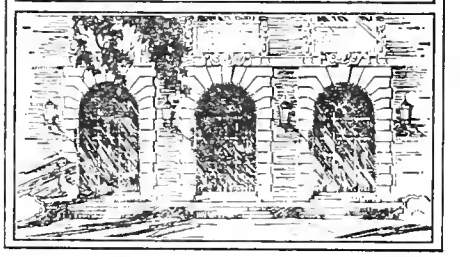

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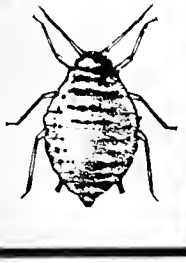
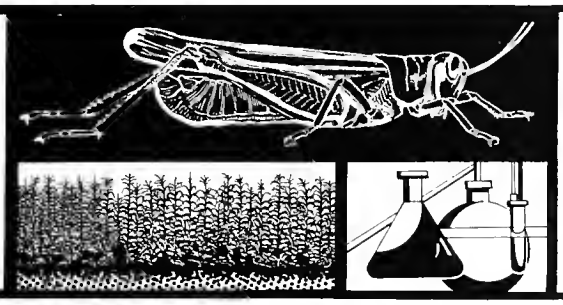




INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE March 15, 1968

INSECT SURVEY BULLETIN NO. 1

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

Cattle lice have increased steadily in numbers since late last fall and have now reached a peak population. Infested cattle rub, lick, and bite themselves excessively; as a result, hair loss and even raw or bloody patches on the skin are common symptoms of louse infestations. Scaly skin, weather, temperature, and diet can also cause similar symptoms. Make a spot check for lice on a few of the animals with the roughest appearance; look first along the brisket and neck, then check the withers and tail crown for the small dark blue or black sucking-lice or reddish-brown chewing lice. Tiny, oval, yellow or black eggs (nits) stuck to hairs are also a sign of lice.

Control cattle lice with sprays. Although using dusts and backrubbers will usually control light infestations, they will not control moderate to severe infestations.

Use Ciodrin for dairy cattle. Mix 1-1/2 pints of liquid concentrate containing 4 pounds of active ingredient per gallon, 2 pints containing 3.2 pounds, or 3 pints containing 2 pounds per gallon with 100 gallons of water. Rotenone is also effective.

For beef cattle, use lindane--1-1/2 pints of 20-percent lindane liquid concentrate per 100 gallons of water; or malathion, 3 quarts of the 50- to 57-percent malathion liquid concentrate per 100 gallons of water. When using lindane, allow 30 days to elapse between treatment and slaughter. Lindane and malathion are preferred for louse control on beef cattle because both materials will also control mange mites as well as lice.

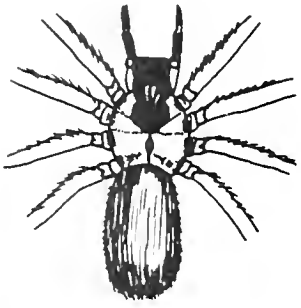
Follow these suggestions when spraying cattle for lice:

1. Add 1 to 2 pounds of a washday detergent to each 100 gallons of finished spray to aid in wetting and in penetrating the thick coat.
2. Apply 1-1/2 to 2 gallons of finished spray per animal, if they weigh 800 pounds or more.
3. Thorough coverage of each animal from head to tail is essential for good control. Spraying must be thorough; if not, repeat the treatment in 2 weeks.

On warm days throughout the winter, adult alfalfa weevils have been depositing eggs in alfalfa stems. A few larvae can be found now. Except in extreme southern Illinois or on steep south or west slopes, damage will not be visible for another 2 or 3 weeks.

Damage will be severe in almost all alfalfa fields south of a line from Paris to Alton. Moderate to heavy damage will occur in most alfalfa fields north to a line from Watseka to Springfield to Hardin.

Egg laying has just begun, and a recent egg survey in east-southeastern Illinois shows that 35 percent of the alfalfa fields already have enough eggs for potentially severe larval damage. This indicates that a severe alfalfa weevil problem can be expected this spring.



Note fiddle-shaped dark marking behind the "head."

Much attention has been given the brown recluse spider during the past year. It is yellow to dark brown in color, about 1/2 inch long, with a distinct fiddle-shaped dark marking behind the "head." It was first found in 1959 in Carbondale and Harrisburg, as far north as Sullivan by 1965, and as far north as Chicago by 1967. (See attached map.)

This spider is usually found in dark places in the home; closets, crawl spaces, and other dark storage spaces are favorite spots. However, the spider is not aggressive and does not attack; it tries to escape when disturbed. When pinched (as in clothing, gloves, or bedding), it will bite. Consult your doctor about any such bites.

We are trying to catalogue the distribution of this spider and others, and we will identify all spiders sent to the Natural History Survey in Urbana. Send specimens in alcohol to Dr. John Unzicker, Room 93, Natural Resources Building, Illinois Natural History Survey, Urbana, Illinois 61801. Include your name, address, and where the spider was found. Dr. Unzicker will reply as quickly as time permits.

North of Highway Route 36, corn rootworms are a common topic of conversation. Several new insecticides for application at planting time are on the market. Dasanit was not included in the printed Illinois recommendations of December 31, 1967, because it did not have federal label approval. Recently, it received this approval, and is now recommended for rootworm control in Illinois. We classify it in the same category with phorate, BUX ten, and dyfonate.

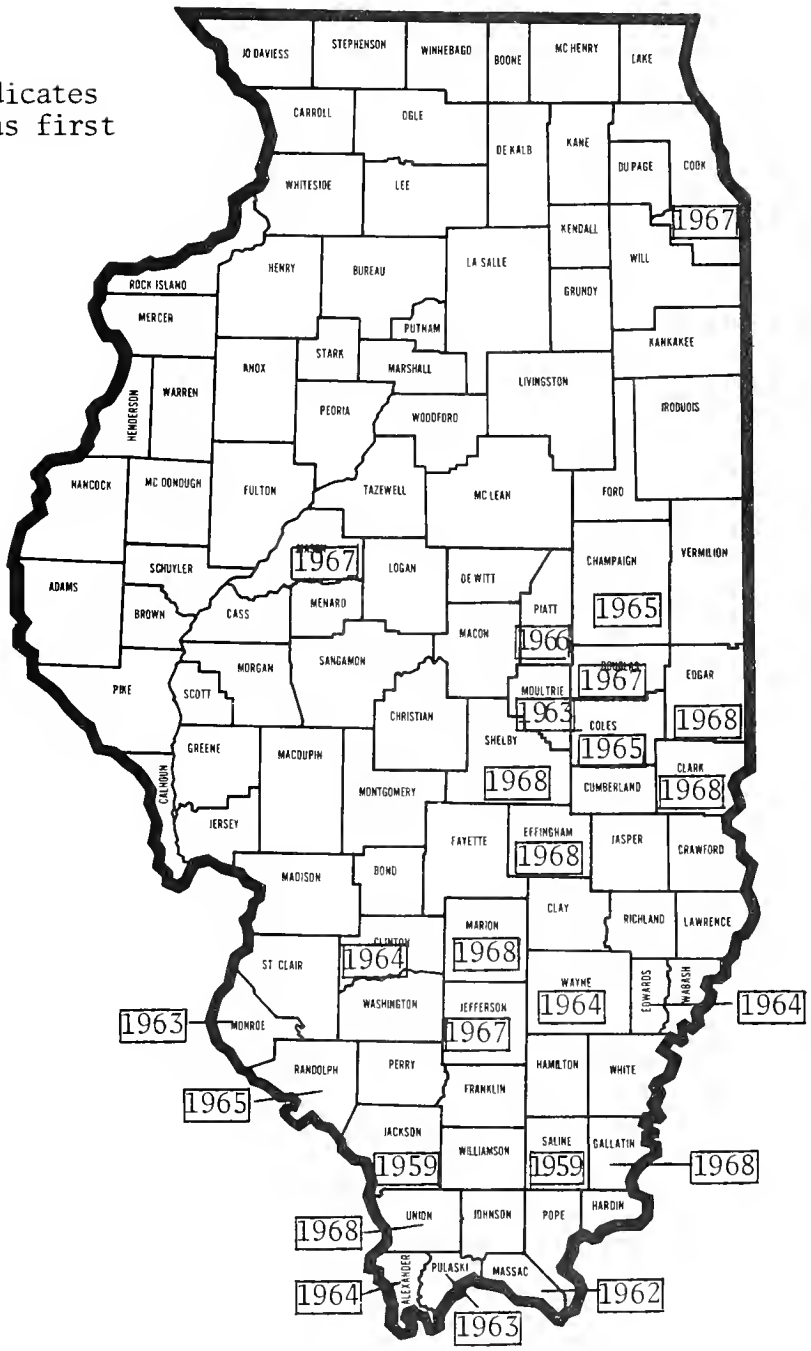
Plant pathologist M.P. Britton states that during the past few weeks, there has been a rash of questions on brown stem rot of soybeans and the reason for its build-up. Under Illinois conditions, a build-up of brown stem rot of soybeans occurs when beans are grown for several years successively in the same field. Red clover in a rotation has not been shown to be a factor in the spread of brown stem rot of soybeans. However, since red clover can be infected by the fungus, we do not think that soybeans should follow red clover. The normal practice, of course, is to follow red clover with corn.

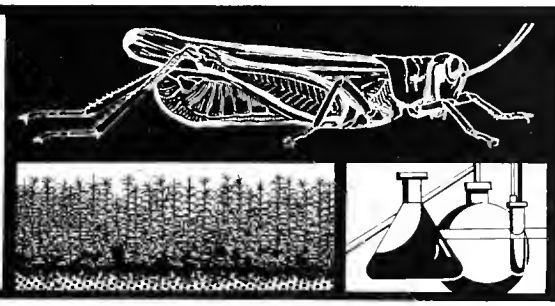
CAUTION: REMEMBER--READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS CAREFULLY.

This weekly report was prepared by H.B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.

BROWN RECLUSE SPIDER DISTRIBUTION

Date in county indicates year the spider was first found.





INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE March 23, 1968

INSECT SURVEY BULLETIN NO. 2

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

This week was National Poison Prevention Week, but attention should be focused on the problem for all year long. In agriculture, the next 3 to 4 months are the most critical, since the majority of insecticides used on farms will be applied during that time. *We constantly repeat, "Read and follow the label."*

These are precautions to follow when handling insecticides:

1. Wear gloves
2. Avoid breathing dust or spray by wearing an appropriate mask
3. Wear goggles
4. Do not smoke
5. Wash carefully after use
6. Wash clothes each day
7. If insecticides are spilled on your clothing, change to clean clothes immediately
8. Store insecticides away from livestock feed, and always store insecticides in their original containers

These and many other warnings can and are listed as precautions, but above all think first and handle insecticides with care. Carelessness can be fatal. In agriculture, the record is good. We have had only one accidental death from a pesticide used in commercial agriculture since 1960--there need be no more.

Unfortunately, pesticides are not used as carefully by homeowners, and small children are the ones who suffer the most. Be sure to store and place insecticides where children cannot get to them. Each year in Illinois, 2 to 4 people die from pesticides as a result of carelessness and there are about 750 cases (mostly children) of accidental ingestion of pesticides.

One way to avoid insecticide accidents in the home is to keep insects out. As an example, most ants live outdoors, as do crickets, centipedes, and spiders. They crawl up over the foundation and into your home. You can keep them out by applying 2-percent chlordane to the foundation and to a 2- to 4-inch band of soil around your home in April or May and again in August. This will control these

insects before they enter your home and eliminate the indoor use of ant baits, which small children are tempted to eat. *But above all, keep pesticides under lock and key where children cannot get them.*

Alfalfa weevil damage will be severe in almost all alfalfa fields south of a line from Paris to Alton. Moderate-to-heavy damage will occur in most alfalfa fields north to a line from Watseka to Springfield to Hardin. Weevil feeding will be apparent in alfalfa fields north of this line, but will not reach significant proportions.

Larvae are now hatching in southern Illinois; they can be found quite easily. Damage has not occurred yet; but by next week, feeding should be noticeable. As the weather warms, observe fields closely for weevil feeding. The first insecticide application will probably not be needed in the more advanced fields in extreme southern Illinois until the first week in April or later, depending on the weather.

If you intend to protect your alfalfa from weevil attack, begin to make preparations now. Apply the insecticide when weevil feeding has become noticeably apparent on 25 percent or more of the terminals; a second application may be needed about 2 weeks later as more larvae hatch; and a third one may be needed to protect the new shoots after the first cutting has been removed. This may seem expensive, but you will produce more and better-quality alfalfa than in the past.

The recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre or a mixture of 1/2 pound of diazinon and 1 pound of methoxychlor per acre. When air temperatures are above 60° F., you may also use 1 1/4 pounds of malathion per acre.

Allow 15 days to elapse between an application of methyl parathion and harvest, 16 days for azinphosmethyl, 7 days with methoxychlor, and 7 days with diazinon. No interval is required between the application of malathion and harvest.

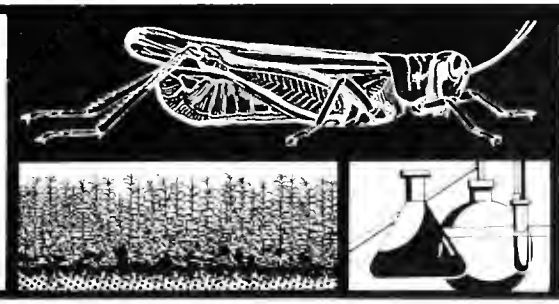
We are continually questioned about the most effective material. Methyl parathion, put on by commercial applicators who wear protective clothing, usually provides the best control under all conditions. Furthermore, the total cost of chemical and application may not be any greater than chemical cost plus labor for the materials used by the individual applicator. Regardless of what or how the material is applied, timing is critical. An application made too early may be wasted, but an application that is too late usually means a crop loss. Apply when 25 percent of the terminal growth has obvious feeding damage.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

A dormant oil application in the early spring will assist in controlling certain scale insects and overwintering red mite eggs. Purchase dormant oil and mix with water according to directions on the label. A 2-percent oil spray is sufficient to control San Jose, Putman, and tulip tree scale. Do not apply when temperatures are below 40° F. or if new growth is present.

CAUTION: REMEMBER--READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS CAREFULLY.

This weekly report was prepared by H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE March 29, 1968

INSECT SURVEY BULLETIN NO. 3

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

Alfalfa weevil larvae are now hatching in southern Illinois. The coming of warmer weather has increased egg hatch and egg laying, resulting in a buildup in the number of larvae; also, the alfalfa is beginning to grow. Check the alfalfa fields closely for damage caused by the larvae feeding on the terminal leaves.

In the new plant growth, newly-hatched larvae feed within the growing plant tips and on the upper leaves as they open. They skeletonize the leaves, which then dry rapidly. Severely damaged fields take on a grayish to whitish cast.

If you intend to protect your alfalfa from weevil attack, begin to make preparations now. The first insecticide applications will probably not be needed in more advanced fields in extreme southern Illinois until the first week in April or later, depending on the weather. A spot check of alfalfa tips will give you some indication of damage. Select 25 terminal tips at random, and carefully examine them for the presence of small larvae or feeding injury.

Apply the insecticide when weevil feeding has become noticeably apparent on 25 percent or more of the terminals. Newly-hatched larvae are about 1/20 of an inch long and are yellow, except for a shiny black head. When full grown, they are about 3/8 of an inch long, green, with a wide white stripe running down the middle of the back.

The recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre or a mixture of 1/2 pound of diazinon and 1 pound of methoxychlor per acre. When air temperatures are above 60° F., you may also use 1 1/4 pounds of malathion per acre.

Allow 15 days to elapse between an application of methyl parathion and harvest, 16 days for azinphosmethyl, 7 days with methoxychlor, and 7 days with diazinon. No interval is required between the application of malathion and harvest.

We are continually questioned about the most effective material. Methyl parathion, put on by commercial applicators who wear protective clothing, usually provides the best control under all conditions. Furthermore, the total cost of chemical and application may not be any greater than chemical cost plus labor for the materials used by the individual applicator. Regardless of what material is applied or how, timing is critical. An application made too early may be wasted, but an application that is too late usually means a crop loss. Apply when 25 percent of the terminal growth shows feeding damage.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

White grubs will probably be present in some fields this spring, especially in the east-central part of the state where they were a problem in 1965 (when approximately 20 thousand acres of soybeans were damaged). These U-shaped larvae with a brown head have been overwintering down in the soil, after hatching from eggs this past fall, and are now near the surface. One species of white grub or June beetles commonly lays its eggs in soybean fields. True white grubs usually complete their life cycle in 3 years, spending almost 2 years in the soil as grubs. This insect feeds on the roots of both corn and soybeans. One indication that this pest is present in a field is that they will be turned up to the surface during plowing. If many birds are feeding on freshly plowed or disced ground, check to see if there are white grubs present. If the field is to be planted to corn, broadcast 3 pounds of actual aldrin or heptachlor per acre and incorporate it into the soil. Do not use these chemicals on fields to be planted in soybeans. Ahead of soybeans, broadcast 4 pounds of actual diazinon per acre and incorporate it into the soil.

White grubs and other soil infesting insects in the home garden can be controlled with a broadcast application of diazinon. Apply 1 ounce of actual diazinon per 1,000 square feet of garden area and work it into the soil. Do not apply aldrin or heptachlor to home garden soil.

Spring cankerworms will be hatching soon and will be feeding on many deciduous trees, such as American elms and apple. These brown to dark-green to black measuring worms (sometimes called inch-worms) can completely defoliate trees in the early spring as the trees leaf out. For best control results, apply the chemical when the worms are still small. Use either carbaryl (Sevin) with 2 pounds of 50-percent wettable powder in 100 gallons of water or lead arsenate with 4 pounds per 100 gallons of water.

Clover mites are annoying in some homes. These mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, walls, curtains, window sills, etc., as they attempt to find their way outdoors. Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for quick knockdown. Before fall, remove grass, clover, and weeds next to the foundation--leaving a strip of soil

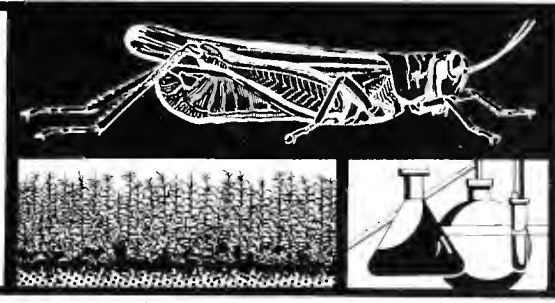
at least 18 inches wide. This bare soil serves as a barrier to the mites. Replanting this strip to such flowers as zinnia, marigold, chrysanthemum, or salvia (which do not attract clover mites), will prevent clover mite problems next year.

Cluster flies (attic flies) are a nuisance in some homes. The adult flies entered houses and buildings last fall to get shelter for the winter. Since attics and basements are not as carefully sealed as other areas, large numbers of flies can gather there. With the onset of warm, sunny days, they become active and leave the partitions and voids to congregate at windows. Clusters sometimes include thousands of flies. Though they are a nuisance, cluster flies don't injure either persons or materials. They are slightly larger and more sluggish than house flies.

The best indoor control is 20-percent dichlorvos (DDVP) resin strips placed in attics, basements, and other fly-infested rooms. One strip per 1,000 cubic feet (one strip per average room) is effective about 4 to 6 weeks. Do not use in rooms where tropical fish are present or in pet shops.

CAUTION: REMEMBER--READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS CAREFULLY.

This weekly report was prepared by H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

tate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE

April 5, 1968

INSECT SURVEY BULLETIN NO. 4

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

Alfalfa weevils continue a slow buildup in southern Illinois. Egg hatch and larval feeding have been reduced by the cool weather. Thus, the expected damage has not yet occurred. However, some fields south of Route 13 have terminal feeding damage of about 10 percent, but treatment should be delayed in these fields until 25 percent or more of the terminals are damaged. Depending on the weather, the first insecticide applications may be necessary south of Route 13 in the second week of April, and 10 days to 2 weeks later north of this line. [In cool weather (below 40° F.), larvae do little or no feeding.]

It is most important to inspect alfalfa fields frequently. Spraying too early or too late can be a waste of time and money. A spot check of alfalfa tips will give you some indication of damage. Select 25 terminal tips at random in several locations of the field, and carefully examine them for the presence of small larvae or feeding injury. Apply the insecticide when larval feeding has become apparent on 25 percent or more of the terminals. Newly-hatched larvae are about 1/20 of an inch long and are yellow, except for a shiny black head. When full grown, they are about 3/8 of an inch long, green, with a wide white stripe down the middle of the back.

The recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, or a mixture of 1/2 pound of diazinon and 1 pound of methoxychlor per acre (3 quarts of the commercially prepared mixture, Alfatox). When air temperatures are above 60° F., you may also use 1 1/4 pounds of malathion per acre.

Allow 15 days to elapse between the application of methyl parathion and harvest; 16 days for azinphosmethyl; and 7 days with methoxychlor, diazinon, or mixtures of them. No interval is required between the application of malathion and harvest.

We are continually questioned about the most effective material. Methyl parathion, put on by commercial applicators who wear protective clothing, usually provides the best control under all conditions. Furthermore, the total cost of chemical and application may not be any greater than the chemical cost plus labor for the materials used by the individual applicator. Regardless of what material is applied or how, timing is critical. An application made too early may be wasted, but an application that is too late usually means a crop loss. Apply when 25 percent of the terminal growth shows feeding damage.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

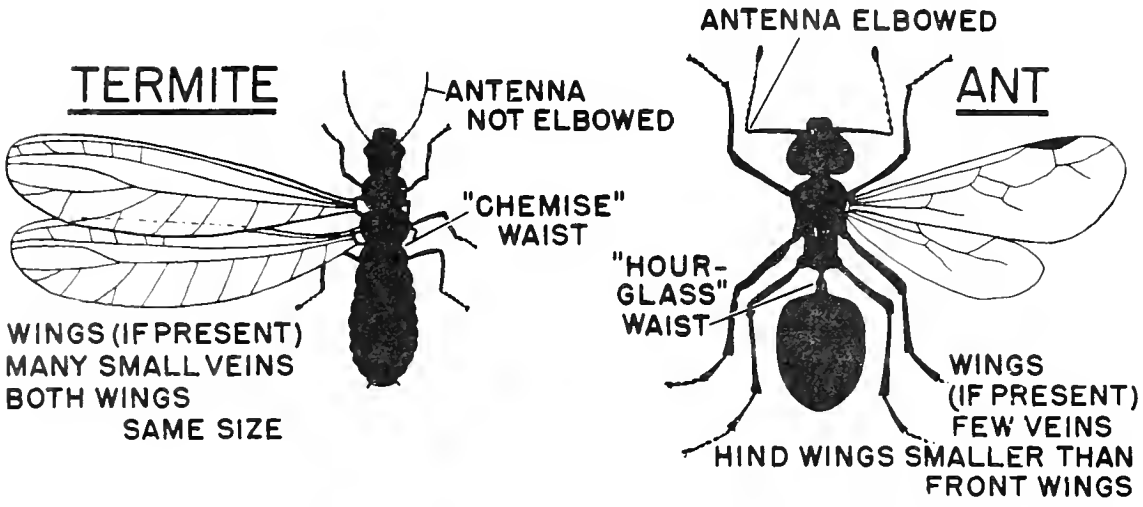
Clover leaf weevils can be confused with alfalfa weevils. This large, pale-green worm with white stripes down its back has a tan or brown head; the alfalfa weevil has a black head. There have been reports of this insect in clover and alfalfa fields in the western part of the state. They feed mainly at night, and hide around the base of the plant during the day. Most stands of alfalfa and clover outgrow the damage from this insect; also, parasites and a fungus disease usually prevent a buildup of this pest. However, if feeding is severe and growth is slow, a spray of 1 pound of malathion will be effective. Pea aphids, if present, will also be controlled by the malathion.

Fungus gnats are numerous in some wheat fields. These small gnat-like flies (sometimes mistaken as Hessian fly), which develop in wet, decaying organic matter, are not pests of the wheat plants. But they do manage to crawl through window screens and become a nuisance in homes. Inside the home, a 0.1-percent pyrethrin space spray applied from a pressurized can will give quick knockdown and relief.

Clover mites are annoying in some homes. These mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, walls, curtains, window sills, etc., as they attempt to find their way outdoors. Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for quick knockdown. Before fall, remove grass, clover, and weeds next to the foundation--leaving a strip of soil at least 18 inches wide. This bare soil serves as a barrier to the mites. Replanting this strip with flowers such as zinnia, marigold, chrysanthemum, or salvia (which do not attract clover mites) will prevent clover mite problems next year.

Winged termites and ants are appearing and are causing concern to homeowners. If swarms of flying termites appear, check for mud tubes on inside basement walls and on the outside of foundations. Many termite control problems are extremely complicated and require an experienced exterminator.

TERMITE or ANT? the differences are:



NOT FOR PUBLICATION: SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

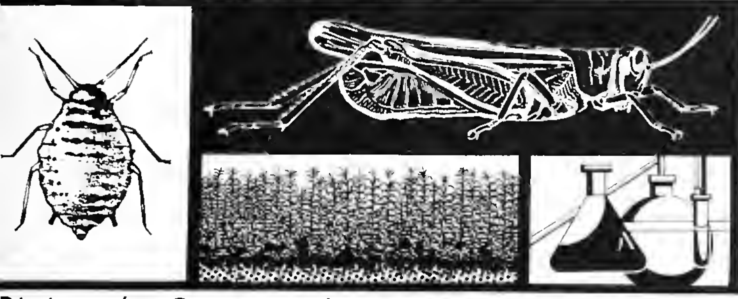
You can have University of Illinois entomologists on your station each week telling farmers how to best control their insect pests. All you do is telephone (217) 333-2614 each Friday. An automatic answering device will play a 1:40 tape summarizing the week's insect activity and forecasting the next week's problems. This summary gives only highlights. We hope you will continue to use these in-depth written reports. Contact your Extension adviser in agriculture for the local angle.

Have your recorder running when you call. The recorded information is different for the northern and southern portions of the state. Therefore, if you are in the northern half of Illinois, call between 9 a.m. and 11 a.m. each Friday; if you are in the southern half of the state, call between 11:05 a.m. and 1 p.m. each Friday.

For more information or in case of difficulty, call Mr. Cliff Scherer in the Agricultural Communications Office, 330 Mumford Hall, University of Illinois, Urbana. Phone (217) 333-4783.

CAUTION: REMEMBER--READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared by H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE April 12, 1968

INSECT SURVEY BULLETIN NO. 5

This series of weekly bulletins provides a general look at the insect situation (fruit insects excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. Before applying insecticides, read the labels carefully and follow all precautions. This will not only insure personal safety, but will also prevent residue hazards.

The alfalfa weevil is damaging alfalfa south of Highway 13. A few fields have already been sprayed. Feeding is more evident than usual on the lower leaves possibly because of the cool weather of recent weeks. Infestations and damage vary from field to field and each field should be judged on an individual basis. At least two and possibly three treatments will be needed to protect alfalfa stands in this area.

In the area between Highways 13 and 40, larvae are present and feeding is noticeable. Some fields in this area will probably need treatment by the end of the week (April 19 or 20). Peak spraying in this area should occur the week of April 21.

In the area between Highway 40 and a line from Watseka to Hardin, weevil activity is just beginning, and it will be at least another 2 weeks before the situation becomes critical.

Apply the insecticide when larval feeding has become apparent on 25 percent or more of the terminals. Serious injury can occur within a few days after this feeding level is reached.

The recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion and for 16 days with azinphosmethyl.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds of methoxychlor and 2 pounds of malathion per gallon) or a mixture containing

at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2 1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1 1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning on days when air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

A few clover leaf weevils can be found in every alfalfa and clover field but as yet no damaging populations have been reported.

White grubs are moving up from the subsoil to feed on grass and weed roots and later on the roots of corn and soybeans. The common three-year-cycle grub caused problems in corn and soybeans in the central sections in 1965 and is expected to be a problem in some fields this year. The grubs are about half grown in this second year of their development and will feed throughout the growing season. Watch for grubs when plowing or during other tillage operations, and if many are present or if the field has a history of grub problems, plan to apply control measures. If the field is to be planted to corn, apply 1 1/2 pounds of actual aldrin or heptachlor and disk it in ahead of planting. Do not use either aldrin or heptachlor on fields to be planted to soybeans. Ahead of soybeans, 4 pounds of actual diazinon broadcast and disked in should provide get-by protection.

English grain aphids are present in wheat fields but are not numerous enough to be of concern. Predators, parasites, and diseases usually hold grain aphid numbers in check. We have observed some fields of wheat in poor condition, but disease (see report below), not aphids, was the cause. Aphids are of greatest concern when the populations are high at the time wheat is heading out. No control is needed at this time.

Septoria leaf blotch is abundant in most wheat fields in Illinois. Extremely favorable conditions for infection of young wheat plants occurred last fall. Defoliation and invasion of crowns at that time produced weakened plants. Some of these did not survive the winter. Spores are produced on the dead leaves in pycnidia, and the disease can be expected to spread upward onto the new leaves as long as cool, wet weather persists.

The pycnidia appear as small black dots, and the resulting speckled appearance of the dead tissue is a reliable symptom for identifying the disease. New infections appear as yellow to light-green areas. At first they are confined to tissue between the leaf veins, but later spread to form irregular blotches.

Septoria leaf blotch does its greatest damage to seedlings in the fall and to tillers in the early spring. In some years the disease kills most of the rosette leaves and up to 50 percent of the tillers. If most of the leaves of maturing plants are killed before the grain reaches the soft dough stage, the grain is lightweight and shriveled.

There is some winter injury in winter wheat. Much of the damage is from heaving. Some is from cold-weather injury to plants weakened by disease or flooding. (Plant disease reports are prepared by M.P. Britton, Extension Plant Pathologist.)

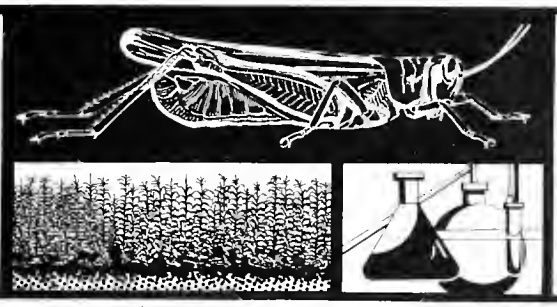
Bagworm eggs are present in the old sacs on many evergreens and other shrubs in the home yard. These eggs will hatch about June 1 in central sections. If you hand-pick and destroy these bags now, you may not have to spray your evergreens in June.

Lawn grubs can destroy the best-kept lawn. Damaged turf turns brown in spots, and the sod can be rolled up like a carpet, often exposing the grubs beneath. If grubs were a problem in your lawn last summer or if you wish to prevent the problem, apply 1 1/4 pounds of actual chlordane per 10,000 square feet. In established sod, apply as granules or as a spray. When spraying, treat only a small area and then water in thoroughly before spraying another small area. For new seedings, mix the chlordane in the soil before planting. Do not plant vegetable root crops in treated soil for 5 years. This treatment should also eliminate ants and soil-nesting wasps from the yard. It will not prevent problems with sod webworms.

Treat now for pine tip moths which infest the tips of mugho, scotch, and red pine. Apply a DDT spray to the ends of the branches and repeat the treatment again in late June. To mix, use 3 tablespoons of the 25-percent liquid concentrate per gallon of water.

CAUTION: REMEMBER--READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

This weekly report was prepared by H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch, from information gathered by entomologists and cooperators who send in weekly reports from their own localities.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

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FOR IMMEDIATE RELEASE April 19, 1968

INSECT SURVEY BULLETIN NO. 6

This series of weekly bulletins provides a general look at the pest situation (fruit insects excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. This release also contains a plant disease report supplied by the Department of Plant Pathology and the Illinois Natural History Survey, as well as a weed control report supplied by the Departments of Agronomy and Horticulture.

FIELD CROP PEST PROBLEMS

Insects

Alfalfa weevil development is now progressing rapidly. However, the alfalfa weevil situation this spring is quite different than it was last year. In the winter of 1966-1967, weevil adults were depositing eggs and larvae were hatching all winter long. As a consequence, weevil larvae were feeding on the alfalfa plants even before they were growing. This past winter, although weevil adults deposited a few eggs, they did not really begin to lay eggs until the beginning of alfalfa growth. By the time the eggs began to hatch, alfalfa had been growing for 2 weeks or longer. Either one of two things could happen because of this late start:

1. Egg laying, hatch, and damage may be condensed into a shorter period, with feeding and damage severe for a short period, then declining rapidly. Egg counts indicate that this may already be taking place.

2. Egg laying may be prolonged over the same span of time as last year. In this case, noticeable damage will occur late into the second growth.

General statements are difficult to make because of the retarded development of the alfalfa weevil. Therefore, each field must be judged individually. Ordinarily, 3 applications of an insecticide are needed to control moderate to heavy infestations. Make the first application when 25 percent of the terminals (individual stems, not plants) show feeding. A second application is required about 2 weeks later, since more hatch occurs and weevils migrate into the fields. A third application is made to protect the new shoots of the second growth, after the first cutting has been removed.

This year, some of the early developing alfalfa may not require 2 insecticide applications on the first crop. However, apply an insecticide when 25 percent or more of the terminals show feeding. Examine the field 10 days to 2 weeks later. If weevil feeding is increasing rapidly and the crop is still 10 days or even

longer from harvest, you may want to make another insecticide application. Although, if the crop is within a week or so of harvest, you may prefer to cut the hay a few days early to avoid the extra cost of insecticide. In this case, be prepared to spray the stubble as soon as you remove the hay, since those larvae present will move immediately from the hay to the new shoots in large numbers and damage could be severe. Later developing fields will probably require the normal insecticide program.

In the area south of a line from Harrisburg to Carbondale, spraying began 10 days ago, and fields should be examined to see if a second application is needed during the next 10 days. Advanced fields may be harvested a little early to avoid the second application, but be ready to spray the stubble.

Spraying began this week in the area north of this Harrisburg-Carbondale line, up to a line from Carmi to Pinckneyville to Sparta. Weevil feeding in that area became quite apparent this week, and untreated fields will be severely damaged within another 7 days.

Hatching began late this week in the area north of the Carmi-Sparta line and south of Route 50. Hatch will progress rapidly now. Examine fields to find out when 25 percent of the terminals show feeding. Many fields will meet this criterion by Monday, April 22.

Fields in the area north of Route 50 and south of Route 40 should begin to show feeding this week. Some may require an insecticide application.

Larvae will be appearing in fields in the area north of Route 40 and south of a line from Watseka to Springfield to Hardin late in the week of April 22 or early in the week of April 29.

The insecticide recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion and for 16 days with azinphosmethyl.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds of methoxychlor and 2 pounds of malathion per gallon) or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2-1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1-1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning, on days when air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

A few clover leaf weevils can be found in every alfalfa and clover field but as yet no damaging populations have been reported.

Cutworms can also be found feeding on red clover in south-central and southern Illinois. The clover, however, seems to be growing away from the damage.

White grubs have been discussed in the past 2 weeks as a potential soybean and corn root pest in the eastern and central areas of Illinois. They have a 3-year life cycle. The last outbreak was in 1965, when many fields of soybeans were severely damaged. If you find lots of grubs as you are plowing, you may want to apply a soil insecticide. If the field is to be planted in corn, apply 1-1/2 pounds of actual aldrin or heptachlor and disk it in ahead of planting. Do not use either aldrin or heptachlor on fields to be planted in soybeans. Ahead of soybeans, 4 pounds of actual diazinon--broadcast and disked-in--should provide get-by protection.

We will appreciate reports of this pest this year. Please notify your county Extension adviser.

Plant Diseases

Septoria leaf spot is now spreading upwards on the leaves of wheat, and will continue to spread as long as the cool weather persists.

Powdery mildew was observed on wheat south of Highway 40 this past week. This disease will become more prevalent as the weather warms up. It is readily recognized by the powdery white growth that occurs in patches on leaves and sheaths.

Weeds

Ramrod has additional clearance in 1968 for corn--including seed production fields, sweet corn, and corn for grain forage or silage. Livestock can now be turned into Ramrod-treated cornfields after harvest. You may also use Ramrod on sorghum, unless the sorghum is to be grazed by dairy cattle or used as silage for dairy cattle.

Ramrod is not cleared for weed control on soybean fields, if the beans are to be used for food, feed, or oil. It can be used if the soybeans are to be used for seed only.

Sutan is now cleared for field corn, sweet corn, and corn used for silage. It is not cleared for hybrid corn grown for seed. (Several seed corn companies will have trials to further check corn tolerance this year.) It may be used alone at 4 pounds actual (2/3 gal.) per acre on a broadcast basis. Incorporate into the soil immediately after application.

One of the major ideas of interest is to apply a combination of Sutan and Atrazine. Although results with this combination looked promising in 1967, only field-trial use is suggested in 1968, in order to obtain more information on weed control and crop tolerance under a wider range of conditions. In trying this combination, we suggest 3 pounds (1/2 gal.) of Sutan with the Atrazine; 1-1/4 pounds of Atrazine 80W on lighter-colored soils may be sufficient, but nearly 2 pounds may be needed on the darker soils. Supplies should be sufficient for this purpose in 1968. We will also further evaluate the combination this year in research trials.

Paraquat has been cleared for application to emerged weeds prior to corn planting or prior to corn emergence. Considerable research has been done with Paraquat for killing sod and planting corn in dead sod. Paraquat is a "quick burner" that becomes inactivated on contact with the soil.

Atrazine is usually applied at the same time for residual control. This program will likely have very limited acceptance in 1968, but there has been a spurt of interest with the new clearance for Paraquat and the development and availability of equipment for "no-till" planting.

Clearance for amitrole and amitrole-T is apparently under review, but no changes are anticipated that will affect normal use in Illinois during 1968.

There have been many questions about seeding-down areas for the government program in 1968, where Atrazine was used on corn in 1967. Plan ahead and do not use Atrazine where you plan to seed small grain or small seeded legumes this fall or next spring. Soybeans can usually follow Atrazine-treated corn the next year, if Atrazine was applied uniformly and accurately at the proper rate.

HOMEOWNER PEST PROBLEMS

Insects

Oystershell scale cannot be controlled now. Many people are asking about controlling this pest that attacks lilacs, many trees, and other shrubs. It is too late to apply a dormant oil and too early for a malathion spray. The eggs are under the overwintering scales. These eggs will hatch in late May in southern Illinois, early June in central Illinois, and mid-June in northern Illinois. The young scales crawl out from under the old scales and migrate to the new growth to feed. At this time, they are called crawlers, and they can be controlled with malathion sprays. Another application may be required in August.

Brown recluse spiders are still being discussed. We need one spider from each county in our collection for reference purposes. We will appreciate receiving specimens. Place suspicious-looking spiders in a small bottle of alcohol and send them to Dr. John D. Unzicker, Illinois Natural History Survey, Urbana, Illinois 61801, for determination.

Plant Diseases

Fusarium rot is a problem if you grow gladioli. Start your control program before you set the bulbs. First, examine the bulbs before planting and discard any that show signs of rot. Then, treat the good bulbs with Arasan dust. Place the bulbs in a paper bag with the dust and shake. They are then ready to plant.

Weeds

Dandelions and other broadleaved weeds are now prevalent in many lawns; people are asking about control. It is still not too late to apply 2,4-D amine or low-volatile esters at the rates suggested on the label.

Mixtures of 2,4-D with NCPP, dicamba, and others are widely available, and these may be used instead of 2,4-D alone. They provide a wider range of weed control. Always follow the label when using these herbicides.

Applications should still kill the dandelions and may prevent formation of the seeds. Apply these materials when there is no wind blowing; even light drift of spray onto susceptible shrubs, flowers, and vegetables may seriously damage such plants.

Precautions in Using Pesticides

Each year we get a few reports of spray solution with pesticides siphoning down into wells from sprayer tanks. Watch the hose when filling, or attach it to the top of the tank so it will remain above the water level. Remove the hose as soon as the tank is filled. The proper use of valves on the water system can also help prevent the possibility of such siphoning. Prevention is a lot easier than effecting a cure.

Keeping good records of pesticide applications is like keeping a good record of your checking account. It provides a valuable review and helps in making future plans.

Always keep pesticides out of the reach of children and people not accountable for their actions. These are the ones who most often suffer from improper pesticide storage.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

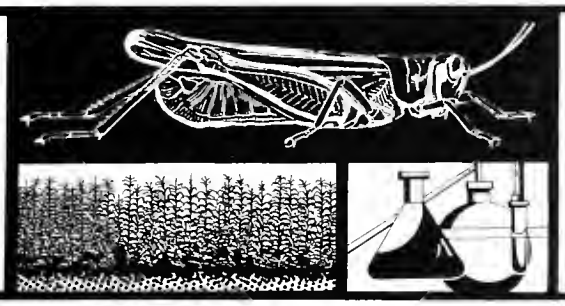
This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture.

Plant Diseases: M.P. Britton, Department of Plant Pathology, and J.L. Forsberg, Illinois Natural History Survey.

Weeds: Ellery Knake, Department of Agronomy, and J.D. Butler, Department of Horticulture.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

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FOR IMMEDIATE RELEASE April 26, 1968

INSECT SURVEY BULLETIN NO. 7

This series of weekly bulletins provides a general look at the pest situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. The plant disease report was prepared by the Department of Plant Pathology, the insect situation report by the Department of Agricultural Entomology and the Illinois Natural History Survey.

FIELD CROP PEST PROBLEMS

Forage Crops

Alfalfa weevil development almost came to a standstill during this past week. Egg-laying by the adults has been slowed down by the cool weather, and feeding has been greatly reduced. Larval populations could have exploded this week in much of the alfalfa weevil area; actually, there was a noticeable increase of larvae in some areas, but not in the proportions expected.

Adults are quite numerous in alfalfa fields now. When brought inside, these adults immediately begin to deposit eggs in quantities. Thus, as soon as the weather warms up, we can expect a surge of egg-laying, which will be followed within 10 days by severe weevil feeding.

This delay of weevil development could prove to be beneficial. Many eggs may be removed from fields as the hay is harvested; also, many small worms will be either removed or killed by exposure to the sun. On the other hand, if the alfalfa is cut before or during this siege of egg-laying, eggs will be deposited on the second growth, resulting in severe damage to that growth.

However, the entire situation is so erratic that no general rules that would apply to all fields can be given. Each field has to be judged by itself. Take into account the abundance of weevil larvae, terminal feeding, alfalfa growth, and length of time until harvest. Some fields may escape injury, while others may be severely damaged; the temperature of the next few weeks will be the determining factor. But in many fields, the alfalfa is now ahead of the weevil, and may continue to outgrow the feeding of these insects.

In the area south of a line from Harrisburg to Carbondale, fields already sprayed may be ready for a second treatment by the week of April 29. Some fields that have not been treated are showing noticeable damage, which will increase. Fields

that are 10 days or more from harvest may benefit by an immediate insecticide application. Otherwise, cut early. Weevil adults are still laying eggs, eggs are hatching, and some larvae are already mature. These pests will still be around for another 4 weeks, so watch for feeding damage to new shoots on second-growth alfalfa and be ready to protect it.

In the area north of the line from Harrisburg to Carbondale and south of a line from Nashville to Mt. Vernon, treatments have already been applied to many fields, or soon should be. Some of the earlier-developing fields may not need another spray, but second growth will require protection. Although few treatments have been made northward to Highway 50, larvae can readily be found in alfalfa fields, and their number will increase rapidly with warm weather. The first growth in most fields will need at least one spray application, but some of the earlier-developing fields on the west side of the state (where the infestation is lighter) may escape treatment if cut a bit early.

In the area north of Route 50 and almost up to Route 40, weevil development is very much behind what was expected, and it now appears that treatments will not be needed at least until after May 1--even later in the area north of Route 40 and south of the line from Watseka to Springfield to Hardin.

Apply insecticide controls when 25 percent of the terminals show feeding. The insecticide recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds of methoxychlor and 2 pounds of malathion per gallon) or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2-1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1-1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning, on days when air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

Clover leaf weevil populations in red clover fields are now declining. As usual, a disease has begun to kill many of them. This disease has appeared in epidemic proportions in some fields.

Pea aphids are conspicuous by their low numbers in alfalfa fields. Ordinarily, they are numerous by this stage of growth. Development will depend now on the weather and on natural enemies, such as lady beetles and aphid diseases. When populations of pea aphids are extremely low on alfalfa in the spring, there is a theory that the natural enemies of pea aphids (lady beetles, aphis lions, and many others) fail to develop in great numbers. When this occurs, corn leaf and many other aphids may be a problem during the warmer months.

Leaf spots in alfalfa fields are abundant on the lower leaflets. Most of these are probably pseudoplea spots. Some leaflet drop can be expected from leaf spot infections. Fungicide control is not feasible.

Wheat

Septoria leaf spot on wheat is still largely confined to the lower leaves. There has not been much movement of the disease upward on the plants. Lower leaves are heavily infected in most fields and the disease could become serious if prolonged periods of cool, wet conditions occur.

HOMEOWNER PEST PROBLEMS

Trees and Shrubs

Spring cankerworms are brown to dark-green to black measuring worms that eat the leaves of elm, apple, and other trees. They may completely defoliate elms. These worms first appear just as the leaves begin to emerge from the buds. They continue to feed for a few weeks; when full grown, they drop to the ground on a silken thread. At times, hundreds of them can be seen swinging on strands of web.

For control, use either (1) carbaryl (Sevin) with 2 pounds of 50-percent wettable powder in 100 gallons of water or (2) 4 pounds of lead arsenate per 100 gallons of water. It is necessary to spray the entire tree. A power sprayer will be needed to do this.

Eastern tent caterpillars are now common in trees, along roadsides, and in wooded areas in the southern part of Illinois. The worms live in the tent in the crotch of a tree and migrate out to the branches to eat the leaves. Strands of webbing or trails extend from the tent to the leaves. The easiest method of control is to cut out the tent and burn the branch and the tent. If this would disfigure the tree, you can spray with carbaryl or lead arsenate, as for cankerworms. But this must be done early, since it is difficult to penetrate masses of webbing with a spray.

Plant Lawns

Helminthosporium leaf spot is showing up in Kentucky bluegrass lawns. This disease can be very destructive during wet, cool weather--especially on lawns that are mowed less than 2 inches high. The leaf spots are dark brown; some have light tan centers. Leaves with several spots are killed. When many leaves are killed, brown areas appear in the lawn. Leaf spot damage can be reduced by applying lawn fungicides containing Phaltan, Dyrene, Maneb, or Acti-dione. Applications must be repeated during wet, cool weather.

PRECAUTIONS IN USING PESTICIDES

Corn planting has started or will start within the next few weeks. Many farmers will be using special insecticides designed to control aldrin/heptachlor-resistant corn rootworms. These insecticides are for use primarily on the soil surface ahead of the press wheel, not in with the seed. A few of them injure germination. Be sure to follow the label instructions on placement concerning these newer insecticides.

Also, some of these newer insecticides are more toxic than those previously used. You can use them without bodily harm, providing a few simple precautions are observed. The first one is to be careful, not careless. When emptying sacks of granules, do so in such a manner that any dust will blow away from you. Always wear gloves. Wear a dust mask and goggles in case of doubt. Change clothes daily. Always wash up carefully before eating.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

SPECIAL NOTICE--NOT FOR PUBLICATION

Last week's report had notes about insects, plant diseases, and weeds. This week, we have insect and plant disease information. We are trying to have a plant pest bulletin, rather than insects only, as part of our continuing efforts to make this weekly bulletin more useful to you. But we need your comments. Please send us your opinion. If this new style meets with your approval, we will rename this bulletin accordingly. Please fill out the questionnaire and return to:

H.B. Petty, Extension Entomologist
280 Natural Resources Building
Urbana, Illinois 61801

1. I want the University to continue this integration of all plant-pest information in a weekly situation bulletin. Yes____. No.____

2. I suggest the following name for such a weekly bulletin.

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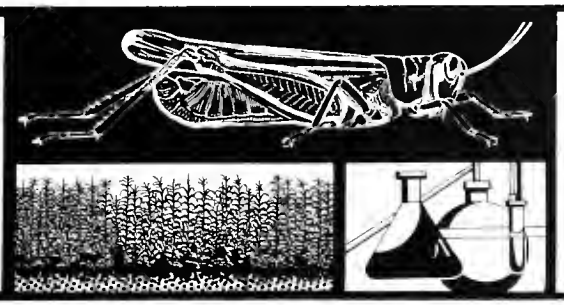
3. I am a farmer____, pesticide and equipment dealer____, salesman____, seedsman____, canner____, newsman____, other (please identify)_____.

4. Other comments:



INSECT SURVEY BULLETIN

College of Agriculture
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FOR IMMEDIATE RELEASE May 3, 1968

INSECT SURVEY BULLETIN NO. 8

This series of weekly bulletins provides a general look at the pest situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. The plant disease report was prepared by the Department of Plant Pathology, the insect situation by the Department of Agricultural Entomolgy and the Illinois Natural History Survey, and the weed report by the Department of Agronomy and the Illinois Natural History Survey.

FIELD CROP PEST PROBLEMS

Insects

Alfalfa weevil development has returned to normal speed, with the warmer weather of the past week. Egg hatch and larval feeding have greatly increased. Most alfalfa fields in the area south of a line from Harrisburg to Carbondale have been treated once, sometimes twice. Treatments should have been applied this past week to most alfalfa fields south of Route 50. Alfalfa stands are growing rapidly with the warmer weather. First cutting of alfalfa will be occurring in a week to 10 days in the southern part of the state. In general, insecticide treatments have been effective in this heavily infested area.

The alfalfa is still ahead of the weevil, especially where the first treatment was timed correctly. In many instances, the second treatment can be delayed until after cutting the first crop. Remove the first crop along with many eggs in the stems and treat the new growth of the second crop.

Next week, egg hatch and larval feeding will increase in areas to the north of Route 50. Treatments will need to be made on some fields in the area up to a line through Jerseyville to Pana to Paris during the week of May 6.

Watch for weevil feeding; when 25 percent of plant terminals show feeding, apply an insecticide. However, some fields may not require treatment if cut early. Weevil feeding will continue for another three weeks.

The insecticide recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds

of methoxychlor and 2 pounds of malathion per gallon) or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2-1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1-1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning, on days when air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

Corn flea beetles are numerous in many wheat fields in western and southern areas. They are inflicting white scratch marks on the tips of leaves as they feed, but this injury is not expected to reduce yields. Although corn flea beetles are vectors of Stewart's disease in corn, they are not known to carry a wheat disease. Treatment of wheat fields is not suggested.

Newly emerging corn should be watched for the presence of these small, shiny, black beetles that jump when approached. If damage to small corn is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre as a band spray over the row.

Spittlebugs are hatching in southern and central areas. The nymphs, orange to yellow in color, cause damage by sucking sap from alfalfa and clover plants. They are found behind leaf sheaths or on the leaves and stems, in masses of froth or spittle. Chemical control is usually not profitable if spittlebug nymphs average fewer than one per stem.

Potato leafhoppers, a migrant from southern states, appeared for the first time this week in southern areas. They are small, green, wedge-shaped insects that skid sideways when disturbed. They cause the yellowing on second- and third-cutting alfalfa. No control measures are recommended at this time.

Variegated cutworms are feeding in clover fields in southern Illinois. Presently, they are very small and few in number.

Plant Diseases

There has not been a significant increase in the spread of Septoria leaf spot in wheat during the last week. The dry weather has effectively prevented the spread of the disease from the lower leaves to the upper ones. Spores are abundant on the lower leaves in nearly all fields, and the disease could become serious if periods of cool, wet weather occur.

Powdery mildew is prevalent on the lower leaves and sheaths of both winter wheat and winter barley in fields that are about knee high (jointing). Mildew tends to be most severe in fields with high nitrogen fertility and high plant populations. This disease can be expected to increase in severity as long as moderately cool temperatures prevail. Rainy weather is not necessary for the development of this disease. The disease can be recognized by the presence of white to gray mats of fungus growth on the leaves and sheaths; the presence of spores gives the mats a powdery appearance. Effective fungicides have not been cleared for use on wheat and barley by the Food and Drug Administration.

Weeds

Oil-soluble amine formulations of 2,4-D have been available under the trade names Dacamine and Emulsamine. These oil-soluble amines of 2,4-D are said to have "the effectiveness of an ester and the safety of an amine."

The regular esters of 2,4-D are formulated in oil and mixed with water to make an emulsion for spraying. The amines are salts that are purchased with the salt already dissolved in a concentrated solution, which is mixed with water for spraying.

When the oily-ester formulation is mixed with water, the resulting emulsion has a milky appearance, with the oil globules dispersed in the water. The amines form a true solution, just like salt or sugar in water; so the spray mixture does not have the milky appearance.

The ester formulations with oil penetrate through the waxy layer on the surface of leaves better than the amines. This is one of the reasons why 1/6 to 1/4 pound of 2,4-D ester generally does about the same job as 1/2 pound of 2,4-D amine. Providing the rate is adjusted, the amine form of 2,4-D is usually about equally effective for killing weeds. But it is safer than the ester, since the amine is less volatile.

The oil-soluble amines are similar to the esters in the way they penetrate leaf surfaces; hence the reason for saying they have the "effectiveness of esters." Since they are still amines, volatility is not a problem; hence the reason for saying they have the "safety of amines."

Don't expect miracles from the oil-soluble amines. Essentially, they are just a different formulation of 2,4-D. Crop tolerance and the degree of weed control will probably be about the same as with other forms of 2,4-D, providing the indicated rates and other directions for application are followed.

Herbicide Combinations. There's a right way and a wrong way to mix herbicide combinations consisting of emulsifiable concentrates (EC) and wettable powders (WP). Before you mix a large amount, test the proportions on a small scale. Some manufacturers suggest this procedure: First add the EC and agitate the solution thoroughly. Premix the WP with a small amount of water, add it to the EC solution, and continue agitating the mixture. When using aldrin and atrazine together, use fertilizer-grade aldrin in an emulsifier; also, be careful to watch for spray line clogging with this combination. *NOTE:* This combination may be less effective than either aldrin or atrazine used alone, since aldrin should be disked-in immediately upon application for greatest effectiveness.

Aquatic Plants in Ponds. No doubt some of the common aquatic plants, such as curly-leaf pondweed and small pondweed, will soon be abundant in many lakes and ponds in Illinois. Sago pondweed and leafy pondweed will also be appearing soon. In a matter of just a few weeks after the above aquatic plants first are observed in the water, they will severely infest much of the water space. Now is the time to apply herbicides for the control of these species, using such herbicides as endothall at the rate of 1 p.p.m. or diquat cation at 0.5 p.p.m. Follow label directions. The application of herbicide prior to seed development will help reduce infestations in future years. Curlyleaf pondweed and small pondweed will persist if not treated until mid-summer. Sago pondweed and leafy pondweed will persist through the summer. Usually elimination of the existing stands of curlyleaf

pondweed, small pondweed, and sago pondweed early in the growing season will rid the water of these aquatic plant pests for most of the summer. Repeated applications of herbicides may be required for the season-long control of leafy pondweed. Apparently, the aquatic plants can infest bodies of water throughout the growing season.

HOMEOWNER PEST PROBLEMS

Insects

Ticks are annoying campers, picnickers, and others. Use a repellent on socks, pants, cuffs, and exposed parts of the body. When entering wooded or grassy tick-infested areas, DEET (diethyltoluamide) is one of the best tick repellents.

To control ticks in the home yard, spray the grass, shrubs, and flowers with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to cannaert red cedar, or carbaryl to Boston ivy.

Ants, water bugs, crickets, and other insects that commonly invade the home can be effectively controlled at this time of the year with a foundation treatment of 2-percent chlordane. Purchase chlordane as an emulsion concentrate and mix with water to the proper strength (1 pint of 45-percent chlordane in 3 gallons of water gives a 2-percent solution). Spray the foundation to the point of runoff plus two or three inches of soil adjacent to the foundation wall. Also, spray cracks or expansion joints along porches and steps and along walk edges. In homes with crawl spaces, treat the inside wall of the foundation plus any supporting pillars. Do not spray on shrubbery or flowers, because the oil may burn the foliage.

Three gallons of finished spray should be adequate for the average house. With this control of insects on the outside of the home, the use of insecticides inside the home will be greatly reduced.

Aphids are already appearing on roses, hawthorne trees, and other shrubs. These soft-bodied, wingless insects usually suck the sap from new terminal leaves causing them to curl back. If aphids are present, spray with either diazinon or malathion. Mix with water according to directions on the label. This treatment will also control mealybugs, if present.

Plant Diseases

Powdery mildew is just beginning to appear in Kentucky bluegrass lawns, especially Merion bluegrass lawns. The disease appears first in the shaded areas under trees and shrubs, and on the east and north side of buildings. The fungicides Karathane and Parnon give excellent control when applications are begun as soon as the disease is seen.

Damage from Helminthosporium leaf spot in Kentucky bluegrass is very apparent in some lawns in southern and central Illinois. This disease is checked by hot, dry weather. Fungicide applications should be continued during wet, cooler weather. Phaltan, Dyrene, Daconil 2787, Maneb, or Actidione are suggested.

Weeds

Ground ivy or creeping charlie seems to be causing more and more problems as a weed in home lawns. This plant, often brought in as a ground cover, escapes from the original beds and becomes a serious lawn weed.

Ground ivy is characterized by a small blue flower, and a kidney-shaped leaf that gives off a minty odor when crushed. Ground ivy develops long runners that often grow beneath the grass. These runners may be raked or pulled out to keep the plant from running rampant. Chemical treatment with silvex, MCPP, or dicamba either alone or in combination with 2,4-D used at the rates recommended on the container should offer effective control although repeat applications may be needed for complete eradication.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake and Marshal McGlamery, Department of Agronomy, J.D. Butler, Department of Horticulture, and Robert Hiltibran, Illinois Natural History Survey.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

INSECT SURVEY BULLETIN
College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 10, 1968

INSECT SURVEY BULLETIN NO. 9

This series of weekly bulletins provides a general look at the pest situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. The plant disease report was prepared by the Illinois Natural History Survey, the insect situation by the Department of Agricultural Entomology and the Illinois Natural History Survey, and the weed report by the Department of Horticulture.

FIELD CROP PEST PROBLEMS

Forage Crops

The alfalfa weevil continues to hold the spotlight. Economic damage is occurring in most alfalfa fields south of Route 40, while north of this line feeding is noticeable but only an occasional field has required treatment. In some fields south of Route 50, larval populations have doubled from what they were last week, but many larvae are pupating. Most fields south of Route 40 have been treated once and some have had two spray applications. In general, insecticide treatments have been effective in this heavily infested area.

In the area north of Route 40 and south of a line from Watseka to Hardin an occasional field may need treatment during the week of May 13.

In some problem fields where at least 25 percent of the plant terminals show feeding, apply an insecticide. But in many of the current problem fields it would be best to cut the alfalfa if flower buds are showing, remove the hay, and spray the second growth. After cutting the first crop, watch the new growth. If weevil damage can be seen and larvae are present, spray immediately.

The insecticide recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre, or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or for 16 days after applying azinphosmethyl.
2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing

2 pounds of methoxychlor and 2 pounds of malathion per gallon), or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2 1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1 1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning on days when air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

Pea aphids are abnormally low this year in alfalfa and clover fields.

Spittlebugs are more numerous this year. Froth masses are easily found in clover and alfalfa fields in the south central part of the state, ranging from 1 mass per 10 to 20 stems. In northern Illinois, nymphs averaging 1 per 4 stems are down low in the leaf sheath but will soon move higher on the stems and froth masses will appear within the next 1 to 2 weeks. Damage so far is light.

Chemical control is usually not profitable if spittlebug nymphs average fewer than 1 per stem. If treatment is necessary, use 3/4 pound of methoxychlor per acre.

Corn Insects

Seed corn beetles have been reported causing damage to an occasional field in central and northern areas. The seed corn beetles (about 1/4 inch long) are brown with a light tan border on their wing covers or a uniform chestnut brown. The beetles hollow out the seed, resulting in poor germination and reduced stands. If replanting is necessary, apply diazinon or phorate (Thimet) as a 7-inch band on the soil immediately ahead of the press wheel.

Black cutworm moths have been flying for several weeks, but there has been no damage reported from newly hatched larvae. Watch for damage in low, poorly drained areas of a field, especially where a soil insecticide was not applied. Broadcast applications of aldrin or heptachlor at or before planting have given good protection against this pest. If damage appears, treat with either carbaryl (Sevin) at 2 to 3 pounds actual ingredient per acre, or diazinon at 2 pounds, or toxaphene at 3 pounds per acre, or trichlorfon (Dylox) at 1 pound per acre. Results will be improved if the spray is directed at the base of the plants, if at least 20 gallons of finished spray is used per acre, and if the spray is incorporated with a cultivation immediately after application.

Corn flea beetles are not yet a problem, but periodic checks of newly emerging corn should be made for their presence. The adults are small, smooth, black, shiny, and roundish, and jump readily when approached. They inflict white scratch marks on the first three or four true leaves and may cause the seedling to appear whitish or silvery and sometimes kill the plant. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin), or 1 1/2 pounds of toxaphene per acre as a band spray over the row

Corn borer pupation reached 70 percent in extreme southern sections this week. Moth emergence should begin next week. Pupation is just beginning in central sections.

HOMEOWNER PEST PROBLEMS

Trees and Shrubs

Oystershell scale eggs began hatching this week in central sections. It will be another 2 weeks before hatch is complete, and during this time the newly hatched crawlers will be setting up housekeeping on shrubs, like lilac and dogwood. Wait until hatch is complete before treating. Crawlers can be controlled by a careful and thorough spraying with malathion (2 teaspoons of 50- to 57-percent concentrate per gallon of water). Even though scales are killed by spraying, the scale covering will persist for several months.

Hawthorn leaf miner egg hatch is complete in central sections. The maggots disfigure leaves and damage plants by eating the tissue between the upper and lower surface of the leaves. Treat immediately with malathion (2 teaspoons of 50- to 57-percent emulsifiable concentrate per gallon of water) or diazinon (2 teaspoons of 25-percent emulsifiable concentrate per gallon of water).

Pine needle scale eggs began hatching this week in central sections. Egg hatch should be completed in one week. The crawlers feed in particular on white pine and Norway spruce. For control, spray with malathion (2 teaspoons of 50- to 57-percent concentrate per gallon of water).

Juniper blight, caused by a fungus, became epidemic in Illinois in 1966 and 1967. Although the disease has been reported from the Midwest since the late 19th Century, and is widely distributed throughout the state, it seldom causes significant damage unless weather conditions become favorable for disease development. The prolonged wet, cool springs of the past two years have been nearly ideal for development and spread of the disease.

The most common symptom of juniper blight is the browning or blighting of young shoot tips, which may appear in early May in southern Illinois and as late as July 1 in the northern part of the state. At the base of the brown or blighted tissues, very small, black fruiting bodies of the disease fungus may be seen under a hand lens or microscope. Spores which are formed in these fruiting bodies are released during wet weather and are easily spread at that time to other branches and adjacent healthy plants by driving rains or on pruning or shearing tools. On highly susceptible hosts, the fungus may invade and girdle larger stems, resulting in browning and death of major branches.

Since the fungus fruiting bodies persist through the winter on the blighted shoots, a tremendous number of spores may be released this spring and, if weather conditions are again favorable for disease development, another juniper blight epidemic could occur in 1968.

Several control measures, if used correctly, may be effective against juniper blight. All blighted twig tips should be removed and burned to eliminate the sources of infection. Pruning or shearing should be done on a dry day to reduce spread of the fungus to other plants by contact. In addition, susceptible plants may be sprayed at 7- to 10-day intervals from the time new growth begins in the spring through early to mid-July. Organic mercury fungicides at the rate of 1 pound or 1 pint in 100 gallons of water will do a good job of control. Bordeaux mixture 8-8-100 or copper fungicides at 3 to 4 pounds in 100 gallons of water are also effective.

HERBICIDES

Special Note to Commercial Vegetable Growers

The herbicide Prefar has been cleared for use on commercial acreages of squash, cucumbers, muskmelons, cantaloupes, and watermelons. Prefar should be applied before planting and incorporated with the soil. Use Prefar on mineral soils only at rates specified on the label.

Prefar has shown excellent and sustained control of annual grasses in test plots in Illinois and neighboring states. Some broadleaf weeds are not controlled and Prefar should be used on a small part of your acreage in 1968 to fit your individual weed problems. Prefar also has clearance on lettuce.

Corn

Sales of herbicides this spring appear to have been a little more delayed than in the last few years. Partly caused by a little more conservative attitude on the part of some farmers and partly caused by some reduction in corn acreage, the increase in use of herbicides may not be as great as in recent years.

Although many farmers have delayed their purchase of herbicides until closer to planting time, a high percentage of farmers are or will be using herbicides again this year.

With the early planting in many areas rain could bring on a weed problem, especially where herbicides were not used. Timely cultivation and properly timed postemergence applications could still keep the weeds under control.

The rotary hoe is still one of the most effective and economical tools we have for controlling weeds. When the weed fuzz begins to show, it is time to go with the rotary hoe. Once the weed seeds have germinated and the seedlings are "in the white," just about ready to emerge, the rotary hoe can kick out millions of weeds per acre.

If a herbicide has been used and is holding the weeds in check, there is no big rush for cultivation. But if the herbicide isn't working well enough, don't hesitate to use the rotary hoe. The rotary hoe isn't necessarily detrimental to the performance of herbicides. If the weather has been dry and one of the less persistent herbicides like Randox hasn't worked within two weeks and weeds are appearing, don't wait for miracles. If one of the longer lasting herbicides such as Atrazine has not worked well enough on the first crop of weeds, a rotary hoe can help and enough Atrazine may still be present to control later weeds.

Postemergence Corn Applications

If you used no herbicide or if you used a grass killer like Ramrod or Randox on corn, 2,4-D is still one of your most economical and effective treatments for broad-leaved weeds. For best control, apply the 2,4-D early when weeds are small and easiest to kill. You can broadcast 2,4-D over the top of corn until it is about 8 inches high. After that height, use drop extensions down to the nozzles.

If you're planning on a postemergence application of atrazine and oil, get it on early before weeds (including annual grasses and broadleaves) are over 1 1/2 inches tall and definitely within 3 weeks after planting. You may hear occasional success reports with applications made later than this, but delaying the application decreases your chances of success and increases the chance of herbicide residue the next year.

Only a few herbicides and phases of weed control are mentioned here. For more complete details refer to the 1968 Weed Control Guide. If you don't have a copy ask your county Extension adviser.

Current issues of Agronomy News will also contain additional weed control information. If you are not on the Agronomy News mailing list, drop a card to Agronomy News, N-305 Turner Hall, Urbana 61801. There is no charge for Agronomy News.

Soybeans

Herbicide combinations for soybeans haven't been developed as much as for corn.

In soybeans, Treflan primarily controls annual grasses and pigweed. It gives some control of lambsquarter. We don't have much of anything to combine with Treflan to take care of the other broad-leaved weeds. The rotary hoe is still one of the best bets to clean out the broad-leaved weeds, and it is not likely to decrease the effectiveness of Treflan.

If annual grass such as foxtail is the major problem in soybeans, Treflan has been one of the most consistent performers.

If broad-leaved weeds as well as annual grasses are a problem, amiben has a good record for control of many broad-leaved weeds and also does quite well on annual grasses.

At this point we do not accept the economics or feasibility of combining Treflan and amiben, which has sometimes been suggested.

Where annual grass and smartweed are the major problems, one possibility would be to incorporate Treflan before planting and follow with a regular surface-applied preemergence application of CIPC at planting time. For smartweed control, 3 or 4 pounds of CIPC (active ingredient broadcast or proportionately less banded) should be adequate.

Labels don't think--people do

Be sure that your personnel deliver the right herbicides for the crop. Double check, especially if a corn herbicide is being moved after most of the corn is planted and most farmers are planting beans. All due respects to Mom, but when she comes in to pick up a few more bags of pesticide for Dad, be sure of the name. It is not too difficult to confuse names like alanap, aldrin, atrazine, and amiben if you are more familiar with cake recipes than with herbicides. We've already had some problems and could have more with farmers figuring their needs closer to the belt and more last-minute delivery rush this year.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

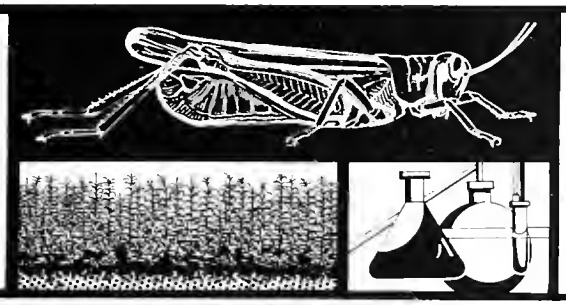
This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, Illinois Natural History Survey and University of Illinois College of Agriculture.

Plant Diseases: Donald Schoeneweiss, Illinois Natural History Survey.

Weeds: Herb Hopen, Department of Horticulture, and Ellery Knake, Department of Agronomy.

The information for this report was gathered by these people, staff members, county Extension advisers, and others in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

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FOR IMMEDIATE RELEASE May 17, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 10

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. The plant disease report was prepared by the Department of Plant Pathology, the insect report by the Department of Agricultural Entomology and the Illinois Natural History Survey, and the weed report by the Departments of Agronomy and Horticulture and the Illinois Natural History Survey.

INSECTS

Forage Insects

The alfalfa weevil situation has not changed greatly during the past week. The number of larva remains high and feeding is evident in alfalfa fields south of Highway 16. North of this line, feeding is noticeable but not severe. Larvae are pupating rapidly but eggs are still hatching, so populations are expected to remain high for another 2 to 3 weeks. However, no further increase in the number of larva is expected, rather a gradual decline should occur as pupation continues and the incidence of parasitism increases. (As high as 22 percent of the larvae were parasitized by a wasp in one field this week.)

New spring adults are appearing in southern sections; they will feed for awhile in alfalfa, then move to protected places near alfalfa fields and remain quiet through the summer. Adult feeding damage appears as a feathering of the leaf margins, in contrast to the skeletonizing injury of the larvae. Adult feeding damage may be more evident this year than usual, since peak emergence of adults is likely to occur in many fields just shortly after cutting when the new growth is still short. No satisfactory control is presently available for adults.

Most alfalfa fields in the problem area have been treated at least once, some twice. In untreated and as yet uncut fields, it would be best to cut the alfalfa if flower buds are present, remove the hay, and spray the new growth of the second crop. Cutting itself can reduce weevil numbers, since a percentage of the unhatched weevil eggs are removed with the hay and many worms will be either killed or forced to pupate by exposure to the sun and the removal of their food supply. If the crop has already been cut but the new growth not sprayed, watch it closely for evidence of weevil damage. If it does not green-up in 2 to 3 days and worms are present, treat it promptly.

On second-crop fields that have considerable growth, apply an insecticide when 25 percent of the plant terminals show feeding. This will mainly apply to southern sections, where the second or possibly third spray treatment is now needed.

The insecticide recommendations are:

1. Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre, or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphosmethyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl.

2. The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds of methoxychlor and 2 pounds of malathion per gallon), or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2-1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1-1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning on days when the air temperatures will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine. The exception is on stubble, where 10 gallons per acre by ground will be sufficient.

Special note: Spray burn has occurred in some alfalfa fields with all of the insecticides currently suggested for use. Burn has been more apparent this year than last, possibly because the alfalfa in general has been taller when sprayed. Little or no spray burn has been observed with stubble treatments. The burn appears first (2 to 3 days after spraying) as yellow spots on the leaves, followed by a more general yellowing of affected leaves. Although noticeable, the spray burn is usually not severe enough to affect yield.

Meadow spittlebug froth masses are numerous, especially in many of the new clover and alfalfa seedings in the state. The heaviest infestation is present in the northern and western sections. Many small, newly hatched, orange nymphs (hidden behind leaf sheaths in the crown of the plants) are also present, so that froth masses will become even more apparent.

To determine the need for treatment, count the number of spittlebugs (several may be present in a single froth mass) on 50 to 100 stems. If there are 1 or more nymphs per stem--not per plant--control is profitable. For maximum benefit, controls should be applied while the nymphs are small and just beginning to form froth masses. Methoxychlor applied at 3/4 pound of actual per acre will provide excellent control. Allow 1 week to elapse between treatment and harvest or pasturing with methoxychlor.

Lesser clover leaf weevil larvae can be found feeding behind leaf sheaths on red clover in the southern half of the state; they will appear soon in northern sections. These small, gray to dirty-green worms eat out a groove or tunnel in the stem behind leaf sheaths, in the axil of the stem, or in terminal buds. Infested plants are often stunted; stems may wilt and die. Blooms may dry up and brown prematurely. Counts this week showed from 5 to 50 percent of the stems infested in most fields. No practical control measures are known.

Potato leafhoppers continue their migration into the state from the south. These tiny, green, wedge-shaped insects that skid sideways when disturbed cause yellowing of second- and third-cutting alfalfa. No control measures are needed at this time.

Corn Insects

Corn seed beetles are damaging germinating cornfields in the central, western, and northern sections. Most fields had been treated with a soil or seed treatment of either aldrin or heptachlor, some with other chlorinated hydrocarbon seed treatments--indicating that seed corn beetles have probably developed resistance to these chemicals. This problem was observed for the first time a year ago.

From 5 to 30 percent of the stand has been destroyed in problem fields. Seed corn beetles are about 1/4-inch long, brown with a light-brown to tan border, or they may also be a uniform chestnut brown. They move readily when disturbed. These beetles hollow out the seed; the adults can usually be found in the damaged seed or in surrounding soil.

If replanting becomes necessary, apply diazinon at 1 pound of actual per acre as a band on the soil surface just behind the planter shoe.

Flea beetles are damaging occasional fields of corn. Newly emerging corn should be watched for the presence of small, shiny, black beetles that jump readily when disturbed and leave white scratch marks on the leaves. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. If grassy areas in fence rows, road sides, or ditch banks border the field, also spray these to prevent additional flea beetles from moving into the corn. Use carbaryl for spraying these field borders, but do not use it in the vicinity of bee hives. Do not contaminate fish-bearing waters when using toxaphene.

Black cutworms are causing damage in only a few cornfields. Watch for cut plants, especially in the low or poorly drained spots, for the next several weeks. Applications of 3 pounds of toxaphene, 2 to 3 pounds of carbaryl (Sevin), 2 pounds of diazinon (use as granules), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control small worms. Worms that are 1-1/2 to 2 inches long are more difficult to control. For best results, use at least 20 gallons of water per acre; cultivate immediately to cover the spray deposit. Rain following treatment will greatly improve control results. Let's get the cutworms early this year!

Preplanting broadcast applications of 1-1/2 pounds of actual aldrin or heptachlor (do not use on dairy farms) per acre is the best insurance against a cutworm problem. Row treatments at planting time with these same insecticides provide erratic results against cutworms.

Corn borer pupation is complete and emergence has reached 50 percent in the extreme southern section. In the central section, approximately 40 percent of the borers have pupated. In the northern section, pupation is just beginning.

Small-Grain Insects

True armyworms are present in thick, rank stands of small grain (wheat, barley, rye) and grasses south of Highway 40. Along the north edge of this area, the worms are about a week old (1/4 to 1/2 inch), while south of Highway 13 the worms

are generally larger. Populations are generally low, but may increase as more eggs hatch. Cool, wet weather favors this pest. The situation will bear watching for the next 2 to 3 weeks.

Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. Sawflies were more numerous than armyworms in the wheat fields examined this week. Sawflies do not damage wheat plants enough to require control.

English grain aphids can be found in wheat, but these populations are not yet alarming. After the wheat heads appear (wheat was heading out as far north as the central section this week), it takes an average of 30 to 50 aphids per head to cause measurable damage. Usually, the aphids will leave the wheat head as it enters the dough stage. Many lady beetles were present; they may hold aphid populations in check.

The aerial spray-eradication program for the cereal leaf beetle was completed this week, according to Mr. Thomas Lanier, Plant Pest Control Division, Agricultural Research Service, USDA. The State Department of Agriculture is also cooperating on this program. Technical grade malathion (9.7 pounds per gallon) was applied by air at 4 fluid ounces per acre in a 2-mile circle at each site where a few cereal leaf beetles were found last July in Will, Kankakee, Iroquois, Vermilion, Edgar, and Woodford counties. Over 400,000 acres were sprayed, with the hope that this new insect pest can be prevented from becoming established in Illinois.

Homeowner Insect Problems

Mosquitoes are becoming numerous in many areas of the state. To reduce the number of mosquitoes in your yard, follow these steps. (1) Eliminate standing water in such places as eaves, troughs, old tires, tin cans, children's toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. Hang the strips out of the reach of children and away from fish bowls and food counters. Repeat treatments with 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5- to 1-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Clothes moths and carpet beetles are getting ready for a summer's feast on improperly stored woolens. A small hole chewed in a piece of clothing may destroy its entire value. To keep woolens safe from damage by these insects follow these suggestions.

1. Dry clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.

2. Woolens that are not dry cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes), vacuum the container thoroughly and spray all inside surfaces with 0.5-percent diazinon, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill the larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Either naphthalene or PDB (paradichlorobenzene) is the fumigant commonly used in moth crystals, flakes, or balls. Use at least 1 pound of crystals, flakes, or balls for every 100 cubic feet of space.

5. Woolens not placed in insect-free containers can be protected by treating in light amounts with 0.5-percent diazinon, from a pressurized spray can, or liberally moistened with a fluoride-base fabric solution. Protection will last a year or more, unless the woolens are washed or dry cleaned. Caution: Infants clothing should be washed or dry cleaned before use.

6. Good housekeeping practices will help reduce the number of these insects. Clean frequently to prevent lint and hair from accumulating, especially around radiators, baseboards, heating vents, and closets, as well as beneath large furniture and other hard-to-get-at places. If these places become infested, a light application of 0.5-percent diazinon will insure protection.

PLANT DISEASES

New Septoria leaf spot infections are showing up on wheat plants. Some fields examined this week had most of the lower half of the leaves severely infected. The increase in this disease has occurred in the areas receiving rainfall during the last week.

Powdery mildew is heavy in scattered fields throughout the state. Fields with high populations of plants and/or high nitrogen fertility should be watched. Lodging can be expected in severely mildewed fields.

Loose smut is showing in wheat and barley fields that have headed-out. Diagnostic characteristic: The brown dusty mass of spores replaces the heads. The amount of smut varies considerably from field to field. The use of seed saved from badly smutted fields will result in a high incidence of loose smut the following year. Lower smut usually results from using certified seed as it is produced in fields with less than 1 percent smutted plants.

Some alfalfa fields in east-central Illinois have been examined that show low-temperature injury. Hints for diagnosis: (1) leaves of the same age near the top of the stems killed from the tip and margins inward. (2) Older leaves showing no damage or lesser damage. (3) New growth from the terminals showing no sign of injury. The degree of injury varies from plant to plant. A period of cold weather, with frost, occurred one to two weeks previously.

WEEDS

Atrazine and oil applied as an early postemergence treatment can still be used to get broadleaf and grass weeds, if you didn't get your preemergence herbicide on at planting time.

Research and field experience suggest that on the relatively dark soils of the state, 2-1/2 pounds of Atrazine 80W plus a gallon of "crop" oil (non-phytotoxic) applied postemergence may be just as effective, sometimes more effective, than a preemergence application of 3-3/4 pounds of Atrazine 80W.

On the relatively light-colored Illinois soils, a regular preemergence application of Atrazine will likely remain one of the most successful treatments.

Many factors influence the results with Atrazine and oil. To control annual grasses, it is especially important to make the application 3 weeks after planting, when grasses are small (up to 1-1/2 inches). If applied too late, weed control is less effective and the possibility of injury to other crops next year is greater. Do not mix 2,4-D with the Atrazine and oil, since there is greater chance of corn injury.

Although corn has displayed excellent tolerance to Atrazine alone, corn has sometimes shown a general stunting where oil was added. In 1967, there were a few cases of fairly severe injury to corn where Atrazine and oil were used.

Where a reduced Atrazine rate has been used in combination with another herbicide for preplant or preemergence application, an early postemergence Atrazine and oil application at a reduced rate might offer "another chance," in case control with the earlier treatment has not been satisfactory. But where Atrazine is applied twice, do not exceed the amount normally recommended for preemergence application for the soil type involved.

Broadleaf weeds in lawns can be kept to a minimum this summer by the proper use of a starter fertilizer and by following other recommended establishment practices. The use of 2,4-D and 2,4-5-TP and most of the selective broadleaf weed killers are not recommended for newly seeded lawns. Often the first mowing will reduce the broadleaf weed problem enough for the lawn to look presentable. However, if the weeds persist after the first few mowings, 2,4-D or 2,4,5-TP may be applied for effective control.

Remember that broadleaf herbicides may damage or even kill desired plants (bentgrass, white clover, etc.). Pay particular attention to the container label for information as to what weeds will be controlled and the lawn grasses that may be treated safely. Follow the directions and precautions on the label.

Filamentous algae growth often becomes apparent in many bodies of water with the onset of warm weather. These unsightly mats frequently drift with the wind and water currents.

Applying fine crystals of copper sulfate directly to the algae mats will eliminate them. The copper sulfate causes the algae mats to turn white and disappear. A follow-up application may be necessary to completely remove all of these mats.

The best time to apply copper sulfate is as soon as the mats appear. The mats are small then, less time will be required to treat them, and less copper sulfate will be needed.

Another method would be to apply copper sulfate around the margins of the body of water, treating only the water area infested, at a rate of copper of 1 part per million. This method of application is also very effective.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

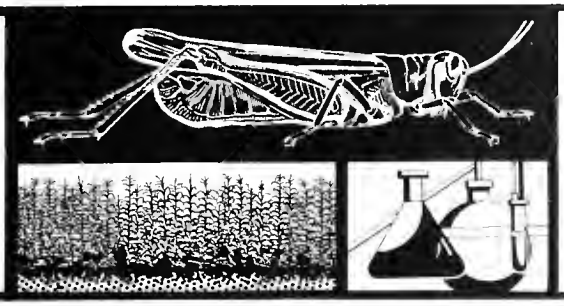
This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy; J.D. Butler, Department of Horticulture; and Robert Hiltibran, Illinois Natural History Survey.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

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FOR IMMEDIATE RELEASE May 24, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 11

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Forage Insects

The alfalfa weevil situation is about the same as it was a week ago. Damage is severe in some unsprayed, uncut fields, but where the first crop has been harvested, the second growth is growing rapidly. The big change this week is the great increase in parasitism by a wasp, one that apparently migrated into Illinois with the weevil. Parasitism in several fields varied from 22 to 78 percent, averaging 47 percent for all fields examined.

If you want to see these parasites, select large larvae and place them in a jar with some alfalfa. After a few days, they will build a lace-like netted globe--the cocoon or shell. In some of these globes, you will see a green worm or pupa; in others, there will be a tiny, brown, seed-like pupa--this is the cocoon of the wasp parasite.

The total effect of this parasitism cannot be assessed as yet. Parasitized larvae do not die in the worm stage; they die in the pupal stage. Although the larvae feed to maturity, they are not as ravenous as the healthy worms. Furthermore, parasitized larvae pupate earlier in life, cutting down on their total consumption of alfalfa.

A question has been raised as to the advisability of spraying, since sprays might kill the parasites. If a field is about ready to harvest, cut it. If the plants do not show signs of growth in 2 or 3 days and weevil larvae are numerous and are feeding heavily, spray it. If the plants are growing, you may be able to avoid a spray application.

Variegated cutworms are abundant in clover fields in the southern half of the state. These grey-to-black worms have a series of white-to-yellow, diamond-shaped dots down their backs. They are usually found in trash on the ground during the day. At night, they feed heavily on the lower leaves of plants and new shoots. Thus, the canopy of leaves on top are untouched, camouflaging the damage that is taking place. When the crop is cut, the worms hide under the bales or windrows. Infested fields take on a brown appearance after hay removal, as the new shoots are being devoured. Apply 1-1/2 pounds of carbaryl (Sevin) per acre to the stubble after the first crop has been removed.

Small-Grain Insects

True armyworms can still be found in luxuriant stands of small grains and grasses south of Highway 40; such fields should continue to be observed. The worms are still small, and it may be 10 days to 2 weeks before any damage appears. No serious infestations have been reported as yet.

Sawflies, which are yellow-to-green, transparent, velvety worms, are also present in wheat fields, but they do no damage. These worms are not striped, as are the true armyworms. Furthermore, they have fleshy prolegs on every segment of the back half of their body, which they use for walking and grasping the surface of a stem securely. True armyworms have only 4 pairs of such prolegs.

English grain aphids have appeared in numbers in a very few fields of small grains in western and southwestern Illinois. They may increase with continued cool weather.

Cereal leaf beetle detection surveys are now or soon will be conducted in the northern two-thirds of the state. Representatives of the state and federal government will be examining small-grain fields, particularly oats, for this new foreign pest. A few specimens have been found in Illinois during the past two years. These scouts will contact your University of Illinois county Extension adviser before the survey begins.

Corn Insects

Corn seed beetles are abundant in some fields. Damage is reported from fields treated with aldrin or heptachlor, indicating resistance. Under adverse conditions for germination, damage will be more serious than when conditions favor rapid germination.

Most damage occurs in end rows and for a short distance into full-size field rows. The entire field is not usually affected. Furthermore, some seeds in dry soil or that were planted too deep have not germinated; do not confuse this lack of germination with beetle injury. Examine kernels for beetle injury--if there is none, the seeds may still germinate. Furthermore, do not disk-up a reasonably good stand--it might still produce more corn than a later planting.

When replanting, you may need one of the insecticides used for corn rootworm control, applied as a band on the soil surface ahead of the press wheel. We suggest 1 pound of diazinon per acre, but other rootworm insecticides may also give control. When replanting, consider the conditions; if they favor rapid germination, treatment may not be necessary.

Wireworms have damaged a few fields of corn already. No insecticide had been used. Although it is difficult to control these pests after corn is planted, a spray of aldrin or heptachlor may greatly retard further damage. Apply 1 pound of the actual chemical per acre; direct the spray at the base of the plant. Cultivate immediately, then hope for about an inch of rain to help carry the insecticide down to the wireworms. Do not use aldrin or heptachlor on dairy farms; try diazinon.

Black cutworms may soon appear. Watch low spots in cornfields. When the first plants are cut, get ready to apply an insecticide while the worms are still small and can be controlled. Applications of 3 pounds of toxaphene, 2 to 3 pounds of

carbaryl (Sevin), 2 pounds of diazinon (use as granules), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control small worms.

For best results, use at least 20 gallons of water per acre; cultivate immediately to cover the spray deposit. A rain following the treatment will greatly improve control results.

Homeowner Insect Problems

Elm leaf beetle eggs were found this week on Chinese elm. These eggs are yellow, formed in clusters on the undersides of the leaves. The yellow larvae that will hatch from the eggs feed on the undersides of the leaves. The leaves appear silvery at first as the green tissue is eaten; but soon, the entire tree will take on a brown appearance. It is still too early to spray, but they are starting.

PLANT DISEASES

Septoria leaf blotch, formerly found only on the lower leaves, has now moved up on wheat plants. In some fields, as many as 50 percent of the leaves are showing infection; some are turning brown. Such leaf damage makes the field appear brown and thin. If the grain is only slightly developed, leaf loss will result in shriveled, light grain at harvest.

Powdery mildew is now common in wheat fields in many areas of the state. Fields with moderate-to-severe infections are beginning to lodge.

Yellow dwarf has appeared in a very few oat fields in southwestern Illinois. Where present, the infection is severe, and damage will be serious.

WEEDS

For broadleaved weeds in corn, 2,4-D is still your most effective and economical herbicide. You can broadcast over the top until corn is 8 to 10 inches high.

Rates suggested for broadcasting 2,4-D per acre are 1/6 pound of the low-volatile ester, 1/4 pound of the high-volatile ester, or 1/2 pound of the amine. For most weeds, the earlier you apply, the better the control.

Nutgrass infestations have increased the past few years. We don't have all the answers for control yet, but Vernam looks like a good bet where you plant soybeans. As an early postemergence agent in corn, atrazine and oil has given partial control of nutgrass; it may give enough knockdown to permit better smothering with the cultivator.

Aerial application of atrazine may give weed control in cornfields that are too wet to cultivate. However, unless applications are accurate and uniform, residue problems may occur next year, if there is much overlap.

How late can preemergence herbicides be applied if they were not put on at planting time? This depends on the herbicide. Atrazine can be applied anytime up to 3 weeks after planting--until weeds are 1-1/2 inches tall. Ramrod may have some effect on very small weeds, if applied very soon after emergence. But your best bet for most preemergence herbicides is to apply them before the weeds emerge--usually at planting time or very soon thereafter.

We know you never make mistakes, but just in case you goof and get the wrong herbicide on the crop, don't panic. The seriousness of the problem will depend on the crop and herbicide involved. If you have a 50-50 chance of crop recovery, you might consider replanting between the rows of the first planting, then saving whichever planting looks best in a few weeks. The use of a herbicide on a crop for which it is not cleared poses another problem.

Planavin has received clearance for the use of up to 1-1/2 pounds of active ingredient (2 pounds of 75-percent wettable powder) on a broadcast basis for soybeans. The previous maximum was 1-1/8 pounds active (1-1/2 pounds of 75-percent wettable powder).

How deep you incorporate herbicides will depend on many factors, such as soil texture, speed, and the adjustment of the equipment. As a rule of thumb, most of the herbicide is usually incorporated only about a third to a half of the depth to which equipment is operated. Excessive incorporation may dilute the herbicide and decrease weed control. If incorporation is too shallow, loss of volatile herbicides may increase. Follow the manufacturer's directions; he is as anxious as you are for the herbicide to work.

If you have to replant and have used a herbicide, analyze your situation carefully. If you used Randox on corn, you could replant to soybeans with no problem. If you used atrazine on corn, don't replant to soybeans, you can replant to corn and still receive some benefits from the atrazine already in the soil. For other situations, review the characteristics of the herbicides, such as persistence, crop tolerance, and clearance.

However, you might apply a herbicide when replanting, but weeds usually aren't as much of a problem on late planting. Good cultivation may be all you will need.

Two general groups of cattails, narrow- and broad-leaf, are found in Illinois water. The narrow-leaf cattails have narrower and smaller leaves but longer seed stock than the broad-leaf cattails. If the two species are present together, crosses can also be present.

The elimination of these two cattail species with herbicides is easily possible, and the same herbicides are effective against both. Also, herbicides applied prior to the development of the cattail head will help prevent spread.

Cattail control can be undertaken by applications of dalapon or aminotriazole to the foliage; use 4 ounces of dalapon or 2 ounces of aminotriazole per gallon of water. The effectiveness will be increased by the addition of some liquid household detergent. A second application may be necessary to eliminate the plants that survive the first application. Hand-pulling the new shoots will prevent regrowth.

In controlling cattails, remember that they help prevent bank erosion, and thereby have some benefit.

SPRAY EQUIPMENT

With equipment for applying fungicides, herbicides, and insecticides, nozzle wear is especially important. Experimental tests show that the flow rate of nozzles increases 25 percent after being used on 500 acres. Such a 25-percent overdose

may be serious, so recalibrate your sprayer after every few hundred acres. Be sure you know the amount of any chemical you are applying, and be certain that the amount you apply agrees with the recommended rate.

If you set the speed for applying chemicals by positioning the tractor speed-control lever, also check this--particularly after the recent rains. Harder soil surfaces will result in a higher ground speed, even though the speed-control lever setting is the same. To determine speed, check the time in seconds it takes to drive between markers 88 feet apart with a running start. Your speed in miles per hour is the number of seconds divided into 60.

A water hose in the spray tank may result in back siphon into the well. To avoid this, fix a bracket on your spray tank to hold the hose above water level when filling. This will eliminate the possibility of a hose stuck down in the tank siphoning pesticide into a well.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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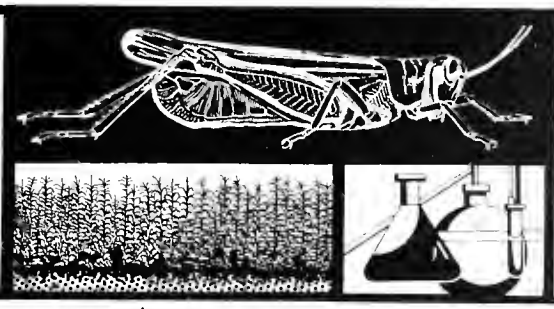
Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Crops, Ellery Knake, Department of Agronomy; Aquatic, Robert Hiltibran, Illinois Natural History Survey.

Spray Equipment: J.C. Siemens, Department of Agricultural Engineering.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

State / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE May 31, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 12

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn Insects

Corn seed insects continue to destroy stands of newly emerging corn. Some fields being destroyed for a second time will need to be replanted again. Circumstantial evidence indicates that both the seed corn beetles and maggot are resistant to the chlorinated hydrocarbon insecticides in these problem fields. How widespread this resistance may be has not been determined as yet, but several dozen fields are known to have problems.

Preliminary observations in test plots (replanted and treated a week ago) indicate that the organic phosphate insecticides used for control of resistant rootworms will effectively control corn seed beetles. For the present, if replanting becomes necessary, we suggest applying 1 pound of actual diazinon per acre as a band on the soil surface just ahead of the press wheel. Take time to consider before disking-up a reasonably good stand--it might still produce more corn than a later planting.

Corn rootworm eggs will be hatching soon. Resistance by northern corn rootworms to aldrin and heptachlor has become widespread in the northern half of the state. The western corn rootworm, which is highly resistant to these same insecticides, will cause commercial damage in some fields in the area west of a line from Galena to Dixon to Peoria to Carthage. Potentially, any field planted to corn for 3 or more years (in some cases even second-year corn may be affected) in the northern half of the state could have moderate-to-severe lodging from rootworm attack this summer.

If you suspect or know that you have resistant rootworms and if you did not use an organic phosphate or carbamate insecticide at planting time, apply an organic phosphate insecticide within the next two weeks. Use granules applied at the base of the plants, and cover them by cultivation. Diazinon, disulfoton (Di-Syston), or phorate (Thimet) at 1 pound of actual chemical per acre have label approval and are suggested for use. If you have not yet planted your corn and wish to control rootworms, apply diazinon, Dyfonate, BUX-ten, Dasanit, or phorate as granules at 1 pound of actual chemical per acre in a 7-inch wide band just

ahead of the press wheel. Always handle insecticides with care; be especially careful when handling Dyfonate, Dasanit, and phorate--all are highly toxic insecticides. Read and follow the precautions on the label.

Black cutworms are just beginning in a few scattered fields. The recent wet weather should favor cutworm development. Continue to watch the low, poorly drained spots or places where water stood during recent rains for signs of cutworm damage. Fields treated before planting with a broadcast application of 1-1/2 pounds of actual aldrin or heptachlor per acre are the least likely to have problems

For emergency control, applications of 3 pounds of toxaphene, 2 to 3 pounds of carbaryl (Sevin), 2 pounds of diazinon (use granules), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control small worms. For best results, use at least 20 gallons of water per acre; cultivate immediately to cover the spray deposit. A rain following the treatment will greatly improve control results.

European corn borer moth emergence has reached 75 percent in the southern section; pupation is about complete in the central section; and it is at the 35-percent level in the northern section. The generally low number of overwintering corn borers (half those of a year ago) make the possibility of serious problems with first-generation borer rather remote. In addition, with the large acreage of early planted corn, moths will be spreading their eggs over many fields rather than just concentrating them in a few. The greatest possibility of injury to a few fields by first-generation corn borer is in the west-central, west, and west-southwest sections--areas where overwintering populations were highest. Be prepared to examine early planted fields in late June and early July in these areas for borer feeding.

Forage Insects

Alfalfa weevil populations have leveled off and are beginning to decline as larvae pupate, parasites take their toll, and overwintering adults lay fewer eggs. The new growth of the second crop may still need to be sprayed in some fields. Although larvae will be present and easily found in most fields for several weeks yet, the peak period of damage is over.

Newly cut alfalfa fields south of a line from Watseka to Hardin should be checked for possible damage. If a field does not green up in 2 or 3 days after cutting and if worms are present, treat it promptly.

For control of alfalfa weevil larvae, farmers making their own applications should use either malathion or a commercially prepared methoxychlor-malathion or methoxychlor-diazinon (Alfatox) mixture. Commerical applicators can use the above materials or one of the more-toxic insecticides like methyl parathion or azinphos-methyl (Guthion). Be sure and follow label directions for dosages, harvest limitation, and precautions when using insecticides.

Meadow spittlebug froth masses are thick; some fields may justify treatment. New seedings of clover and alfalfa in the north and western sections are the most-heavily infested. If there are 1 or more nymphs per stem--not per plant--control is profitable. Methoxychlor applied at 3/4 pound of actual chemical per acre gives excellent control. With methoxychlor, there is a 1-week waiting period between treatment and harvest or pasturing of the crop.

Potato leafhoppers continue to migrate into the state from the south, laying eggs in alfalfa. These small, green, wedge-shaped insects that skid sideways when disturbed cause yellowing of second and third cuttings. They not only reduce yields, but also lower the vitamin A and protein content of the hay. Populations appear to be heavier than normal; damage could be more pronounced this year.

Leafhopper abundance can be detected by shaking the plants over a piece of paper. If swarms of these insects are observed at cutting time, treatment of the new growth is indicated. Spray when the new growth is 2 to 6 inches tall with either 1 pound per acre of actual carbaryl (Sevin) or methoxychlor. Allow 7 days to elapse between treatment and harvest when using methoxychlor. There is no waiting period for carbaryl.

Small-Grain Insects

The number of true armyworms remained low in the fields observed this week, and it appears that this may be a light year for them. The worms found in the central and south-central sections were about 1/2 to 1 inch in size, with the highest counts in thick, rank, lodged spots averaging about 1 per foot of row. No reports of control applications have been received at this time.

English grain aphid populations have increased in wheat, particularly in the west-southwest and southwest sections. Counts range as high as 20 aphids per head. It takes an average of 30 to 50 aphids per head to cause measurable damage. Make a careful count, taking head samples in several areas of the field to obtain an average figure. If control is indicated, have a commercial applicator apply methyl parathion at 1/4 pound of actual chemical per acre. There is a 15-day waiting period between treatment and harvest for methyl parathion.

Homeowner Insect Problems

Bagworm hatch is now complete in southern sections, and sprays should be applied immediately. The target date for spraying in the central sections is after June 15; in northern sections, after June 30.

Make plans to apply treatments early this year, while the worms are still small and easy to kill and before damage is evident. Carbaryl (Sevin), diazinon, or malathion are all effective. Malathion will also provide fair control of mites that might be present. Follow label directions and check the plants that may be injured if sprayed with the insecticide you are using.

Oystershell scale hatch is about complete in the central and southern sections; sprays will control them if applied during the next few weeks. In northern sections, sprays should not be applied until after June 15, when hatch is complete. Careful and thorough spraying with malathion (2 teaspoons of 50- to 57-percent liquid concentrate per gallon of water) will effectively control oystershell scale. An additional treatment will likely be needed in early to mid-August for second generation crawlers. Even though scales are killed by spraying, the scale covering will persist for several months.

Chiggers will be a problem soon. They annoy campers, hikers, picnickers, fishermen, and berry pickers--even homeowners in their own yard on occasion. When entering possible chigger-infested areas, use a repellent such as DEET (diethyltoluamide).

Take a warm soapy shower or bath as soon as possible after returning from a chigger-infested area. It takes the mites several hours to penetrate the skin; they can often be washed off before becoming embedded.

To reduce chiggers in a home yard, spray lightly over the grass, low flowers, and shrubs with either malathion or diazinon.

PLANT DISEASES

Wheat

Septoria leaf blotch has increased during the last week. Lesions may be found on all leaves in fields in southern Illinois. The leaves on the lower half of the plant are usually dead. The incidence of septoria is less as you go north in the state. Damage by septoria can be expected to increase during the next week or 10 days if the weather remains moderately cool.

There has been relatively little change in the amount of powdery mildew. Although scattered in occurrence, this disease is present in some fields in sufficient quantity to cause lodging.

Leaf rust and stem rust can be found on susceptible wheat varieties south of Highway 40. Rust has not been observed on Benhur or Riley 67. Trace amounts have been found on Triumph and Monon. Uniform light leaf rust has been found in Gage wheat.

Oats

Yellow dwarf in oats has been found only in the extreme southwestern part of Illinois. If aphid populations increase in other parts of the state, oat fields should be watched for this disease.

Corn

Cold-weather damage to corn has been reported in northern Illinois.

WEEDS

Ducks and Herbicides

The excessive moisture we have had in some areas may be fine for ducks, but what about herbicide performance?

With normal seedbed preparation and fairly loose, open soil, herbicides are usually moved into the soil with initial rainfall. There probably wasn't much lateral movement across the soil surface, unless herbicides were applied to a compact smooth surface that wouldn't let the herbicide in easily. The torrents of rain that moved soil in some places may also have caused some herbicide movement with the soil.

With excessive rain, the more-soluble herbicides like Randox may be moved too deep--past the zone where they are most effective. Ramrod is less soluble (700 parts per million) and not as subject to leaching as Randox. Atrazine is one of the least-soluble herbicides for corn (70 p.p.m.). Other factors (soil texture, soil structure, temperature, and degree of adsorption onto the soil complex) will also affect the rate of herbicide loss.

Treflan is one of the least-soluble herbicides (less than 1 p.p.m.). But with excessive moisture degradation, certain chemical or biological processes in the soil may be increased. As soil moisture moves up to the surface and evaporates, some herbicide may move upward with the moisture and might be relocated in the effective zone. Or some may move with the water vapor into the air.

Your best indication of how much herbicide you have left is to check on how good your weed kill is. If you used a preemergence herbicide and it's working, count your blessings. But if weeds are growing, don't hesitate to cultivate as soon as you can--even though you used a herbicide. Weeds may sometimes emerge and then die, but don't wait too long if you could be cultivating.

With the sun coming out, crusting may be a problem on some fields. The rotary hoe is still one of the best implements for breaking crusts and killing early weeds. For weeds that are too far along for the rotary hoe, the row cultivator is one of your next lines of defense.

Postemergence herbicides may help, especially on large acreages or where it's too wet to cultivate. If you haven't used any atrazine on the field yet and you don't think cultivation or 2,4-D is the answer, consider atrazine and oil.

If you used a half rate of atrazine with Ramrod preemergence on dark soil and if Ramrod isn't holding the grass, consider another half rate of atrazine with oil. Weigh the cost against possible loss due to weeds.

For most broadleaved weeds, 2,4-D is still your best bet for postemergence application. Atrazine plus oil can help on both broadleaved and grass weeds that are less than 1-1/2 inches tall. Lorox or Dowpon are possibilities a little later for directed postemergence application in corn, but you will need special equipment and a lot of care in application.

We haven't been overly optimistic about aerial applications of atrazine and oil. But they may help out in emergency situations, where fields are wet and it looks as if the weeds will get too large for cultivation. If you decide on aerial application, insist on as uniform an application as possible. Avoid overlapping that can cause residue problems. It will be difficult to eliminate overlap completely. If you use an aerial application of atrazine, plan on corn in treated fields again next year. Don't use more than 2-1/2 pounds per acre of Atrazine 80W, and be sure to keep atrazine off crops other than corn.

Make your decisions and control weeds as early as possible. We don't have any good answers for knee-high grass in corn and soybeans.

Atrazine and Oil

Atrazine and oil can help control weeds when it's too wet to cultivate, but users should realize that corn can sometimes be injured. This may be a good year for killing weeds with atrazine and oil. But adding oil to atrazine can increase the possibility of injury to corn. Last year, some corn showed early stunting but usually recovered well. There were a few cases of fairly severe injury. With the cool and wet weather, corn is growing slowly and is already under stress. Applying oil may further reduce respiration, resulting in some injury. However, when it warms up and plants are growing rapidly, entry into the plant may be greater, also creating some possibility of injury.

Weeds can also be a serious threat, so carefully weigh the advantages and disadvantages of using atrazine and oil. If you decide on atrazine and oil, be willing to accept the risks involved as well as the benefits. You can reduce risks as much as possible by making uniform and accurate applications.

Marginal Aquatic Plant Control

Several species of aquatic plants inhabit the shorelines of many bodies of water. Frequently, the entire shoreline is infested (depending upon the water depth), and the plants can form borders along the water edge. Also, the marginal plants can infest much of the area where there is shallow water.

Marginal plants--arrowhead, waterwillow, creeping water primrose, and bulrushes--can be controlled by applications of granules 2,4-D at a rate of 1 pound of 20-percent granuler 2,4-D per 440 square feet. Also, foliar applications of liquid 2,4-D using 1/4 cup (4 pounds per gallon ester of 2,4-D) diluted to 1 gallon with water is very effective for the above species.

However, these plants also help prevent erosion along the bank of the pond, thereby, they are of some value.

LISTING OF LICENSED ILLINOIS CUSTOM SPRAYER APPLICATORS

If you would like a list of persons having an Illinois Custom Spray Applicator's License, you may obtain one by writing to Mr. Juett Hogancamp, Weed and Herbicide Adviser, State Department of Agriculture, Emerson Building, State Fairgrounds, Springfield, Illinois 62705. County Extension advisers already have one copy of this list.

NOT FOR PUBLICATION: SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

If you inadvertently misplaced or lost the number to our automatic telephone-answering service, it is as follows: (217) 333-2614. Have your recorder running when you call. The answering device will play a 1:40 tape, summarizing the week's insect activity and forecasting the next week's problems. If you are in the northern-half of Illinois, call between 9 a.m. and 11 a.m. each Friday; if you are in the southern-half of the state, call between 11:05 a.m. and 1 p.m. Contact your county Extension adviser in agriculture for the local angle.

For more information, or in case of difficulty, call Mr. Cliff Scherer in the Agricultural Communications Office, 330 Mumford Hall, University of Illinois, Urbana: (217) 333-4783.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

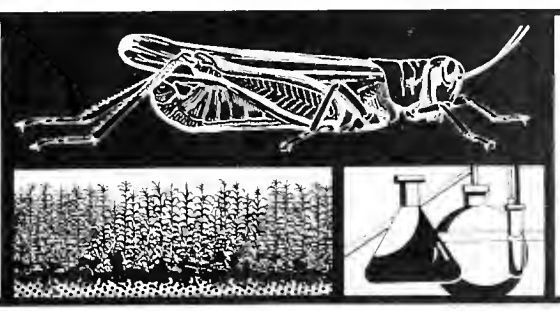
This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy; Robert Hiltibran, Illinois Natural History Survey.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

tate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE June 21, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 15

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

Corn Insects

Corn rootworms are of primary concern this week. We have found a few newly-hatched western rootworm larvae and had a report of northern rootworm egg hatch on June 20. Rootworms should be found commonly within the next 10 days.

All western corn rootworms in Illinois are highly resistant to aldrin and heptachlor. The area of moderate to severe western corn rootworm infestation is bounded in Illinois by the Mississippi River on the west and a line from Carthage to Peoria to Dixon to Galena on the south, east, and north. In this area, third-year cornfields are likely to be damaged and second-year fields may very well be severely damaged by western rootworms, particularly in Mercer County and adjacent areas. Over 50 percent of the fields infested by northern corn rootworms in 1967 showed varying degrees of rootworm resistance to aldrin and heptachlor. Although these northern corn rootworms are present throughout the state, they are expected to be more severe in the northern half of Illinois than in the southern half. Fields planted to corn for 3 or more years continuously are most likely to be damaged, but severe damage to second-year corn may occur. The farther north and west the more common the northern corn rootworm is and the more resistant it has become.

At planting time, many farmers used one of the phosphate or carbamate insecticides in places of aldrin or heptachlor to control these rootworms. Many other farmers have planned to use one of these phosphate or carbamate insecticides as a basal, cultivator, or lay-by application. The insecticide is directed at the base of the plant and the cultivator throws dirt over the chemical. We recommend 1 pound of diazinon, disulfoton (Di-Syston), or phorate (Thimet) per acre. BUX ten, Dasanit, and dyfonate do not have label approval for this purpose. Parathion and carbaryl (Sevin), although not recommended in Illinois for this purpose, do have label approval and are recommended by some states.

For convenience, this can be done any time in the fore part of June, but the ideal time to apply these chemicals as basal treatments is when the first rootworm eggs begin to hatch and that is now. Another week and it will be impossible to get through some fields. For those farmers who have already made these applications, the control should be very good.

Several have called to ask about determining need for this basal application. If the field was treated with aldrin or heptachlor last year, the corn lodged badly, and the roots were devoured, then you probably had resistant rootworms. If you found green beetles feeding on the silks of each ear, you have a rootworm problem. Corn planted in these fields this year will probably be damaged, and you should be ready to apply or already have applied control measures. But you can make a basal application even after rootworm hatch has begun, providing you can get through the field with your equipment. Ideal time for application is now, not after the damage has been done. It will be too late 2 to 3 weeks from now.

Black cutworms continue to appear in a few fields but only a few are present.

For emergency control, applications of 3 pounds of toxaphene, 2 to 3 pounds of carbaryl (Sevin), 2 pounds of diazinon (use granules), or 1 pound of trichlorfon (Dylox) per acre--directed as a spray at the base of the plants--will control small worms. For best results, use at least 20 gallons of water per acre; cultivate immediately to cover the spray deposit. A rain following the treatment will greatly improve control.

White grubs are now being reported from a few corn and soybean fields. These fields are usually those where beans were grown in 1967. The June beetles, adults of the white grubs, deposit their eggs in bean fields in a continual corn-soybean rotation. The eggs hatch and by the following year the grubs are about 1/4 inch long. We are in the second year of this cycle, and these grubs will feed all summer.

If the field is in soybeans, we have no chemical control after the beans are up. In corn, it might help to apply a spray of 1 pound of aldrin or heptachlor. Direct the spray at the base of the plant. Cultivate immediately and throw dirt over the sprayed area. This will provide some help but control will not be perfect. Whether or not this specific use has label approval is open to question, but the corn should not be used for ensilage or stover. The grain should be free of any contamination, however. This should not be applied after early July.

First-generation European corn borers are not expected to be a general problem this year even in the more advanced fields in an area. However, it would be wise to check the most advanced fields to be sure that a localized situation has not developed.

Based on borer development, time for treatment in west-southwest and west-central Illinois will be the week of June 24 and for north-central and northern Illinois the week of July 1.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and determine the percentage of the plants with recent feeding in the whorl leaves. To determine the tassel ratio, measure the height of the plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. That figure is the tassel ratio. If the tassel ratio is at least 55 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray

to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and ensiling of corn when applying diazinon; carbaryl has no waiting period. Recent label approval has been granted for use of 7 1/2 to 10 pounds of 20-percent carbaryl granules per acre. Our tests some years ago were with 5-percent granules, but we would anticipate similar control results.

Soybean Insects

Variegated cutworms have been found damaging soybeans. This almost black to gray worm has a series of yellow or white diamond spots down its back. It feeds at night and hides in the soil during the day. Carbaryl (Sevin) as a spray at 1 pound per acre should give practical control.

Small Grain Insects

Cereal leaf beetles have been tentatively identified (not yet officially confirmed) this year from Cook, Champaign, Edgar, Kankakee, Grundy, Shelby, Livingston, Vermilion, and Will counties. They have not been found in Woodford and Iroquois counties this year but were found in these two counties in previous years. This foreign insect is a pest of oats and spring wheat and has been a problem in northern Indiana and northern Michigan for the past few years.

Honey bees

Under some circumstances, use of insecticides on foliage can kill large numbers of bees needed for pollination of many crops. This represents a loss to the farmer who was using the insecticide to kill noxious insects. Bee kills also work a financial hardship on the beekeeper. However, beekeepers and farmers can both benefit by cooperation when insecticides are to be used.

Insecticide use can very well be of benefit to bees. Insecticides kill insect pests and allow more plants to grow and bloom, thus increasing pollen and nectar supply for the bees.

Selection of insecticide and formulation may greatly reduce or eliminate bee losses. Some insecticides are quite toxic to bees, others moderately so, and others only mildly toxic. Some are persistent, others are not. A toxic insecticide applied as a granule may have little effect on bees frequenting the field, while a spray or a dust of the same insecticide may be quite toxic. Both beekeepers and applicators should know the properties of the insecticide and the formulation to be used. Farmers should notify beekeepers prior to use of insecticides, giving enough notification that the beekeeper can handle his bees properly.

The beekeeper should know the agricultural practices in the neighborhood of his bee hives. At critical times of insecticide use, he may be able to cover the hives or under some circumstances move them temporarily to another location. Beekeepers can help by posting their name and address on bee yards. They can also supply the county Extension adviser with a list of beekeepers in the area and locations of hives.

With a little care bee losses in Illinois can be of minor importance. For further information, ask your county Extension adviser for a copy of University of Illinois Circular 940, "Pesticides and Honey Bees."

Livestock Insects

Flies on pastured cattle are increasing in number and are causing noticeable annoyance to the animals. In southern sections, there is an average of 40 to 250 horn flies and 2 to 4 stable flies per animal. In northern sections, there is an average of 25 to 50 horn flies, 1 to 3 stable flies, and 2 to 10 face flies per animal.

Start fly control rather than waiting until the problem is severe. Thus far, weather has been favorable for high survival of stable flies and maggots which forecasts a severe fly year. Stable flies prefer wet and rotting straw in which to deposit eggs, as their maggots survive very well in this material. If the weather remains moist and humid throughout the summer, stable flies will even develop in moist rotting vegetation in fence rows and fields. Piles of discarded hay or grass clippings also provide an incubator for these stable flies.

Right now remove wet straw and hay from the barns and barn lots. Scatter it to dry before the stable flies use it as their egg incubator. A bit of sanitation now may prevent a severe problem later.

For dairy cattle, apply Ciodrin, dichlorvos (DDVP), or synergized pyrethrin sprays daily or twice a week depending on amount used per animal. For beef cattle, use toxaphene every 3 weeks or Ciodrin in an automatic sprayer. Do not apply toxaphene within 28 days of slaughter nor to calves under 4 months of age.

PLANT DISEASES

Corn

Corn smut has killed young plants in some fields in central Illinois. The damage occurs only in the low areas of fields. Stand reductions in the damaged areas of as much as 50 percent have been observed. The smut infection occurs below the soil line and results in typical white smut galls on the base of the plant. The above-ground symptoms are: (1) stunting of the entire plant, (2) wilting of the leaves followed by death of leaves, and (3) death of the plant. Some galls extend above the soil line and cause considerable distortion of the plant. This can be distinguished from herbicide injury by the presence of the smut galls. There apparently is no evidence that herbicides predispose the plants to infection. Damage to corn seedlings by smut is a little unusual; however, such injury was noted in Indiana last year and again this year.

Wheat

Leaf rust has increased rapidly during June and is very heavy in some fields at this time. Some fields have had all leaf tissue killed by a combination of damage from Septoria leaf blotch, powdery mildew, and leaf rust. If the leaves are killed while the kernels are still in the late milk stage, reduction in test weight and possibly in kernel size can be expected. Benhur is apparently resistant to the races of the rust found on the other varieties. Very little stem rust has been observed.

WEEDS

Field Crop Weeds

It is too late now for Atrazine and oil applications. Most weeds are too large for good control, and late applications could result in Atrazine residue problems in the soil next spring.

If you apply Treflan now for late-planted soybeans, there may be some chance of injury to fall-seeded grain from such a late application.

With the cool wet weather of late May and other factors, we perhaps have had more than the usual amount of crop injury from herbicides this year. For aid in recognizing herbicide injury symptoms, refer to pages 51-54 of the 1966 Custom Spray Operators' Training School Manual; the February, 1967, issue of Crops and Soils Magazine; or the July, 1968, issue of Successful Farming.

Lawn Weeds

One of the best ways to combat weeds in a lawn is to maintain a dense stand of grass. Heavy rains in much of Illinois have helped, in many instances, to cause a need for additional fertilizer, especially if the lawn is to be kept looking its best.

Summer fertilization of the grass should be done with care. Follow the recommendations for summer fertilization on the fertilizer bag. If directions are not on the bag, then directions for summer lawn fertilization and ways to prevent fertilizer burn can be found in Circular 982, Keeping a Lawn, available from your county Extension adviser in agriculture.

Crabgrass in lawns is becoming noticeable in much of Illinois. If you failed to get a preemergent herbicide on early, you might want to treat with one of the summer crabgrass control materials such as DSMA or AMA. Two or perhaps three applications of these materials are usually needed to achieve satisfactory control. Often materials of 2,4-D type for control of broadleaved weeds are included with the crabgrass materials to give a broader spectrum of weed control.

SPECIAL NOTE:

Field days, featuring agronomy research programs, will be conducted at research centers throughout Illinois this summer. Representatives from the U. of I. will be present to discuss research programs on these fields.

DATE	TIME	FIELD
June 26	10:00 a.m.	*DeKalb[1/]
June 27	6:30 p.m.	*Carlinville
July 25	1:00 p.m.	*Carbondale[2/]
Aug. 16	10:00 a.m.	*Dixon Springs[1/]
Aug. 19	4:30 p.m.	Kewanee[1/]
Aug. 26	6:00 p.m.	Aledo
Aug. 27	4:30 p.m.	Hartsburg[1/]
Sept. 4	9:00 a.m.	*Brownstown[1/]
Sept. 4	6:00 p.m.	Carthage
Sept. 5	1:00 p.m.	*Carlinville
Sept. 5	1:00 p.m.	Toledo
Sept. 6	1:00 p.m.	Oblong
Sept. 9	1:00 p.m.	*Newton
Sept. 12	8:00 a.m.	*Urbana
Sept. 16	1:00 p.m.	Dixon
Sept. 17	1:00 p.m.	Elwood

1/ Food will be available.
2/ Sponsored jointly by Southern Illinois University and the University of Illinois. All other meetings are sponsored by the University of Illinois except as noted.
* Includes weed control research.

SPECIAL NOTE TO EXTENSION ADVISERS

Several have asked about methods of counting corn rootworm larvae. One method is to spread a piece of canvas on the ground, dig up a corn plant along with the soil in a 6-inch square about 4 to 6 inches deep, and examine the soil carefully by sifting it through your hands several times. Then tear up and split the roots, also looking at the debris which has fallen off the roots.

A second method resembles the first. Examine the soil, but cut off the roots and place them in a plastic bag. Look for worms that will leave the roots at 24-, 48-, and possibly 72-hour intervals.

A third system is to examine the soil in the field and save the roots. Place them on hardware cloth over a bucket, having first placed a piece of moist paper in the bottom of the bucket. Keep this moist and examine for worms at the end of 48 hours.

A fourth, the flotation method, is to mix a pound of salt per gallon of water. Place this in a bucket and put the dirt and roots still attached to the base of the plant in this salt solution. Any salt will do--it does not have to be table-grade. Swish the roots and soil around several times. The rootworms will soon float to the top with the debris and foam. Sometimes this is an excellent method and works perfectly. At other times, the worms get mixed in with the debris which must be examined carefully several times. After the count is made, the salt water could be strained into another bucket and reused at least a few times. One problem is disposal of this concentrated salt solution. Do not dump it in the field.

Interpretation? If the worms are still very small, and hatches just starting, and you find 4 or 5 per plant, make a basal application. Later when the worms are larger and hatch has progressed, 10 to 15 worms are needed to necessitate a basal treatment.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Cereal Leaf Beetle: T.J. Lanier, USDA, Plant Pest Control.

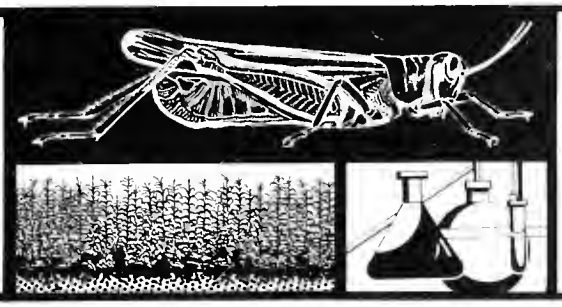
Bees: E.R. Jaycox, Department of Horticulture.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy; J.D. Butler, Department of Horticulture.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

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FOR IMMEDIATE RELEASE

June 28, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 16

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn Insects

Northern and western corn rootworm eggs continue to hatch, and in some fields of continuous corn in the northern half of the state an average of 30 larvae per plant are already present. Counts of 100 or more per plant will be common in problem fields within the next week or two. There is extreme variation in egg hatch and size of the worms from field to field. The worms scarify the surface and tunnel into the roots. They particularly like the tender, more succulent, newly-forming brace roots. By late July or August severely damaged plants will tip over.

To find rootworm larvae, dig up a 6-inch-square area of soil about 6 inches deep around the corn plant. Examine the soil by breaking up the clods and sifting the soil through your fingers. Rework the soil several times. Then tear up and split the roots, watching the debris which falls for additional larvae. Another method of checking for rootworm larvae is the use of a salt solution. Mix a pound of crude salt or table salt in a gallon of water. Place the soil and roots into this solution and stir vigorously. The rootworm larvae will float to the top and with care can be sorted from the foam and debris and counted. Do not dump the salt solution in the field.

If you suspect or know you have a rootworm problem (10 to 15 per plant or more justifies treatment) and you can still get a cultivator through the field, it still may not be too late (particularly in the northern section) to obtain some benefit. However, for best results the applications should have been made a week or two ago when eggs were just beginning to hatch. Further delay now in treatment will result in less effective control since damage is already occurring.

We recommend 1 pound of actual diazinon, disulfoton (Di-Syston), or phorate (Thimet) per acre as a basal treatment off the cultivator. The insecticide is directed at the base of the plant and the cultivator throws dirt over the chemical.

First-generation European corn borer infestations are generally light in the problem area of west-southwestern, west-central, and northwestern Illinois. In the most advanced corn between 5 and 40 percent of the plants were infested this week.

In the west-southwest section the optimum time for treatment is past as borers are already entering the stalk. In the west-central and northwest sections the time for treatment is this week (July 1).

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and determine the percentage of the plants with recent feeding in the whorl leaves. To determine the tassel ratio, measure the height of the plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. That figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1 1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and ensiling of corn when applying diazinon; carbaryl has no waiting period. Recent label approval has been granted for use of 7 1/2 to 10 pounds of 20-percent carbaryl granules per acre. Our tests some years ago were with 5-percent granules, but we would anticipate similar control results.

A report was received of black cutworms damaging waist-high corn in northern Illinois. The recent wet weather in many areas of the state makes conditions favorable for continued cutworm development. On tall corn the worms bore into the stalk just at or slightly below ground level and tunnel up or down in the stalk for a short distance. The leaves of infested plants first wilt and later turn brown. The plant will snap off readily if handled. On small corn the stalk is usually cut off and the plant pulled into the cutworm burrow. There is little that can be done to control the cutworm once corn is laid by. If you can still get a cultivator through the field, an application of 3 pounds of toxaphene, 2 to 3 pounds of carbaryl (Sevin), 2 pounds diazinon (as granules), or 1 pound of trichlorfon (Dylox) per acre will control small worms. Direct the spray at the base of the plants, using at least 20 gallons of water per acre and cultivate immediately to cover the spray deposit.

Common stalk borers are feeding in the whorls of some corn plants and the stalks of oats. These whitish-brown, striped worms with a purple band around their middle cause irregular holes to appear in unfolding corn leaves; in oats the heads turn white prematurely. Damage is most common along the edges of fields--especially adjacent to fence rows, ditchbanks, roadsides, and grass waterways where there was a weed problem out in the field the previous year. Usually only a small percentage of the total plants are infested. Injury is of little consequence and by the time the stalk borers are found, it is too late for an insecticide to be effective. You can lessen the problem for next year by keeping weeds under control in August and September.

Black and yellow grass thrips (about 1/16 inch) are abundant in the whorl leaves of corn. The thrips rasp the leaf surfaces, leaving silvery patches. Plants are not usually seriously affected and will outgrow the damage.

Corn leaf aphids are present in the whorl of corn plants in a few fields, particularly in the west-southwestern section. Aphids were also observed on grasses in and bordering cornfields in the central section. These early aphid migrants are winged and will soon move to corn, giving rise to many young aphids. It is still too soon to determine how serious the problem will be in 1968.

Soybean Insects

Thistle or painted lady caterpillars are still present and feeding on soybeans. They web the leaves together in a nestlike manner and eat chunks out of the leaf margins in the same way that grasshoppers do. One worm will move a foot or two along the row as it feeds. The larva is covered with dark spines, and the body itself is velvety black with light green stripes running lengthwise. When full grown (1 1/2 inches) the larvae transform into silvery, pink, hard-shelled cocoons found attached to the undersides of the leaves.

In general, infestations are not serious. Most fields have less than 10 percent feeding damage. Soybeans can withstand considerable defoliation (30-40 percent) before bloom without affecting yields greatly. Toxaphene and carbaryl (Sevin) have both provided good control of this insect. Do not feed soybeans as forage to livestock if treated with toxaphene.

Homeowner Insect Problems

Cottony maple scale eggs are hatching, and the young crawlers are moving to the leaves to feed. The eggs appear as cottony masses (like popcorn) on small twigs and branches. This scale is particularly injurious to soft maple but will attack a variety of trees and shrubs.

Cottony maple scale

Apply control measures within the next week or two to kill the young crawlers before they develop protective coverings. A malathion spray containing 2 teaspoons of the 50-57 percent liquid concentrate per gallon of water is effective.

Bagworm hatch is now complete in northern Illinois, and larvae are feeding on evergreens and other trees and shrubs. Treatments should be made when the worms are young and easy to kill before severe damage is done. Carbaryl (Sevin), diazinon, or malathion are all effective. Malathion will provide fair control of mites that might be present. Follow label directions and check plants that may be injured if sprayed with the insecticide you are using.

Striped and spotted cucumber beetles are attacking vine crops in the home garden. The beetles may kill small seedlings and seriously retard or kill older plants. Carbaryl (Sevin) or malathion will control these insects. Follow label directions for dosage and precautions. Make the application late in the day to avoid injury to bees.

Mosquito populations continue high in many areas. This is fast becoming another record high year for these insects. To reduce the number of mosquitoes in your yard, follow these steps. (1) Eliminate standing water in such places as eaves, troughs, old tires, tin cans, children's toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50-57 percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in

good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. Hang the strips out of the reach of children and away from fish bowls and food counters. Repeat treatments with 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. (5) When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5- to 1-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Ants, spiders, crickets, millipedes, sowbugs, roaches, and other crawling insects continue to enter homes. If you sprayed the foundation wall of your home in May, it may need another treatment now. Buy chlordane as a liquid concentrate and dilute it with water to the proper strength (1 pint of 45-percent chlordane liquid concentrate in 3 gallons of water gives a 2-percent solution). Spray the foundation from the sill to the soil until the spray runs off. Also, spray 2 to 3 inches of soil next to the foundation wall. Spray in cracks or expansion joints, along porches and around steps, and along the edge of sidewalks and driveways. In houses with crawl spaces, treat the inside of the foundation wall as well as the outside, and spray support pillars. The average house requires about 3 gallons of finished spray. Do not spray near wells or cisterns. Do not spray shrubbery or flowers because the oil may burn the foliage. Repeat the treatment again in late summer for protection in the fall.

WEEDS

Herbicide injury seems to be a little above normal this year. Injury to soybeans from atrazine carryover is being observed in some fields. Symptoms vary from a slight mottling of some leaves to necrotic brown sections in others. There are some completely dead plants. The severity depends on the amount of atrazine left in the soil. Injury is most evident on field ends where sprayers were filled, where sprayers were left on when turning, or where there was overlapping. Where correct rates were carefully applied, injury is usually not severe. And slight injury to soybeans early in the season may not be reflected in final yields. Injury may look worse than it actually is. This indicates the need for future rate adjustments and careful application.

There are several factors that may have contributed to herbicide carryover in some fields this year. Temperatures in 1967 were below normal. Some areas were relatively dry last summer or early this spring. Both chemical and biological degradation of herbicides proceed faster with warm moist conditions.

In some fields atrazine postemergence was not applied until mid-June of 1967 and soybeans were planted in early May of 1968. This gave a relatively short period of time for herbicide decomposition as compared to preplant or preemergence applications in April or early May of 1967 with soybean plantings in June of 1968. Some research suggests that when atrazine is incorporated into the soil immediately, loss of the herbicide from the soil surface may be reduced and residue in the soil may be increased.

Where tillage is minimized and the herbicide is not sufficiently diluted by mixing with more soil, there is more chance of carryover injury. Some increase in carryover may be associated with broadcast applications. Make careful observations in your fields this year and try to select rates for next year that will be sufficient for weed control without residue problems. Consider combining herbicides and rotating herbicides to decrease residue problems. The surest way to avoid herbicide injury is not to use herbicides. But in spite of the occasional problems, the benefits from herbicides usually far outweigh any disadvantages.

Injury to fall-seeded wheat where Treflan had been used on soybeans has not been serious in the past, but it may pay to try to avoid planting wheat this fall where Treflan was applied unusually late this spring.

Help make America beautiful. Give a boy a haircut, and spray weeds in fencerows. One quart of 2,4-D and 5 pounds of Dowpon in 50 gallons of water will treat 2 miles of fencerow 4 feet wide. Some custom applicators should be able to pick up extra business and satisfied customers with a fencerow spray program. Vary the herbicides and rates to fit the situation. And use care to avoid injury to adjacent crops.

DUCKWEED CONTROL

Frequently ponds become infested with duckweed, *Lemna minor*. This species is difficult to control because the mature seed-producing plant is small, and a large number of plants are involved. Applications of Diquat or disodium aquathol, 1 cup of herbicide diluted to 4 gallons, applied directly to the duckweed as a fine spray will reduce the duckweed population. Applications about every two weeks will be required to keep the duckweed under control. We have not been able to eliminate duckweed from a body of water, but by the repeated applications have kept the water surface relatively free of duckweed.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

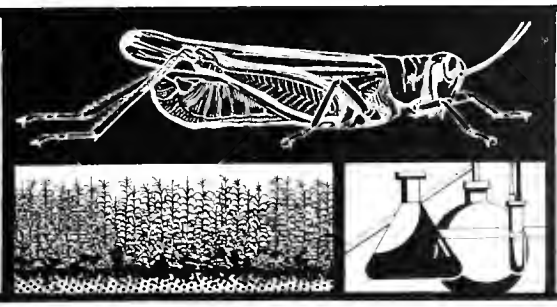
This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Weeds: Ellery Knake, Department of Agronomy; Robert Hiltibran, Illinois Natural History Survey.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 5, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 17

This series of weekly bulletins provides a general report on the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn Insects

Corn rootworm development is progressing rapidly. This week occasional, early-emerging adults were observed. In addition, between 2 and 3 percent of the rootworm population is now in the resting or pupal stage, and will soon change into adults. Apparently, rootworm development is earlier in western than in eastern Illinois; but, in general, it is now too late to make a basal or cultivator application of an insecticide in most fields. In most instances, corn-plants breakage and root pruning would be too great to justify this basal application. Also, in most fields, the worms are now big enough to be difficult to kill by late insecticide applications.

Billbugs are damaging late-planted corn; in a few of these problem fields, damage is severe. Billbugs are gray, brown, or black snout beetles (1/5- to 3/4-inch) that drill holes in the stalk below ground level, usually at or just above the main roots. When the leaves emerge, they have a series of holes in them. The adult snout beetles stay hidden in the soil and under clods during the day, but often move readily from plant to plant at night. Soil treatments with aldrin and heptachlor have never been highly effective against billbugs.

If damage is severe and treatment indicated, apply 1-1/2 pounds of actual carbaryl (Sevin) as a band spray over the row.

Corn flea beetles continue to damage occasional, late-planted cornfields that are bordered by grassy areas. These small black beetles (that jump readily when disturbed) leave white scratch marks on the leaves. Once corn reaches 10 to 12 inches in height, it can usually grow away from flea-beetle injury.

If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row.

The first European corn borer larvae are maturing rapidly, and many of them have already entered the stalk. Development appears to be slightly earlier than normal. Once they have bored into the stalk, insecticides no longer control them. It is

too late to effectively control these borers now. There were only occasional fields of early planted corn with sufficient infestations (75 percent or more of the plants with borer feeding) to justify treatment. Most advanced fields of corn have a light number of corn borers. With good survival of this first generation, we could still experience second-generation corn borer problems in some late-maturing cornfields.

Black cutworms might possibly still appear in cornfields. If a late generation occurs, damage could be extremely severe. Watch fields for an occasional dead or dying plant. Examine such plants to see how large an area has been gouged out of the stalk below the soil level. Examine other areas of the field to see if worms are present, or if this is just an occasional worm doing damage.

Common stalk borers can still be found in some cornfields. These are whitish-brown, striped worms with a purple band around the middle. They feed in the whorl. Emerging leaves have irregular holes in them. Damage is usually most common along the edge of the fields. The damage is not thought to be serious; by the time injury is noticed, it is too late to apply an insecticide. However, controlling the weeds along the edge of the field and out in the field in August and September will decrease the problem for next year.

Fall armyworms may soon appear in late-planted cornfields. Areas in a field will have numerous plants with severely chewed leaves. Dark brown, smooth-skinned worms will be found feeding in the whorls of plants. This will appear in "patches" in the field, because the moths deposit a cluster of 50 to 100 eggs on one plant. The worms move to adjacent plants as they hatch, infesting several plants in a row. Control is usually not recommended since the plants usually grow away from the damage.

In cases of severe damage, try granules of either carbaryl (Sevin) or toxaphene at 1-1/2 pounds of actual chemical per acre. Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as forage or stover to livestock fattening for slaughter within 28 days of slaughter.

Soybean Insects

Thrips, commonly found last week in the whorl leaves of corn, are increasing in number on soybeans in some areas. These small, yellow-to-black thrips (about 1/16-inch long) rasp the surface of the leaves, giving them a "silvery" appearance. Plants will usually outgrow the damage, and rain helps.

Small, green, gnat-like leafhoppers are also numerous on soybeans. But as yet, damage is of minor importance and no control is needed.

Homeowner Insect Problems

"Cottony" maple scale eggs are hatching, and the young crawlers are moving to the leaves to feed. The eggs appear as cottony masses (like popcorn) on the small twigs and branches. Soft maple is the primary variety attacked, but this scale also feeds on other trees and shrubs. If control is needed, apply within the next two weeks. Use 2 teaspoons of 50- to 57-percent malathion liquid concentrate per gallon of water.

Elm leaf beetle larvae are feeding on elm foliage, especially Chinese elms. The dirty-yellow to black worms feed on the underside of leaves, skeletonizing them. Spraying the foliage with carbaryl (Sevin) at the rate of 2 pounds of 50-percent wettable powder is effective. Another treatment about the first of August (this timing is suggested for central Illinois) may be needed for the second generation.

Aphids are building up on roses, as well as on other flowers, shrubs, and trees. Spraying with malathion or diazinon will give effective control. A repeat application may be needed later, if populations begin build up again. Follow the directions and precautions listed on the label.

PLANT DISEASES

Corn

Corn smut is unusually prevalent on the stalks and leaves of corn this year. The large galls low on the stalk can kill the plants. These galls also cause extreme deformation that may result in unproductive plants. Galls on the leaves are not particularly harmful. Ears and tassels can be destroyed. Evidently, the weather conditions have been ideal for infection by the smut fungus. There is no chemical control for this disease.

Soybeans

Rhizoctonia and phytophthora fungi are now killing seedling soybean plants. Phytophthora damage occurs primarily in low spots in the field. Rhizoctonia damage occurs on both high and low ground. If phytophthora is a problem, the grower should use resistant varieties in the future.

Septoria brown spot is beginning to appear in some soybean fields. This fungus disease occurs on the lower leaves first, moving upward later in the season. The leaflets turn yellow and have scattered chocolate-brown spots on them. The spots do not fall out.

Wheat

Glume blotch is a problem in a number of wheat fields. The disease is recognized by light tan-to-brown lesions on the upper half of the glumes and lemmas of the spikelets. Small dark pycnidia (spore cases) occur on the diseased areas and are diagnostic. Kernels in the diseased heads tend to be somewhat smaller and lighter than those in healthy heads.

WEEDS

Just at press time, a flurry of reports started to come in concerning onion-leafing on corn, associated primarily with 2,4-D application. We'll have more information on this in next week's BULLETIN.

Onion-leafing, malformation in brace roots, brittleness, and elbowing of the stalks are typical symptoms of 2,4-D injury to corn. We have some every year. Overdosing is one cause. If you direct 2,4-D toward the row, be sure to adjust your rates so you don't apply more than the recommended rate on the area actually treated. Also, injury may be more likely if you spray during hot, humid weather. Some hybrids are more sensitive than others to 2,4-D. It may pay to check with your seedsman before you spray.

In spite of occasional injury, 2,4-D is still one of the most effective and least costly treatments for controlling many broadleaved weeds in corn. There will probably be 3 to 4 million acres treated in Illinois again this year.

Don't wait until corn is tasseling or silking to apply 2,4-D. Apply it early, while weeds are small and are the easiest to kill.

Banvel-D can give greater control of smartweeds in corn than 2,4-D. But if you plan to use Banvel-D, be fully aware of the possibility of injury to nearby soybean fields. See the *1968 Weed Control Guide* or the *Agronomy Handbook* for more details. If you used atrazine earlier, you very likely do not have a serious smartweed problem now. Smartweeds are quite sensitive to atrazine applied preemergence or as a very early postemergence treatment.

2,4-DB may help control a serious infestation of cockleburs in soybeans. It can also help control annual morningglory and giant ragweed. But again, be aware of the risk of soybean injury. Refer to the *1968 Weed Control Guide* for details.

In addition to the previous clearance (for broadcasting 2,4-DB from 10 days preboom to midbloom), there is a new clearance for application as a directed spray, when soybeans are 8 to 12 inches tall and cockleburs are 3 inches tall.

Panicum and crabgrass may be late-season grass problems in cornfields, especially where corn stands are thin or in inbred seed fields where plants are short and there is little shade. With these late grasses, only the seeds near the surface germinate. In some fields, these grasses can be controlled with timely cultivation.

You may find panicum or crabgrass developing in fields that were treated earlier with atrazine. Ramrod applied shortly before or immediately after crabgrass and panicum germinate might provide satisfactory control, but timing is critical. Directed postemergence applications of Lorox or Dowpon are other possible controls, but these should be applied when the grasses are small. Be sure to keep Lorox and Dowpon off the corn leaves.

If you find a serious infestation of crabgrass or panicum this year, consider planting soybeans and using Treflan next spring.

Leaflets three--let it be. It may be poison ivy. If you need wall charts to help the kids at summer camp identify poison ivy ask for Circular 850, *Controlling Poison Ivy*, available from your Extension adviser in agriculture; or write to the Information Office, College of Agriculture, University of Illinois, Urbana, Illinois 61801.

Amitrole or Amitrole-T is effective for controlling poison ivy. Now is a good time to spray. See Circular 850 for details. A slide set on "Identification and Control of Poison Ivy" is available for loan from county Extension visual libraries. Ask your Extension adviser.

NOT FOR PUBLICATION--SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

The 1:45 tape recording from our automatic telephone answering service of the weekly insect report has been expanded for your convenience.

The report for the northern half of Illinois is available between 5 p.m. Thursday and 11 a.m. Friday of each week.

The report for the southern half of Illinois is available between 11:05 a.m. Friday and 2 p.m. Saturday.

The number to call is (217) 333-2614. Have your recorder running when you call. The report summarizes the week's insect activity and forecasts next week's insect problems. You should contact your Extension adviser in agriculture for the local angle.

For more information or in case of difficulty, call Mr. Cliff Scherer in the Agricultural Communications Office, 330 Mumford Hall, University of Illinois, Urbana, Illinois: (217) 333-4783.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

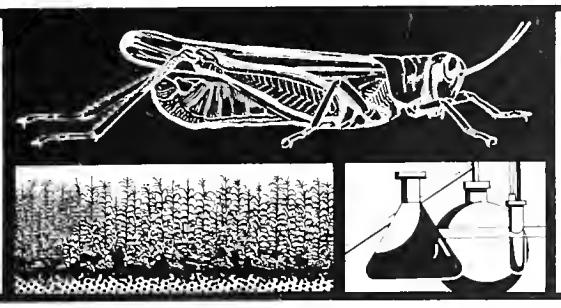
Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 12, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 18

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

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INSECTS

Corn Insects

First-generation European corn borers have begun to pupate in the southern half of Illinois. Pupation is almost complete in the southernmost counties; moth emergence has begun. Watch for whorl damage to late corn by the last week of July.

In south-central Illinois, pupation ranges from 10 to 40 percent in field corn; moth emergence will begin in late July. In early August, watch for feeding on corn that is in the late-whorl to early-silk stage.

Second-generation infestations in late field corn can be handled in the same way as the first-generation problem. If 75 percent of the plants have whorl-leaf feeding, apply carbaryl or diazinon granules. If the corn has tasselled, look for egg masses. If the average is about 1 per plant, apply an insecticide when a few eggs have begun to hatch.

A survey this week of the most mature fields in the area between highways 40 and 50 revealed that first-generation borer populations ranged from 25 to 90 per 100 plants--100 mature borers per 100 plants represents a 3-percent decrease in yield. It is too late to control this first generation; with these low numbers, it might not have been profitable anyway.

Southwestern corn borer is present in several southern Illinois counties. Potentially, it is a more serious corn pest than the European corn borer. Fortunately, it does not yet overwinter too successfully in our climate, because its origin was Mexico or Arizona. However, it appears to be slowly adapting to Midwestern conditions.

A random field survey in the four southernmost counties revealed an average of 10 to 30 first-generation southwestern corn borers per 1,000 stalks of corn. This is probably the highest infestation ever in Illinois.

These first-generation borers have begun to pupate. Some moth emergence is expected within the next week, but peak emergence should not occur before the week of July 22, or perhaps the week of July 29. Egg-laying will begin within 2 days following emergence. Only late fields of corn should be affected.

To determine the need for insecticide treatment, examine the whorls of late-planted corn for signs of leaf-feeding by European and southwestern corn borers. Both insects feed in the whorl. As the leaves emerge, they show regular patterns of circular or elongated holes across the leaves. Also, there is some stripping of the plant tissue, appearing as white areas where the green tissue was eaten.

If you find 60 percent or more of the whorls with this feeding, it is time to treat. If only southwestern borers are present, as little as 10 to 25 percent of whorl feeding may mean economic damage. One to three insecticide applications may be needed to control an infestation of southwestern corn borers alone or a mixture of both the southwestern and European corn borers. Only one application--at the most two--would be needed to control European corn borers alone.

Egg counts are another way of determining the need for southwestern corn borer control. If you find 25 egg masses per 100 plants, treatment may be profitable.

We have no Illinois information on chemical effectiveness, since treatments have never been made before. Entomologists in the states to the south and west of Illinois recommend 2 to 3 applications of insecticides at intervals of 7 to 10 days. Granules are preferred over sprays. Endrin at 0.3 to 0.4 pound per acre per application is usually recommended. Also, 2 pounds of carbaryl (Sevin) or 1 to 2 pounds of diazinon are suggested. Although endrin may be the most effective, we do not encourage its use in the area of Illinois most heavily infested with the southwestern corn borer, because many such fields are near wildlife and waterfowl refuges and fish-bearing waters.

Do not use ensilage, stover, or fodder from endrin-treated corn. If you use diazinon, allow 10 days to elapse before using the ensilage, stover, or fodder. No waiting period is required for carbaryl.

Southern corn rootworm larvae, pupae, and adults (spotted cucumber beetles) are present in some cornfields in the southern half of Illinois. The larvae eat the roots. In some late cornfields, they have tunnelled up into the stalks, killing the heart of the plant. The beetles feed in the leaves and silks of the corn. They will deposit eggs in the soil for another generation or two yet this year.

Northern and western corn rootworms are developing as anticipated. Pupation has begun in northern Illinois, but eggs are still hatching and very tiny worms can be found. This situation may exist for another two weeks. Damage to roots is now evident in many fields; it will become progressively worse during July.

In northern Illinois, only late cornfields can profit from basal treatments. In case you find extremely high infestations in earlier fields, you may, in desperation, want to try a broadcast application of diazinon, phorate (Thimet) or disulfoton granules without cultivation. However, the prospects for effective control by this method are not good, unless timely rains should occur.

The number of corn leaf aphids is increasing this week. Some fields in the south-southwestern part of the state have a few plants that are heavily infested. Both winged and wingless aphids can be found on grasses and in the whorls of corn plants. These insects suck the juices from the plant. Such damage usually occurs just prior to and during tasseling. Check the whorls of corn plants for these insects during the two-week period prior to tasseling.

Early treatment is best. When the corn is in the late-whorl stage and 50 percent or more of the plants have aphids (with a few plants heavily infested), and if the corn is under stress, treat immediately. Treatment is also justified in corn in the early tassel-to-pollinating stage, if 15 percent or more of the plants are heavily loaded with aphids.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will provide control. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover. There is no waiting period between treatment and harvest for grain for diazinon, but allow 10 days for ensilage or stover. If corn is still in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Common stalk borers in border rows of corn are still causing concern, but should soon disappear. Keep fence rows, ditch banks, grass waterways, and similar areas mowed during August to help prevent infestations next year. This is where the moths deposit their eggs.

Black cutworms were found this week in a cornfield in south-central Illinois. About 10 percent of plants had been hollowed out below the ground level, and these plants were dead. It is too late for control when this has happened.

True armyworms have been observed in grassy cornfields in the northern half of Illinois. Watch such fields closely; the worms feed first on the grass and then move on to the corn plant. For infestations, apply carbaryl (Sevin) or toxaphene.

There is no waiting period between application and harvest of the crop for grain or ensilage if you use carbaryl. If you apply toxaphene, there is no restriction on use of grain, but do not feed treated forage to dairy animals. Do not feed ensilage, fodder, or stover to livestock within 28 days of slaughter.

Soybean Insects

Bean leaf beetles are now present in southern Illinois, but not in damaging numbers.

Very small, green cloverworms are present in soybeans in central and northern Illinois. These pale, green worms with white stripes are the ones that feed heavily on soybeans, usually in August. If the plants are jarred, they fall to the ground. When touched, they twist their body rapidly--almost as if they were a spring. The severity of this problem remains to be seen, but a fly parasite lays tiny, white globular eggs on the backs of these worms. When present in sufficient numbers, they aid in control.

Livestock Insects

The number of face flies is now increasing, on both dairy and beef cattle. We do not know all the factors involved in this growth pattern. With the population now on the increase in southern, central, and western Illinois, it would be well to check on them weekly.

If control becomes necessary, apply 2 percent Ciodrin at 1 to 2 ounces per animal 2 to 6 times per week, either by an automatic cattle sprayer or with a hand sprayer. For beef animals on pasture, you may want to try 5-percent toxaphene in oil. To do this, saturate a cloth, canvas, or burlap head or back oiler at least weekly.

Do not treat cattle under 4 months of age with toxaphene and do not apply within 28 days of slaughter. Do not contaminate feed, water, milk, or milking utensils with Ciodrin.

HOMEOWNER INSECT PROBLEMS

Picnic beetles are especially numerous at the present time. These black beetles with four yellow spots are attracted to food odors and decaying or overripe fruit and vegetables. They are commonly found around garbage cans and on window screens.

For control in home yards, harvest fruits and vegetables before they become overripe. Dispose of any spoiled produce. To kill the adult beetles, spray with malathion, diazinon, or carbaryl (Sevin) on and around garbage cans. Spraying shrubbery and tall grass with the same insecticides before a cookout will greatly reduce the number of these beetles. Follow directions on the label; check plants that may be injured if sprayed with the insecticide you are using. Either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) in pressurized spray cans will give a quick knockdown of beetles that suddenly move into an area.

Tomato hornworms as well as fruitworms (corn earworm) are common in tomato patches in the southern half of the state. Spray with carbaryl (Sevin), using 2 tablespoons of 50-percent wettable powder per gallon of water. Repeat if necessary each week. There is no time limit between treatment and harvest.

Variegated cutworms will soon be common pests of several vegetable crops and flowers with heavy foliage in home gardens. Carbaryl will control them.

PLANT DISEASES

Corn

A secondary effect of the widespread 2,4-D injury to corn has been the increase of corn smut infection on the injured plants. Many smut galls are prevalent near the whorl at the base of the "onion" leaf. Most of the smut galls are on leaves and sheaths and will do little damage. Some galls involve the developing stalk and will be damaging. The increase in smut, following 2,4-D damage is on hybrids that are normally susceptible to smut.

Soybeans

Bacterial blight is appearing in some fields at this time. It is recognized by the angular leaf spots, usually surrounded by a narrow zone of yellow leaf tissue. The dead spots tend to fall out of the leaf. Severely infected leaves may have a ragged appearance.

Homeowner Plant-Disease Problems

Early blight on tomatoes is now showing up in home gardens. Look for roundish-to-angular dark brown spots, with angular rings or ridges within them. Affected leaves turn yellow or brown and drop early, starting at the base of the plant. Exposed fruit later sunscald. The same fungus may cause dark brown-to-black, sunken, leathery spots on the "shoulders" of the fruit near the stem end.

Control early blight by applying maneb (mostly sold as Manzate, Manzate D, Ortho maneb, Dithane M-22) or Dithane M-45 as sprays at 7- to 10-day intervals. If the weather is rainy, shorten the interval to 5 days; if it is dry and hot, lengthen the interval, up to 14 days. Thorough coverage of foliage and fruit is essential. Multipurpose vegetable dusts and sprays usually have maneb as an active ingredient.

Blossom-end rot on tomatoes can be found now wherever fruits are at least half-grown. The bottom or blossom end of the fruit becomes dark brown-to-black, and is sunken and leathery. Up to one-half of the fruit may be involved.

The control for this disease is to water during dry periods. Where feasible, maintain a uniform soil-moisture supply and promote steady growth. Mulch or cultivate in a shallow fashion during dry periods, and fertilize adequately--based on a soil test. Avoid overfertilizing with nitrogen and potassium. Four weekly applications of calcium nitrate, starting when the first fruits are the size of golf balls, may help. Use 1/2 to 3/4 of an ounce per gallon of water. Calcium nitrate may be added to the maneb used to control early blight.

Cat face on tomatoes is another disease now prevalent in home gardens. The blossom end of the fruit is extremely malformed and scarred with irregular, swollen protuberances and bands of scar tissue. The control is to grow locally adapted varieties and use the same treatment recommended for blossom-end rot. Cat face may be caused by drought or by high (95° F. or above) or low (55° F. or below) temperatures that reduce pollination on contact with a hormone-type herbicide, such as 2,4-D. The disease is due to poor pollination.

Early blight on potatoes can be found now and will be increasing with summer showers and heavy dews. The symptoms and control are the same as those for tomatoes.

Blackleg on potatoes is common in Illinois following heavy rains and cold weather in heavy, poorly drained soils. Affected plants are stunted, upright, and wilting, with curled upper leaves. The stem base may be an oily green, but it soon becomes dark brown-to-blackish, slimy, and rotted. The seed piece is often decayed, and such plants are easily pulled up. Blackleg commonly follows seed-corn maggots, wireworms, white grubs, borers, hail, or other injuries. The only control procedure is to plant the best blue-tag seed available and to control insects.

WEEDS

Corn

This year, 2,4-D injury to corn seems to be more severe than ever before in the history of 2,4-D use in Illinois.

The major sign of injury during the past week has been "onion-leafing." Although the total number of fields actually affected may still be relatively low, some fields have shown rather severe, tight rolling of the leaves.

This rolling has occurred in many areas of the state on many different hybrids and apparently with many different 2,4-D formulations. Although some injury has shown up after both early and late spraying, most of the injury seems to have occurred where corn was sprayed early, when it was only a few inches tall.

Our best guess is that with the cool, moist stress conditions present during the last part of May, the 2,4-D affected the plants when most of the leaves were in the very early stages of formation--surrounding the growing point and hardly recognizable as leaves. Then, with the subsequent moist and hot weather and pattern of extremely rapid growth, these early effects later became visible as the onion-leafing.

An occasional tendency toward onion-leafing has been reported this year even in fields not sprayed with 2,4-D. This is most likely related to the very rapid growing conditions, possibly to certain genetic lines of corn.

Usually in previous years, only a very small percentage of the plants in a field where extensive onion-leafing has appeared have been seriously affected. Leaves have usually unrolled soon enough for tassels to emerge. Pollination was nearly normal, and there was little effect on ears. This year, however, where some of the leaves seem to be very tightly rolled, there may be a greater-than-usual effect on tassel emergence. It's difficult to predict what the result may be on ears; but with a smaller leaf area exposed for normal photosynthesis, ear development may be affected.

There seems to be an increase in smut in some fields. Where the corn was brittle, cracking opened the way for more smut. The seriousness of the situation will have to be assessed in individual fields, using common sense and good judgment. Hopefully, some fields may outgrow the injury fairly well.

This problem would tend to make one cautious about applying 2,4-D during the next few weeks. However, the symptoms we see now do not necessarily mean that severe problems will develop with later spraying.

Do not spray injured fields a second time with 2,4-D. Avoid spraying on hot, humid days. Be sure the correct rates are carefully applied.

There is little that can be done now about the injured fields, except to hope that a high percentage of the plants will outgrow most of the injury.

Pond Weeds

Chara vulgaris, commonly known as mushgrass, becomes abundant in many bodies of water in Illinois. At this time of year, other vegetative problems may have matured or responded to applications of herbicides.

In general, chara resembles other aquatic vegetation. But since it is an algal species, it is not susceptible to commonly used herbicides, such as endothal or 2,4-D. Stands of chara can be eliminated by applications of crystals of copper sulfate directly to it. This is the cheapest and most-effective method for control. Chara has a pungent odor, and this can be imparted to the water and fish.

NOT FOR PUBLICATION--SPECIAL NOTE TO COUNTY EXTENSION ADVISERS

Fly control at county fairs: We have modified the following portion of a Purdue Insect Newsletter on this subject to fit Illinois conditions:

1. Fair officials will need to be sure that manure, garbage, refuse, and soft drink bottles are removed from the grounds every day. This is a must.

2. Just before the Fair starts, spray livestock sheds and other buildings that may harbor flies with dimethoate (Cygon), diazinon, or ronnel (Korlan). A farm crop-sprayer, equipped with a lead of hose and a spray gun, can be used for this purpose. Most rotary pumps on these sprayers can be adjusted to operate at 250 to 300 pounds of pressure.

   If the water pressure is good, a spray gun that fits on the end of a hose will do a good job of applying the insecticide.

   Sprays can also be applied to refuse containers, garbage cans, etc.--before and during the Fair. A couple of boys with compressed-air sprayers can do this job.

3. The clip-on foggers that attach to a gallon can of oil-base pyrethrins and/or DDVP fly spray will do a good job of killing adult flies in animal shelters. These fogs are best applied in the early morning when no people are around. Animals need not be removed, although horses may be frightened by the fog.

4. Urge that food stands keep some pyrethrins and/or DDVP household pressurized spray cans on hand, to kill adult flies. These sprays should be used at night after the stands close. The local health department should insure that all stands maintain the required standards of cleanliness.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton and M.C. Shurtleff, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy, and Robert Hiltibran, Illinois Natural History Survey.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.




INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE July 19, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 19

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn Insects

Corn leaf aphids have increased rapidly in fields in many areas, especially across the central part of the state. In many fields, populations have increased to the point where more than half the plants in a field are infested with at least a small colony; the infestation in some plants is moderate to heavy. A few fields have an infestation as high as 100 percent.

> Corn leaf aphid infestations usually begin while the plant is in the whorl stage probably, two to three weeks ahead of full tassel, reaching a maximum during peak pollen shed. Infestations decline rapidly after that. The time to decide about treatment is now. Fields where the plants are now in full tassel will most likely escape damage; fields with more than half the tassels showing may escape injury, while those with a few or no tassels showing are most likely to suffer damage and should be examined critically until after pollen shed.

To examine a field for aphids, (1) pull 25 whorls in four places in a field, (2) unroll the leaves, and (3) determine the percent of infested plants and degree of damage. If the next two weeks are hot and dry, the population of aphids is most likely to increase greatly, decreasing with cool, rainy weather. We have observed very few predators. The black beetles with the four yellow spots, commonly seen in the whorl, are picnic beetles. They are not predators and do not damage plants.

Treatment is justified on late-whorl-stage corn (a few tassels showing), if 50 percent or more of the plants have some aphids (a few heavy) and if the corn is under stress (from low soil moisture, fertility, disease, etc.). Continue to watch the infestation as long as growing conditions are good; if 15 percent or more of the plants become heavily loaded with aphids, treat immediately.

Seed fields should be treated if 50 percent or more of the plants have some aphids (only a few heavy), even if the corn is not under stress. In general, applications after all the silks have dried are disappointing.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. When using malathion, allow 5 days between treatment and harvest for grain, ensilage, or stover. Using diazinon, there is no waiting period between treatment and harvest for grain, but allow 10 days to elapse before making ensilage or stover. If corn is still in the late-whorl stage, seed producers may prefer to use 1 pound of either diazinon or phorate (Thimet) per acre as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Corn rootworm larval populations are continuing to increase in cornfields as tiny, recently hatched worms can be found in northern Illinois. Eggs are still hatching and the number of larvae is expected to increase or remain constant for another one or two weeks. Pupation of worms is progressing rapidly in many fields and adults are emerging. One field in northern Illinois increased from 45 worms per hill on July 10 to 101 per hill on July 17.

Goosenecking of corn plants, as a result of larval damage, is now evident in many infested cornfields. Wilting and dying plants were observed in some heavily infested fields.

Northern corn rootworm adults are beginning to emerge from the soil in cornfields where rootworms have been feeding on the roots of corn plants in the northern and central sections of the state. These green beetles feed on fresh silks and may reduce pollination.

Western corn rootworm adults are also emerging and they do the same damage. These yellow- and black-striped beetles will appear in the northwestern section of the state. Both of these insects will be emerging during the next few weeks. Treatment is justified if there are 5 or more beetles per plant and if not over 50 percent of the plants have silked. This situation is likely to exist in many fields about August 1. The beetle population will continue to increase until mid-August.

Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound actual insecticide or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be applied by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion; carbaryl has no waiting period.

European corn borers have almost completed pupating and are also emerging as moths in the southern half of Illinois. Pupation is just beginning in the northern sections. Second-generation infestations in late cornfields can be handled the same as the first-generation situation: If 75 percent of the plants show whorl feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasseled, look for egg masses on the leaves. If the average is 1 or more per plant, apply an insecticide when a few eggs have begun to hatch.

True armyworms have been observed in grassy cornfields in the northern half of Illinois. Watch such fields closely; the worms feed first on the grass and then move onto the corn plant. For infestations, apply carbaryl (Sevin) or toxaphene.

If you use carbaryl (Sevin), there is no waiting period between application and harvest of the crop for grain or ensilage. If you apply toxaphene, there is no restriction on use of grain, but do not feed treated forage to dairy animals. Do not feed ensilage, fodder, or stover to livestock within 28 days of slaughter.

Woolybears and other leaf-feeding bristly caterpillars are being observed feeding on corn leaves and silks. Control with insecticides is seldom needed for these insects.

Soybean Insects

Green cloverworms are present in some soybean fields in central and northern Illinois. These pale, green worms with white stripes "spring" or jump by rapidly curling and uncurling their body. Damage is not apparent, but the situation bears watching.

Small-Grain Insects

Cereal leaf beetles were recently found in Moultrie County, as well as in those counties previously reported. A survey of all 102 counties for this insect has now been completed by the Plant Industry Division, Illinois Department of Agriculture and the Plant Pest Control Division, USDA.

Forage Insects

Young grasshoppers are present in occasional fencerows, roadsides, and ditches, grass waterways and hay fields. They will remain in these areas as long as succulent plant growth is present for feeding. When the growth begins to turn brown, these insects will migrate into adjoining soybean and cornfields.

Since egg hatch is complete, there is only one generation per year and they are concentrated in small areas. Chemical control of these young 'hoppers is most economical and easiest before they migrate into the field crops. Treating these areas with carbaryl (Sevin) at 3/4 pound per acre as a spray is best for grasshoppers. Diazinon at 1/2 pound, malathion at 1 pound, and naled (Dibrom) at 3/4 pound per acre are also effective. When treating forage crops, allow 7 days between treatment and harvest with diazinon, 4 days with naled; there is no waiting period for malathion or carbaryl.

Homeowner Insect Problems

Sod webworm moths, which are buff colored, have been observed flying over lawns in towns in the southwestern section of the state, and they are beginning to appear in the central section. This flight is the second-generation of moths. They are laying eggs as they fly in a zigzag pattern just above the lawn. If you notice large numbers of these moths, plan to treat your lawn with an insecticide about 2 weeks later.

The larvae of the webworm are a gray worm with small brown spots over their back and a black head. They are about an inch long when mature, and live for about 4 weeks as a larva. The worms live in silken-lined burrows in the thatch of the lawn, clipping off the grass blades at the base. Brown spots appear in the lawn when worms are numerous, and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late for control.

To control sod webworms, apply as a spray: (1) 2 pounds of actual carbaryl (Sevin), (2) 1 pound of diazinon, or (3) 1-1/4 pounds of trichlorfon (Dylox) per 10,000 square feet (1/4 acre). Apply the amount of insecticide suggested in at least 25 gallons of water, and do not water the lawn for 3 days after treatment. Granular forms of the same insecticides applied from a fertilizer spreader can be used in place of the spray.

Aphids are still prevalent on many shrubs and in some trees. They are soft-bodied, sucking insects that are easily controlled with malathion (50- to 57-percent liquid concentrate) or with diazinon (25-percent liquid concentrate, using 2 teaspoons of either chemical per gallon of water).

Picnic beetles continue to be uninvited guests at cookouts, picnics, and in and around the home. The black beetles with four yellow spots are attracted to the odor of food, especially overripe and decaying produce. Also, they are present around garbage cans.

For control in home yards, harvest fruits and vegetables before they become overripe. Dispose of any spoiled produce. To kill the adult beetles, spray with malathion, diazinon, or carbaryl (Sevin) on and around garbage cans. Spraying shrubbery and tall grass with the same insecticides before a cookout will greatly reduce the number of these beetles. Follow directions on the label; check plants that may be injured if sprayed with the insecticide you are using. Either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) in pressurized spray cans will give a quick knockdown of beetles that suddenly move into an area.

PLANT DISEASES

The plant-disease situation in field crops has remained about the same as given in the last two issues.

WEEDS

A lot of soybean fields look quite clean this year. The delayed planting, use of herbicides, rotary hoeing, and good cultivation have all contributed.

Now is a good time to chop that volunteer corn out of soybeans. Relatively few fields have a serious problem.

As the beans stop growing, some of the taller-growing weeds (like velvetleaf) will become more evident. Pulling these to prevent seed production will be well worthwhile in many fields. Pulling may not sound very "glamorous," but is still practical and economical in many fields. (And it will give kids something to tell their grandchildren.)

Corn has made tremendous growth in the last few weeks. There are still some applications of 2,4-D with "high boy" sprayers. Even though this is a low-cost practice, there is no need to spray unless you really do have susceptible, broadleaved weeds present. In spite of the problems we've had with 2,4-D this year, we still say that weed control is usually better and competition less if weeds are sprayed when they are small, rather than waiting until it is too late.

The common recommendation is not to spray when corn is silking and pollinating. We usually don't have much of a problem in this regard--perhaps because most folks do avoid spraying then.

With the small grain harvested, weeds such as foxtail and ragweed now have a chance for more-vigorous growth. If you don't plan to work the fields for a while, consider clipping or spraying to reduce the weed seed production. If you don't have a grass or legume seeding, consider spraying. A low-cost application of 2,4-D can check most broadleaved weeds. A few pounds of Dowpon per acre--alone or added to

2,4-D--can reduce the seed production of grasses considerably. The smaller the grass, the less Dowpon you'll need. If weeds have made much of a growth, it may pay to clip or chop the stubble before spraying.

If you have Johnsongrass in wheat stubble and plan to plant corn or soybeans in the field next spring, consider a Dowpon application now for control. Clipping or chopping the Johnsongrass a time or two before spraying will help deplete the food reserves in roots and rhizomes; this generally improves control.

When the Johnsongrass is about a foot high and is actively growing during warm moist weather, spray with 8 pounds of Dowpon in 30 to 40 gallons of water per acre. Wait at least a week or two before working the soil, in order to give the Dowpon plenty of time to translocate and act on the roots and rhizomes. Unless the Johnsongrass is making good, active growth when sprayed, results may be disappointing.

By spraying Johnsongrass this summer, you can control much of the old Johnsongrass without delaying planting next spring. But you should plan to follow up next spring with a preemergence application of Eptam for corn or Treflan for soybeans, to control Johnsongrass that may come from seed. See Illinois Circular 827 for more details on Johnsongrass control.

If you see dead clumps of Johnsongrass along roadsides and in other non-crop areas, it means somebody is doing a good job of spraying. Find out who it is and pat them on the back.

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Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Cereal Leaf Beetles: T.J. Lanier, USDA, Plant Pest Control.

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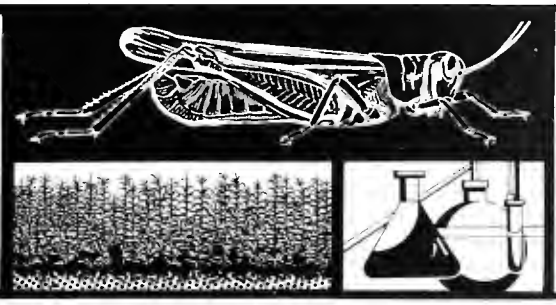

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

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FOR IMMEDIATE RELEASE July 26, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 20

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn

Corn leaf aphids are still present in most cornfields in light to moderate numbers. A few fields have heavy populations. Fields still in the late-whorl or early-tassel stage are the most critical, especially if soil moisture is low. Fields of corn with fully exposed tassels and in which pollen shed is about complete will probably escape damage, unless infestations are extremely severe. Infestations in these fields are already beginning to decline.

Examine fields of corn in the late-whorl to early-tassel stage, especially if the soil moisture has been less than adequate.

To examine a field for aphids, (1) pull 25 whorls in four places in a field, (2) unroll the leaves, and (3) determine the percent of infested plants and degree of damage. If the next two weeks are hot and dry, the population of aphids is most likely to increase greatly--decreasing with cool, rainy weather. We have observed very few predators. The black beetles with the four yellow spots, commonly seen in the whorl, are picnic beetles. They are not predators and do not damage plants.

Treatment is justified on late-whorl-stage corn (a few tassels showing), if 50 percent or more of the plants have some aphids (a few heavy) and if the corn is under stress (from low soil moisture, fertility, disease, etc.). Continue to watch the infestation as long as growing conditions are good; if 15 percent or more of the plants become heavily loaded with aphids, treat immediately.

Seed fields should be treated if 50 percent or more of the plants have some aphids (only a few heavy), even if the corn is not under stress. In general, applications after all the silks have dried are disappointing.

Spray treatments by ground or air with 1 pound of malathion or diazinon per acre will control the aphids. Allow 5 days between treatment and harvest for malathion and 10 days for diazinon. If corn is still in the late-whorl stage, seed producers may prefer to use 1 pound of either diazinon or phorate (Thimet) per acre as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Corn rootworm adults are feeding on silks in many cornfields throughout the state. The tan or pale-green northern rootworms, 12-spotted southern ones, and yellow-and-black (often striped) western rootworms all feed on silks. The western corn rootworm was found for the first time in Brown County this week. In the primary rootworm problem area (the northern half of the state), as many as 5 or more beetles per silk were observed in some fields this week. Adult emergence varies from 10 to 40 percent in these fields, so adult populations will increase as the beetles continue to emerge. In most of these problem fields, lodging is already noticeable and root damage is severe, due to root pruning by the larvae.

When beetles are numerous, they can interfere with pollination. The injury will probably be more severe in medium- and late-maturing fields, since adult rootworms are likely to be higher in these fields during the critical pollinating period.

Treatment for adult rootworms is justified if there are 5 or more per silk, and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be applied by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion; carbaryl has no waiting period. Sprays of malathion, methyl parathion, and diazinon will also control corn leaf aphids, while carbaryl will not.

We have been receiving calls from farmers who have not previously had rootworm problems. Most such problem fields had received an aldrin or heptachlor treatment that did not control the rootworms. Rootworm resistance to aldrin and heptachlor has now become widespread in Illinois; hence, these insecticides can no longer be depended on for rootworm control. In general, the phosphate and carbamate insecticides used this past spring for the control of resistant rootworms are providing satisfactory results. Within the next week or two, it would be wise to check your corn (particularly continuous corn) for rootworm damage and for the presence of adult beetles, if you have not already done so.

You can best determine the need for a rootworm control program for next year by making an estimate of the adult rootworm population at this time. Make a count of the average number of beetles per plant when the corn is in full silk. An average of 5 to 10 or more adults per plant is probably enough to cause economic losses in 1969, if the field is planted to corn again. Although not fool proof, this is the best, current rule of thumb we can give you for predicting rootworm problems for next year.

Notify your local county Extension adviser about severely damaged fields, especially if you have had failures with the organic phosphate or carbamate insecticides used for the control of resistant rootworms. Also, report any fields of first-year corn that have been bothered by rootworms.

Second-generation European corn borer moth emergence is well under way in southern sections, and eggs are being laid. Emergence is just beginning in the central section. Pupation ranges from 15 to 30 percent in the northern section. Now is the time to check late-maturing fields for egg masses and whorl feeding in the southern section. Wait about a week in the central section, and about 2 weeks in the northern section. Treat whorl-stage corn if 75 percent or more of the plants show recent whorl feeding. Treat tasseled corn if the egg masses per plant average

one or more. Apply the treatment at first egg hatch. Use either 1-1/2 pounds of carbaryl (Sevin) or 1 pound of diazinon as a granule or spray. On whorl-stage corn, aerial applications should be granules, not sprays. Aerial sprays on tasseled corn are effective. Allow 10 days to elapse before making ensilage or stover when using diazinon. Carbaryl has no waiting period.

Corn-blotch leaf miners, tunneling between the leaf tissues, were especially noticeable on the lower leaves of corn in some areas this week. The tunnels appear as transparent galleries, and may be confused with corn leaf diseases. By carefully separating the leaf tissue, you can often find a small 1/16- to 1/4-inch, green-to-white maggot or a reddish brown pupa inside. This leaf mining seldom consumes a very large portion of the leaf, and only a few leaves per plant are involved. Damage done by this insect is believed to be of little or no economic importance. No control is recommended.

Soybeans

Green cloverworm populations have increased in soybeans. They strip the leaves but do not attack the pods, as do grasshoppers and bean leaf beetles. Damage is most severe when defoliation occurs while bean pods are filling and while the beans are mature but still green. Moderate defoliation--less than 40 percent--occurring before bloom or after the beans are mature will not affect the yield significantly.

As a rule-of-thumb, we feel that an average of 6 or more worms per linear foot of drill row during the period of pod development justifies treatment. To determine the field average, shake the plants over the center of the row and count the worms in several places in the field. Use 1-1/2 pounds of toxaphene or 1 pound of carbaryl (Sevin) per acre to control this insect. When using toxaphene, the beans should not be harvested for 21 days after spraying. Do not feed toxaphene-treated soybeans as forage to dairy animals or to livestock being fattened for slaughter. Carbaryl has no waiting period or feeding restrictions.

Livestock Insects

Face fly populations continue moderately high on pastured cattle in the central and south-central sections. In the area between Route 460 and Route 9, pastured cattle averaged 20 to 40 flies each. Cattle show annoyance from face flies when 10 to 15 flies per animal are present. Cattle on tight, dry-lot confinement are not bothered by face flies.

For dairy cattle, apply Ciodrin as a 2-percent oil or water-base spray at 1 to 2 ounces per animal two to four times per week. An automatic sprayer, a small electric mist-type sprayer (not fogger), or a hand sprayer can be used. Apply the spray over the entire animal, including the legs. Ciodrin is the most effective insecticide for face fly control, and it will also eliminate horn flies and reduce the number of stable flies.

For beef cattle, the use of an automatic sprayer with Ciodrin as suggested for dairy cattle should be considered. If this is impractical, use a 1-percent Ciodrin-water diluted spray at 1 to 2 pints per animal, as often as once a week if needed. Canvas or burlap head oilers and face or back oilers, saturated with a 5-percent toxaphene in oil solution, will provide some relief to cattle. Do not treat cattle under 4 months of age with toxaphene, and do not apply it within 28 days of slaughter.

Homeowner Insect Problems

Fall webworms are spinning webs around the ends of branches on shade trees--especially birch, ash, and elm. Pale green or yellow worms with a dark stripe down the back and a yellow stripe along each side skeletonize the foliage inside the web nest. They continue to extend the web to take in fresh foliage. The damaged leaves turn brown, curl, dry up, and eventually die.

Spraying with 50-percent carbaryl (Sevin) at the rate of 2 tablespoons per gallon of water is effective.

Picnic beetles are thick in cornfields and around homes. These black beetles with four yellow spots on their back eat decaying material in the galleries of corn borer and feed on the sticky secretions left by aphids on corn. Around the home, they are attracted by cooking odors or to garbage containers, as well as to overripe fruits and vegetables in the garden. They are a real nuisance at cookouts, picnics, and outdoor barbecues.

For control in home yards, harvest fruits and vegetables before they become overripe; dispose of any spoiled produce. To kill the adult beetles, spray with malathion, diazinon, or carbaryl (Sevin). Follow directions on the label for dosages, and observe the specified waiting periods between treatment and harvest. For beetles, a spray-can application of either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) will give a quick knockdown. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Apply the same mist over the top and around the sides of garbage containers.

Both the imported and looper cabbage worms are feeding on the outer leaves of cabbage heads, or may be eating their way into the head. These worms are difficult to control when they are more than half grown. Spraying with carbaryl (Sevin) or malathion while the worms are small will give adequate control. Allow 7 days between the last application and harvest when using malathion, and 3 days for carbaryl.

PLANT DISEASES

Corn

A few fields of corn have been seen in which a high number of plants have the "crazy top" disease. This fungus disease is soil borne. Infection occurs only in low, wet spots in fields.

The symptoms are a general stunting of the plant and yellow streaking of the leaves, followed by death of the leaves. As the tassels form, they are often leafy, showing the typical "crazy top" symptom.

Soybeans

Bacterial blight is severe on soybean leaves in many fields throughout the northern half of Illinois. It is recognizable by the angular leaf spots, usually surrounded by a narrow zone of yellow leaf tissue. The dead spots tend to fall out of the leaves, and severely infected leaves may have a ragged appearance.

Phytophthora blight is present in low spots in soybean fields planted to susceptible varieties. This disease can be identified by the complete killing of plants in low spots. Plants of any size may be killed.

WEEDS

Is It Too Late To Spray Corn With 2,4-D?

Most 2,4-D labels say not to spray corn from the tasseling to the dough stage. Whether or not the corn is subject to much injury at that stage is somewhat controversial. Based on field studies and observations, it is difficult to establish that 2,4-D has much of a direct effect on silks that would interfere with fertilization. And, under field conditions, it is rather difficult to study the effect of 2,4-D on pollen viability. Conceivably, 2,4-D that has translocated in the plant might affect silking and tasseling, even though it was not directly applied to the silks and tassels.

Mid-season hybrids silk about 60 to 70 days after corn emergence--depending on the hybrid, the season, and the date of planting. If plenty of pollen is available, the silks are pollinated soon after they emerge from the husks. But where stands are uneven, the time for pollen shed and silk emergence can be extended.

About two weeks after the silks emerge they will be dry. The plant reaches the dough stage about 3 to 4 weeks after the silks emerge.

To be on the safe side, it is best to follow the indicated label precautions and not spray from the tasseling to the dough stage. This is a crucial stage in the development of the corn plant.

In addition, large weeds are competing with the crop by late July and August. They may have already formed viable seed, and they are not easily controlled. Dense shade in high-population fields can considerably depress the growth of many weeds.

While you may have more time to spray 2,4-D now, your control would have been much better in most fields if you had used 2,4-D earlier. Also, there is still some risk of 2,4-D making corn brittle and causing injury.

A "Color Chart for Estimating Organic Matter in Mineral Soils in Illinois" (AG 1941) is available from the Office of Publications, College of Agriculture, University of Illinois, Urbana, Illinois 61801.

The chart, prepared by John Alexander of the Agronomy Department, can help you estimate the organic-matter content of soils on the basis of color. The guide should also be of considerable help to you in determining the appropriate herbicide rates for adequate weed control, as well as minimum cost and residue.

NOT FOR PUBLICATION

Special Note to County Extension Advisers, South-Central and Southern

Two field meetings especially for county Extension advisers will be held on the identification, damage, and control of the European corn borer. We invite you to attend.

Tuesday, July 30.....Bond County Extension Adviser's Office, 1:00 p.m.
Wednesday, July 31...Richland County Extension Adviser's Office, 1:00 p.m.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

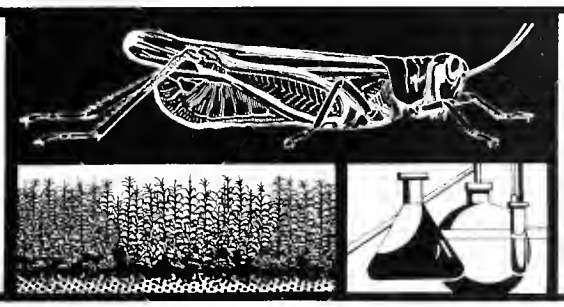
Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

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FOR IMMEDIATE RELEASE

August 2, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 21

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

Corn

Corn leaf aphids increase rapidly in number in corn from pretassel to late silking. How soon will these aphids decrease? They decrease after pollination has occurred. After silks are dry, they disappear rapidly from the field.

Several other questions are being asked. The white objects in the aphid colony are the shed skins of aphids--not dead aphids or aphid eggs. There are no aphid eggs. In fact, there are no male aphids during the summer months. All aphids are females that give birth to living young. The black on the corn plants is sooty mold growing on the honey-dew secretion of the aphids. This is also present on plants without aphids. This sooty mold will wash off with rain and the plants will look greatly improved.

Stress on the corn plant is all important. A drought during an aphid outbreak can be extremely serious. If plant roots are pruned for any reason (as by rootworms), the aphid damage will be greater than to plants with normal root systems.

In general, the aphid situation is not serious in most areas of adequate moisture, because the light to moderate infestations are not damaging. Some people become excited and refer to light or moderate infestations as "heavily loaded plants." A heavily loaded plant is one with the tassel plus several of the upper leaves literally coated with aphids.

This week, aphid populations decreased rapidly in fields already pollinated, and they started to decrease in fields that were pollinating. Fields in the late-whorl or early tassel stage should be observed carefully this week.

Treatment is justified on late-whorl-stage corn (a few tassels showing), if 50 percent or more of the plants have aphids (a few heavy) and if the corn is under stress (from low soil moisture, fertility, disease, etc.). Continue to watch the infestation as long as growing conditions are good; if 15 percent or more of the plants become heavily loaded with aphids, treat immediately.

Corn rootworm adults are increasing in abundance in cornfields, and there are more to come before emergence is complete. The tan or pale-green northern rootworms, the yellow and black-striped western ones, and the 12-spotted southern rootworms, all feed on silk. In most fields, pollination is complete and silk feeding is no longer important. We observed a few heavily infested fields of western rootworms (15 to 20 or more beetles per plant), where the adults were feeding on the silks as well as skeletonizing leaves and feeding on brace roots. In these fields, the root pruning by the larvae was so severe that some corn plants were dying. The western corn rootworm infestations appear to be most severe in fields of second-year corn, while northern corn rootworm infestations seem most severe in fields where corn has been planted for 3 or more years in succession.

In most fields, treatment with insecticides at this time will not be profitable. But in late fields, where pollination may still be affected by silk feeding, or in those where adults are extremely numerous and are damaging ear tips, treatment may still be justified. Treatment for adults is recommended only if there are 5 or more beetles per ear, and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be applied by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion; carbaryl has no waiting period. Sprays of malathion, methyl parathion, and diazinon will also control corn leaf aphids, while carbaryl will not.

Do not expect a single insecticide application for adult control to significantly reduce the number of larvae that will be present in the field next year. Migration of the adult beetles from adjacent fields and prolonged emergence will provide sufficient eggs to cause economic problems in 1969, if the field is planted to corn again. However, it is possible that two or more applications may kill enough adults now to reduce larval numbers next year.

European corn borer moths are now present in most areas. In north-central and northern Illinois, egg laying will not really be underway for several days yet; egg laying has just begun in central Illinois. First-generation populations were low in these areas. Severe second-generation damage is not expected.

However, many fields in south-central Illinois were infested by first-generation borers. Second-generation moths are numerous in this area, and egg laying will progress rapidly during the next 2 weeks. Many fields now in the late-whorl stage will be favored by the moths for egg laying. Watch such fields closely; some late-planted cornfields may be severely damaged.

If you find small worms in the whorls of 75 percent of these plants, an application of an insecticide will be justified. In the more-mature fields, count egg masses. If there is an average of 1 egg mass per plant, insecticide applications will be profitable. Apply insecticides at first egg hatch.

Use either 1-1/2 pounds of carbaryl (Sevin), or 1 pound of diazinon, as a granule or spray. On whorl-stage corn, aerial applications should be granules, not sprays. Aerial sprays on tasseled corn are effective. Allow 10 days to elapse before making ensilage or stover when using diazinon. Carbaryl has no waiting period.

Southwestern corn borer is abundant in bottomland fields of very late corn in the southern tip of Illinois. Now is the time to apply insecticides. If 25 percent of the whorls show feeding from this borer and small borers are found in the whorl, apply either 1 to 2 pounds of actual diazinon or 2 pounds of carbaryl (Sevin) per acre. If applying by air, use granules; they will roll into the whorls and get in behind the leaf sheaths. Some states also recommend EPN granules. With diazinon granules, wait 10 days before harvesting the crop. There is no time limit on the use of carbaryl. There is a 14-day waiting period when using EPN.

Corn flea beetles are extremely abundant in cornfields in the southern half of Illinois. Their feeding alone is not of importance, but they could be transmitting Stewart's disease or blight. This will appear as brown, dry, lower leaves within the next few weeks. Control of flea beetles now will not reduce the incidence of disease, so no control is recommended for flea beetles.

Fall armyworms are present in some late-maturing cornfields. The dull-green to brown, smooth-skinned worms feed in the whorl, leaving ragged holes in the leaves. Several plants in one area will be damaged, and there is usually only one worm per plant. The worms were about half grown this week in the south-central section. When mature, the worms drop to the ground and pupate in the soil. Unless the field is heavily infested (25 percent or more), treatment is not profitable. If the infestation is severe and the worms still present, carbaryl or toxaphene at 1-1/2 pounds per acre as granules will give control. Do not feed toxaphene-treated corn as forage to dairy cattle or to livestock fattening for slaughter. The corn grain may be fed.

Cattail caterpillars--orange-striped, brown and black, bristly worms--are present in some fields of corn. They feed along the leaf margins, chewing out large areas similar to grasshoppers. Seldom are they numerous, probably because a wasp parasitizes many of the worms and kills them. No control measures have yet been necessary.

Soybeans

Green cloverworms continue to be a problem in many soybean fields, particularly in the northern two-thirds of the state. All sizes of worms are present, but many of them still tiny. They strip the leaves--especially the newer, more-tender top leaves, but do not attack the pods or blossoms. Severely damaged fields take on a grayish to whitish cast. Damage is most severe if defoliation occurs when the pods are half filled. Most beans are now in the early pod-forming stage. A few parasitized worms were observed this week, but in general, the worm populations are healthy.

Treatment is justified if there are 6 or more worms per linear foot of drill row during the period of pod development. This is particularly true if 25 percent of the leaf surface has already been eaten. To determine the field average, shake the plants vigorously over the center of the row and count the worms in several places in the field. Use 1 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre to control this insect. Toxaphene is slow-acting, so wait about 4 days after spraying before judging its effectiveness. The beans should not be harvested for 21 days after spraying with toxaphene. Do not feed toxaphene-treated soybeans as forage to dairy animals or to livestock being fattened for slaughter. Carbaryl has no waiting period or feeding restrictions.

Potato leafhoppers are extremely abundant in soybeans. Damage may appear as browning of the leaf margins and stunted or misshapened appearance of the plants. Rarely is control recommended for these tiny, green, wedge-shaped insects. If damage has become noticeable, however, you may want to control them with malathion, carbaryl, or toxaphene. Control measures for green cloverworms will control these leafhoppers and will add to the benefits derived from cloverworm control. Do not feed toxaphene-treated soybeans as forage to livestock. Do not harvest malathion-treated soybeans for 3 days after treatment.

Stinkbugs are numerous in some soybean fields, particularly in southern sections. Find a large semielliptical green or brown insect that is shaped somewhat like a shield and smash it. The name indicates the way to identify the bug. These bugs will attack developing pods, sucking the sap from them with their long, stout beaks. They cause shrinking, dimpling, and underdevelopment of the beans; sometimes, pods without any beans. They are also capable of transmitting yeast spot disease. Most farmers usually do not become concerned about stinkbugs until harvest time, when beans are down-graded because of damage.

USDA research workers have found that an average of 1 stinkbug per yard of row will reduce the yield by 10 percent. If stinkbugs are numerous and control is needed, apply 1 pound of carbaryl (Sevin) or malathion per acre. When using malathion, allow 3 days to elapse between treatment and harvest.

Livestock Insects

Fly populations are high on untreated pastured cattle throughout the state. Blood-sucking flies, like the horn fly, are averaging between 300 to 500 per animal in the southern section, 100 to 200 in the central section, and 50 to 150 in the northern section. Stable flies are also present, with an average population of 12 per animal. Annoying flies, like the face fly, are highest in the area between route 460 and route 9, where 20 to 40 flies per animal are common. Runny eyes and problems with pink eye and conjuctivitis are noticeable where face flies are abundant. Young calves seem to suffer the most.

For dairy cattle, apply Ciodrin as a 2-percent oil or water-base spray, at 1 to 2 ounces per animal, two to four times per week. An automatic sprayer, a small, electric mist-type sprayer (not a fogger), or a hand sprayer can be used. Apply the spray over the entire animal, including the legs. Ciodrin is the most effective insecticide for face-fly control; it will also eliminate horn flies and reduce the number of stable flies.

For beef cattle, the use of an automatic sprayer with Ciodrin as suggested for dairy cattle should be considered. If this is impractical, use a 1-percent Ciodrin, water-diluted spray, at 1 to 2 pints per animal, as often as once a week if needed. Canvas or burlap head oilers and face or back oilers, saturated with a 5-percent toxaphene in oil solution, will provide some relief to cattle. Do not treat cattle under 4 months of age with toxaphene, and do not apply it within 28 days of slaughter.

WEED CONTROL

Where Treflan was applied to soybeans in 1967, we had several cases of injury to corn earlier in 1968. Some of the injury could be explained by excessive applications, particularly on field ends. In the majority of fields showing injury, soybean stubble was not plowed with a moldboard plow prior to planting corn. The

problem is not considered extremely serious, and much of the corn recovered surprisingly well. However, as an added precaution, it would be well to consider conventional plowing where fields treated with Treflan this year will be planted to corn next year.

If you used atrazine and oil in June this year, consider planting corn rather than soybeans in the field next year. Applying atrazine relatively late decreases the amount of time for herbicide decomposition and increases the possibility of damage to soybeans next year, especially if the soybeans are planted early.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

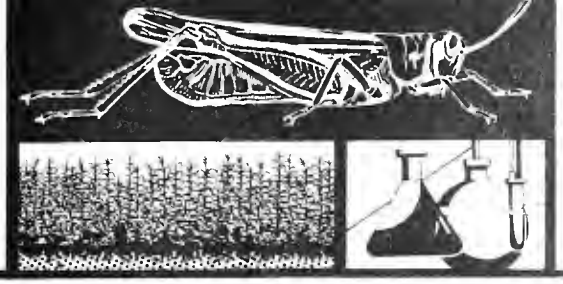
Weeds: Ellery Knake, Department of Agronomy.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

NOTE TO COUNTY EXTENSION ADVISERS

This year, we had corn rootworm control demonstrations in 7 counties. These 7 advisers applied several insecticides at planting time. We helped rate these plots. Several counties have asked about demonstration plots of standard recommendations for next year. We now plan to organize such plots. If you are interested in having one in your county in 1969, select possible fields now. Count the number of beetles per plant or per ear. Find several fields that have more than 10 beetles per plant. One of these may then be selected for next year, depending on the ease of obtaining harvest records, the evenness of field, availability, etc. Let us know your plans.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
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FOR IMMEDIATE RELEASE

August 9, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 22

This series of weekly bulletins provides a general look at the insect, plant disease, and weed situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own field to determine local conditions.

CORN INSECTS

Corn leaf aphid populations decreased rapidly this past week in fields where pollination is complete. Ocassionally, such fields still have a high number of aphids. Aphids can also be found in moderate to heavy numbers in late-maturing fields that are still in the late-whorl to early silk stage. Adult, winged aphids are especially common in these later-maturing fields, as they have migrated from the earlier maturing fields.

Treatment is justified on late-whorl-stage corn (a few tassels showing) if 50 percent or more of the plants have aphids (a few heavy) and if the corn is under stress (from low soil moisture, fertility, disease, etc.). Continue to watch the infestation as long as growing conditions are good; if 15 percent or more of the plants become heavily loaded with aphids, treat immediately.

Corn rootworm adults are abundant in many fields in the northern half of the state. The western corn rootworm was found for the first time in Kankakee County last week, and this week in LaSalle County. If you live in a county where western corn rootworms are not known to be present, take any specimens resembling this insect to your county Extension adviser in agriculture for identification.

In most fields, treatment with insecticides at this time will not be profitable. But in late fields (where pollination may still be affected by silk feeding) or in fields where adults are extremely numerous and are damaging ear tips, treatment may still be justified. Treatment for adults in late-maturing fields is recommended only if there are 5 or more beetles per ear, and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be applied by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion; carbaryl has no waiting period. Sprays of malathion, methyl parathion, and diazinon will also control corn leaf aphids, while carbaryl will not.

Do not expect a single insecticide application for adult control to significantly reduce the number of larvae that will be present in the field next year. Migration of the adult beetles from adjacent fields and prolonged emergence will provide

sufficient eggs to cause economic problems in 1969, if the field is planted to corn again. However, it is possible that two or more applications may kill enough adults now to reduce the number of larvae next year.

European corn borer moths seem to be abundant in some areas of north-central Illinois; this indicates a greater potential second-generation population than previously expected. In northern sections, about 70 percent of the second-generation moths had already emerged this week. Egg-laying will continue in the central section for another week or two, and in northern sections for another 2 to 3 weeks. Late-maturing fields should be checked for the presence of the borer eggs. An average of 1 egg mass or more per plant is sufficient to justify an insecticide treatment. Make the application at first egg hatch.

SOYBEAN INSECTS

Green cloverworms are being killed by a fungus disease and parasitic flies. Worms, dead from disease, are white to tan, and the body tissues are hard (mumified). High temperatures and humidities have provided ideal conditions for the spread and development of this disease and the sudden decline in worm numbers in some fields. The incidence of disease among the worms varies from field to field. In some fields, as high as 30 to 50 percent of the worms were affected. This should help reduce the threat of serious damage to late-maturing soybeans from the next generation of green cloverworms. In addition, many of the larger worms are nearly through feeding, and some have already pupated.

In most areas, populations are generally somewhat lower than they were a week ago; thus, fewer fields will require treatment. However, the situation still bears watching; the population of worms is still high in some fields.

Damage from these pests is most likely to occur from the late-blossom through the pod-development stage, when leaf destruction may result in decreased yields. Plants can usually stand losses of 25 percent or more of the leaf surface, even at this critical time. Therefore, do not worry about controlling these worms until about 25 percent of the leaf surface has been consumed and until, by several counts, you find 6 or more worms per foot of row. When the pods approach the filled stage, leaf loss is of much less importance; if late enough, this can be beneficial.

Reports indicate that 1-1/2 to 2 pounds of toxaphene per acre has not performed consistently well. Carbaryl, by report, has provided good control, but should not be used at more than 1 pound per acre, because high rates will damage beans. Malathion at 1 pound per acre has given good results in the few fields where it has been used. It has a shorter residual life than toxaphene and may not kill newly hatching worms more than a day or two after application.

Toxaphene may be used with greater bee safety than carbaryl or malathion. If bee yards are present in the vicinity, either use toxaphene or malathion. If you are using malathion, apply in the late afternoon, after bee activity has ceased.

Potato leafhoppers and plant bugs are also abundant in soybean fields. As you control cloverworms, you control these pests--adding to the benefit to yield.

Bee Poisoning (taken from the Cornell University Chemicals Pesticides Newsletter)

Bees are an essential part of our agriculture. Most bee poisoning occurs when pesticides are applied to crops while in bloom. However, some fields, though not in bloom, will have weeds in bloom and selection of the safest materials available should be made to keep poisoning to a minimum. Spraying in the evening or early morning will help.

Other hazards are:

1. Drift of toxic sprays or dusts on to adjoining crops which are in bloom
2. Contamination of flowering cover crops when orchards are sprayed
3. Bees coming into contact with insecticide residues on plants
4. Bees drinking or touching contaminated water on foliage or flowers
5. Bees collecting contaminated pollen or nectar
6. Bees collecting insecticidal dusts with pollen (arsenical materials and Sevin are especially dangerous because they may be stored with pollen in the hive and later fed to brood; hazardous amounts of insecticides have not been found in honey)

Cooperation between the beekeeper and the grower should be a major consideration in reducing bee poisoning. Try to work together to reduce the chances of poisoning. Remember that foraging bees may travel 1 or 1-1/2 miles. Do your part to reduce bee poisoning.

University of Illinois Circular 940, *Pesticides and Honey Bees*, is available at your Extension adviser's office.

HOMEOWNER INSECTS

Fall webworms are defoliating certain trees--especially birch, ash, and elm. These pale-green or yellow worms (with a dark stripe down the back and a yellow stripe along each side) spin a web over the ends of the branches and skeletonize the leaves inside. They continue to extend the web to take in fresh foliage. The damaged leaves curl, turn brown, and dry up.

A spray of carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of water, is effective.

Aphids are heavy on many kinds of trees, shrubs, and flowers. These small, soft-bodied, sucking insects (green, yellow, black, or red) secrete a sticky material called "honeydew." This sugary secretion coats leaves, making them glisten. Cars parked beneath infested trees become covered with sticky spots. Ants are often numerous on aphid-infested plants, where they feed on the aphid secretions. White specks are usually visible on the leaves; these are the cast-off skins of the aphids--not eggs. Leaves of heavily infested plants will curl, yellow, and eventually brown.

For control, spray the foliage thoroughly, using 2 teaspoons of 50- to 57-percent malathion or a 25-percent diazinon emulsion concentrate per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Sod webworm moths can be seen flying over lawns at dusk. They hide in tall grass and shrubbery during the day. These buff-colored moths of the second generation have been laying eggs for the past 2 or 3 weeks. If worms are going to be a problem, they should be causing damage soon. Brown, irregular spots in the lawn are an indication of damage. These gray worms (with brown spots and dark-brown heads) hide in the thatch and are difficult to find. Their silken-lined tunnels, their droppings, and the cut pieces of grass are more apparent.

If treatment becomes necessary, apply 2 pounds of actual carbaryl (Sevin), 1 pound of actual diazinon, or 1-1/4 pounds of actual trichlorfon (Dylox) per 10,000 square feet. Apply the amount of insecticide suggested in at least 25 gallons of water. Do not water for 3 days after treatment. Granular forms of the same insecticide can be applied from a fertilizer spreader in place of the spray.

Fleas often provide a not-so-welcome surprise when vacationers return home. The hungry horde of adult fleas have developed from eggs and larvae while the dog or cat were away. Flea eggs and larvae are difficult to find; they develop in rugs, upholstered furniture, lint deposits, beds where dogs and cats sleep, and even outdoors in the soil. The adult fleas emerge and spread throughout the house and yard in search of a warm-blooded animal. Fleas usually attack the lower parts of the legs on humans, leaving a series of 2, 3, and 4 punctures in a row in the skin.

For control, treat the dog or cat with a 4-percent malathion or 5-percent carbaryl (Sevin) dust. Pets serve as a walking lunch counter for fleas. In cases of severe infestations in homes, spray lightly over rugs, upholstered furniture, and other areas where fleas are present with 0.1-percent pyrethrum or 1-percent dichlorvos (DDVP) from a pressurized spray can. This will provide a quick kill of adult fleas. Repeat treatments may be needed, since the spray lasts for only a few hours. Apply the same dust material used on the dog or cat on their bedding or basket. Outdoors, dust or spray the infested areas with either malathion or carbaryl.

PLANT DISEASES

Corn

Stewarts leaf blight (bacteria) of corn is present in scattered fields of dent corn. Infections severe enough to cause yield reduction occur most frequently in southern Illinois. Severely blighted fields invariably have increased amounts of stalk rot late in the season.

Stewarts blight can be recognized by the long, irregular streaks in the leaves. At first, the streaks are light-green to yellow. Later, the tissue dies and turns brown. Several streaks may coalesce and kill the entire leaf. Careful examination of the streaks when the leaf is held to the light shows feeding injuries made by flea beetles. The injury appears as fine, irregular scratches. The disease is spread by the flea beetle. Control is obtained by using resistant varieties.

Northern corn-leaf blight and southern corn-leaf blight have been found in susceptible fields this week. Only trace amounts are present. These diseases are caused by fungi. Northern corn-leaf blight is characterized by elliptical lesions, that are typically 2 to 4 inches long by a half inch wide. Southern corn-leaf blight is characterized by lesions 1 inch or less in length by a quarter inch wide that have parallel sides. The color of lesions in both diseases is grayish green at first. Later as the tissue dies, they become tan. Northern corn-leaf blight occurs throughout Illinois. Southern corn-leaf blight is usually found in only the southern half of the state.

Both diseases are effectively controlled by using resistant hybrids.

Soybeans

Some soybean fields in southern Illinois have plants infected with bud blight. This virus disease usually appears at the margin of fields, especially when the soybeans are planted next to clover, alfalfa, or pastures.

Symptoms vary with the stage of development at which plants become infected. In young plants, the terminal bud turns brown and bends sharply downward forming a crook. The buds become dry and brittle. Leaves may be bronzed and the plants remain dwarfed. Plants infected near flowering time are somewhat dwarfed and produce few or no pods, or a few poorly filled pods. Infected plants usually remain green until killed by frost.

Phytophthora blight is more prevalent this year than it has been for several years. This is probably caused by the large acreage of susceptible soybean varieties planted and by the ideal conditions for infection by the phytophthora fungus. Plants may be killed at any stage of growth. The infected plants usually turn yellow, the leaves wilt and droop, and the plant dies. Usually, brown lesions can be found on the basal part of the stem of the large dead plants.

SEED TREATMENT OF WHEAT

The mercury seed treatment fungicides can be used on wheat planted this fall. Seed treatment of wheat is recommended for the control of seedling diseases caused by seed and soil-borne fungi that cause stand reductions, and for the control of stinking smut or bunt. Mercury seed-treatment fungicides will not control loose smut.

The best results have been obtained with seed that has been custom treated at elevators and at seed and feed houses. Satisfactory results can be obtained with drill box formulations of the mercury seed-treatment fungicides. The use of drill box mixing assures that only the seed that is planted is treated. TREATED SEED IS HIGHLY POISONOUS: IT MUST NOT BE USED FOR FOOD OR FEED. DO NOT PUT TREATED SEED IN GRAIN GOING TO MARKET.

The new systemic fungicide, Vitavax, used for smut control in small grains, will not be available for use on certified or market wheat seed this year. The Uni-Royal Company has requested label clearance for the use of this fungicide on foundation and registered seed only, and at this date, they have not been granted a label for such use. The company expects a decision from the Food and Drug Administration within a week. We will keep you informed on developments.

WEEDS

Where Banvel-D (dicamba) was sprayed postemergence on corn, we have had several reports of injury to nearby soybean fields. Soybean leaves become crinkled and cupped, and the top leaf buds do not open and expand normally but are somewhat clustered.

Corn has relatively good tolerance to Banvel-D, and this herbicide controls many of the same weeds as 2,4-D. One of the major differences is that Banvel-D usually gives better control of smartweed than does 2,4-D.

However, considering the number of cases where injury to nearby soybeans occurs from Banvel-D each year, we strongly suggest that other alternatives be explored for smartweed control. One of the best alternatives is Atrazine. Smartweeds are very susceptible to Atrazine--applied preplant, preemergence, or early postemergence. We have obtained excellent smartweed control on dark soils with rates of 1-1/4 pounds or more of Atrazine 80W.

Will yields be affected in fields now showing injury? Each field needs to be considered individually, since the degree of injury will vary. Slight cupping and crinkling of the leaves does not necessarily mean that there will be a yield reduction. Selecting several plants at random from both the affected and unaffected areas of the field and counting pods should give some indication of the seriousness of the problem before harvest. A comparison of yields at harvest provides one of your best means of appraisal.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

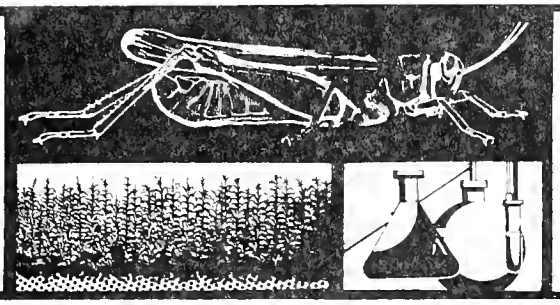
Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey.

Plant Diseases: M.P. Britton, Department of Plant Pathology.

Weeds: Ellery Knake, Department of Agronomy.

Ag Communications: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE August 16, 1968

ILLINOIS INSECT, DISEASE, AND WEED SURVEY BULLETIN NO. 23

This is the last issue of this series for 1968. We sincerely hope these 23 issues have been of help to you in the control of insect, plant disease, and weed control problems in your community. Next year, we will have a new masthead. If you have suggestions for an appropriate design, send us your ideas. We appreciate your help and cooperation.

CORN INSECTS

European corn borer is still a problem to canning companies that process sweet corn. As many as 100 egg masses per 100 stalks were still found this week in mid-season to late plantings. Adhere to insecticide schedules for such fields. Low populations of first-generation corn borers in early planted corn provide many moths. Second-generation borers could be a problem if these moths concentrate their egg-laying on sweet corn; but if they also deposit eggs on late-planted field corn, the pressure on sweet corn will be relieved to some degree. Overall, we do expect a noticeable infestation of second-generation corn borers in late corn in many areas of Illinois.

Corn rootworm adults can now be found readily in many cornfields throughout the state. The highest populations of beetles are still in the west, northwest, and northeast sections. However, it is not uncommon to find fields of corn where beetle populations average up to 10 per plant in central and eastern Illinois.

In general, it is now too late to control beetles to prevent pollination injury. Most fields have already pollinated. Treat late-maturing fields if there are 5 or more beetles per ear, and if not over 50 percent of the plants have silked. Use 1 pound of carbaryl (Sevin), diazinon, malathion, or 1/4 pound of methyl parathion per acre. Methyl parathion should be applied by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Diazinon will control corn leaf aphids, while carbaryl will not.

Do not expect a single insecticide application for adult control to significantly reduce the number of larvae that will be present in the field next year. Migration of the adult beetles from adjacent fields and prolonged emergence will provide sufficient eggs to cause economic problems in 1969, if the field is planted to corn again. However, it is possible that two or more applications may kill enough adults now to reduce the number of larvae next year. A random survey of cornfields is now underway in 22 counties--checking adult beetle populations, in order to better estimate possible damage in 1969.

For the next 4 weeks, examine silks and plants every week for the green, northern corn-rootworm beetles or the striped, western corn-rootworm beetles. You are most likely to find western rootworm beetles already in second-year cornfields, where they will lay eggs for next year's crop of rootworms. Northern rootworm beetles will be most common in fields where corn has been grown for two or more years successively. They will also migrate, and will occasionally be found this fall in fairly large numbers in first-year cornfields.

If you find no beetles, it is unlikely that you will have rootworm problems next year. If you find beetles, this does not necessarily mean you will have rootworm problems next year, but the odds are that you will. Egg laying is underway right now.

How many beetles should you find to predict problems next year? We do not know; but 1 per plant is a start, and 5 per plant can lead to serious problems. If you find this many, plan on using one of the phosphate or carbamate insecticides, because all rootworms in Illinois can now be considered resistant to aldrin or heptachlor.

If the western corn rootworms have not been reported from your county, please send suspicious-looking beetles to us. See your Extension adviser in agriculture for a list of counties where this pest has already been found. The western corn rootworm was found for the first time in Mason and Logan counties this week.

Corn leaf aphids are about as conspicuous now by their absence as they were by their presence a few weeks ago. Winged aphids have been migrating from infested fields as soon as they reached the dry-silk stage. Huge numbers of these winged aphids have infested the whorls of late corn, where some build-up of wingless offspring may occur. In general, however, the aphid problem is disappearing.

Fall armyworms are appearing in very late-planted corn that is just now in the whorl or very-early-tassel stage. These grey to brown worms can be found deep in the whorl. As the partially damaged leaves emerge, they are very ragged.

Damage is most common in patches or areas in the field; the female moth will deposit a cluster of several dozen eggs on one leaf. As they hatch, the tiny worms migrate or are blown onto adjacent plants--thus affecting several plants in the one spot.

Usually, yields are not seriously affected. Sometimes, however, these worms enter the ear and stalk. They are damaging if they feed extensively in ears. Although this is usually not the case, it can occur.

Control is difficult, since the worms are either deep in the whorl or in the ear before they are discovered. Carbaryl (Sevin) or toxaphene granules will help control them in the whorls; carbaryl sprays will help prevent ear infestations, but will not control the worms after they are deep in the ear.

SOYBEAN INSECTS

Green cloverworm populations continue to decline. The fungus disease that has killed them apparently is now widespread in the state, and the worms have disappeared rapidly. Beans should soon mature enough that reinfestation would not seriously affect yields.

Leafhoppers disappeared almost as rapidly as the cloverworms. They are very scarce now, even though they were quite abundant in soybean fields a few weeks ago.

Grasshoppers are abundant in some roadsides, ditches, fencerows, and grass waterways. In some instances, they have started to migrate into stands of corn, soybeans, and hay. If large numbers have been observed and are causing damage (especially to soybean pods), they can be controlled with 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre. This would apply to cornfields, soybean fields, and fencerows. In clover and alfalfa fields, use either 3/4 pound of carbaryl, 1/2 pound of diazinon, 1 pound of malathion, or 3/4 pound of naled (Dibrom) per acre.

Do not feed soybean forage treated with toxaphene to dairy animals, or to livestock fattening for slaughter. Do not make more than two applications after pods begin to form.

Treat while the 'hoppers are small and before damage is severe.

WHEAT INSECTS

Hessian fly populations are at the lowest level in 10 years, but they could build up rapidly if the weather and farm practices during the next year favor their survival. To keep this pest at its present low level, destroy all volunteer wheat by mid-September. In this way, the adult flies that emerge in late September or early October will have no wheat on which to deposit eggs. Also, seed a resistant variety of wheat. Soft wheats (such as Knox 62 and Benhur) or hard wheat (such as Gage, Scout, Scout 66, and Parker) are suggested by the University of Illinois Agronomy Department as resistant varieties.

If you seed a Hessian fly-susceptible wheat, observe the date recommended for optimum yields for your community. Even when seeding a resistant variety, it is best to observe the "fly-free" dates.

HOMEOWNER INSECTS

Crickets often migrate considerable distances at this time of year. They feed on vegetation in uncultivated areas during the summer. Ordinarily, their food supply (in pastures, fencerows, ditch banks, and other grassy areas) dries up in late August or early September. This food shortage--added to their instinctive desire to migrate--results in huge swarms, often suddenly appearing around lights at night. A chlordane spray around the house foundation, the doorways, and the outdoor lights of the home will help reduce the number of these invaders that get into the house.

Leafhoppers (wedge-shaped, dark green insects about 1/4-inch long) also appear in great numbers around lights. As with crickets, these insects have been developing all summer; as they mature and their food dries up, they have the urge to migrate. Chlordane sprays will also be helpful here.

Foundation sprays of 1-percent chlordane in water will help to control the leafhoppers and crickets, as well as ants, spiders, and roaches that will be migrating into homes this fall. Use emulsifiable concentrate, and dilute with water to a 1-percent strength. Spray the foundation of the house to runoff, as well as a 4-inch strip of soil alongside the foundation. Spray around doorways and lights. If you plan to spray only the house foundation, use a 2-percent chlordane solution.

If millipedes (thousand-legged pests) are a problem, use carbaryl (Sevin) around the foundation and out into the yard for several feet.

PLANT DISEASES

Reportedly, the Vitavax label for the treatment of foundation and registered barley and wheat seed has been approved and is effective for use this week. Official confirmation is expected shortly.

WEEDS

This has been a bad weed year; the weather has favored the weeds. Despite this handicap, weed control has been very good. The first killing frost is just around the corner, and it will kill the weeds that were missed this summer. But they have shed seeds for a next year's crop. Watch during harvest for the weedy spots. This will indicate where and what to expect next year.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

It has been a privilege of the following people to prepare these weekly reports:

Insects: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture and Illinois Natural History Survey; and E.R. Jaycox, Department of Horticulture.

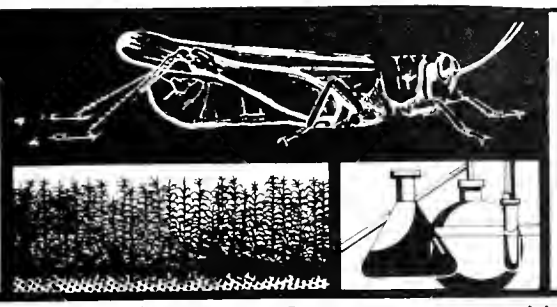
Plant Diseases: M.P. Britton and M.C. Shurtleff, Department of Plant Pathology, University of Illinois College of Agriculture; and Donald Schoeneweiss and J.L. Forsberg, Illinois Natural History Survey.

Weeds: Ellery Knake and Marshal McGlamery, Department of Agronomy; H.J. Hopen and J.D. Butler, Department of Horticulture, University of Illinois College of Agriculture; and Robert Hiltibran, Illinois Natural History Survey.

Equipment: J.C. Siemens, Department of Agricultural Engineering.

Ag Communications: Del Dahl.

The information for these reports was gathered by these people, other staff members, county Extension advisers, USDA Agricultural Research Service, Plant Pest Control Branch personnel and other cooperators.



INSECT SURVEY BULLETIN

College of Agriculture
University of Illinois
and Natural History Survey, Urbana, Illinois

COOPERATIVE EXTENSION SERVICE UNIVERSITY OF ILLINOIS

ate / County / Local Groups / U. S. Department of Agriculture Cooperating

FOR IMMEDIATE RELEASE

November, 1968

Illinois Insect, Disease, and Weed Survey Bulletin No. 24

SPECIAL ISSUE

INSECTICIDE RECOMMENDATIONS

We receive many inquiries about changes in recommendations during the fall of each year, but prior to the publication of printed circulars. We are sending you these Tentative Special Suggestions and Major Changes for 1969 to help answer your "early" questions. Caution statements, time limitations between application and harvest, and other precautions are not included. These tentative suggestions will appear in final form in the University of Illinois College of Agriculture Circular 899, which will be sent to the printers by November 25, 1968. These statements have been reviewed by entomologists of the Illinois Natural History Survey and the University of Illinois College of Agriculture, and were prepared by H.B. Petty, Steve Moore, Roscoe Randell, and Don Kuhlman from information gathered by entomologists in Illinois and the USDA Agricultural Research Service.

Dairy Farms

As in the past, dairy farmers are cautioned against the use of the chlorinated hydrocarbon insecticides--aldrin, chlordane, dieldrin, DDT, endrin, heptachlor, or lindane--to avoid the possibility of illegal residues in milk.

Because of possible drift, do not apply sprays or dusts of aldrin, DDT, chlordane, dieldrin, heptachlor, or lindane to fields adjacent to dairy hay, pasture, or ensilage crops.

Soybean Farms

On the basis of research and the results of random surveys of Illinois soybeans, we suggest to Illinois soybean producers the following limitations on the use of certain insecticides in 1969:

1. Do not use the soil insecticides aldrin, chlordane, dieldrin, endrin, heptachlor, or lindane as a soil or foliar treatment for soybeans.

2. At present, if either aldrin or heptachlor have been applied annually in a field for 5 or more years, allow 2 years to elapse from the date of the last application before planting soybeans. Thus, if aldrin or heptachlor was applied to a field from 1964 through 1968, do not apply aldrin or heptachlor in 1969; do not grow soybeans in this field until 1970. If corn is grown, use one of the suggestions for rootworms listed on page 2.

3. For the common Illinois rotation (which includes soybeans, corn, and grains), continue to plant soybeans as you have in the past. The future of this suggestion depends on research and survey data.

CORN SOIL INSECT SITUATION

Western corn rootworms: In 1968 they were found, with the exception of 8 counties, throughout the area of Illinois north of a line from Pittsfield (Pike County), to Lincoln (Logan County), to Kankakee (Kankakee County). In 1969, they may spread to most of the counties north of a line from St. Louis to Danville. In Mercer and adjoining counties, many second-year cornfields were damaged in 1968; in 1969, many fields of second-year corn will be severely damaged in the area north and west of a line from Dixon to Peoria to Stronghurst (Highway 116), and extended to the state boundaries. Second-year cornfields will be damaged more than others, but not all of them will be severely affected.

All western corn rootworms in Illinois are resistant to the commonly used soil insecticides aldrin and heptachlor; they will no longer control this insect.

The northern corn rootworm, although found throughout Illinois, is most abundant north of Highway 36 (Pittsfield to Springfield to Decatur), and is often a pest in fields if corn is grown for 3 or more years continuously in the same field. Under some conditions, we have seen second-year corn damaged by northern corn rootworms. Although it is not common, this does occur.

Even though northern rootworms are not a general pest south of this line (Pittsfield to Springfield to Decatur), they do damage corn severely in central localized areas, such as bottomland, where corn is grown as a continuous crop.

Northern corn rootworm populations increased in 1968. Despite this, weather conditions favored root regrowth, and many fields were able to recuperate from severe root pruning and produce a good yield. Therefore, damage was less apparent in 1968 than in 1967. The population of corn rootworm beetles was greater in August, 1968, than in either 1966 or 1967. Thus, the threat of damage is greater for 1969. To further complicate matters for 1969, resistance to aldrin and heptachlor has increased to such a degree that these two insecticides no longer give practical control of northern corn rootworms in the majority of cornfields.

Seed-corn beetles eat the seed and chew off the sprout during germination. There were a lot of these pests this past year. Quite often, aldrin, dieldrin, heptachlor, and lindane soil or seed treatments failed to control them. Seed-corn maggots hollow the seeds prior to their germination. In at least two instances, resistance to aldrin, chlordane, dieldrin, heptachlor, and lindane were confirmed.

In 1968, attacks by these two seed pests reduced stands from a few hundred plants per acre in some fields to as many as several thousand plants per acre in others.

Wireworms, cutworms, white grubs, grape colaspis, and others are still controlled by the use of aldrin or heptachlor, even though these chemicals can no longer be relied on to control rootworms, seed-corn beetles, and seed-corn maggots.

CONTROL OF RESISTANT ROOTWORMS, RESISTANT SEED INSECTS, AND GARDEN SYMPHYLANS

A crop rotation may be the easiest method for controlling resistant corn rootworms. To hold populations of northern corn rootworms at low levels, do not grow corn for more than 2 years successively in any rotation. In western corn rootworm areas,

rotations involving only 1 year of corn may be required. However, the resistant strain of northern corn rootworms may become a problem on second-year corn, much as the western corn rootworms are now.

In addition to crop rotation, early planting may help minimize root damage by corn rootworm larvae and pollination damage by the adults. However, early planting may increase corn borer problems.

Although several insecticides are labeled for corn rootworm control entomologists of the University of Illinois Cooperative Extension Service and the Illinois Natural History Survey suggest the following materials for the most-effective control of rootworm in Illinois. These rates are based on row length, not width.

For Planting Application

Furadan (if label approval is granted)	.1 pound per acre
Buxten	.1 pound per acre
Dasanit	.1 pound per acre
Dyfonate	.1 pound per acre
Phorate	.1 pound per acre

These materials were used in Illinois in 1968 at the rates shown. To reduce costs, lower rates of application have been suggested. Lower rates will likely reduce effectiveness, particularly with heavy infestations.

For Basal Application in June

Diazinon	.1 pound per acre
Disulfoton	.1 pound per acre
Parathion	.1 pound per acre
Phorate	.1 pound per acre
Carbaryl	.2 pounds per acre

Many of the registered organic-phosphate insecticides--and carbamate insecticides when applied at planting time--kill only 40 to 75 percent of the rootworms. With light infestations of corn rootworms, this provides practical control; although not as effective on early planted corn as on that planted later, they still did an acceptable job in Illinois during 1968. However, in fields with moderate-to-heavy infestations, the more-effective insecticides are needed to give a practical degree of control.

Applications of insecticides approved for use during cultivation in late May to mid-June are equally effective. The insecticide is directed at the base of the plant; for best results, there should be some soil cover. These basal applications can be made when convenient. But to avoid bad weather, do not wait until the last minute.

The insecticides listed for rootworm control at planting may be adversely affected by heavy rainfall. The control of corn rootworm may be less effective when these insecticides are applied to early rather than later-planted corn, because of exposure to greater amounts of rainfall.

Extreme drought conditions may also decrease the effectiveness of the insecticide. This could be particularly important in the use of basal applications to control rootworms. For this reason, late May to mid-June applications are encouraged, in order to take advantage of normal rainfall patterns.

Resistant seed-corn beetles and maggots were controlled by planting applications of Dasanit, diazinon, dyfonate, Furadan, and phorate. We have no data on seed-beetle control by the use of planter applications of carbaryl, disulfoton, and parathion.

In a few fields in central Illinois, an experimental application of 3 ounces of 50-percent diazinon wettable powder plus 1-1/2 ounces of graphite per bushel of seed just prior to planting gave excellent seed-corn beetle control. Resistant seed-corn maggots have been controlled with as little as 1/2 ounce of diazinon per bushel of seed in Canada. The rate of diazinon to be used per bushel of seed has not been thoroughly established for seed-corn beetle and seed-corn maggot control in Illinois. It is possible that 1 ounce per bushel of the actual diazinon may provide excellent control.

If combinations of diazinon and other insecticides are used as seed treatments, follow the manufacturer's directions to avoid possible germination injury. In using a seed treatment, empty and clean the planter often. This will avoid any accumulation of excess powder in the bottom of the planter box, which could interfere with seeding rates.

To further confuse the soil-insect problem in Illinois cornfields, the garden symphylan (a tiny, white, rapidly-moving, centipede-like pest) appeared in many Illinois cornfields. It feeds on corn roots. Small areas in a field may be generally stunted, or one plant may be knee-high while an adjoining plant may be shoulder-high. These stunted plants do not produce normally. Of the insecticides mentioned for rootworm control, only dyfonate seems to be effective in controlling this pest. Effective control using zinophos and parathion has been reported by some states.

CONDENSED SOIL INSECTICIDE SUGGESTED USES

In 1969, suggestions for maximum soil-insect control in Illinois cornfields must be based on individual situations. We have attempted to list them below:

1. First-year corn, or any corn in areas where rootworms are no problem:

   On nondairy farms:

   Use diazinon as a seed treatment to control resistant seed-corn beetles and seed-corn maggots. If cutworms, wireworms, white grubs, grape colaspis, and others are usually a problem, broadcast and disk-in 1-1/2 pounds of aldrin or heptachlor per acre prior to planting. Row treatments of 1 pound per acre can be used, but will be less effective.

   On dairy farms:

   If soil insects have been a problem, apply 1 to 1-1/2 pounds of diazinon, or 1 pound of Dasanit, dyfonate, or phorate at planting time in a 7-inch band to the surface of the soil ahead of the press wheel. If you do not do this, at least as a minimum, use a diazinon seed-treatment. If you suspect that garden symphylans are present, use dyfonate at planting time.

2. Fields that have been in corn for 2 or more years in an area of severe western corn rootworm infestation (west and north of a line from Dixon to Peoria to Stronghurst):

   Use Furadan, Buxten, Dasanit, dyfonate, or phorate at 1 pound per acre at planting time, or apply 1 pound of diazinon, disulfoton, parathion, phorate, or carbaryl as a basal application. When using Buxten at planting time or any basal application with no planting-time application, use a diazinon seed-treatment at planting time.

3. Fields in corn for 3 or more years in the area where western rootworms are not a problem but where northern corn rootworms are a problem: Apply the same controls listed in No. 2.

SOYBEAN INSECTICIDE SUGGESTIONS

Green cloverworm: We will tentatively drop toxaphene and add malathion at 1 pound per acre.

Caution: Carbaryl used at more than 1 pound per acre has injured soybeans.

SUGGESTED INSECTICIDE CHANGES FOR INSECT CONTROL ON LIVESTOCK AND IN LIVESTOCK BARNS FOR 1969

Additions to Current Suggestions

1. Ciodrin (1.0-percent water, 1 pint per animal per week) for face flies on pastured beef and dairy cattle.

2. Ruelene (crufomate) emulsion, 2 cc. per 10 pounds of body weight, as a drench for sheep-nose bot control.

3. Toxaphene (0.5-percent water base) for mange control on beef cattle and swine.

4. Ciodrin for mange control on dairy cattle.

5. Rabon (SD 8447) as a residual barn spray for house flies.

Deletions to Current Suggestions

1. Rotenone for cattle-lice control on dairy cattle.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

OR IMMEDIATE RELEASE No. 1, March 28, 1969

is series of weekly bulletins provides a general look at the insect, weed, and plant sease situation (fruit and commercial vegetables excepted), along with suggested, ab- eviated control measures. Each individual should check his own fields to determine cal conditions.

INSECTS

rage Insects

falfa weevil development slowed this week due to the cold, wet weather. An average of larvae per square foot were found in the extreme southern counties. The worms are still all, more yellowish than green, and hidden in terminal leaf buds. Some tips are showing eding but no damage has yet occurred. A week to ten days of warm weather would cause a dden hatch of many new larvae, resulting in the need for treatment in some fields. The rst insecticide applications will probably not be needed in the extreme southern counties til the week of April 6 or later, depending on the weather. Cool weather will prolong g laying and hatch, allow the alfalfa to grow, and lessen the amount of injury.

is spring, the alfalfa weevil has the potential of inflicting severe damage to fields of falfa south of a line from Watseka to Hardin. Damage could be noticeable. Some treat- nts could be needed in alfalfa fields in the area north of this line as well.

you intend to protect your alfalfa from weevil attack, begin to make preparations now. an to apply an insecticide when 25 percent of the terminals show noticeable feeding and rvae are still present. A second application may be needed about 2 or 3 weeks later as re larvae hatch. Even a third spraying might be needed in some southern areas to com- etely protect the first cutting and new growth of the second cutting.

e insecticide recommendations are:

Experienced commercial applicators who have the proper protective clothing will get the best results with methyl parathion applied at 1/2 pound per acre, or a special alfalfa weevil spray of azinphosmethyl (Guthion) at 1/2 pound per acre. Azinphos-methyl can be applied only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl.

The person not properly equipped with protective clothing to use methyl parathion or azinphosmethyl can use a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre (3 pints of a concentrate containing 2 pounds of methoxychlor and 2 pounds of malathion per gallon), or a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre (2-1/2 to 3 quarts of the commercially prepared mixture Alfatox). You may also use 1-1/4 pounds of malathion per acre (1 quart of the 5-pounds-per-gallon concentrate) in the morning on days when the air temperature will be above 60° F. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The quantity of finished spray applied per acre is also important. Use no less than 4 gallons per acre by air or 20 gallons per acre by ground machine.

Clover-leaf weevil larvae, which can be confused with alfalfa weevil, are also present in both alfalfa and clover fields. Clover-leaf weevils are large, pale-green larvae with white stripes down their back and a tan or brown head; the alfalfa weevil has a black head. Clover-leaf weevils feed mainly at night, hiding down around the base of the plant during the day; alfalfa weevils are found feeding in the terminals during the day. Warm, humid weather enhances the spread of a fungus disease that kills clover-leaf weevils. Parasites also help control them. Clover and alfalfa stands can usually grow away from the damage; however, if damage becomes severe and growth is slow, a spray of 1 pound of malathion per acre is effective. This will also control pea aphids, a few of which are now present in southern sections.

CORN INSECTS

European corn borer survival this past winter was normal or above in the northern, western and west-southwestern sections of the state, as shown by a recent survey. A similar surve will be conducted in other areas within the next few weeks. The following survival record were obtained:

County	Percent survival of corn borer
Greene	82
Henderson	76
JoDaviess	76
Knox	62
LaSalle	76
Livingston	88
Macoupin	84
Madison	68
Winnebago	80
Average.	77

A figure of 70 to 80 percent is considered a normal survival level--above 80 is high, and under 70 is below normal. Statewide, the borer population is higher than it has been since 1955, and it presents a potentially serious problem. The incidence of parasites and diseases among borers is low, so borers are healthy. However, strong winds or beating rains in late May (southern sections) and June (central and northern sections), when the overwintering moths are emerging, could still eliminate much of the problem.

Plow cornstalks cleanly and you will eliminate 99 percent of the overwintering borers. Stalk choppers or shredders should be used on stalk fields that are not plowed, or else disk them thoroughly. This will eliminate about 92 percent of the overwintering borers.

Plant hybrids that are adapted to your area. If you plant your corn early, plan on applying an insecticide to prevent corn borer damage. Midseason plantings of corn will have less injury from both first- and second-generation corn borer.

HOMEOWNER INSECTS

Scale insects are present on many kinds of trees and shrubs--lilac, dogwood, Euonymus, tulip, spruce, elm, etc. The scales are in the egg stage beneath the old body-covering of the female scale. Examine the branches of trees and shrubs in your yard for the presence of scales.

A dormant oil spray will help control San Jose, Putnam, and tulip tree scales and overwintering red mite eggs. Purchase a dormant oil and mix it with water, according to manufacturers' directions on the label. Do not apply when temperatures are below 40° F. or if new growth is present. Do not use on evergreens. For later treatments to control scales, apply a malathion water-base spray. Time the treatments at peak hatch when the scales are in the crawler stage. This will vary with the type of scale and the location in the state.

Spring cankerworms, dark-brown to dark-green measuring worms, will be feeding soon on trees like American elm and apple as well as other fruit and shade trees. They attack early, feeding on developing leaf buds and newly developing leaves. Sometimes they completely strip a tree of foliage while other trees are only partly defoliated. When full-grown, the worms drop to the ground by means of silken threads that appear like streamers in the wind. By this time, it is usually too late for control.

Use either carbaryl (Sevin) with 2 pounds of 50-percent wettable powder or lead arsenate with 4 pounds in 100 gallons of water.

You can control soil insects in your vegetable garden by applying diazinon at 1 ounce per 1,000 square feet before planting. To do this, mix 1/4-pint (4 fluid ounces) of 25-percent diazinon liquid concentrate in enough water (usually 2 to 3 gallons) to cover 1,000 square feet, then rake into the soil.

Flies are becoming a nuisance again in many homes. These are mainly cluster flies, but face flies, flesh flies, and bottle flies are also present. They have overwintered in the partitions and other recesses within the home. On warm, sunny days they become active. Those that are unable to get outdoors end up indoors, usually congregating around windows.

The best control is provided by using 20-percent dichlorvos (DDVP) resin strips. Place these strips in attics, basements, and other fly-infested rooms. One strip per 1,000 cubic feet (about one per average-size room) is effective for about 6 weeks. As an added precaution, hang the strips out-of-reach of children and away from fish bowls or food counters. An 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) space spray, applied from a pressurized spray can, can be used for quick knockdown in place of the dichlorvos resin strips. Apply for 15 to 20 seconds in an average-size room. Frequent treatments will be needed during problem periods. Remove all birds, fish, and other pets before making the application.

WEEDS

Treat Musk Thistle In April

Several areas of Illinois have a new weed called "musk" or "nodding thistle." The thistle thrives in pasture land and other noncultivated areas.

Musk thistle is a biennial, requiring two years from seedling to seed. The first year, a basal rosette of coarsely lobed, spiny leaves forms. During the second year, the flower and seed head develop. Infestations may not be noticed until the second year; it is then that the plants produce their tall, upright flower stalks--usually during May. Unfortunately, it is too late for the most effective control by that time.

April is the best time to treat musk thistle. The weed is still in the rosette stage, and the musk thistle is quite susceptible to 2,4-D. But, the plant builds up a tolerance to 2,4-D after the flower stalk forms. Also, control is usually better when the temperature is above 75° F. and when the plant is growing actively.

Apply 2,4-D at the rate of 1 to 1-1/2 quarts per acre of the 4-pounds-per-gallon formulation in 20 or more gallons of water. Use the low-volatile ester form. Remember that April treatments are much more effective than later treatments. Do not graze dairy cattle for seven days after the 2,4-D treatment.

For spot treatments, put 1 quart of the same 2,4-D mixture in 25 gallons of water and spray until the plant is moist. Adding one cup of household detergent to the 25 gallons of water will increase the effectiveness.

NEW NAMES FOR HERBICIDES

This season has brought several name changes to herbicide users. To help limit some of the confusion, here they are:

1. "Swat" is the new name for the Sutan-atrazine combination.

2. Geigy's new names for atrazine and simazine are "Aatrex" and "Princep."

3. Alanap + CIPC has these new names: Whistle (Kaiser); Amoco Soybean Herbicide (American Oil); and Alanap Plus (Uniroyal).

PLANT DISEASES

Oat Seed Treatment

Proper treatment with a mercury fungicide (such as Ceresan, Chipcote, Ortho LM, or Panogen) is cheap insurance for improving stands and grain quality, and also for getting higher yields. Income from oats can be increased as much as $5 per acre with a seed treatment that costs only a few pennies. Oat diseases controlled by mercury seed treatment include loose and covered smuts, bacterial blights, Helminthosporium leaf blotch, scab, seed-borne root rots, Fusarium blight, seed decay, and seedling blights. New races of the smut fungi are causing more loose and covered smuts both in Illinois.

It is difficult for many farmers to get oat seed treated commercially. Two products are now available for safe and effective hopper- or drill-box treatments. These are Ceresan M-DB and Panogen PX. Follow the manufacturer's directions carefully. Warning: Treated seed should not be used for feed or food. Even one kernel may cause an entire carload to be condemned and destroyed. For more details, ask your Extension adviser for *Report on Plant Diseases, No. 1001 (Revised).*

Pruning--Disease Control and Tool Disinfectants

It's pruning time. Orchardists, nurserymen, arborists, and homeowners are pruning for at least one of these reasons: to improve shape and form; to make spraying and dusting easier; to increase fruit quality and yield; to eliminate rubbing, dead, weak, and overcrowded branches; or to control disease.

When cankers, fire blight, wood decay, crown gall, or other infectious diseases are known or suspected, pruning tools should be disinfected between cuts or between trees. Cheap disinfectants you can use to dip or swab pruning tools include 70- or 95-percent rubbing alcohol and liquid household bleach (Clorox, Purex, Sunny Sol), diluted 1 to 5 with water After using bleach, the tools should be thoroughly washed with water.

Tree wounds more than 1 to 2 inches in diameter should be promptly covered with a permanent-type wound dressing or pruning paint, to prevent the entry of disease-causing organisms.

USE DISEASE-RESISTANT, CERTIFIED SEED

When ordering field crop, vegetable, flower, or other seed, select adapted varieties and cultivars recommended for your area that are both disease-resistant and certified. You can get information on field crops from the Department of Agronomy and the Illinois Crop Improvement Association in Urbana. By checking through seed and nursery catalogs and various Cooperative Extension Service circulars and other printed matter, you can find what you want to know about vegetable, flower, and other types of seed.

Many improved varieties are resistant to one or more diseases. One way to get disease-free seed is to insist on certified seed. You can't tell by looking at a seed whether it's infected. The disease-producing organisms may be dormant or microscopic. They are often located under the seed coat.

Most certified vegetable seed, and much of our flower seed, is produced under strict growing conditions in arid regions in the Pacific Northwest. You may pay a little more for certified seed, but you won't be taking the chance of increasing losses from seed-borne diseases.

LAWN RENOVATION AND DISEASE CONTROL

If your lawn is thick with a heavy mat or thatch of dead, choking grass, and if the grass is beginning to green-up, this is a good time to renovate the lawn and reduce future disease problems. "Vertical" mowers or dethatching machines are available from most garden-supply and rental-equipment centers. It is not unusual to remove two or more truckloads of dead grass from an established home lawn. Removal helps the grass to grow and reduces future losses from leaf spot and melting-out, Rhizoctonia brown patch, Schlerotinia dollar spot, Fusarium blight, and snow molds. Removing the clippings, especially if they are long, also reduces disease losses.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

PLANT DISEASES: M.C. Shurtleff, Department of Plant Pathology

WEEDS: Marshal McGlamery, Department of Agronomy

AG COMMUNICATIONS: Del Dahl

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

Special Note to Pesticide Dealers and Applicators: The first of a series of field training meetings will be held for pesticide dealers and applicators on Wednesday, April 2, in Johnson County. We will meet at Mr. Bob Wetherell's office (Johnson County Extension Adviser), 19 Court Street, Vienna, Illinois, at 1:30 p.m. and go to the field for about 2 hours. These meetings are to help you brush-up on trouble-shooting techniques concerning insect and plant-disease problems. The insect portion of the meeting will cover alfalfa weevil, clover-leaf weevil, pea aphids, and corn-borer development. In case of rain, we'll have specimens along and will meet in the Extension adviser's office. The following week on Tuesday, April 8, a similar meeting will be held in Randolph County with Mr. Charles Willman, Extension Adviser, at South St. Louis and Belmont Streets, in Sparta, Illinois. The meeting time, again, is 1:30 p.m. Announcements about the dates and locations for future meetings will be carried in this bulletin.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 2, April 5, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevil development continues to be slow. It now appears that no insecticide treatments will be needed in extreme southern Illinois until at least the week of April 13. Small larvae are generally present; an average of 33 larvae and 100 eggs per square foot were observed again this week. Feeding by these tiny worms is hardly noticeable, but it will become more apparent with warmer weather.

Further north, the hatch has been delayed and only an occasional small worm is present. Continued cool weather may retard weevil development but may permit the alfalfa to grow. This would reduce the number of sprays needed to protect the alfalfa. But as soon as 25 percent of the terminals show feeding, apply an insecticide unless the field is to be harvested within a week to 10 days.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

Clover leaf weevils resemble alfalfa weevil, but feed at night and hide in ground debris during the day. Inspect red clover fields that have a heavy straw or mat covering. Slow-growing plants may be injured by this worm. The leaves will be devoured and the plants will look unthrifty--often with almost no leaves. Although warm, humid weather favors a disease that will kill these worms, severe problems could develop if the cool weather continues for any extended period.

Clover can usually grow away from the damage. If the damage becomes severe and growth is slow, a spray of 1 pound of malathion per acre is effective. This will also control pea aphids, a few of which are now present in southern sections.

CORN

European corn borer survival has been quite high in Illinois this winter. Several county Extension advisers report survival ranges of 70 to 90 percent, with the highest ones in northern and southern Illinois. It now appears that weather and farm practices may well determine the extent of the corn borer problem this summer.

Plow corn stalks cleanly. If they are not plowed, then disk or shred the stalks thoroughly to provide some help in killing these overwintering borers. Plant adapted hybrids. Since the earlier, more-mature corn in late June and early July is most susceptible to damage by first-generation corn borer, farmers who plant early should be prepared to use insecticides for control.

For corn seed beetles and maggots, the extent of resistance to aldrin and heptachlor still poses a problem. These two pests can reduce stands as they eat out the heart of the seed or cut the small sprouts. We suggest that those using aldrin or heptachlor as a soil treatment should also use diazinon as a seed treatment. However, when using planter-box seed treatments, empty the planter boxes frequently to prevent buildup on the plates or the accumulation of excess dust in the planter boxes. Either one can reduce seeding rates. Use no less than 4 ounces of 25-percent or 3 ounces of 33.3-percent diazinon seed treatment per bushel of seed. Two ounces of 25-percent (or less) diazinon will probably not be sufficient to control these seed pests, particularly the corn seed beetles.

HOME GARDEN

Soil insects: Some home gardeners still apply such insecticides as aldrin, heptachlor, dieldrin, or others to the garden and work it into the soil before planting. However, the rates they use are often dangerously high. To avoid problems, we recommend the use of diazinon at 1 ounce of the actual chemical to 1,000 square feet (an area 25 by 40 feet). This is 1/4 pint of 25-percent concentrate in enough water to cover the area. Rake it into the soil immediately.

WEEDS

FORAGE CROPS

Eptam (EPTC) can be incorporated before planting alfalfa, lespedeza, and birdsfoot trefoil to control annual grasses--when the legumes are sown without a companion crop and without grasses in the mixture. Apply 3 pounds (a half gallon) of the herbicide and immediately mix to a depth of about 2 inches by disking before seeding the legume. Do not graze or feed treated legumes for 60 days after treatment.

Balan can be used in a similar manner. Balan is approved for alfalfa, birdsfoot trefoil, red, alsike, and ladino clovers.

2,4-DB may be used to control broadleaved weeds (wild mustard, pigweed, and lambsquarter) in new seedings of alfalfa, red clover, ladino clover, alsike clover, or birdsfoot trefoil when seeded alone or with oats, wheat, or barley. Apply 1/2 to 1-1/2 pounds of 2,4-DB amine per acre or 1/2 to 3/4 pounds of ester, when the weeds are less than 3 inches high. No portion of a treated crop should be fed to livestock within 30 days of application. 2,4-DB may also be used in established forages.

Dowpon (Dalapon) has been used successfully to kill young grass seedlings in seedling stands of alfalfa and birdsfoot trefoil that are not seeded with small grain or grasses. Use 2 to 3 pounds of the commercial preparation per acre, when weed grasses have about

leaves and legumes are 2 to 3 inches high. Forage from the treated area must not be fed ɔ dairy animals or to animals being finished for slaughter. The first-year crop should ɔt be sold commercially or shipped interstate.

ıALL GRAINS

ıeck winter wheat now to determine the need for chemical weed control. You can control ɔst broadleaved weeds in winter wheat with 2,4-D. April is the time to do it. Wheat is ɔst tolerant to 2,4-D after it has finished tillering in the spring and before it is in ıe boot stage.

f there is a legume underseeding, use no more than 1/4 pound of 2,4-D amine--1/2 pint of 4-pound-per-gallon formulation. This rate will control most troublesome weeds, except ild onion and garlic.

ɔ control wild onion and garlic, use 1/2 pound per acre of the 2,4-D ester. This rate ill probably destroy legume underseedings and may damage wheat, but it will reduce aerial ulblet formation of wild onion and garlic and will lessen the possibility of harvest-time ɔckage.

ead the label and follow all precautions. Federal regulations specify: "Do not forage r graze treated grain fields for 2 weeks after treatment. Do not use treated straw for ivestock feed."

OME GARDEN

ultivation is the most-used and safest method of weed control for the home gardener. This ust be done several times during the summer to be effective. Mulching is also quite effec-ive, because it prevents light from reaching the weed seedlings. Such opaque materials as raft papers, black polyethylene, ground corn cobs, weed-seed free straw, etc. are used. n addition, mulching conserves moisture, makes for uniform soil temperatures, and keeps he edible portions above ground clean.

PLANT DISEASES

MALL GRAINS

outh of about Highway 50, Septoria leaf blotch has seriously infected or killed most of he wheat leaves formed last fall. It is now moving onto the leaves formed this spring. he wheat is about 8 inches tall in Johnson and surrounding counties. The dead fall leaves erve as a source of inoculum for the newly formed leaves.

o rust or powdery mildew is evident now on wheat in southern Illinois.

here is some heaving damage. No serious loss is expected, since soil moisture is abundant nd the injured wheat plants are starting to reroot themselves. Off-color leaves--reddish-urple to purple--are common, mostly because of the unseasonably cold weather.

arge yellow spots are also common in many wheat fields. This may be the result of overly et soil and infection by Septoria.

or more information on *Septoria Leaf Blotch and Glume Blotch of Wheat*, write to the Depart-ent of Plant Pathology, 218 Mumford Hall, University of Illinois Urbana-Champaign Campus, rbana, Illinois 61801. Ask for a copy of RPD No. 105 (Revised).

CORN AND SOYBEANS

Don't rush corn and soybean planting. Wait until the soil warms up. If you plant now, the seed--even though properly treated with a protective fungicide such as captan or thiram--will be in cold, wet soil, and sprouting will be delayed. This gives seed decay and pre-emergence seedling blight fungi, such as Pythium, a chance to "get in their licks."

After the soil warms up, the seed will germinate more rapidly, stands will be more uniform, plant vigor and yields will be higher, and the possibility of having to replant will be greatly decreased.

The period during which a seed germinates and the seedling becomes established is very critical in the life of a corn or soybean plant. Avoid deep planting, poor seedbed preparation, and cold or wet soils (below 50° to 55° F. for corn and about 60° F. for soybeans). A soil temperature below 50° to 55° F. favors most soil-borne fungi, causing seed rot and seedling blights.

GENERAL INFORMATION

TANK-MIXING AGRICULTURAL CHEMICALS

There is considerable interest in mixtures and combinations of herbicides, insecticides, and liquid fertilizers. For use limitations on mixtures, read all labels and follow the one with the most-severe restrictions.

There are both tank-mix and formulated mixtures. While Sutan-atrazine is only a tank-mix, other herbicide combinations (such as Ramrod-atrazine and Lorox-Ramrod) are available as both tank and formulated mixes. With tank mixes, you can vary the ratio to meet local conditions. But there may be problems caused by inefficient agitation, insufficient water volume, and lack of an emulsifying agent. Normal spraying requires approximately 2 gallons of spray volume for each pound of wettable powder, to keep a good dispersion.

Wettable powders (WP) require continuous agitation. Mechanical or hydraulic-jet agitation is preferable to normal by-pass agitation.

In mixing, first have some liquid carrier in the tank. Never place concentrated chemicals in an empty tank. Also, add wettable powders before adding emulsifiable concentrates (EC) spray oils, or other additives. Always premix wettable powders before adding them to the tank.

Some chemicals are formulated as "fertilizer grade," with extra emulsifier. But if the chemicals you use are not this way, adding emulsifier can sometimes help. Compex (Colloidl Products Corporation) is a spray tank adjuvant formulated to help in preparing chemical blends. Use it at the rate of 3 pints per 100 gallons of spray (1/2 teaspoon per pint).

Check compatibility by mixing small amounts first. To do this, a set of measuring spoons and a few quart jars are quite handy. When checking compatibility, remember that 1 teaspoonful per pint equals 1 quart per 25 gallons; also, that 1 level teaspoonful of wettabl powder per pint equals 1 pound per 25 gallons. Therefore, if your mix calls for a 25-gallon solution with 2 quarts of emulsifiable concentrate (EC) and 3 pounds of wettable powder (WP), your conversion is 2 teaspoons of EC and 3 level teaspoons of WP per pint of carrier (water or liquid fertilizer).

Procedure: (1) Calculate conversion factors for 1 pint of mix. (2) Place 1 pint of carrier in each jar and label the jars "A" and "B." (3) Add one-half teaspoon of adjuvant to jar marked "A" (adjuvant added). (4) Add the proper amount of chemicals to both jars (WP's first). (5) Close the jars and shake or invert to mix. (6) Allow to set and observ the results.

The compatibility and the amount of agitation needed can be determined by observing jar "B" (without adjuvant). If the materials remain suspended for over 2 hours without separating, flaking, precipitating, or "gunk" formation, there is no need for extra spray adjuvant, and only moderate agitation is needed. If they separate but can be easily resuspended, the materials can be combined and applied together with thorough agitation.

The need for extra adjuvant can be determined by comparing jar "A" (adjuvant added) with jar "B." If the materials in "A" remain suspended while those in "B" do not, then extra emulsifier or dispersing agent may make the combination possible. Remember: some "fertilizer grade" materials already have extra adjuvants added.

TESTING FOR HERBICIDE RESIDUE

Will this year's crop be injured by last year's herbicide? You can find out by growing seedlings of susceptible plants in "suspect soil" while you are doing your early spring planting or gardening.

Gather soil samples from areas where you suspect herbicide carryover. Headlands and hills that may have received excessive doses because of overlapping or decreased sprayer speed are likely areas. You will need about 2 quarts of suspect soil and 2 quarts of untreated soil. Be certain your samples are representative. If you use pint containers, you can have 4 containers with "suspect" soil and 4 with untreated samples for comparison. If necessary, check samples can be prepared from suspect soil by adding activated charcoal (1 gram for each 2 quarts). Activated charcoal capsules of the half-gram size can be obtained from most drugstores.

Place the soil into the containers. Metal or cardboard containers should have holes punched in the bottom for drainage. Seed about 15 oats, a half teaspoon of lawngrass seeds, or 6 soybean seeds per container. Water the soil, but do not saturate. Place the containers in a warm place where they will receive sunlight. Keep the soil moist, but not overwet.

Injury symptoms should appear in about 2 to 3 weeks--by the time the seedlings are 3 to 4 inches tall. The time required will depend partly on temperature and moisture. Severe injury will result in a complete kill of the seedlings. Marginal injury can best be determined by comparing check and suspect samples.

You can minimize field injury by thoroughly mixing the soil during seedbed preparation. Plow rather than disk. Delaying planting will allow greater time for chemical breakdown. Another choice is to grow a less-susceptible crop.

When planning this year's herbicide program, consider what crops you plan to grow next year.

PESTICIDES IN WELLS

Several calls are received each year about pesticides that accidentally get into a well. Often, the contamination is caused by flushing or overflowing the sprayer near the well. Also, water systems with freeze drains or without pressure tanks can back-siphon liquid from a sprayer tank if hoses are not removed and the valves closed.

Prevention is certainly cheaper and easier than the cure. Close all valves and remove the hose from the tank after filling. But never put the hose inside the tank. A bracket to hold the hose at the top of the tank will also prevent siphoning.

Don't leave the tank while it is filling. And don't flush tanks where the material will drain into the well.

SPECIAL ANNOUNCEMENTS

PESTICIDE DEALERS AND APPLICATORS FIELD DAYS/1:30 P.M./EACH DAY

April 8, Office at Randolph County Extension Adviser, Charles E. Willman, Sparta.
April 15, Office at Monroe County Extension Adviser, Arlin H. Obst, Waterloo.
April 16, Office at Madison County Extension Adviser, Warren W. Bundy, Edwardsville.

Insect and plant disease trouble-shooting will be the general topic, with special emphasis on alfalfa weevil and corn borer.

PUBLICATIONS AVAILABLE

Circulars: The "1969 Fungicide Guide for Commercial Vegetable Growers" (Circular 999) and "Soil Disinfestation Methods and Materials" (Circular 893, Revised) have just been issued. Others that you may find helpful are Circular 676, "Soybean Diseases in Illinois," and NC Regional Extension Publication No. 21, "Corn Diseases in the Midwest." Single copies of these publications may be obtained by contacting your county Extension office or by dropping a postcard to the Agricultural Publications Office, 123 Mumford Hall, University of Illinois Urbana-Champaign Campus, Urbana, Illinois 61801.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

PLANT DISEASES: M.C. Shurtleff and M.P. Britton, Department of Plant Pathology.

WEEDS: Marshal McGlamery and Ellery Knake, Department of Agronomy; Herb Hopen, Department of Horticulture.

AG COMMUNICATIONS: Del Dahl

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 3, April 11, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevil development continues to be slow in the area south of a line from St. Louis to Lawrenceville. A few fields in this area had very light feeding on 10 to 30 percent of the terminals, but visible damage is not readily apparent. Most larvae are small and are found only by close examination of the buds of the plants. Further north, the hatch has been delayed.

Adult alfalfa weevil populations started to build up this week south of Route 50, ranging from 20 to 90 per 100 sweeps. The warm days recently caused these adults to become very active. Egg laying is increasing rapidly.

Depending on the weather conditions, insecticide treatments will not be necessary for 7 to 10 days. Egg-laying and egg-hatch will increase at a rapid rate if the warm weather continues. Watch your fields closely during the next week for increasing larval populations and feeding damage, particularly on south slopes. As soon as 25 percent of the terminals show noticeable feeding, it is time to treat.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

The 24-county European corn borer survival survey is now completed. Nearly all areas in the state revealed higher-than-normal survival rates. Several county Extension advisers report corn borer survival of 70 to 98 percent.

District	Percent survival
Northwest	77
Northeast	78
West	73
Central	64
East	72
West-Southwest	80
East-Southeast	77
Southwest	95
Southeast	77
STATE AVERAGE	82

A figure of 70 to 80 percent is considered normal as a survival level--above 80 is high, and under 70 is below normal. Weather and farm practices may well determine the extent of the corn borer problem this summer.

Fungus gnats are numerous in some wheat fields, as well as in many buildings and homes. These small, gnat-like flies (sometimes mistaken for the Hessian fly) develop in wet, decaying organic matter. They manage to crawl through window screens, becoming a nuisance in homes. Inside the home, a 0.1-percent pyrethrin space spray applied from a pressurized can will give quick knockdown and relief.

Clover leaf weevil populations remained about the same as last week. From 2 to 4 per square foot were found in the central section of the state. All were less than half-grown and were difficult to find.

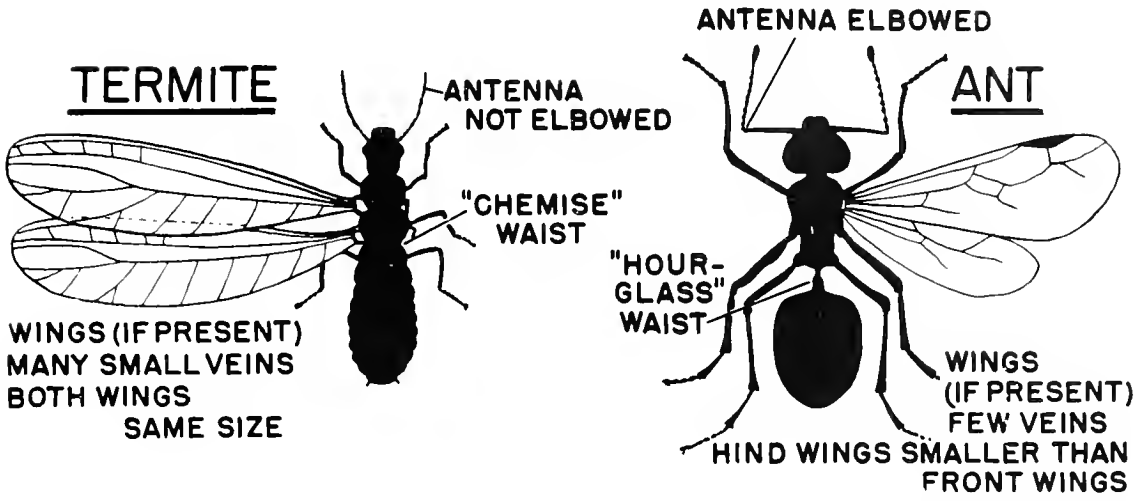
Watch new seedlings of red clover and alfalfa for leaf damage. The presence of warm, rainy weather is favorable for a fungus disease. Such a disease will reduce the number of weevils.

Potato leafhoppers are now present in alfalfa around the southern half of the state. They are small, green, wedge-shaped insects that skid sideways when disturbed. They cause yellowing on second and third cuttings of alfalfa. No control is recommended at this time.

Clover mites are also becoming annoying in some homes. These mites are tiny, orange-to-black moving specks about the size of a pinhead. They cover furniture, walls, curtains, window sills, etc. as they attempt to find their way outdoors. They can be picked up with a vacuum cleaner, or an 0.1-percent pyrethrin spray from a pressurized spray can will give quick relief. Before fall, remove grass, clover, and weeds next to the foundation--leaving a strip of soil at least 18 inches wide. This bare soil serves as a barrier to the mites. Replanting this strip with flowers, such as zinnia, marigold, chrysanthemum, or salvia will prevent a clover-mite problem next year.

Winged termites and ants are appearing and are causing concern to homeowners. If swarms of flying termites appear, check for mud tubes on inside basement walls and on the outside of foundations. Many termite-control problems are extremely complicated and require an experienced exterminator.

TERMITE or ANT? the differences are:



NOT FOR PUBLICATION: SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

You can have University of Illinois entomologists on your station each Friday or Saturday telling farmers how to best control their insect pests. All you do is telephone (217) 333-2614 each Friday. An automatic answering device will play a recording with U. of I. entomologists summarizing the week's insect activity and forecasting next week's problems.

This year both the southern and northern Illinois insect report will be available at the same time.

Each report will be 2 minutes long. You may record either report each time you call. You'll be getting a higher broadcast quality report this year since the playback machine is of professional standards.

For more information or in case of difficulty call Gene Stanley (217) 333-4782.

For the northern and the southern Illinois insect report call (217) 333-2614 each Friday between the hours of 6 a.m. and 5 p.m.

WEEDS

LASSO GRANULES CLEARED

Lasso 10-percent granules have now been cleared for use. Lasso liquid was cleared earlier, so the herbicide is cleared for both soybeans and corn. Primary emphasis will likely be for soybeans in 1969.

So far, in both soybean and corn trials, tolerance appears to be good with Lasso. For most individuals, Lasso is less irritating than Randox or Ramrod, and it controls about the same spectrum of weeds as Ramrod.

However, compared to Ramrod, Lasso may perform somewhat better on the lighter soils, may hold up better under relatively heavy rain, and may control weeds slightly longer. Under low-rainfall conditions, Ramrod may sometimes perform slightly better than Lasso.

Lasso should be used for surface-applied preemergence application, at planting time or soo after. Rates should center at about 2 pounds of active Lasso per acre--2 quarts of the liquid, or 20 pounds of granules--on a broadcast basis. Reduce the rate proportionately i you're banding. Rates can be safely varied 1/2 pound either way, depending on soil type and the degree of control desired.

TREFLAN CARRY-OVER

Some treflan used on soybeans in 1967 carried over and affected a few 1968 cornfields. Low rainfall conditions in the fall and spring of 1967 probably contributed to a slower degradation of the Treflan. Most of the fields where the problem occurred had only been disked or chisel-plowed.

Using a moldboard plow dilutes the herbicide more than disking or chisel-plowing. To avoi carry-over problems, uniform and accurate applications of no more than recommended rates are important.

The results of one experiment indicate that the granule may have a longer persistence thar the liquid formulation.

Although the Treflan residue problem was not widespread or serious, some consideration and caution seems appropriate, in order to avoid any possible problems in 1969 and 1970.

HOMEOWNER WEED PROBLEMS

Prevent crabgrass. Crabgrass is especially widespread in southern Illinois, but it is a serious lawn problem throughout the state. If you've had crabgrass in your lawn in past years, consider using a herbicide.

Today, many excellent preemergence herbicides are available that will prevent crabgrass ir festations. Often, these materials will control other annual grasses and some broadleaf weeds as well. Used as directed, the materials give consistent crabgrass control when applied to established Kentucky bluegrass lawns.

Most of the preemergence chemicals are sold to the homeowner in dry form for application with a lawn spreader. Pay particular attention to proper spreader setting, in order to realize the desired results.

Preemergence materials should be applied early in the season before the crabgrass seed germinates. A rule of thumb often used is to apply the chemical before the petals of the early blooming magnolia fall.

PLANT DISEASES

CONTROL DAMPING-OFF OF SEEDLINGS

Vegetable, flower, tree, and other seedlings may suddenly wilt and wither or collapse fror a decay that strikes at the ground line or below. Usually, the decay is caused by soil-borne fungi.

Damage is most common in cold, heavy, wet soils and in shady areas where air circulation is poor. One answer is to grow plants in soil that has been treated with a broad-spectrum soil fumigant. Once damping-off starts, here's what can be done to save the rest of the seedlings.

1. Keep soil on the dry side.

2. Avoid overcrowding, excessive shade, too-deep planting, and overwatering--especially with nitrogen.

3. Water seedlings at 5- to 7-day intervals with ferbam or ziram 76-percent wettable powder (2-1/2 level tablespoons per gallon of water); or use captan, thiram, zineb, or folpet (all 50- to 76-percent WP) at the rate of 1 to 1-1/2 tablespoons per gallon. Apply about 1/2 pint per square foot of bed surface, using a watering can or coarse sprinkler.

4. Be sure to buy and plant only top-quality seed that has been treated with a protectant fungicide (such as captan or thiram). The seedbed soil should naturally be well-prepared, deep, and well-drained.

SPRAYING FRUITS TO CONTROL DISEASE

The present period--from the bud-swelling to early bloom stage--is a critical time in controlling a wide range of fruit diseases--including apple scab, powdery mildew, and cedar rusts; peach-leaf curl and plum pockets (buds must still be dormant or the treatment is too late); brown rot blossom blight of stone fruits; strawberry leaf diseases; anthracnose and spur blight of brambles; and grape black rot. Suggested spray schedules are given in Circular 936 *Pest Control in Commercial Fruit Plantings*, Fruit Leaflet No. 1 *Strawberry Spray and Dust Guide*, and Circular 935 *Growing Small Fruits in the Home Garden*. Copies may be obtained from the Office of Agricultural Publications, 123 Mumford Hall, Urbana 61801.

Captan is the best all-around fungicide for fruits, especially for the home fruit grower. It is widely sold in multipurpose fruit-spray and dust mixes that can be applied to practically all fruits. If powdery mildew is a problem, Karathane or sulfur can be added to the captan. If rusts are important, add thiram, zineb, or maneb to the mix.

Dikar is a new fungicide for the commercial apple grower. It is sold by Rohm & Haas and is a mixture of their Dithane M-45 and Karathane. It has been highly effective in controlling scab, powdery mildew, and rust diseases.

NEW SOIL DISINFESTATION CIRCULAR

Soil is treated by heat or chemicals to destroy disease-causing organisms (including nematodes), insects, and weed seeds in the soil. The process eliminates the need to change soil in greenhouses, cold frames, hot beds, and other plant beds. A complete, up-to-date discussion of this subject is given in a revised Circular 893, *Soil Disinfestation Methods and Materials*. Copies may be obtained from your County Extension Office or by writing to the Office of Agricultural Publications, 123 Mumford Hall, Urbana 61801.

PUMPS FOR FIELD-SPRAYING

The roller pump is still the one most-commonly used because of its low cost and availability. The principal complaint against the roller pump is that the rollers wear rapidly, especially when used for pumping suspensions of wettable powders. Generally, the capacity of the roller pump can be restored by replacing the rollers, if the housing is not severely damaged. However, much of the wear or damage to the pump may be caused by the way it is used and stored.

Roller pumps--or any pump for that matter--should not be operated dry. Excessive heat wil damage the rollers and seals. With a clear suction line and an open discharge line, the pump should displace liquid within 15 seconds. When used for spraying wettable powders, roller pumps should not be shut off as long as the wettable powder suspension is in the pump housing. If the pump is shut off, the wettable powder will settle to the bottom of the pump and will cause damage when the pump is started up again.

The water used should be free of suspended solids that can cause wear. Use only clean water that is filtered while filling the tank.

The centrifugal pump is rapidly gaining in popularity, and it is recommended over the roller pump for handling wettable powders. A centrifugal pump made of abrasion-resistant materials will pump wettable powder suspensions satisfactorily. Its capacity is high, so keeping wettable powders in suspension should not be a problem if an adequate bypass syste is used. It is readily available for tractor-PTO use at a reasonable price. But the centrifugal pump is more expensive than the roller pump. The main limitation of the centrifugal pump is its maximum pressure. However, such pumps are entirely adequate for field applications of herbicides, liquid fertilizers, and most insecticides.

The piston pump, if properly constructed, will handle wettable powders satisfactorily. It provides far more pressure than is needed for most field spraying but the increased pressu may be necessary for fungicide applications.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Days/1:30 p.m. each day

April 15, Office of the Monroe County Extension Adviser, Arlin Obst, Waterloo.
April 16, Office of the Madison County Extension Adviser, Warren Bundy, Edwardsville.
April 22, Office of the Greene County Extension Adviser, Eldon Starkweather, Carrollton.
April 23, Office of the Macon County Extension Adviser, Warren Myers, Decatur.

Insect and plant disease trouble-shooting will be the general topic with special emphasis on alfalfa weevil and corn borer.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

PLANT DISEASES: M.C. Shurtleff and M.P. Britton, Department of Plant Pathology.

WEEDS: Marshal McGlamery and Ellery Knake, Department of Agronomy; J.D. Butler, Departmen of Horticulture.

AG ENGINEERING: John Siemens.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Exten sion advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 4, April 18, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil development, although still slower than normal south of Highway Route 50, did speed up this week. Insecticide applications should be made now in the more-severely infested fields. Fields that had feeding on 10 to 30 percent of the terminals last week now show 40- to 50-percent terminal feeding; 5 to 10 percent of the terminals had severe feeding; 20 percent, moderate; and 20 percent, light. Although most larvae are small and can be found only through close examination, they are growing rapidly. Expect more damage to appear this week.

In the area south of Highway 50, weevil adults are also more numerous. Populations reached 160 per 100 sweeps of an insect net, compared with 20 to 90 last week. Egg-laying is increasing--so will larval populations and damage.

Further north, weevil activity is just beginning. Here there was feeding on 5 to 20 percent of the terminals, and there were 1 to 5 worms per infested terminal. Egg-laying and hatch will accelerate with warm weather. Those worms already there will grow and feed, so insecticide control may be justified late in the week of April 21.

Watch all alfalfa fields closely from now on. As soon as 25 percent of the terminals show noticeable feeding, apply an insecticide--unless the field is within two weeks of harvest. In that case, cut early and treat the new growth.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing. Slight discoloration of alfalfa may occur after the use of parathion.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

Pea aphids are appearing in occasional southern Illinois alfalfa fields, but are not plentiful enough to be serious at present. The current warm and calm weather, with the moisture now present, will promote the spread of a fungus disease of aphids, which would kill them. Diseased aphids are brown and flattened, and often have a white mold about them.

Insecticides are recommended for alfalfa weevil control, also for the control of pea aphid

CORN INSECTS

Flea beetles are now common in fence rows and wheat fields. They will soon migrate to corn. These black beetles strip narrow lines on the leaves, leaving the white tissue. Th beetles are tiny and jump at the slightest disturbance. Approach the plants slowly or the beetles will have disappeared before you get to the plant.

This beetle transmits Stewarts disease of corn. We know so little about the time of inoculation that we cannot recommend beetle control to prevent disease infection this early. I the beetles are killing or severely damaging plants, sprays of toxaphene or carbaryl will prove helpful.

Black cutworm moths were found this week for the first time this year.

HOMEOWNER INSECTS

Elm leaf beetles that have wintered in the wall voids and partitions are now trying to get outside. These yellow and brown-striped beetles are a nuisance when they migrate into the home rather than outside. Usually, they congregate between the storm sash or screen and the window. Leave the outer window partly open and they will go outdoors. Inside the home, use a vacuum sweeper to pick them up.

Bagworms are still in the egg stage in any bagworm sacks from last year that are still hanging. For the next three to four weeks, hand pick and burn these bags. This will reduce the number of bagworms that will hatch in late May and early June. Although hand-picking may not eliminate the need for sprays, it will at least reduce the number of worms that will be present later on. This will help substantially in controlling them.

Spring cankerworms (often called inch-worms) are dark-brown-to-green measuring worms that feed on the buds and newly emerging leaves of trees like elm and apple. Full grown, the worms drop to the ground on silk threads. Hundreds of them can be seen hanging from a tree. When this happens, it is too late to spray. If the infestation is found when the worms are small, sprays of carbaryl (Sevin) or lead arsenate will provide control. A bacterial spray is also available, which is reported to be effective.

Millipedes are moving into homes from shrubbery beds, lawns, storm sewers, and from mounds of dirt and refuse made by excavations in new subdivisions, where the soil is filled with decaying vegetation.

In cases of heavy migration, spray lawns and shrubbery beds with carbaryl or diazinon. Th provides a barrier zone in which the millipedes are killed, preventing them from getting into the home.

For minor problems, limited spraying of a 3- to 4-foot-wide area around the house foundation should be adequate. Apply approximately 2 pounds of actual carbaryl or 1 pound of actual diazinon in 25 gallons of water for each 10,000 square feet of area treated.

Galls on trees, especially maple and oak, are caused by tiny insects that have hatched from eggs layed in the leaves. These tiny insects burrow into the newly developing leaves. The plant then grows the galls around the insect.

Spraying with malathion at or immediately after new leaves develop will help control these pests. However, these galls rarely, if ever, kill the tree.

WEEDS

HERBICIDES AND SEED CORN PRODUCTION FIELDS

Two big problems in seed production fields have been late-season weed control and inbred lines susceptible to herbicidal injury. Herbicides with close crop tolerance may injure some inbred corn lines, causing a failure of male- and female-parent lines to "nick."

Several herbicide labels caution about use on inbred lines of corn or in seed production fields. Eptam, Randox-T, and Dowpon have not been recommended for seed production fields in the past. Currently, Primaze and Sutan are not suggested for this purpose. Primaze is a combination of atrazine and prometryne, and prometryne has some potential for corn injury.

Many seed producers have had a problem with late-season grass control. Sutan has shown the ability to control some of these grasses such as fall panicum, witchgrass, and crabgrass. Many inbred corn lines were evaluated in 1968 for their susceptibility; most lines showed good tolerance. However, a few lines were initially injured, but did recover.

Seed producers and custom applicators should be cautious about using herbicides with close crop tolerance on seed production fields. If such a herbicide is used, care must be taken with calibration, formulation, and application.

REVISION OF JOHNSONGRASS CONTROL

The spring treatment program for Johnsongrass control has been changed to shorten the time between application and planting of corn and soybeans. Current label directions are:

. Allow Johnsongrass to grow until 8 to 12 inches tall.

. Apply 5 to 7 pounds of Dowpon per acre as a foliar spray.

. Wait 3 days after spraying, then plow.

. Wait <u>at least</u> 5 days after plowing to plant corn or soybeans. If dry weather persists, wait <u>at least</u> 5 days after receiving a minimum of a half an inch of rainfall.

This clearance shortens the time between spraying and planting by 2 to 4 weeks. The delay between spraying and plowing allows absorption and translocation of Dowpon into the Johnsongrass. The waiting period between plowing and planting allows breakdown of the Dowpon so that it won't injure the corn or soybean crop.

This change makes the spring program more flexible and allows earlier planting than was previously possible. The major concern is the possibility of crop injury if planting is too soon after plowing. The most-effective control program for established Johnsongrass is still the summer program after small grains.

The seedling or "new grass" treatment is a vital part of any Johnsongrass control program. The seedlings are controlled by a preemergence herbicide. We suggest using Sutan in corn-Treflan, Planavin, or Vernam in soybeans.

HERBICIDE INCORPORATION

Most annual weed seeds germinate in the top 2 inches of the soil and the herbicide is usually needed here for the best results. Incorporation prevents surface losses of volatile herbicides and moves low-solubility herbicides into the soil. Most herbicides of moderate solubility move into this weed seed zone with normal rainfall.

To incorporate herbicides, use a tandem disk-harrow or a rotary tiller. With powered rotary tillers, the distribution of the herbicide is best when the increment of cut is 2 inches and when many knives are used as possible--at high rotor speeds or slow ground speeds. However, powered rotary tillers are not available on most farms and they do not always leave the most-desirable seedbed. The tandem disk is the tool most commonly used for herbicide incorporation. The disk does not incorporate as uniformily as the rotary tiller. And it has a tendency to partially invert a soil slice, concentrating the pesticide along a diagonal plane parallel to the direction of travel. A single disking results in zones of high concentration. In tests by the Agricultural Engineering Department, an additional disking did not increase the uniformity of incorporation much.

Studies of the effects of travel speed and gang angle show that the distribution can be improved when gang angle is increased and the tandem disk is used at high, but safe, speeds. The soil should be loose and not too moist for best results. A wet, sticky soil resists incorporation.

The tandem disk should be operated at a depth of about 4 inches for best results. Greater depths may cause excessive dilution of the herbicide.

Field cultivators, chisel plows, and spring-tooth harrows are not satisfactory because they primarily just shatter and lift the soil. They cause the finer particles to be moved downward, leaving the clods on top and little mixing occurs.

PLANT DISEASES

WHEAT DISEASES

Septoria leaf blotch is abundant now on the lower leaves of plants in nearly all Illinois fields. The disease has spread upward to new leaves during the last week throughout the southern one-half of Illinois.

In Gage wheat, septoria is especially severe in combination with infection by soil-borne wheat mosaic virus. The symptoms of the combined diseases are apparent as irregular areas of yellowed wheat. Individual leaves are mottled from the virus infection. The septoria infection produces a streaking.

Recovery from the virus symptoms will occur in two to three weeks. But septoria infection may remain heavy throughout the rest of the growing season.

Powdery mildew may appear anytime on wheat and winter barley in southern Illinois where the crop is dense and fertility--especially nitrogen--is high. Mildew has become an increasingly important disease in recent years as farmers have increased the use of fertilizers and rate of seeding. High nitrogen produces a rank, dense growth that creates an ideal

nvironment for the development of the mildew fungus. For more information read Report on lant Diseases No. 104, "Powdery Mildew of Wheat and Barley." Copies may be obtained by riting to the Department of Plant Pathology, 218 Mumford Hall, University of Illinois at rbana-Champaign, Urbana 61801.

HOULD SOYBEAN SEED BE TREATED WITH A SEED-PROTECTANT FUNGICIDE?

eed treatment fungicides--containing captan, thiram, or chloranil--protect seed against eed-decay fungi and help ward off soil-born organisms that infect just before or just fter emergence.

ı Illinois and surrounding states, soybean seed treatment tests have usually shown that roper seed treatment improves the germination of poor-quality seed, but has little or no ffect on the germination of high-quality seed--except under very stress conditions such s cold, wet soil and deep planting.

eed treatment often increases the emergence of low-germinating seed by 10 to 50 percent, ut such increases are seldom accompanied by increases in yield. Our thoughts may change ı the above points based on extensive trials planned this spring. You will hear more about ıis after harvest.

e feel that farmers should plant only top-quality, certified seed (germination 85 percent r more). This gives the soybean grower the best protection against low-germinating seed ıat is shriveled, cracked, moldy, badly weathered, split, or immature. Sowing top-quality eed is the best guarantee for a thick, uniform stand of vigorous plants.

RUIT DISEASES ARE ACTIVE NOW

›rays should be applied to strawberries, brambles, apples, pears, stone fruits, and grapes : 7- to 10-day intervals. This will keep new foliage (and later fruit) protected during ›riods of wet weather when infections occur.

NEW PUBLICATIONS

ıiversity of Illinois Circular 1001, *Home Orchard Pest Control*, has just been published. : will be available from county Extension advisers and the Office of Agricultural Publica- ons, 123 Mumford Hall, Urbana 61801. This circular covers insect, disease, and weed- ntrol suggestions for the various tree fruit crops. A multipurpose spray is suggested.

SPECIAL ANNOUNCEMENTS

sticide Dealers and Applicators Field Days/1:30 p.m. each day:

ril 22, Office of the Greene County Extension Adviser, Eldon Starkweather, Carrollton.
ril 23, Office of the Macon County Extension Adviser, Warren Myers, Decatur.
ril 29, Office of the Iroquois County Extension Adviser, Kenneth Imig, Watseka.

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problems. There is a southern- and northern-Illinois report, each 2 minutes long. You may record either report each time you call. For more information or in case of difficulty call Gene Stanley (217) 333-4782. To get the northern- and southern-Illinois insect reports call (217) 333-2614 each Friday between 6 a.m. and 5 p.m..

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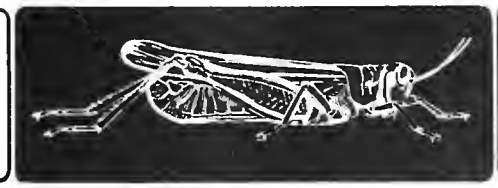
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 5, April 25, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil varies greatly from field to field and from area to area. In some fields where alfalfa growth is extremely slow, weevil development is equally slow; where alfalfa is growing rapidly, weevil development is also progressing rapidly. This reflects the effect of wind breaks, field slopes (south and west exposures warm up earlier), and similar factors that affect early growth. Each field must be examined to determine the weevil infestation.

Since last week, weevil populations have jumped visibly in the area south of a line from Carmi to Pinckneyville to Sparta. This week, we found up to 2,300 larvae per 100 sweeps of an insect net--compared to only 200 last week. Terminal feeding varied from a low of 10 percent in some fields to a high of 75 percent in others. The ideal treatment period started this week and will continue into next week (the week of April 28). If a field is within 2 weeks of harvest, you may choose to cut early, remove the hay, and spray the new growth.

From the Carmi-to-Sparta line north to Highway 50, the weevil populations are not high yet. They range from 100 to 300 per hundred sweeps of an insect net. In this area and just to the north of it, the variation between fields is quite noticeable; so each field must be examined. Populations are increasing here and insecticide treatments may be needed by the middle or latter part of the week of April 28. Early cutting may also be a partial answer to weevil control there.

The weevil situation varies greatly in the area between Highway 50 and a line from Paris to Mattoon to Carlinville. Although treatment may be warranted in an occasional field late the week of April 28, treatment generally will not be necessary until the week of May 5--unless weather becomes unseasonably warm. Early cutting, hay removal, and spraying new growth may help answer the weevil problem by then.

This year, as last, one application may be enough to protect the first cutting, but watch the new growth carefully because new shoots may need protection. If fields are more than 2 weeks from harvest and 25 percent of the terminals show noticeable feeding, treat them.

The insecticide recommendations are:

- Commercial applications can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor diazinon, or mixtures of them. There is no waiting period for malathion.

Pea aphids are becoming more common in alfalfa fields in the southern part of the state. Fortunately, a few lady beetles are also appearing. If these natural enemies of the aphi increase in number, they will help with aphid control.

CORN AND SMALL GRAIN INSECTS

True armyworm and black cutworm moths are moving northward from states to the south of us These armyworm moths arrive early and will lay eggs in the grass along fence rows, ditch banks, roadsides, and in pastures where the growth is thick and rank. Soon they will con centrate their egg-laying in rank stands of wheat, barley, and rye. Black cutworms will lay their eggs in cornfields--in the low wet spots, poorly drained portions, and grassy areas. Cool, wet weather favors both armyworm and cutworm development. It is too soon as yet to predict possible problems with these insects.

HOMEOWNER INSECT PROBLEMS

Aphids are appearing on hawthorn trees, as well as on other trees, shrubs, and flowers. These small, green, black or red, soft-bodied insects congregate on developing buds and leaves and suck the sap. If aphids are numerous and control appears necessary, spray the foliage with malathion (2 teaspoons of the 50- to 57-percent liquid concentrate per gallo of water) or with diazinon (2 teaspoons of the 25-percent liquid concentrate per gallon o water). These sprays will also control mealybugs and help reduce the number of mites.

Clover mites are still a nuisance in some homes. They scatter out over furniture and on walls, curtains, window sills, etc.--particularly on the south and west sides of the house. Pick them up with a vacuum cleaner, and/or use a 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) spray from a pressurized spray can for quick knockdown. Before fall, remove all grass, clover, and weeds next to the foundation--leaving a strip of bare soil at least 18 inches wide. By replanting this strip with flowers such as zinnia, mari gold, chrysanthemum, rose, or salvia, you will prevent problems with clover mites next ye

WEEDS

HERBICIDES AND SOIL ORGANIC MATTER

The amount of organic matter in the soil influences the performance of many herbicides. Illinois mineral soils vary in organic matter content from 0.5 to 7 percent.

There are several ways of estimating the organic-matter content of your soils. A chemical laboratory test is the most-accurate one.

Another option is to use the *Color Chart For Estimating Organic Matter In Mineral Soils I Illinois*, AG-1941. A third option is to use Bulletin 725, *Soils of Illinois*. The chart and bulletin are available through your county Extension adviser.1/

1/ They are also available from the Office of Agricultural Publications, 123 Mumford Hall or the Agronomy Extension Office, N-305 Turner Hall, University of Illinois at Urbana-Champaign, Urbana 61801.

We suggest adjusting the rates to organic-matter levels on these corn herbicides: AAtrex (atrazine), Princep (simazine), prometryne, Lorox (linuron), and Lasso. Thus, combinations which contain one or two of these herbicides--such as Primaze, Londax, Sutan-atrazine, Ramrod-atrazine, and atrazine-linuron--are also affected by the level of organic matter.

Treflan, Planavin, Lasso, and Lorox are soybean herbicides that are affected by the organic-matter level in the soil. Lorox tolerance to soybeans is close, so no more than one pound of Lorox 50W (50 percent ai) is suggested for each percent of organic matter. This will maximize control and will minimize injury.

SOYBEANS FOR SEED

These preemergence herbicides are presently cleared for use on soybeans for seed, or on replanted beans: Ramrod, Londax (a mixture of Lorox and Ramrod), and Preforan. They are not to be sold for use in food, feed, or oil markets.

PLANT DISEASES

WHEAT

Septoria leaf blotch. The situation is about the same as last week. Older leaves are yellowed or dead, and black specks (pycnidia of the Septoria fungus) are common in older spots on spring-formed leaves.

Soil-borne mosaic. Last week, gage wheat showed some yellowing and mottling of leaves. The wheat is growing out of this now, and the new leaves are a healthy green. No further damage is expected. Mosaic is only serious in cold weather in low, wet areas where susceptible hard wheats are grown.

Powdery mildew. This can now be found in light amounts within about a third of the fields as far north as Jasper County. Mildew is prevalent only in heavily fertilized fields. We expect the disease to move north during the coming week.

Leaf or stem rusts. There is no evidence of these at present.

ALFALFA

Spring black stem. This is common now in southern Illinois within the counties sampled--White, Jefferson, and Hamilton. Look for dark, slightly sunken areas on the stem and leaf petioles. Small, dark spots will also show on the leaves. Many of these leaves will be turning yellow and dropping off shortly.

Crown rot. Some of this is evident, along with heaving damage. Crown-rotting fungi enter through wounds caused by heaving, frost damage, and other types of winter injury. Abundant soil moisture is keeping these plants alive. But some plants will probably die during moisture-stress periods later on.

CLOVERS

Yields look good so far. The only diseases evident are the viruses. Symptoms vary, depending on the virus and the species of clover. Infected plants are usually stunted or dwarfed and are "bunchy," with yellow and mottled leaves. Regular or irregular yellow patterns may develop along the veins of the leaves.

LAWNS

With all the recent rains, mushrooms will be popping up in lawns and near old stumps. There is no effective chemical control. To avoid worry about poisoning pets or children, collect or rake the mushrooms by hand or mow over them.

Warn homeowners about the chances of poisoning. Only a trained mycologist can tell poisonous types from those that can be eaten. Mushrooms usually grow from rotting wood or other decaying organic material in the soil. They are common in areas of buried tree stumps, dead roots, logs, and boards. Expect them any time following heavy rains or watering to mid-fall.

One means of lasting control is to dig up the buried wood. Otherwise, let the mushroom mycelium in the soil go ahead and complete the decay. Then they will disappear.

STORED CORN AND SMALL GRAINS

As the weather warms up, storage rots and the molds that cause them will become active. The symptoms are: (1) discoloration of the germ or embryo; (2) evidence of mold growth (bluish green, green, tan, white, black, or pinkish-red material); (3) "caking" together to form a crust--usually at the center and top of a bin; and (4) a musty odor. Bins should be checked frequently for "hot spots" or the formation of a moldy crust.

USEFUL REFERENCES

You can obtain copies by writing to the Department of Plant Pathology, 218 Mumford Hall, University of Illinois at Urbana-Champaign, Urbana 61801. Ask for Reports on Plant Diseases (RPD's) by number:

Soil-Borne Mosaic of Winter Wheat (RPD 102, Revised)
Powdery Mildew of Wheat and Barley (RPD 104, Revised)
Leaf and Stem Diseases of Alfalfa (RPD 301)
Root and Crown Troubles of Alfalfa (RPD 302)
Virus Diseases of Alfalfa and Clovers in Illinois (RPD 307, Revised)
Storage Rots of Corn (RPD 206)

NEW SOIL DISINFESTATION CIRCULAR

Soil is treated by heat or chemicals to destroy disease-causing organisms (including nematodes), insects, and weed seeds in the soil. The process eliminates the need to change soil in greenhouses, cold frames, hot beds, and other plant beds. A complete, up-to-date discussion called "Soil Disinfestation Methods and Materials" is given in the newly revised Circular 893. Copies may be obtained from your county Extension office or by writing to the Office of Agricultural Publications, 123 Mumford Hall, University of Illinois at Urbana-Champaign, Urbana 61801.

A WORD TO THE WISE

Keep a record of the insecticides you use. Include the trade name, percentage of active ingredients, and the dilution--as well as the rate of application and the dates of application. If you are ever questioned, you have the records.

Because of tight credit and bad weather, farmers are not buying farm chemicals. Dealers who ordinarily would have sold out a good share of their stock and reordered by now have not done so this year.

hances are, when the weather breaks, farmers will all want their chemicals at the same ime. Some farmers may find that the chemical they want is not on hand. Because of clogged istribution channels, it may not be available for several days.

o avoid having to choose an alternate chemical, farmers should either buy now or place an rder for the chemicals they want. By doing this, they can be fairly certain that their hemical will be available when the rush comes.

SPECIAL NOTE TO AGRICULTURAL EXTENSION ADVISERS

et us know immediately about any fields of corn where the stand has been seriously damaged y seed-corn beetles. Dr. Ralph Sechriest is anxious to locate these fields for test purposes.

o those willing Extension advisers who agreed to dissect stalks each week in order to help etermine corn-borer development in their area--sharpen your knives! We would appreciate it f you would count 25 live specimens (larvae, pupae, or empty pupal cases) and have the re- ort in the mail by Tuesday afternoon. Begin dissections the week of April 27 in the southern ection, the week of May 4 in the central section, and the week of May 11 in the northern ection. Stan Ceglinski, Cairo, Illinois, found no borer pupation on April 21.

SPECIAL ANNOUNCEMENTS

esticide Dealers and Applicators' Field Days/1:30 p.m. each day:

pril 29...Office of the Iroquois County Extension Adviser, Kenneth Imig, Watseka.
ay 6.....Office of the Grundy County Extension Adviser, Albert Pilch, Morris.

nsect and plant disease trouble-shooting will be the general topic, with special emphasis n the alfalfa weevil and the corn borer.

EAD THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

his weekly report was prepared as follows:

NSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, niversity of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural istory Survey.

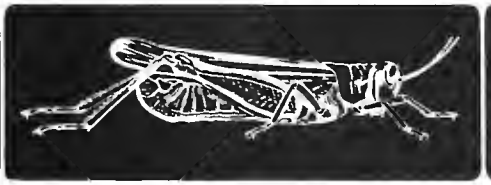
LANT DISEASES: M.C. Shurtleff and M.P. Britton, Department of Plant Pathology.

EEDS: Marshal McGlamery and Ellery Knake, Department of Agronomy.

G COMMUNICATIONS: Del Dahl.

he information for this report was gathered by these people, staff members, county Exten- eion advisers, and others, in cooperation with the USDA Agricultural Research Service, lant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 6, May 2, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil development is progressing slowly, but there is a gradual buildup. Most alfalfa fields south of Highway 460 are being damaged. In the area between Highway 460 and Highway 16, feeding damage is evident; some fields may need treatment this week or by the following week (May 11). Between Highway 16 and Highway 17 larvae can be readily found, but populations are still low. There may be need for treatment in some fields in this area in another two or three weeks.

When checking for alfalfa weevil, judge each field separately; there is a wide variation in weevil populations from field to field. If a field is within two weeks of harvest, it probably would be best to cut early, remove the hay, and spray the new growth. For most fields in the southern section, we will probably get by with a single spraying on the first crop, but a second spraying may still be needed on the new growth of the second crop. In the central section, early cutting and a spray treatment, if needed, on the new growth of the second crop are likely to be sufficient. If fields are more than two weeks from harvest and 25 percent or more of the terminals show noticeable feeding, spray immediately.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

Clover leaf weevil larvae are numerous in some fields of clover and alfalfa, particularly in the western and northern sections of the state. Counts ranged from 4 to as high as 40 per square foot in some fields. The larvae are about a third grown. Although feeding is

noticeable, damage as yet is slight. Red clover (4 to 5 inches tall) is only about half the height of alfalfa (8 to 10 inches tall) and, therefore, most vulnerable. Warm, humid weather will allow rapid plant growth and will enhance the spread of a fungus disease that kills the larvae. A few cream-colored weevil were observed, indicating the possibility of infection by the fungus disease.

Watch fields closely for the next 10 days. If clover-leaf weevil feeding begins to get ahead of plant growth, a spray of 1 pound per acre of malathion will control them.

Spittlebugs are hatching in northern sections. These tiny orange nymphs are down low behind the leaf sheaths. Soon, they will move higher up on the plants and form froth masses. They damage alfalfa and clover plants by sucking out the sap. Occasional fields, especially new seedings of red clover, are averaging 1 to 2 nymphs per stem. Damage so far is light. In the central and southern sections, froth masses are apparent, but infestations are generally lower than in the north.

Chemical control is usually not profitable if you find fewer than 1 nymph per stem. If treatment is necessary, apply 3/4 pound of methoxychlor per acre. Wait 7 days after treatment before pasturing livestock or cutting for feed purposes.

CORN INSECTS

Slender seed-corn beetles were numerous in some fields of corn stubble in the northern section. In one field the average was as high as 12 beetles per square foot. This chestnut-brown beetle (3/8-inch long)--along with the striped seed-corn beetle and seed-corn maggot--will eat holes in the germinating corn seed and cut small sprouts. The severity of the problem will depend on weather during the planting period. Cool weather and slow germination will enhance the likelihood of damage. Warm weather and more-rapid germination will lower the chances for injury. Since aldrin, heptachlor, chlordane, lindane, or dieldrin as soil or seed treatments may not control these insects (due to resistant problems), we suggest the use of a diazinon seed treatment. A planter treatment (7-inch band over the row or just ahead of the press wheel) of Furadan, dyfonate, dasanit or phorate (Thimet) at 1 pound of actual chemical per acre--as suggested for rootworms--will also give adequate protection against these insects.

Corn borer pupation began in the extreme southern section this week, as reported by Bob Wetherell in Vienna. Stan Ceglinski in Cairo found no borer pupation as yet, so spring development is just getting started. Warren Bundy of Edwardsville found no borer pupation on April 28.

LIVESTOCK INSECTS

Horn flies appeared on pastured cattle in the extreme southern sections for the first time this week. Populations are light, but an economic buildup (50 to 100 or more per animal) could develop within the next two weeks.

HOMEOWNER INSECT PROBLEMS

Holly leaf miner larvae can be found tunnelling between the leaf tissues of many types of holly. They leave a yellowish mine, and will continue to damage the leaves if not controlled. It is still not too late to control them. Use a dimethoate (Cygon) spray by mixing 2 teaspoons of the 23-percent (2E) liquid concentrate in a gallon of water. Spraying should be done immediately. Thorough coverage is important for good success. Another spraying may be needed about the middle of June.

Sod webworm larvae were reported damaging a few lawns. These were probably larvae that overwintered in the soil and have just recently moved to the surface to feed. Only occasionally are overwintering larvae numerous enough to cause damage. Actually, not even the first-generation webworm larvae in June and July present the major problem; rather, the second-generation ones in August.

Carbaryl (Sevin), diazinon, or trichlorfon (Dylox) as sprays or granules are effective against sod webworms. Follow the instructions on the label relating to dosage, method of application, and precautions.

Crayfish. We were asked what to do about crayfish in low-lying lawn areas where rains have been heavy. Our first thought was to stock the lawns with large-mouth bass, if conditions are still wet enough; otherwise, wait until conditions dry. The crayfish will disappear then.

Ticks are annoying campers, picnickers, hikers, fishermen, and other persons. They cling to the vegetation along paths in and near wooded areas, waiting for man or other warm-blooded animals to come along. They attach themselves by embedding their mouth-parts into the skin. When entering wooded areas or ones suspected as tick-infested, use a repellent on socks, pants, pants cuffs, and exposed parts of the body to prevent tick bites. DEET (diethyltoluamide) is one of the best tick repellents. To control ticks in the home yard as well as in parks or playground areas, spray the grass, shrubs, and flowers with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to Cannaert red cedar, or carbaryl to Boston ivy.

You can prevent ants, water bugs, spiders, crickets, and other insects from entering your home by spraying the outside foundation wall with a 2-percent chlordane water emulsion. Purchase chlordane as a liquid concentrate and mix it with water to the proper strength (1 pint of 45-percent chlordane in 3 gallons of water gives a 2-percent solution). Spray the foundation wall from the soil to the sill area or along the outer wall for a distance of about a foot above the soil to the point of runoff. In addition, spray 3 to 4 inches of soil adjacent to the wall and the expansion joints along porches and steps, plus the edges of walks. In homes with a crawl space, spray the inside wall of the foundation and any supporting pillars. Do not spray shrubbery or flowers, because the oil in the spray may burn the tender foliage.

Three gallons of finished spray should do for the average house. The need for using insecticides inside the home will be greatly reduced by using this type of outside, preventative treatment.

WEEDS

INCORPORATING SOYBEAN HERBICIDES

Most people incorporate herbicides to reduce the surface loss of volatile herbicides. Treflan, Planavin, and Vernam are all subject to some surface loss when left exposed on the soil surface. Label recommendations for these herbicides have changed during the past year.

Previously, the manufacturer of Treflan suggested that it be incorporated immediately. The current recommendation is that incorporation can be delayed as much as four hours after application. Weed control may be variable because of delayed incorporation--if the application is made to wet, warm soil or if the wind velocity is 10 m.p.h. or greater.

For Planavin, the manufacturer suggests that incorporation may be delayed as much as two days. If rain should prevent mechanical incorporation, the rain itself will probably do the job. Planavin is slightly more soluble and less volatile than Treflan, but incorporation is considered necessary for both.

Vernam liquid and granular formulations are suggested as preplant incorporated treatments. But the granules are also suggested as a preemergence treatment without incorporation. Granules will probably reduce volatile loss until rainfall occurs. Slight incorporation will probably decrease variability. According to current label suggestions, incorporating Vernam is necessary for control of nutgrass, wild cane, or Johnsongrass from seed.

Dacthal has a low solubility, and will perform more consistently when lightly incorporated

Amiben, Randox, Lorox, and Lasso are currently recommended for surface preemergence treatment only. If adequate rainfall does not occur within 10 to 14 days, normal, rotary hoeing is suggested. The practice will keep seedling weeds under control, and the slight incorporation may improve herbicide performance.

PASTURE WEED CONTROL

Many broadleaved weeds in perennial grass pastures can be controlled easily with 2,4-D. Timing is an important part of the spray problem in pastures. Most annual broadleaved weeds germinate from late April through June. Most are susceptible to 2,4-D when they are young and are growing fast.

Biennial weeds, such as bull thistles, are more susceptible to 2,4-D when they are in the rosette stage rather than in the flower-stalk forms. Perennial weeds like Canada thistle are most susceptible when they are in the early-bud stage.

Choose the application rate to fit the problem. In the young stages, most annual weeds and dandelions can be controlled with 1/4 to 1/2 pound of 2,4-D per acre. Most other pasture weeds can be controlled with a 1- to 2-pound application. Apply 1 to 2 quarts per acre of a 4-gallon-per-acre formulation. The high rate will eliminate most legumes in a grass-legume pasture.

If woody or brush species must be controlled, use a mixture of 2,4-D plus 2,4,5-T brushkiller.

Do not spray seedling grasses or grasses that are in the boot to milk stage. Do not graze dairy animals on treated areas for 7 days after treatment.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators' Field Day, 1:30 p.m., May 6, Office of the Grundy County Extension Adviser, Kenneth Imig, Watseka.

Insect and plant disease trouble-shooting will be the general topic, with special emphasis on the alfalfa weevil and corn borer.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: Marshal McGlamery and Ellery Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

SPECIAL NEWS RELEASE

FOR IMMEDIATE RELEASE

Diazinon Buildup Reduces Seeding Rates

URBANA--A diazinon seed treatment has been recommended for the first time this year to protect germinating corn seeds against attack by seed corn beetles and seed corn maggots.

University of Illinois and Natural History Survey Entomologist H.B. "Pete" Petty says the practice is good, but as with all new practices, a few problems have resulted.

Under some conditions--possibly high humidity--corn seeding rates have been seriously reduced. Some farmers have been forced to replant. The problem occurs when diazinon dust builds up under the corn planter plates.

Petty cautions farmers to remove and examine the plates frequently to avoid the buildup problem. And he advises adding additional graphite, as they have done in the past, to ensure an even flow of seed.

As an additional precaution, farmers should avoid applying more than recommended rates of diazinon. An overdose results in extra dust.

Premixing the powder and seed corn before putting it in the planter box also may help prevent the buildup problem.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 7, May 9, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil development and alfalfa growth have both speeded up this past week. Severe feeding was found in many fields below Highway 40, moderate to light feeding in fields in the central section, and very light feeding in the north-central section of the state. Many alfalfa fields have been or will be cut within a week.

If the first cutting has been removed, be sure to watch the new growth of the second crop. If larvae are present and damage is being done, spray immediately. In the central part of the state, fields are generally within two weeks of harvest and damage is light. Therefore, it would be best to cut early, remove the hay, and treat the new growth. Also, if flower buds are present (regardless of how much damage the weevil has done) and if the field has not been treated, cut the alfalfa, remove it, and spray the second-crop new growth.

Parasites of the alfalfa weevil were found in some areas of the state in 1968, with the parasitism ranging up to 78 percent. Parasites are small wasp larvae that hatch-out inside the weevil and feed on it. Again this past week, parasitism was found in larvae collected in the southern part of the state. The percent of larvae parasitized varied from area to area, but averaged 85 percent around Lawrenceville. If fields are more than 2 weeks from harvest and 25 percent of the terminals show noticeable feeding, treat them.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

3. Fields that are close to harvest and in which treatment is necessary should not be treated with azinphosmethyl (at least 16 days before cutting) or with methyl parathion (15 days). Switch to one of the other suggested chemicals, such as malathion, that has no waiting period.

Spotted alfalfa aphids can be found in about any alfalfa field in the state in low to moderate numbers. If weather conditions become hot and dry during mid-summer, damage could be severe in some fields around late July and early August.

Clover-leaf weevils are present in most clover fields. But a fungus disease has killed many of them in central and southern parts of the state, leaving pale-colored, dead larvae hanging from clover leaves or lying on the ground.

Dead pea aphids can be found attached to clover and alfalfa leaves, as a result of being parasitized.

Spittlebugs are appearing on the stems of alfalfa and clover plants, forming froth masses on the stems.

Chemical control is usually not profitable if you find fewer than 1 nymph per stem. If treatment is necessary, apply 3/4 pound of methoxychlor per acre. Wait 7 days after treatment before pasturing livestock or cutting the field for feed purposes.

CORN INSECTS

Corn planting, compared to European corn-borer development, is early in the northern two-thirds of the state. Winter populations of corn borer were higher than normal, and the survival level is higher than normal. This comparatively early planting and the spring borer populations indicate a serious potential problem, unless something drastic happens to the corn borer. Pupation began this week, but is still averaging less than 10 percent in extreme southern Illinois. Farmers in the northern half to two-thirds of Illinois should plan now to take time to examine their early planted corn regularly for corn borer, during late June and early July.

Corn seed beetles are now found in many cornfields or in fields soon to be planted. Anything that hastens germination will help prevent damage by this pest.

We issued a statement last week about diazinon seed treatment and seeding rates. This had nothing to do with germination. However, in some instances, excess dust can accumulate in the bottom of the planter box and decrease the seeding rate. In some cases, certain hybrid seed has apparently "bridged-over" in the planter box and seeded unevenly. In other cases, the dust caked in the planter plates and decreased the seeding rate. More trouble was encountered with plastic plates than with metal plates. Diazinon as well as other seed treatments can cause seeding problems.

Several corrective measures have been used: (1) Add extra graphite, (2) premix the seed, (3) do not overdose, (4) increase the seeding rate, and (5) empty boxes and examine planter plates after filling each box.

Above all, watch the seeding rate.

Pay no attention to rumor and do not panic as some have done. This seed treatment is a good practice. As with all new practices, some difficulties will be encountered. It will require that a bit more care be taken when planting. Many farmers who have examined their planter boxes at regular intervals reported to us that they had no problems. Furthermore, many have asked about using diazinon seed treatment and rootworm insecticides. Except for BUXten, aldrin, or heptachlor, the rootworm insecticides should control these beetles.

Flea beetles are common in early planted sweet corn in the southwestern part of the state. Fields of newly emerging corn should be observed often for these shiny, black, jumping beetles. They strip-out narrow lines on the corn leaves, leaving only white tissue. If damage is occurring and plants are dying, apply either 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band over the corn row. Also, treat grassy areas bordering the field, such as fence rows or ditchs, to prevent additional flea beetles from moving into the corn. Do not use carbaryl near beehives or toxaphene near fish-bearing waters.

HOMEOWNER INSECT PROBLEMS

Roaches in the home can be controlled with a spray of 0.5-percent diazinon in oil, applied to their runways and hiding places. This material can be purchased in a pressurized spray can. Also, Baygon was recently approved for use in the home and can be purchased in pressurized cans. Brown-banded roaches require a more-thorough treatment than the other, more-common species.

Oystershell scale eggs have begun to hatch, especially on lilac, and the newly hatched crawlers are moving out on new growth. Thorough spraying with malathion (2 teaspoons of 50- to 57-percent liquid concentrate per gallon of spray) at this time will provide good control of these crawlers. The old scale coverings will probably remain on the bark for a while, but they will eventually slough-off.

WEEDS

POSTEMERGENCE CORN TREATMENTS

Although Ramrod is primarily used as a preemergence material at planting time, Ramrod wettable powder is cleared for early postemergence spray applications for corn until grass weeds reach the two-leaf stage.

Fairly good results have come in from Agronomy Department trials with this early postemergence treatment. But the sooner application can be made after planting, the better. Corn tolerance has been good for both preemergence and early postemergence Ramrod applications.

You don't have to wait until you see the weeds. Ramrod can be applied anytime before the weeds or crop emerge. You can still make an application until the weeds have two leaves. But don't stretch your luck by applying Ramrod to bigger weeds.

The very early, postemergence treatment may also provide control of some broadleaved weeds, such as pigweed and lambsquarter. There is no recommendation for mixing oil or 2,4-D with Ramrod as an early postemergence treatment.

The Ramrod-atrazine combination has clearance for very early postemergence application--before weeds reach the two-leaf stage. There are no label recommendations for adding oil to this combination.

With AAtrex, you have quite a bit of flexibility. If you didn't get it on preplant or at planting, you can still apply it after planting. But do it before the weeds emerge.

AAtrex may also be used with or without the oil additive as an early postemergence spray before weeds are 1-12/ inches high. If the weeds aren't up, there is no need to add the oil. Important point: The sooner you apply AAtrex after planting, the better.

When mixing AAtrex and oil, fill the spray tank with at least half the amount of water needed. In a separate container, make a thin slurry of AAtrex in water and add this to the tank. Keep the suspension well-agitated, add the oil, then add the remaining amount of water needed.

If you plan to use AAtrex and oil, store and handle the oil carefully. Oil contaminated with even a small amount of water may not emulsify properly when added to the tank.

For further details, refer to the University of Illinois *1969 Weed Control Guide*, and the most-recent label instructions.

For the best weed control and highest yields, exercise control early.

HERBICIDE COMBINATIONS FOR SOYBEANS

We have received several questions about the use of herbicide combinations for soybeans. Farmers look to combinations as a way of controlling more broadleaved weeds.

Alanap Plus (Whistle and Amoco soybean herbicide) is a mixture of Alanap and Chloro-IPC. The Chloro-IPC improves the smartweed control.

Dyanap (Alanap + dinitro) is cleared for very early postemergence use on soybeans.

Dinitro is a contact herbicide that will control most of the broadleaved weeds that emerge with the soybeans. Many of the broadleaved weeds continue to emerge long after soybeans come up.

Londax (Lorox + Ramrod) presently is cleared for soybeans, and is to be used for seed replanting.

Noraben, a mixture of Herban (norea) + Amiben, is being advertised before clearance. Norea is chemically related to Lorox. It is cleared for cotton, sorghum, and spinach, but not for soybeans as yet.

There is also interest in Lorox and Lasso as a preemergence, tank-mix combination. The Lorox rate will need to be adjusted for soil type to give a maximum margin between soybean tolerance and selective weed control.

NEW DINITRO CLEARANCE

Dow has announced that "Preemerge" (dinitro) has been cleared for directed post-emergence use on seed soybeans. Dinitro previously had clearance only for use on soybeans from the cracking stage--as plants emerge--until the first true leaves form. Present clearance is for use from the time soybeans are 5 to 6 inches tall until they bloom.

The purpose of this restricted registration is to control some broadleaved weeds, such as cocklebur and morningglory, which are tolerant to most preemergence herbicides.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Meetings, 1:30 p.m. each day. May 20... Office of the Pulaski-Alexander County Extension Adviser, Stan Ceglinski. May 21...Office of the Saline County Extension Adviser, Robert Edgar. Insects and diseases will be the general topics, with emphasis on the corn-borer situation and control.

* * * * * * * * * * *

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: Marshal McGlamery and Ellery Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 8, May 16, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations continue at a high level, and damage is evident in fields south of Highway 16. In the area between Highway 16 and Highway 136, damage is approaching economic levels. Some fields may need treatment this week. North of this line, feeding is noticeable but is not yet severe. Larvae are just beginning to pupate in the central section; pupation is progressing rapidly in the southern sections. However, eggs are still hatching; so, populations are expected to remain high for another 2 to 3 weeks. Larval populations should now begin to level off and gradually decline, as pupation continues and the incidence of parasitism increases. (In several fields, an extreme of 80 to 95 percent of the larvae were found parasitized by a wasp this week.)

Continue to watch alfalfa fields in the southern half to two-thirds of the state for weevil problems. In fields that are untreated and as yet uncut, it would be best to cut the alfalfa, remove the hay, and spray the new growth of the second crop. Cutting will often reduce the weevil population, since many eggs are removed and a good many larvae are either killed or forced to pupate by exposure to the sun. If the crop has already been cut but the new growth has not been sprayed, watch it closely for evidence of weevil damage. If it does not green up in 2 to 4 days and if worms are still present, apply treatment promptly. When the second-crop growth is considerable, apply an insecticide as soon as 25 percent or more of the terminals show noticeable feeding. This mainly applies to the southern sections of the state.

The insecticide recommendations are:

1. Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4, pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

3. Fields that are close to harvest and in which treatment is necessary should not be treated with azinphosmethyl (at least 16 days before cutting) or with methyl parathion (15 days). Switch to one of the other suggested chemicals, such as malathion, that has no waiting period.

Use no less than 4 gallons of finished spray per acre by air, or 20 gallons per acre if ground equipment is used. On stubble, 10 gallons per acre is sufficient.

Special note: Some spray burn was noticed this week, but the burn was not serious enough to affect yield. The burn appears 2 to 3 days after spraying as yellow spots on the leave

Spittlebug froth masses are numerous in many new seedings of clover and alfalfa, particularly in the northern and western sections. If there are 1 or more nymphs per stem, control is profitable. It is best to control the nymphs while they are still small and just beginning to form the froth masses. For control, apply methoxychlor at 3/4 pound of actual chemical per acre. With methoxychlor, allow one week to elapse between treatment and harvest or pasturing.

Potato leafhoppers continue to migrate into the state from the south. These tiny, green, wedged-shaped insects that skid sideways when disturbed cause a yellowing of the second- and third-crop alfalfa. No control measures are needed at this time.

CORN INSECTS

European corn-borer pupation is well along in the southern section of Illinois, and a few moths have emerged. Pupation is just beginning in the central section. Reports on corn-borer development were received this week from Stan Ceglinski at Mounds, Earl Lutz at Ridgway, Warren Bundy at Edwardsville, and Jim Paullus at Rochelle. First-generation corn borers now have the potential of seriously damaging corn in the northern half to two-thirds of the state. Planting got well under way during the last few days of April and the first week of May in this area. Rain has since prevented further planting. Corn-borer moths will concentrate their egg-laying in these more mature fields (corn, which is now up) during the month of June. Watch these fields closely in June for borer infestations. Be prepared to use insecticides if needed.

High overwintering borer populations exist. Thus far, the borers are healthy, although strong winds and beating rains during peak moth flights could still eliminate the threat.

Seed-corn beetles continue to pose a serious threat for germinating corn. The new suggestion of using a diazinon seed treatment for protection has presented some problems with seeding rates for farmers. The treatment has not affected germination. The earlier reports that diazinon dust adversely affected seeding rates have been traced largely to the use of the dust during periods of high humidity. This was our suspicion when we first commented on this problem two weeks ago. Generally speaking, farmers who have taken the time to check and clean their planter plates frequently have had little difficulty. We still feel that the use of a diazinon seed treatment is good practice. Some of the farmers who have returned their supply of diazinon dust to their dealers may regret this later on.

Black cutworm moths have been flying for several weeks, but there has been no damage reported as yet. Cool wet weather favors this insect. Watch low, wet spots or poorly drained spots in cornfields for damage. Broadcast applications of aldrin or heptachlor at or before planting (not for use on dairy farms) have given the most-consistent protection against this insect. If damage appears, use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds,

r trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least) gallons of water per acre and to cover the spray band by throwing soil at the base of ıe plants with a cultivator.

ɔrn flea beetles could soon be a problem in newly emerging corn. These small, black, hiny beetles that jump when disturbed eat white scratch marks on the leaves. Damaged lants first turn whitish or silvery, and sometimes are killed. If damage is severe nd plants are being killed, apply 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxa- hene per acre as a band spray over the row.

MALL-GRAIN INSECTS

rue armyworms are present in thick, rank stands of wheat and barley in the southern and ɔuthwestern sections of the state. As yet, they are still small and are not numerous nough to cause problems. However, the situation will bear watching as more eggs are aid and hatch. Cool, wet weather favors this pest.

ɔ not confuse the striped armyworms with the transparent yellow-to-green sawflies. An rmyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. In many wheat ields, we saw more sawflies than armyworms. Sawflies do not damage wheat plants enough ɔ require control.

ɔMEOWNER INSECT PROBLEMS

all cankerworms have hatched, and the larvae are beginning to feed on leaves of shade rees. This is particularly true in northeastern Illinois. These cankerworms like apple r elm, but will also feed on other fruit and shade trees. Sometimes these brown, to ark-green, to black measuring worms completely strip trees of their new spring foliage, hile other trees may be only partly defoliated. When full grown, the worms drop to the round by means of a silken thread that appears like a streamer in the wind. By this ime, it is too late for control. For best results, spray the foliage while the worms re still small and before the damage becomes severe. Use either 2 pounds of 50-percent arbaryl (Sevin) wettable powder or 1 quart of 50- to 57-percent malathion liquid con- entrate per 100 gallons of water.

awthorn leaf miner maggots will soon disfigure the leaves of Hawthorn trees. They damage he leaves by eating the tissues between the upper and lower surfaces. Small brownish atches develop along the edge of infested leaves. If your Hawthorn has been bothered by eaf miners, spray the leaves now with malathion (2 teaspoons of 50- to 57-percent liquid oncentrate per gallon of water) or diazinon (2 teaspoons of 25-percent liquid concentrate er gallon of water).

lothes moths and carpet beetles are getting ready for a summer's feast on improperly tored woolens. A small hole chewed in a piece of clothing may destroy its entire value. ɔ keep woolens safe from damage by these insects, follow these suggestions.

. Dry-clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.

. Woolens that are not dry-cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes vacuum the container thoroughly and spray all inside surfaces with 0.5-percent diazino applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill the larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Either napthalene or PDB (paradichlorobenzen is the fumigant commonly used in moth crystals, flakes, or balls. Use at least 1 poun of crystals, flakes, or balls for every 100 cubic feet of space.

5. Woolens not placed in insect-free containers can be protected by treating in light amounts with 0.5-percent diazinon, from a pressurized spray can, or liberally moistened with fluoride-base fabric solution. Protection will last a year or more, unles the woolens are washed or dry-cleaned. Caution: Infants clothing should be washed or dry-cleaned before use.

6. Good housekeeping practices will help reduce the number of these insects. Clean frequently to prevent lint and hair from accumulating, especially around radiators, baseboards, heating vents, and closets, as well as beneath large furniture and other hard-to-get-at places. If these places become infested, a light application of 0.5-percent diazinon will insure protection.

The brown recluse spider was found for the first time in Pike County this week.

Cereal product insects may be having lunch in your kitchen cabinets as uninvited house guests. Many kinds of beetles and moths attack stored food products. They can be found not only in packages or containers of food, but also in the cracks and crevices of cabinets or cupboards. Follow these three simple steps:

1. Remove all food packages from the cabinets and examine a small amount from suspect packages under a bright light for signs of insects.

2. Vacuum or carefully brush out cabinets and shelving.

3. Spray the entire inside surface of the empty cabinets with a 0.5-percent diazinon or 5.0-percent methoxychlor-oil solution from a pressurized spray can.

WEEDS

CONTROLLING YELLOW NUTSEDGE

Yellow nutsedge (nutgrass) reproduces from seed, nutlets, and rhizomes. It usually emerge late in damp areas, such as drainageways or low-lying soils.

Some preplant herbicides help control the weed. Sutan, AAtrex, and Vernam all give some control. If you use Vernam on soybeans in late-planted fields, you may be able to determine the exact area where application is needed.

Ramrod and Lasso have both given some control. Lasso appears to be much more active. Las is cleared for preemergence use on both corn and soybeans.

:razine and oil will also give control in corn, when applied postemergence to plants that :e 2 to 3 inches tall. Corn tolerance is lowered with atrazine and with 2,4-D.

SPECIAL ANNOUNCEMENTS

:sticide Dealers and Applicators Field Meetings, 1:30 p.m. each day.

ıy 20. . .Office of the Pulaski-Alexander County Extension Adviser, Stan Ceglinski.
ıy 21. . .Office of the Saline County Extension Adviser, Robert Edgar, Harrisburg, Illinois.

ısects and plant diseases will be the general topics with emphasis on corn borer, armyworms, ıd flea beetles.

NOT FOR PUBLICATION

SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

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SPECIAL NOTE TO SPECIALIZED AGRONOMY EXTENSION ADVISERS

:veral weeks ago, you were sent information about the locations of fields of corn stubble ı your area with high overwintering populations of European corn borers. We need your :lp in following the development of corn borer in the state for the next several weeks. ften, there are sufficient stalks left exposed, even if the field has been plowed or isked. Keep track of the number of larvae, pupae, and empty pupal cases as you dissect ıe stalks until you count a total of 25 forms. You should be able to do this in 30 inutes to an hour, if the field still has sufficient borers. If you can get the reports ıto the mail by Monday or Tuesday of each week, this would be most helpful.

:AD THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

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NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

)R IMMEDIATE RELEASE

No. 9, May 23, 1969

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INSECTS

)RAGE INSECTS

.falfa weevil populations remain high. Moderate to serious damage is evident in untreated .elds south of Route 16. Terminal feeding by larvae ranged from 40 to 100 percent in this ea this past week. Damage has reached economic levels in many alfalfa fields between)utes 16 and 136. Treatments should be made now or else the hay should be cut and removed. .elds between Routes 136 and 24 should be watched closely during the coming week.

1 the extreme southern areas of the state, the number of larvae is gradually leveling off, ven declining, as pupation increases and new adults emerge. Parasitism of the larvae by isps should also help keep populations in check.

)ntinue to watch alfalfa fields in the southern two-thirds of the state for weevil prob-ems. If the alfalfa is near cutting, remove the hay and watch the new growth for damage.

iny fields south of Route 50 have been sprayed at least one time. In some instances, the amage to the new growth is already extensive with as many as 10 to 20 worms present per weep. If the crop has already been cut but the new growth has not been sprayed, watch it .osely. If it does not green-up in 2 to 4 days and if worms are still present, apply an isecticide as soon as 25 percent of the terminals show noticeable feeding.

ie insecticide recommendations are:

- Commercial applicators can apply 1/2 pound per acre of methyl parathion or azinphos-methyl (Guthion) with good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, 16 days for azinphosmethyl. Wear protective clothing.

- Persons not equipped with protective clothing can use a mixture of (1) 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (2) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (3) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion.

- Fields that are close to harvest and in which treatment is necessary should not be treated with azinphosmethyl (at least 16 days before cutting) or with methyl parathion (15 days). Switch to one of the other suggested chemicals, such as malathion, that has no waiting period.

se no less than 4 gallons of finished spray per acre by air, or 20 gallons per acre if round equipment is used. On stubble, 10 gallons per acre is sufficient.

CORN INSECTS

European corn borer pupation is 75 to 100 percent completed in the southern sections of Illinois and moth-emergence is beginning. Egg-laying was observed in a field of early planted sweet corn south of Route 13. In the central section, approximately 25 percent of the borers have pupated. Pupation is just starting in the northern sections.

All conditions considered, damage from first-generation corn borers could be serious in the northern half to two-thirds of Illinois. Corn borer development is about a week behind, compared with last year at this time. Early planted corn in the northern two-thirds of the state may be sufficiently mature by mid- to late-June to attract moths and increase corn borer survival.

Flea beetles are damaging occasional fields of corn. Watch newly emerging corn for small, shiny, black beetles that jump when disturbed and leave white scratch marks on the leaves. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. Many fields being damaged are adjacent to grassy areas, fence rows, roadsides, and grass waterways. Spray these to prevent additional flea beetles from moving into the corn. Do not contaminate fish-bearing waters when using toxaphene.

Black cutworms are conspicuous by their absence but can't be written off the books yet. Watch the low, wet spots in the cornfields for damage. If damage appears, use a spray directed at the base of the plants of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre and to cover the spray band by throwing soil at the base of the plants with a cultivator.

Common stalk borers caused considerable damage last year to border rows in many cornfields. Whorl damage by this pest is often observed after it's too late to make a treatment.

Damage most often occurs to cornfields adjacent to weedy fence rows, ditchbanks, roadsides, or grass waterways. These are the places where the common stalk borer overwinters in the egg stage. About mid-June, watch for damage to corn whorls by a whitish-brown, striped worm with a purple band around the middle. Treatments are not effective unless the infestation is spotted early.

SMALL GRAIN

True armyworms are being found in thick stands of wheat and barley in the southern half of the state. So far, their number is low. Continue to observe wheat and barley fields during the next two weeks. The presence of cool, wet weather is favorable for the development of armyworms.

Treatment is justified if there are six or more armyworms per foot of row as an average over the field. Apply 1-1/2 pounds of actual toxaphene per acre for armyworm control in small grains. There are no restrictions in use of the grain, but do not feed the straw to dairy cattle or to livestock being fattened for slaughter. Do not contaminate fish-bearing waters. Avoid drift onto pastures or hay fields. Trichlorfon (Dylox) at 3/4 pound of actual per acre may be used to within 21 days of harvest, but the straw should not be used for livestock feed. Use carbaryl (Sevin) at 1 pound of actual chemical per acre on grass pastures or hay fields. Warn area beekeepers when carbaryl is applied.

ny sawflies are being found in wheat fields, but they are of little concern. Do not con-
se sawflies with armyworms. The sawfly larva is transparent and is yellow to green in
clor. It also has six or more pairs of abdominal prolegs, while the armyworm has five
irs.

MEOWNER INSECTS

ropean pine sawflies, a third to a half grown, have been reported at work defoliating
ne trees. These black-headed, grayish-green larvae like to feed together in clusters.
ey can be controlled by spraying with carbaryl (Sevin) using two tablespoons of the 50-
rcent wettable powder per gallon of water, or 2 pounds per 100 gallons of water.

WEEDS

STEMERGENCE HERBICIDES FOR CORN

4-D is the most-economical and effective treatment for most broadleaved weeds in corn.
u can spray over the top until the corn is 8 inches high. On taller corn, use drop
zzles (extensions) to keep 2,4-D out of the corn whorl.

sure to apply no more than recommended rate of 2,4-D. That rate varies with the
rmulation and the strength of formulation (the number of pounds per gallon).

ters are more effective than amines on weeds, so the rates vary. The volatile drift
zard is greater with esters than with amines.

me corn hybrids are more susceptible to 2,4-D injury than others. Some single-crosses
em to be extremely susceptible. Inbred seed stock (parent lines) often are quite
sily injured. It may be wise to check before spraying.

ch year some corn is damaged by 2,4-D--1968 was a particularly bad year. Corn is most
sceptible to 2,4-D injury when it is growing fast or when it is under stress. Spraying
rn with 2,4-D during or immediately after very cool, wet weather (or during very hot,
mid weather) may increase the possibility of corn injury.

nvel (dicamba) is less likely to injure corn than 2,4-D, but is much more likely to drift
d injure nearby soybeans, vegetables, or ornamentals. Banvel controls smartweed better
an 2,4-D, but is more expensive.

trex (atrazine) can be applied to corn as a postemergence spray until weeds are 1-1/2
ches tall. Broadleaved weeds are much more susceptible to AAtrex than annual grass
eds. So for effective grass control, the timing is critical.

ray additives, such as emulsifiable oils or special surfactants, have increased the post-
ergence herbicidal activity of AAtrex. The spray oil should be low in aromatic content,
ve a high UR value, and should contain at least 1-percent suitable emulsifier--so the
l and water will mix. Agitation is essential to prevent separation of the oil and water.

e 2-1/2 pounds of AAtrex 80W and 1 gallon of oil in 20 to 40 gallons of water per acre.
sure to add the oil last in the mixing operation. Oil contaminated with water before
xing can cause compatibility problems.

ecial surfactants, such as Tronic or T-Mulz, have also been used with AAtrex. They are
ed at a rate of 1 pint per acre or 1 pint per 25 gallons of spray. Surfactants have the
vantage of having less volume to handle, but oils are usually slightly more effective.

Under some conditions, AAtrex-oil-water emulsions have resulted in corn injury. Do not use oil in AAtrex sprays when the corn is under stress or when it is wet and succulent. Do not treat breeding stock or inbred lines with sprays of AAtrex-oil. Do not add 2,4-D to the AAtrex-oil-emulsion.

If AAtrex is applied postemergence at higher than 2-1/2 pounds per acre of 80W, or if it is applied later than mid-June, plan to plant corn in the field again next year. Do not graze treated areas or feed treated forage to livestock for 21 days following application.

PLANT DISEASES

WHEAT

There is less disease in wheat this year than in any of the past 10 or 15 years.

Septoria leaf blotch has not spread upward from the lowest leaves. Losses from this diseas should be very minor this year.

Powdery mildew is abundant in scattered fields and will cause lodging and yield reduction.

Leaf rust should start appearing during the next week or ten days. Trace amounts are now present in Arkansas and Missouri. Leaf rust development is later than normal in these states, and we anticipate that it will be late in Illinois.

Loose smut will be evident as the heads emerge from the boot.

ALFALFA

Leaf spot diseases are causing defoliation of alfalfa and clovers. Early harvest will prevent some leaf loss for this and future cuttings.

LAWNS

Leaf spot and melting-out are common problems, ones that are now serious in some lawns. Brown or purple spots are evident on the leaves. Later, the centers become light brown and the dark-purple borders are quite distinct. Leaf sheaths are turning brown, causing death of the leaf blades and giving diseased lawns a brownish undercast. Later, the crowns rhizomes, and roots will turn brown. During hot weather, the plants will die in large irregular areas.

Cultural control practices help keep this disease complex in check. Fungicides such as Ortho Lawn and Turf Fungicide, Daconil 2787, Dyrene, defolatan, folpet (Phaltan), maneb (Fore), or zineb are effective when applied on a regular, protective schedule. But they will do little good now if leaf spot and melting-out are severe.

Stripe smut is prevalent and is serious in scattered turf areas. Look for pale-green to yellowed plants occurring in patches. Infected plants are stunted and have curled or shredded leaves with black stripes. Such plants will probably die during the hot, dry weather.

At present, about all we can suggest is to water and fertilize heavily infected lawns. These practices promote vigor and help keep smutted plants alive. If smut is a minor problem (only a few scattered plants that are difficult to see), let the lawn dry out. The smutted plants will die and healthy plants will then replace them.

FRUIT

Peach leaf curl is serious and is causing almost complete defoliation of unsprayed trees in backyards. All we can suggest is to fertilize and water during dry periods, to promote vigor and a new crop of leaves. The disease is easily controlled by a single, dormant application of almost any fungicide.

Fire blight is showing up on apple, pear, crabapple, hawthorn, and related plants. See *Report on Plant Diseases No. 801* for more details.

Apple scab is now serious on apple and crabapple. Infected leaves are turning yellow and are dropping off. Many trees will be nearly defoliated during the next several weeks where a protective spray program is not followed.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Days/1:30 p.m. each day:

June 3, Office of the Perry County Extension Adviser, Charles Howell, Pinckneyville
June 4, Office of the White County Extension Adviser, Ralph Romig, Carmi
June 9, Office of the Jasper County Extension Adviser, Larry Casey, Newton
June 10, Office of the St. Clair County Extension Adviser, Ray Hardimon, Belleville
June 10, Office of the Marion County Extension Adviser, Les Rogers, Salem
June 11, Office of the Macoupin County Extension Adviser, William McAllister, Carlinville
June 11, Office of the Moultrie County Extension Adviser, Roger Wenberg, Sullivan

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WEEDS: Marhsal McGlamery and Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and M.P. Britton, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

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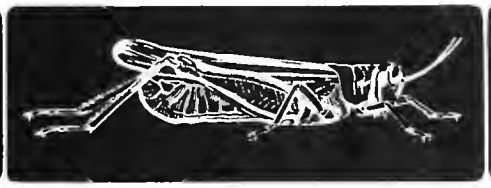
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 10, May 29, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Seed-corn beetles and seed-corn maggots are both damaging germinating corn. The beetles are also hurting seedling plants. Missing plants (skips) or stunted plants are a sign of seed damage by these insects. The slender seed-corn beetle (most common) is chestnut brown color. The striped seed-corn beetle is dark-brown with a tan border. Both are about 3/8 inch long and move about in the soil readily. The seed-corn maggot is a pale, yellowish-white maggot about 1/4 inch long found in the seed.

The beetles and maggots eat holes in the seed. The beetles also eat gouges in the developing sprout, sometimes cutting small sprouts completely. Plants with damaged sprouts or minor tunnelling in the seed are stunted. Many of these plants will still recover. Once corn reaches the three- or four-leaf stage, it will usually grow away from the damage. However, the insects will continue to hurt germinating corn for another 2 to 4 weeks. Damage is evident in untreated fields as well as in fields treated with aldrin, heptachlor, chlordane, lindane, or dieldrin as seed or soil treatments, indicating resistance to these insecticides. The control of these insects has been satisfactory, when a diazinon seed treatment or an insecticide for resistant rootworms was applied at planting time.

If replanting becomes necessary, use a diazinon dust on the seed for control. Take time to check and clean the planter plates frequently. This will help prevent any reduction in the seeding rate.

Black cutworms are reported to be causing damage in a few fields. Watch the low, wet spots in the cornfields. If damage appears, use a spray directed at the base of the plants of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre and to cover the spray band by throwing soil at the base of the plants with a cultivator.

European corn-borer moth emergence is progressing rapidly in the southern section. In the central section, approximately 75 to 90 percent of the borers have pupated, and emergence of moths is beginning. Pupation has started in the northern section, but no moths have emerged as yet. Corn-borer development parallels that of 1956, when a high overwintering population caused severe damage in the more-mature plantings in late June and early July. Much of the corn planted before May 10 in the northern half to two-thirds of the state (except localized areas in the east-central section) may develop economic infestations of first-generation borers. Watch fields in the south-central section beginning about June 12, in the central section about June 18, and in the northern section about June 24 for damaging infestations. Plan to use insecticides if needed.

Grape colaspis is damaging occasional fields of corn planted on a plow down of red clover, according to late reports. These small white grubs chew off the root hairs. Row treatments of aldrin or heptachlor do not provide adequate protection against this insect, but broadcast treatments are effective. Affected plants are stunted and the leaves turn purpl indicating a lack of phosphate due to the inability of the damaged roots to absorb a sufficient amount. The grubs will mature and complete their feeding during the next two to three weeks. Generally, plants will recover and produce a near-normal yield unless the damage is extremely severe.

CORN AND SOYBEAN INSECTS

White grubs have been reported as numerous in a few fields now being plowed in the central section. These are mainly fields in a continual corn-soybean rotation. The grubs are generally large, indicating that this is the last year of their cycle. These large grubs will finish feeding in mid to late June and will burrow down in the soil to form the resting (pupal) stage. Next year about this time, the adult June beetles will emerge and lay eggs in soybean or sod fields to complete the cycle.

If the field is to be planted to soybeans, a delay in planting to allow the grubs to finis their feeding period will be helpful. If the beans have already been planted, nothing can be done.

Before planting corn, broadcast 2 pounds of actual aldrin or heptachlor per acre and disk it in. After corn is up, it might help to spray 1 pound of actual aldrin or heptachlor per acre. Direct the spray at the base of the plants. Cultivate immediately to throw soil over the sprayed band. This will provide some help but will not be perfect. Rain following treatment will improve control. Corn treated in the same manner should not be used for ensilage or stover, but it may be used safely for grain. Do not make treatments after July 1. Do not use aldrin or helptachlor on dairy farms.

FORAGE INSECTS

Alfalfa weevil populations are beginning to level off and decline as the larvae pupate. Parasites take their toll, and adults lay fewer eggs. The problem area lies south of Route 9.

Watch the new growth of the second crop. If it does not green-up in 2 to 4 days after cutting, and if worms are present, spray it promptly. When the second-crop growth is considerable, apply an insecticide as soon as 25 percent or more of the terminals show noticeable feeding. (This applies mainly to the southern third of the state.) Larvae of the alfalfa weevil will be present and easily found for several weeks yet, but the peak period for damage is over in most areas.

For control of the alfalfa weevil larvae, farmers making their own applications should use malathion or a commercially prepared malathion-methoxychlor or methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use the above materials or one of the more-toxic insecticides like methyl parathion or azinphosmethyl (Guthion). Be sure to follow label directions for dosages, harvest limitations, and precautions when using insecticides.

Lesser clover-leaf weevil larvae can be found feeding behind leaf sheaths and along the stems of red clover. The larvae are gray to dirty-green, legless worms with a black head. They can usually be found in a dirty groove on the stem or in a tunnel inside the stem behind a leaf sheath, or in terminal buds. Infested plants are often stunted, and stems and leaves may wilt and die. The blooms dry-up and turn brown prematurely. No practical control measures are known.

OMEOWNER INSECT PROBLEMS

agworm hatch is about complete in the southern sections, and sprays should be applied immediately. The target date for spraying in the central sections is after June 15; in the orthern sections, after June 30. Bagworms especially like to feed on evergreens (except ews), but they will also attack other trees and shrubs.

ake plans to apply treatments early this year, while the worms are still small and easy o kill and before damage is evident. Carbaryl (Sevin), diazinon, or malathion are all ffective. Malathion will also provide fair control of the mites that may be present. ollow label directions and check the list of plants on the label for the ones that may be njured if sprayed with the insecticide you are using.

phids are heavy on many kinds of trees, shrubs, and flowers. These small, soft-bodied, ucking insects (green, yellow, black, or red) secrete a sticky material called "honeydew." his sugary secretion coats leaves, making them glisten. Cars parked beneath infested rees become covered with sticky spots. Ants are often numerous on aphid-infested plants, here they feed on the aphid secretions.

hite specks are usually visible on the leaves; these are the cast-off skins of the aphids-- ot eggs. The leaves of heavily infested plants will curl, yellow, and eventually brown.

or control, spray the foliage thoroughly, using 2 teaspoons of 50- to 57-percent malahion or a 25-percent diazinon emulsion concentrate per gallon of water. Do not use malahion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus.

uonymous scale crawlers are now moving out on the leaves and new growth. They will soon orm a protective covering, making control difficult. If your euonymous has a history of cale problems, apply a malathion spray immediately. Repeat the treatment twice more at eekly intervals. To mix, use 2 teaspoons of the 50- to 57-percent malathion liquid conentrate per gallon of water.

he "dive bombers" are back again. There are a large number of mosquitoes in many areas, robably as a result of the wet weather during recent weeks. To reduce the number of mosuitoes in home yards, follow these steps: (1) Eliminate standing water in such places s eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a ater-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid conentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every eek or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang lastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per ,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and lies for 4 to 6 weeks. As an added precaution, hang the strips where children cannot each them and away from fish bowls and food counters. A 0.1-percent pyrethrum space pray--applied from a pressurized spray can--can be used for quick knockdown in place of he dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most-effective osquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and hairs and into the air for a few feet around the area. Repeat the treatment as needed.

he number of fleas on dogs and cats is increasing. If left uncontrolled, they can beome a serious problem in a home or home yard by late summer. The worm (larva) stage f fleas live in the bedding of dogs and cats, rugs, upholstered furniture, and even in he dirt in flower and shrubbery beds. The worm stage is usually not noticed and is armless, but adult fleas suck the blood of warm-blooded animals. Your dog or cat is a

walking bait station for fleas. Dust them at least once a month during the warm weather (May to October) with either 4-percent malathion or 5-percent carbaryl (Sevin). Treatments should also be made once or twice during the colder months (November to April) for added protection.

WEEDS

POSTEMERGENCE TREATMENTS ON CORN

Four points seem timely:

1. Atrazine and oil applications need rain soon after application to be highly effective.

2. We've had several calls regarding the control of nutgrass in corn. Atrazine and oil does the best job. If you're willing to risk corn injury--where you have a serious nutgrass problem, you can add 2,4-D to the atrazine and oil. Keep in mind that the practice is risky, and if you try it, you're gambling and may suffer some corn injury.

3. We have a report from Minnesota researchers that adding one-half pound of Dowpon to atrazine and oil activates the atrazine and improves grass control. Dowpon is cleared for such use, but our tests have not shown much improvement in control by adding the Dowpon.

4. Where grasses are coming, consider using the rotary hoe. It's still a good way to kill existing weeds, and the light incorporation sometimes improves herbicide activity

WATCH YOUR WELL

We've had several calls from farmers who have filled their spray tanks, and then had the tank's contents siphoned back into the well--herbicide and all.

Remove the hose when you finish filling the tank. Better yet, be certain you have a valve that will prevent siphoning. Another way to avoid the accident is to fasten the hose to the top of the tank, so that it doesn't extend into the spray tank.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Days/1:30 p.m. each day:

June 3, Office of the Perry County Extension Adviser, Charles Howell, Pinckneyville
June 4, Office of the White County Extension Adviser, Ralph Romig, Carmi
June 9, Office of the Jasper County Extension Adviser, Larry Casey, Newton
June 10, Office of the St. Clair County Extension Adviser, Mike Hardimon, Belleville
June 10, Office of the Marion County Extension Adviser, Les Rogers, Salem
June 11, Office of the Macoupin County Extension Adviser, William McAllister, Carlinville
June 11, Office of the Moultrie County Extension Adviser, Roger Wenberg, Sullivan

NOT FOR PUBLICATION

SPECIAL NOTE TO RADIO AND TELEVISION STATIONS

You can have the insect situation report on your station each Friday through Monday noon. Telephone (217) 333-2614 each Friday. An automatic answering device will play a recording with U. of I. entomologists summarizing the week's insect activity and forecasting next week's problems. There is a southern- and northern-Illinois report, each 2 minutes long.

u may record either report each time you call. For more information or in case of difficulty, call Ron Scherer (217) 333-1130. To get the northern- and southern-Illinois sect reports call (217) 333-2614, from 6 a.m. on Friday until noon on Monday.

AD THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

is weekly report was prepared as follows:

SECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, iversity of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural story Survey.

EDS: Marshal McGlamery and Ellery Knake, Department of Agronomy.

COMMUNICATIONS: Del Dahl.

e information for this report was gathered by these people, staff members, county Exnsion advisers, and others, in cooperation with the USDA Agricultural Research Service, ant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 11, June 6, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Seed-corn beetles are still present in many cornfields throughout the state. Where a diazinon seed treatment was not used, damage may yet occur to newly emerging corn plants. If replanting is necessary or if the corn is just now going in, be sure to treat with diazinon. Corn now 6 inches high or taller will probably escape further damage by the beetle.

The slender seed-corn beetle is migrating now and was picked up in light traps by the thousands this past week. Damage caused by the seed beetle may appear in fields, but the beetle could be gone.

True armyworms have been reported doing damage to corn following rye where a no-tillage system of planting was used. The armyworm moths laid eggs in the rye, and the newly hatched worms are feeding on the corn. For control, use 1-1/2 pounds of toxaphene, 1-1/2 pounds of carbaryl (Sevin), or 1 pound of trichlorfon (Dylox)--applied as a spray over the row when damage is apparent. Cultivating after application will be helpful.

Wireworms are damaging corn in a few fields where no insecticide had been used. If replanting is necessary, apply a broadcast application of 2 pounds of aldrin or heptachlor per acre, and disk-in immediately. A spray may give quicker kill than the granules. It is difficult to control this insect after corn is planted. Use a spray of aldrin or heptachlor to salvage a damaged stand where replanting is unnecessary and to prevent further damage. Apply 1 pound of the actual chemical per acre. Direct the spray at the base of the plant and cultivate immediately. Do not use aldrin or heptachlor on dairy farms--try diazinon.

Corn rootworm eggs of both the western and northern species will begin to hatch within another week or two. Potentially, fields of continuous corn in the northern half of Illinois may be affected. Many fields of second-year corn north and west of a line from Dixon to Peoria to Stronghurst may be damaged by the western corn rootworm. Other fields of second-year corn to the east and north of this line may also be damaged. The northern corn rootworm is most abundant north of Highway 36 (Pittsfield to Springfield to Decatur), and is often a problem in fields where corn has been grown continuously for three or more years in the same field.

If you suspect or know that you have a resistant western or northern corn-rootworm problem, and if you did not use an organic phosphate or carbamate insecticide at planting time, apply one of these within the next two weeks. Use granules applied at the base of the corn plants, and cover them by cultivation. A special applicator on the cultivator directs the phosphate granules at the base of the plant, and dirt is thrown over this deposit.

Organic phosphate or carbamate insecticides are the only effective means of controlling resistant rootworms. The following materials have label approval for basal application and are recommended for control of resistant rootworms in Illinois.

Insecticide	Rate per acre (lb.)
*BUXten	1
Diazinon	1
Disulfoton (Disyston)	1
Parathion (Niran)	1
Phorate (Thimet)	1
Carbaryl (Sevin)	2

*Note: Effective June 1, 1969, BUXten granular has been granted USDA registration for use as a basal application for corn rootworm larval control in field corn. For best results, make the application before June 15.

The emergence of European corn borer moths is almost complete in the southern section. In the central section, pupation is complete and moth emergence is well underway. Pupation is about 90-percent complete in the northern section and moth emergence is just starting.

Egg-laying has been observed south of Route 50. These early counts show 55 to 65 egg masses per 100 plants. An estimated 10 to 15 percent of the pupae in old stalks in the southern section have been killed by sunscald. In southern areas, egg-laying will take place for another 10 days to two weeks.

Watch closely for damage in fields that were planted very early. Fields averaging 30 inches in height now, with a tassel ratio of 5 to 10, may have a high level of borer survival and could warrant treatment within two weeks, or perhaps sooner. The survival of borers from eggs layed during the next two weeks will increase with corn plant development. Economic damage may be prevented if we get hot, dry winds, which will roll the egg masses off plants. Hard, beating rains would also help kill the moths during peak egg-laying periods. Moths may be laying eggs on weeds and other plants, and this would further reduce economic damage.

Much of the corn planted before May 10 in the northern half to two-thirds of the state (except for localized areas in the east-central section) may develop economic infestations of first-generation borers. Watch fields for damaging infestations... in the south-central section beginning about June 12, in the central section about June 18, and in the northern section about June 24. Plan to use insecticides if needed.

To decide whether an insecticide can be profitably applied, measure the tassel ratio of the field and determine the percentage of the plants with recent feeding in the whorl leaves. To determine the tassel ratio, measure the height of the

plants with leaves extended; split the stalk open and measure from the tip of the developing tassel to the base of the plant; divide the tassel height by the plant height; and multiply by 100. That figure is the tassel ratio. If the tassel ratio is at least 35 (preferably 40 to 45) and at least 75 percent of the plants show whorl feeding, treatment is justified. Use 1 pound of actual diazinon in granular form per acre or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion, which provides good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Corn flea beetles are appearing, but their number remains low except in an occasional field. They can damage stands when the population is high. Both the black beetles have been observed on small corn. If damage to newly emerging corn is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. They inflict white scratch marks on the first 3 or 4 true leaves and may cause the seedling to appear whitish or silvery. Do not contaminate fish-bearing waters when using toxaphene.

Black cutworm problems have been few thus far. Although damage is more likely to occur in low, wet spots, these cutworms may attack on hillsides too. Check the low spots in cornfields regularly; watch for missing, cut, or wilting plants. The small, gray-to-black worm can usually be found in the soil near the damaged plant. Corn plants cut above the growing point or heart will recover.

If damage appears, use a spray directed at the base of the plants of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre; also, to cover the spray band by throwing soil at the base of the plants with a cultivator.

If you know the location of a black cutworm problem field, please contact us.

Thrips can be found in the whorl of all corn plants in southern Illinois. Their feeding appears as tiny streaks of white mottling on the leaves. When thrips are abundant, the damage may give the field a wilted, silvery appearance. Do not confuse thrip damage with the silvery colored upper corn leaf damage caused by wind or cold. Insecticides are seldom needed to control thrips on corn. There are two species; the adult of one species is yellow and white, the other is black. Fully grown adults are about 1/16 of an inch long.

Corn blotch leaf miners are appearing in cornfields around the southern areas. The adult lays eggs in the surface of the corn leaf. The larvae leave mines, or transparent galleries. The feeding and egg-laying punctures made by the adult (a gray to-brown fly) probably have little effect on plant vitality. Likewise, the leaf mining by the larvae seldom causes injury.

SMALL GRAIN

True armyworm populations continue to remain low in most thick, rank stands of small grains (wheat, barley, rye, grasses) throughout the southern half of the state. It is advisable to make spot checks in small grain fields for another two weeks. Cool, wet weather is favorable for the development of armyworms.

Treatment is justified if there are 6 or more armyworms per foot of row as an average over the field. For control, apply 1-1/2 pounds of actual toxaphene per acre. There are no restrictions on the use of the grain, but do not feed the straw to dairy cattle or to livestock being fattened for slaughter. Do not contaminate fish-bearing waters. Avoid drift onto pastures or hay fields. Trichlorfon (Dylox) at 3/4 pound of actual chemical per acre may be used to within 21 days of harvest, but the straw should not be used for livestock feed. Use carbaryl (Sevin) at 1 pound of actual chemical per acre on grass pastures or hay fields. Warn area beekeepers when carbaryl is applied.

FORAGE INSECTS

Alfalfa weevil larvae populations are declining in the southern part of the state, as pupation increases and adults emerge. In the central and north-central sections (between Route 36 and Route 34), larvae are causing economic damage to many fields of first-crop alfalfa. In this area, it is best to cut and remove the hay; then watch the new growth for damage.

Some serious larval damage to the new growth of the second crop has been reported south of Route 50. If the new, second-crop growth does not green-up within 2 to 4 days after cutting, look for the small, green larvae or the 1/4 inch, brown-snout beetle adults of the alfalfa weevil. Treat promptly if either or both are present and if 25 percent or more of the terminals show feeding. Adult feeding damage, which appears as a "feathering" along leaf margins, may occur in the extreme southern areas as the pattern of emergence increases.

For control of the alfalfa weevil larvae, farmers making their own applications should use malathion or a commercially prepared malathion-methoxychlor or methoxychlor-diazinon (Alfatox) mixture. Commercial applicators can use the above materials or one of the more-toxic insecticides, such as methyl parathion or azinphosmethyl (Guthion). Be sure to follow the label directions for dosages, harvest limitations, and precautions when using insecticides.

HOMEOWNER INSECT PROBLEMS

Bagworms are hatching in southern sections. Sprays should be applied immediately. In the central sections, the target date for spraying is after June 15; in northern sections after June 30.

For best results, spray while the worms are still small and easy to kill--and before damage is evident. Use either carbaryl (Sevin), diazinon, or malathion. The latter will also provide fair control of any mites that are present. Follow the recommendations on the label, and check the plants that may be injured by the particular insecticide being used.

Leaf miners are feeding between the upper and lower surfaces of the leaves on some birch trees, leaving blotches and "mines." For control, spray the foliage thoroughly when the mines first appear. Use diazinon (4 tablespoons of diazinon 25-percent E.C. in 6 gallons of water) or malathion (4 tablespoons of malathion 50- to 57-percent E.C.). Repeat the treatment in 10 to 12 days.

Elm leaf beetles will soon be skeletonizing the leaves of Chinese elm. Other elm species are also affected to some extent. These are small, dirty-yellow to black worms found on the undersides of the leaves. A spray of carbaryl (Sevin), using 2 pounds of 50-percent wettable powder per 100 gallons of water, or lead arsenate, using 4 pounds of wettable powder per 100 gallons of water, is effective.

Maple bladder galls can be found on the upper sides of the leaves on some soft maple trees. These show up as green or reddish growths. Mites overwintering on the bark of trees stimulate the formation of the galls, in which many mites live and feed. These galls rarely cause damage. It is too late to control this insect in 1969. Next spring, spraying with malathion after the buds are swollen but before new leaves appear will control this pest.

Oystershell scale hatch is underway in the central and southern parts of Illinois. The new crawlers are getting ready to begin feeding on lilac, birch, dogwood, ash, peonies, and many other shade trees and shrubs. In the northern sections, it will be about 2 weeks (June 15) before hatch is complete. For control, use a spray of malathion (2 teaspoons of 50- to 57-percent concentrate per gallon of water), and treat the infested area thoroughly. An additional treatment may be needed in mid-August for the second-generation crawlers. Even though scales are killed by spraying, the covering will persist for several months.

Forest tent caterpillars are pale blue worms with a white keyhole marking on each segment down the back. These worms make no tent or extensive webbing, but they can quickly defoliate trees. Carbaryl (at 2 pounds of 50-percent wettable powder per 100 gallons of water) will give control.

The brown recluse spider was found for the first time in Franklin County this week.

WHEAT DISEASES

Glume blotch is beginning to appear on wheat heads. On the Ben Hur variety, glume discoloration occurs naturally and should not be confused with glume blotch.

Loose smut is also present in wheat, as is head blight or scab.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Days/1:30 p.m. each day:

June 9, Office of the Jasper County Extension Adviser, Larry Casey, Newton.
June 10, Office of the St. Clair County Extension Adviser, Mike Hardimon, Belleville.
June 10, Office of the Marion County Extension Adviser, Les Rogers, Salem.
June 11, Office of the Macoupin County Extension Adviser, William McAllister, Carlinville.
June 11, Office of the Moultrie County Extension Adviser, Roger Wenberg, Sullivan.
June 17, Office of the Brown County Extension Adviser, Robert Hayward, Mt. Sterling.
June 17, Office of the Henderson County Extension Adviser, Curt Eisenmayer, Stronghurst.
June 18, Office of the Knox County Extension Adviser, Don Teel, Galesburg.
*June 18, Office of the Livingston County Extension Adviser, Paul T. Wilson, Pontiac.
*June 19, Office of the McLean County Extension Adviser, Gene Mosbacher, Bloomington.
June 19, Office of the Iroquois County Extension Adviser, Ken Imig, Watseka.

*NOTE: THE DATES OF THE LIVINGSTON AND MCLEAN COUNTY MEETINGS HAVE BEEN CHANGED FROM PREVIOUS ANNOUNCEMENTS.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

DISEASES: M.P. Britton, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

OR IMMEDIATE RELEASE No. 12, June 13, 1969

his series of weekly bulletins provides a general look at the insect, weed, and plant isease situation (fruit and commercial vegetables excepted), along with suggested, abreviated control measures. Each individual should check his own fields to determine local onditions.

INSECTS

ORN INSECTS

eed-corn beetle damage is still being reported to us. Plant stands are erratic, and plants ary greatly in size. Since these beetles have eaten the food stored in the seed, the small prout dies before it emerges; or if it does emerge, the seedling is weakened. Therefore, here are normal plants in the field, weak plants less than half normal size, plants that ave never emerged, and seeds that did not germinate. Variation in size can also be due to ertilizer burn, wind, fungus infection, and planting-depth differences. However, if the eed was definitely hollowed out, the damage is probably seed beetle. Seed-beetle damage as been observed where no treatment was applied, as well as where aldrin or heptachlor ad been used as soil insecticides.

orn blotch leaf miners are becoming more common. They are not of economic importance, but an be confused with other problems. The adult, which is a fly, makes tiny elongated punctures in groups about 1/16-inch long--usually in the tip of the leaf. The maggot mines etween the upper and lower leaf surfaces. A dirty-yellow maggot can usually be found in hese mines.

ommon stalk borers are now appearing in cornfields and can be expected to appear in many rops--oats, wheat, corn, tomatoes, and many flowers--during the next three weeks. Although hey are still only 1/4-inch long, the distinctive coloration is noticeable. They have ellow-to-white stripes running lengthwise along the body. The middle section of the body s purple, black, or brown; both ends are lighter colored.

hese pests usually infest crops near fence rows, ditch banks, grass waterways, or any ther area where weeds were present for the moths to deposit eggs last August. These eggs re now hatching, and the worms are migrating to the nearest plants.

ontrol is rarely recommended, since these worms usually remain on one plant and do not igrate throughout the field--contrary to the impression held by some people.

orn flea beetles are tiny, black, shiny beetles found on corn leaves. They jump at the lightest disturbance, so approach the plants cautiously if you want to see them. The eetles strip tiny areas from the surface of the leaf. The tiny "scratches" are parallel o the leaf veins. Although not numerous enough to be damaging, these beetles transmit tewart's disease of corn. No control on field corn is practical for these insects unless hey are killing plants.

Black cutworm damage reports, although not numerous, are more common this year than last. Check low spots on fields. If plants are being cut above the growing point of the corn and if the worms are all over 1 inch long, the outbreak will be over very shortly, and the corn will continue to grow. However, you should treat immediately if the plants are being cut off below the growing point and many worms are less than an inch long. Direct the spray at the base of the plants; use carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre in at least 20 gallons of water per acre; also, cover the spray by throwing soil at the base of the plants with a cultivator.

Corn rootworm eggs will begin to hatch this week in the north half of Illinois. Potentially, fields of continuous corn in the northern half of Illinois may be affected. Many fields of second-year corn north and west of a line from Dixon to Peoria to Stronghurst may be damaged by the western corn rootworm. Other fields of second-year corn to the east and north of this line may also be damaged. The northern corn rootworm is most abundant north of Highway 36 (Pittsfield to Springfield to Decatur), and is often a problem in fiel where corn has been grown continuously for three or more years in the same field.

If you suspect or know that you have a resistant western or northern corn-rootworm problem and if you did not use an organic phosphate or carbamate insecticide at planting time, apply one of these within the next two weeks. Use granules applied at the base of the corn plants, and cover them by cultivation. A special applicator on the cultivator directs the phosphate granules at the base of the plant, and dirt is thrown over this deposit.

Organic phosphate or carbamate insecticides are the only effective means of controlling resistant rootworms. The following materials have label approval for basal application and are recommended for control of resistant rootworms in Illinois.

Insecticide	Rate per acre (lb.)
*BUXten	1
Diazinon	1
Disulfoton (Disyston)	1
Parathion (Niran)	1
Phorate (Thimet)	1
Carbaryl (Sevin)	2

*Note: Effective June 1, 1969, BUXten granular has been granted USDA registration for use as a basal application for corn rootworm larval control in field corn. For best results, make the application before June 15.

In northern Illinois, the big question relates to rainfall and the effectiveness of plantin time applications of rootworm insecticides. Did the 3- to 6-inch rains take the insecticid out of the rootworm zone? This is likely to vary with insecticides. Check the root system of plants this week and during the next two weeks for the infestations. If you find 5 or more worms per plant, use a basal application.

Small worms are hard to find. Dig up the plant. Put the roots in a plastic bag. Examine the bag for tiny rootworms two times at 24-hour intervals. In another 10 days, the rootworms will probably be large enough to be seen in the field by shaking the roots over a piece of canvas or plastic. At this time, also tear open the roots; many rootworms are actually in them.

Unfortunately, it may be too late to get through the corn with a cultivator by the time you find the rootworms. If you think the rain did seriously reduce the effectiveness of your planting-time treatment, information from our 1968 corn rootworm control demonstrations may help you decide on whether to make a basal application.

First, 1968 was a year for optimum results from planting-time treatments. We had no heavy rains between planting time and rootworm egg hatch. We applied diazinon to 1/2 of each plot as a basal application. Our results from 8 fields showed that a planting-time treatment plus a basal application yielded 1-1/2 percent more corn than the planting-time application alone. Under many conditions (including those of 1968), this gain would not justify the added expense. But with the heavy rains that came before rootworm egg-hatch this year, making a basal application could produce much better results this year. If you feel certain your field will be heavily infested with rootworms, if you did have heavy rains, the 1968 data may help you make a decision now, as you should recover at least the 1-1/2 percent in yield as in 1968 and most likely considerably more with this year's rainfall.

The potential for European corn-borer infestations is still uncertain. Corn-borer development this year parallels that of 1956, when we had one of our most-severe, first-generation infestations. Moth emergence is similar to that of 1956, egg-laying is a little later this year, and the corn about 5 to 10 inches shorter. Thus, borer survival may be slightly lower than in 1956. This year, we have also had more borers die in the pupal stage before they could emerge as moths. In southern Illinois, emergence is complete and egg-laying will soon be over. Examine the most-advanced fields now for possible treatment. Only a very small percentage of the fields are involved.

In south-central Illinois, emergence is almost done and about 5 to 20 percent of the moths are yet to emerge. Egg-laying should be complete by June 20 to 25. On the east side of the state, a few fields of the most-advanced corn will be involved. On the west side, 2 to 4 percent of the fields might have economic infestations. The next 7 to 10 days will determine the importance of corn borer to the early corn. Continue to examine the most-advanced fields carefully.

Although the threat of economic damage from first-generation borers is not great in south and south-central Illinois, the survival rate may be high enough to cause damage later on.

In central Illinois, about 10 to 30 percent of the moths are yet to emerge. Egg-laying has just begun, and it will continue for the next 2 weeks or a little longer. Much depends on the temperatures at night. If those temperatures remain high, the moths will deposit their eggs quickly and egg-laying will be over. Cooler nights will mean that the egg-laying will continue for a longer time, and about 5 to 10 percent of the fields will develop borer problems. Observe the most-advanced corn until the last few days of June.

In north-central and northern Illinois, 20 to 45 percent of the moths are yet to emerge. An occasional egg mass can be found. Egg-laying will continue into late June and early July. Observe the most-advanced fields carefully, starting about June 20.

To determine the need for treatment, measure the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. If there is corn-borer feeding in the whorl, the percent of plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre or 1-1/2 pounds of carbaryl (Sevi) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion, which provides good control of the corn borer. Parathion has a 12-day waiting perid between treatment and harvest.

SOYBEAN INSECTS

Bean leaf beetles are now appearing and are eating holes in leaves. Do not treat unless the stands are being noticeably reduced.

Alfalfa weevils and related alfalfa pests are feeding on the leaves of soybeans planted in fields where alfalfa was plowed down this spring. No controls are needed.

FORAGE INSECTS

Alfalfa weevil needs watching on second-growth alfalfa in central and north-central Illinois; also, on the east side of the state to as far north as Kankakee and LaSalle. On the west side of the state, this problem tapers off to the south. If second-crop alfalfa is not growing and is browning and if worms are present, apply one of the weevil insecticides

STORED-GRAIN INSECTS

Stored-grain insects are lying in wait for wheat harvest, which is just around the corner in southern sections. To protect wheat from insect damage, follow these steps:

1. Sweep up and clean out all old grain, chaff, and other debris inside and around the storage bin.

2. Apply a water-base spray of 1.5-percent premium-grade malathion (mix 3 ounces of 50- to 75-percent malathion emulsion concentrate per gallon of water) or a 2.5-percent methoxychlor (mix 14 ounces of 25-percent methoxychlor-emulsion concentrate per gallon of water) to the ceiling, walls, and floor of the bin.

3. If the wheat is to be stored for a month or longer, treat it with a premium-grade malathion dust (40 to 60 pounds of 1-percent dust per 1,000 bushels), or spray (1 pint of 50- to 57-percent emulsion concentrate in 3 to 5 gallons of water per 1,000 bushels. The dust is best applied on the surface of the wheat in the combine hopper; the spray, as the wheat is augered or elevated into the bin.

4. Clean out the combine, auger, and other grain-handling equipment. An easy way to clea the combine is to discard or feed to livestock the first 2 or 3 bushels that pass through.

HOMEOWNER INSECT PROBLEMS

Sod webworm moths can be observed around shrubbery, also on window screens and around ligh at night. They are laying eggs for the first-generation larvae, which will be feeding dur ing late June. This generation usually does not do economic damage, as does the second generation in late July and August. But lawns should be watched for damage anyway. If control is necessary, use carbaryl (Sevin) or diazinon--either as spray or granules.

Galls of all shapes and descriptions are appearing on the leaves of maple, oak, and several other shade trees. These galls are caused by mites, wasps, grubs, aphids, and other insects. Each one has its own special tree species and gall formation. In general, the small insect begins to feed on the leaf in its early development, sometimes almost in the bud stage. As a means of protection, the leaf develops this corky growth around the insect. This growth may disfigure the leaf, but it rarely, if ever, hurts the tree. It is too late to do anything now. A spray of malathion in the early stage next spring would reduce the galls next year.

Seventeen-year locusts are being reported in northeastern Illinois. These pests appear every 17 years--as the navy and black, clear-winged adult. Their high-pitched shrill singing can be heard for some distance. They deposit their eggs on the tips of twigs. The young hatch, go into the ground, and will emerge as adults 17 years from now.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

WEEDS

So far, preplant applications of Sutan-atrazine and Ramrod-atrazine have performed well in corn. Some grasses emerged in fields where Sutan-atrazine or straight Sutan was used, but then twisted, curled, and died. More farmers used the Ramrod-atrazine combination this year and got good results. This is one of the outstanding corn treatments.

Many fields received quackgrass treatments too late. If you have some perennial grasses (quackgrass or wirestem muhly) in corn, do the best you can with cultivation and plan to make a good atrazine treatment this fall. Atrazine is effective, but the treatments should be made in the fall or spring before plowing--not after seedbed preparation.

If you have equipment for direct spraying and there is enough height difference between annual grass weeds (foxtail, panicum) and corn, you might try Lorox or Dowpon as directed sprays. However, it is better to rely on cultivation before the grass gets too high, because these treatments may injure the crop.

POSTEMERGENCE HERBICIDES FOR CORN

Do not mix 2,4-D with atrazine and oil. If corn has been recently sprayed with 2,4-D, there may even be some risk in using atrazine and oil soon after. Although no one has reported any corn injury from 2,4-D, be sure to apply proper rates. Do not make applications if the corn is under stress.

2,4-D spraying is economical, effective, and especially helpful where no herbicide has been used or where only a grass killer such as Sutan, Ramrod, or Lasso was used. 2,4-D will control velvetleaf if applied before the weeds are big enough to effectively compete with the crop.

AAtrex, applied preemergence or postemergence, will generally control smartweed. If you still have a smartweed problem, 2,4-D postemergence may curl the leaves but probably will not give good control. AAtrex action is sometimes delayed on velvetleaf. The velvetleaf may emerge but then dies.

Banvel postemergence gives good smartweed control, but watch out if soybean fields are near cornfields that you are treating. The risk of injuring soybeans is high.

POSTEMERGENCE HERBICIDES FOR SOYBEANS

Tenoran (chloroxuron) is used mainly to control broadleaved weeds where a preemergence herbicide such as Treflan has been used. It gives fairly good control of pigweed, lambsquarter, smartweed, jimsonweed, morning glory, and cocklebur.

Apply the herbicide when broadleaved weeds are less than 2 inches high and when grass weed are less than a half inch high. Treat velvetleaf before it is an inch high, because contrl is difficult after that. Tenoran works better on cocklebur after two true leaves emerge, rather than earlier when the "leathery" cotyledons are exposed.

To broadcast Tenoran, use 2 to 3 pounds of the 50-percent wettable powder per acre with 1 pint of Adjuvan T surfactant added per 25 gallons of spray solution. The rate for banding is proportionately less. Soybeans treated with Tenoran usually show leaf burn, but the injury may not affect yields.

2,4-D may be broadcast from 10 days before soybeans begin to bloom until mid-bloom, or it can be used as a postemergence directed spray when soybeans are 8 to 10 inches tall and cockleburs are 3 inches tall. It gives fairly good control of annual morning glory and giant ragweed, too.

After being sprayed with 2,4-D, soybeans may show early wilting, curving or cracking of th stems, and proliferate growth at the base of the plant. If you use too much or apply the chemical under unfavorable conditions, lodging may increase and yields may decrease.

Postemergence herbicides on soybeans have not gained much acceptance in Illinois.

SPECIAL ANNOUNCEMENTS

June 17, Office of the Brown County Extension Adviser, Robert Hayward, Mt. Sterling
June 17, Office of the Henderson County Extension Adviser, Curt Eisenmayer, Stronghurst
June 18, Office of the Knox County Extension Adviser, Don Teel, Galesburg
*June 18, Office of the Livingston County Extension Adviser, Paul T. Wilson, Pontiac
*June 19, Office of the McLean County Extension Adviser, Gene Mosbacher, Bloomington
June 19, Office of the Iroquois County Extension Adviser, Ken Imig, Watseka
June 23, Office of the Whiteside County Extension Adviser, Fred Tincher, Morrison
June 23, Office of the LaSalle County Extension Adviser, Jim Daugherty, Ottawa
June 24, Office of the JoDaviess County Extension Adviser, Geo. Swallow, Elizabeth
June 24, Office of the Winnebago County Extension Adviser, Dick Kerr, Rockford

*NOTE: THE DATES OF THE LIVINGSTON AND MCLEAN COUNTY MEETINGS HAVE BEEN CHANGED FROM PREVIOUS ANNOUNCEMENTS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 13, June 17, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer egg-hatch in south-central Illinois below Route 16 reached its peak with most of the corn too small for borers to survive. The majority of the corn there is less than 40 inches tall, with about 20 percent over 40 inches and a tassel ratio of 15 or less in these taller fields. Late-planted fields in this area should be watched carefully later on for second-generation borers.

In central Illinois up to Route 9, moth-emergence is all but complete. Egg-laying is in full swing with hatch just beginning. Very little whorl feeding is evident. Less than 10 percent of the fields have corn taller than 40 inches. Moths are beginning to concentrate on the earlier fields. The decision on whether treatment is needed in these early fields can be made early next week.

Between Routes 9 and 6, egg-laying has just begun, with 10 to 25 percent of the moths yet to emerge. By late next week, egg-hatch will be occurring in the earliest fields, and a decision can be made then about treatment.

North of Route 6, about 30 percent of the moths have yet to emerge and egg-laying is starting. Most of the corn is about 10 inches tall. In a few fields, it is close to 30 inches high. Watch these early planted fields during the first week in July for whorl feeding, and treat if necessary.

In all areas of the state where the corn borer is a potential problem, cool nights have temporarily delayed egg-laying; also, moth-emergence. This delay can allow corn to reach an optimum height for borer survival.

To determine the need for treatment, measure the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. If there is corn-borer feeding in the whorl, the percent of plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Corn rootworm eggs will be hatching soon. If you know or suspect that you have a rootworm problem and did not use an organic phosphate or carbamate insecticide at planting time, apply one of the recommended chemicals now as a basal treatment. Do not wait to count larvae. In many fields--especially early planted ones--the corn will be too tall for a basal treatment by the time rootworms are large enough to be found and counted.

Insecticides suggested for basal treatment are diazinon, phorate (Thimet), BUXten, disulfoton (DiSyston), or parathion (Niran)--at the rate of 1 pound of actual chemical per acre, and carbaryl (Sevin) at the rate of 2 pounds actual per acre.

Black cutworm damage is still being reported in various locations in Illinois. Check cornfields for areas of missing plants, especially in the low spots. If plants are being cut above the growing point of the corn and if the worms are all over 1 inch long, the outbreak will be over very shortly, and the corn will continue to grow. However, you should treat immediately if the plants are being cut off below the growing point and many worms are less than an inch long. Direct the spray at the base of the plants; use carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre in at least 20 gallons of water per acre; also, cover the spray by throwing soil at the base of the plants with a cultivator.

Billbugs damage to young corn stands has been observed. They are snout beetles that drill holes in stalks below ground level. When the leaves emerge, they have a series of holes in them. The feeding of a single beetle may kill a small plant, while a larger plant may continue to grow normally with only a few rows of holes across the leaves. Suckering and distorted growth are other symptoms of billbug injury.

White grub damage has been reported in both corn and soybeans. These grubs have hatched in 1968 or 1967 from eggs laid by June beetles. Half-grown grubs will continue to feed all summer. Full-grown grubs will soon pupate and quit feeding. There is no effective chemical control for grubs in a soybean field after the plants are up. In a cornfield, some control can be obtained with 1 pound actual of aldrin or heptachlor, applied as a spray to the base of the plant and cultivated-in immediately. Do not use aldrin or heptachlor on a soybean field.

Common stalk borers are moving out of grasses and weeds into border rows of corn. These whitish-brown, striped worms with a purple band around their middle feed in the whorl of the corn plant. Emerging leaves have irregular holes in them. Plants may be killed or severely damaged by this pest. Chemical control is difficult to achieve because the borers are usually too deep in the whorl of the plant for insecticides to reach them.

FORAGE INSECTS

Alfalfa weevil activity is about over. Continue to watch for damage to the new growth of second-crop alfalfa north of a line from Jacksonville to Watseka. If the field does not green-up soon after the first cutting, treat it promptly. Larvae are present in fields in this area, but pupation and adult emergence is progressing rapidly.

HOMEOWNER INSECT PROBLEMS

Elm leaf beetles have begun to hatch, especially Chinese, this week. The small, dirty-yellow to black larvae feed on the underside of leaves--skeltonizing them and leaving only the veins. Sprays of carbaryl (Sevin) or malathion now will reduce the damage. An additional spray 10 to 12 days later will help control this insect.

Bagworms have hatched and have begun to feed in the central part of the state. Spray with either malathion, carbaryl (Sevin), or diazinon. Follow label directions.

Aphids of many species are commonly found on lots of trees--especially willow, tulip, and sycamore; also on shrubs, including roses. In most instances, these aphids, or plant lice, do very little damage. If damage is serious with leaves curling and drying, apply malathion as a spray, using 2 teaspoons of 50- to 57-percent liquid concentrate per gallon of spray.

Bean leaf beetles are chewing holes in green bean leaves. Carbaryl (Sevin) applied as a dust or spray will effectively control this insect. Also, the same chemical as a dust or spray will control both the spotted and striped cucumber beetle. These two beetles, particularly the black and yellow striped adults, feed on young plants of cucumbers, melons, and other vine crops. Many times, they cause these young plants to wilt and die, due to bacterial wilt--a disease carried by the beetles.

Some homeowners who have applied chlordane as a foundation spray may wish to repeat this practice during the next few weeks to provide protection against house-invading insects such as crickets, water bugs, ants, spiders, and millipedes. One pint of 45-percent chlordane liquid concentrate added to 3 gallons of water is usually sufficient to treat the foundation of the average-size home. Be sure to spray to the point of runoff; also, treat cracks around steps and sidewalks along the foundation.

WEEDS

Several Illinois vine weeds may cause problems. Hedge bindweed got a good start in some cornfields, but 2,4-D will control it. Field bindweed is much more difficult to control.

Control wild sweet potato with 2,4-D, but be sure to apply it at the right time. Use the usual rate of 2,4-D in corn when the sweet potatoes are in the bud stage--just before the buds open up into flowers. At this stage, 2,4-D moves with food reserves from the leaves downward to the tubers and gives greater control. The bud stage may be late enough to require high-clearance spray equipment.

Wild cucumber control has been relatively good where AAtrex was applied preemergence. AAtrex gave the best control when it was incorporated. 2,4-D applied after the weeds emerge will not help much. 2,4,5-T controls wild cucumber much better than 2,4-D, and can be used in fence rows and non-crop areas. However, 2,4,5-T does not have federal clearance for use in corn.

You can control annual morning glories in corn with a preemergence herbicide such as AAtrex, but some of the soybean herbicides like Amiben and Lorox do not give good morning glory control. In corn, 2,4-D postemergence controls annual morning glory. In soybeans, a postemergence application of 2,4-DB may give fair control where the problem is severe. Before using 2,4-DB on soybeans, however, consider the injury risk. If you use 2,4-DB, make careful and accurate applications.

Cocklebur, though not a vine, is in a similar category as annual morning glory. It is easy to control in corn with 2,4-D. In soybeans, Amiben gives erratic cocklebur control. 2,4-DB gives fairly good control of cocklebur in soybeans, but use it only for the more serious problems, and consider the risks of soybean injury.

UI AGRONOMY DAY FEATURES RESEARCH, MANAGEMENT

Illinois farmers, caught in the middle of a cost-price squeeze, must look for new ways to lower costs and raise profits. University of Illinois agronomists are not promising to unveil any magical solutions to the problems at Agronomy Day this year, but most of the stations on the tour present information geared to help farmers get the most from limited cash outlays. At each of the 16 research plots, specialists will explain the work they are doing.

Agronomy Day Chairman Gene Oldham says that the first tour starts at 7 a.m. on June 26. Tours will start every 10 minutes thereafter until 1 p.m. The tours last about 2-1/2 hours. So if you come early, you can make the full tour and be on your way home by 10 a.m. Lunch will be available on the grounds at the Agronomy South Farm in Urbana.

Here are the stops on the Agronomy Day tour:

1. Water Pollution.
2. What Is New in Chemical Weed Control?
3. Soil Organic Matter and Herbicides.
4. Corn for Specific Purposes.
5. Micronutrient Survey.
6. Alfalfa Varieties.
7. Alfalfa Seeding.
8. Plant Diseases.
9. Tillage.
10. Nitrogen--What Is It and How Much.
11. Soybean Fertility.
12. Oat Production.
13. Wheat Production.
14. Insect Report.
15. Corn Fertility.
16. Soybean Production.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

SPECIAL ANNOUNCEMENTS

Pesticide Dealers and Applicators Field Days/1:30 p.m. each day:

June 23, Office of the Whiteside County Extension Adviser, Fred Tincher, Morrison
June 23, Office of the LaSalle County Extension Adviser, Jim Daugherty, Ottawa
June 24, Office of the JoDaviess County Extension Adviser, George Swallow, Elizabeth
June 24, Office of the Winnebago County Extension Adviser, Dick Kerr, Rockford

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

)R IMMEDIATE RELEASE

No. 14, June 27, 1969

iis series of weekly bulletins provides a general look at the insect, weed, and plant isease situation (fruit and commercial vegetables excepted), along with suggested, abreviated control measures. Each individual should check his own fields to determine ocal conditions.

INSECTS

)RN INSECTS

ie first generation of European corn borers has almost been eliminated as a general threat o early corn this year.

lthough first-generation borers may not present a general problem, some fields that ere planted early will be damaged. This is particularly true in the area bounded by the llinois River on the east, Route 136 on the south, and Route 6 on the north. The rain nd wind storms of the past week apparently whipped egg masses off leaves and killed a reat many moths, because it is now difficult to find either moths or eggs in early corn. f we have misjudged the effect of these storms, egg laying will begin with the first ight that is warm and quiet. Such nights enable moths to fly and deposit eggs without eing disturbed.

s an insurance, continue to examine early planted fields in western and northern Illinois or signs of whorl feeding for another week. It will pay to treat fields with an insecticide if tassel ratios are over 30 and if 75 percent of the plants show whorl feeding, but o not apply insecticide until the tassel ratio is at least 35, preferably 40 to 50. Higher assel ratios require a lower percent of plants with whorl feeding to warrant insecticide ontrol. Naturally, the earliest fields will now have the highest tassel ratios.

o determine the tassel ratio, dig up a plant and measure from the bottom of the plant to he tip of the longest leaf. Split the plant and find the developing tassel. Measure from he bottom of the plant to the tip of the tassel. Divide the tassel height by the plant eight and multiply by 100.

orn rootworm larvae have not yet been reported, but they should appear this week. If you now or suspect that you have a rootworm problem and did not use an organic phosphate or arbamate insecticide at planting time, apply one of the recommended chemicals now as a asal treatment. Do not wait to count the larvae. In many fields--especially early planted nes--the corn will be too tall for a basal treatment by the time rootworms are large enough o be found and counted.

he insecticides suggested for basal treatment are diazinon, phorate (Thimet), BUXten, disuloton (DiSyston), or parathion (Niran)--at the rate of 1 pound of actual chemical per acre; nd carbaryl (Sevin), at the rate of 2 pounds actual per acre.

Common stalk borers are migrating from the hollow-stemmed grasses and weeds in fence rows to other crops. Corn plants along the edges of fields are being killed or severely chewed This striped worm with a brown, purple, or black area around the middle of the body can easily be found in dead or dying weed stems, or in the corn plants.

We have been asked to make control suggestions, ones to be used only if you insist on tryi to control these borers. First, mow the fence row--a stubble beater would be best. This will kill some worms, but will drive the worms out of the weeds and grasses in the fence row and into the corn. Therefore, spray the stubble, soil, and first two or three rows o corn immediately--before the worms get into the corn. Use 2 pounds of 80-percent carbaryl (Sevin) in 20 gallons of spray per acre. This suggestion is only for a trial.

Garden centipedes (symphylans) are now appearing. Damage may occur to all plants in an area within a field, or only individual plants may be affected. The most-common symptoms are severe plant stunting and purpling, or the plants may die. Root systems are weakened or are nonexistent. Numerous, small, grey-to-white, many legged creatures can be found in the soil around the plants. They disappear very rapidly. If you have this condition, make plans to control them in these areas next year.

Several different kinds of aphids have been found frequently on corn. None of these are the corn leaf aphid, and none are numerous enough to cause injury. It is too soon to make predictions about the prospects for corn leaf aphids.

SOYBEAN INSECTS

Corn-seed maggots have been reported doing damage to stands of soybeans. The maggots attack the seeds during germination, and will also tunnel into the stems afterward. Ohio extension entomologists report the same problem in some areas of that state. If you re-plant, you can use diazinon as a planting-time treatment. However, it is not likely that damage from these maggots would occur with rapid germination; therefore, insecticide might not be needed now.

LIVESTOCK INSECTS

The number of flies on cattle now on pasture is building up, particularly in the central and southern sections of Illinois. Fly counts on untreated herds this week showed the following averages:

Section of Illinois	Average number flies per animal		
	Face flies	Horn flies	Stable flies
Southern	5	350	5
Central	10	100	6
Northern	2	10	1

An average of one horse fly or deer fly per animal was also found on cattle in the southern section. The number of flies will increase sharply with warm weather, particularly in the northern section. The wet condition we now have favors the development of flies. Studies have shown that the pasture fly complex will cause a 10- to 20-percent loss in milk or beef production during a normal fly season.

For control on dairy cattle, apply Ciodrin as a 2-percent oil or water-base spray--at 1 to 2 ounces per animal and 2 to 4 times per week. A 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrum spray applied at 1 to 2 ounces per animal each day can also be used.

Pay particular attention to the animal's legs and undersides when spraying. For dry stock and young stock on pasture, use a 1-percent Ciodrin, water-diluted spray. Apply 1 to 2 pints per animal, as often as once per week if needed. Ciodrin is the most-effective insecticide for face-fly control. All of the above insecticides provide good control of horn flies and fair control of stable flies.

For control on beef cattle, apply a water-base spray of 0.5-percent toxaphene, using 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies.

If face flies become serious, use Ciodrin as suggested for dairy cattle. A canvas or burlap head-oiler or back-oiler, saturated with 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER INSECT PROBLEMS

Mimosa webworm larvae can be found feeding on honey locust and mimosa in the southern sections of the state. Within the next week or two, they should become apparent in the central and northern sections. They are small, gray-to-brown, striped, active caterpillars that use a silken thread to tie a bunch of leaflets together. They skeletonize these leaflets and then form a new nest. The old nest turns brown, and the leaflets die. Several generations will follow this first one. Treatments made now in the southern sections and during the next week or two in the central section will help prevent more-severe damage by this insect later in the summer. However, an additional treatment in late July and August may still be needed.

A spray of either carbaryl (Sevin) using 2 pounds of 50-percent wettable powder per 100 gallons of water or malathion using 1 quart of the 50- to 57-percent liquid concentrate per 100 gallons of water is effective.

First-generation elm leaf beetles are skeletonizing the leaves of Chinese and other elms in the central and northern sections. The damage by first-generation worms is about over in the southern part of the state. These small, dirty-yellow to black worms feed on the undersides of leaves and congregate in large numbers next to the trunk at ground level when they are ready to pupate. A spray of carbaryl (Sevin) or malathion is effective. Spray treatment may be needed again in late July in southern sections to control second-generation worms.

Hatching and feeding by cottony maple scale is beginning on the leaves of soft maple and other trees and shrubs. A sign of infestation is the appearance of white cottony masses (like popcorn) on small twigs and branches. The female scale has laid hundreds of eggs in these cottony masses. Apply control measures within the next week or two. The young scales must be killed before they develop a protective covering. A malathion spray is effective.

Bagworm hatch is now complete in northern sections, and the larvae are feeding on evergreens and other trees and shrubs. Sprays should be applied immediately for best results. Use carbaryl, malathion, or diazinon. Follow the directions on the label. In central and southern sections, it is still not too late to spray shrubs for protection against bagworms.

WEEDS

Several Illinois vine weeds may start to cause problems about now. Hedge bindweed got a good start in some cornfields, but it is rather easily controlled with 2,4-D. Field bindweed is much more difficult to control.

Wild sweet potato can be controlled with 2,4-D, but the timing of the application is critical. Use the usual rate of 2,4-D in corn when the sweet potatoes are in the bud stage--just before the buds open up into flowers. At that stage, 2,4-D moving toward the tubers with food reserves from the leaves gives the most-complete control. The bud stage may be late enough that high clearance equipment will be needed.

Wild cucumber control has been relatively good where AAtrex has been applied preemergence, preferably incorporated. As a postemergence treatment, 2,4-D isn't much help. 2,4,5-T controls wild cucumber much better than 2,4-D. 2,4,5-T can be used in fence rows and in noncrop areas, but it does not have federal clearance for use in corn.

Annual morning glories are often controlled in corn with a preemergence herbicide such as AAtrex. Some soybean herbicides like Amiben and Lorox do not give good morning glory control. In corn, 2,4-D postemergence gives good control. In soybeans, postemergence application of 2,4-DB may give fair control where the problem is severe. But before using 2,4-DB on soybeans, consider the risk of injury. If you use 2,4-DB, make careful and accurate applications.

Cocklebur, although not a vine, is similar to annual morning glory. It is easy to control with 2,4-D in corn. In soybeans, cocklebur control is somewhat erratic with Amiben. 2,4-DB can give fairly good cocklebur control in soybeans, but go easy. Use 2,4-DB for only the most-serious problems, and consider the risks before you use it.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS.

SPECIAL ANNOUNCEMENTS

Garden Centipede (Symphylan) Research Plot Demonstrational Meeting

July 9. . .Thomas Watson Farm (Rock Island County). . .9 a.m.
Go 4-1/2 miles east of the Mississippi River or 4-1/2 miles west of Illinois City on Route 92, then south on the blacktop (County Road B) for 1-1/2 miles and east for 1/4 mile.

This weekly report was prepared as follows:

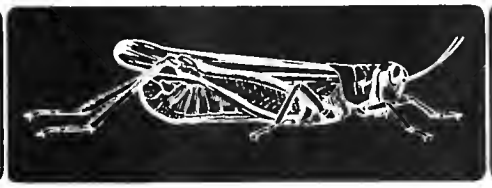
INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake, Department of Agronomy

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 15, July 3, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer moths were apparently killed by rain storms about as fast as they emerged from the pupal cases during the past 2 weeks. However, some did escape, deposited eggs, and these borers did survive. Decisions about treatment should be made now.

In southern and south-central Illinois, egg-laying is over and some of the most-advanced fields have up to 30 percent of the plants infested with 2 to 3 half-grown borers per plant, but this is not enough to warrant use of an insecticide. The borers were still behind the leaf sheaths, and had not yet bored into the stalks. This many first-generation borers, although not plentiful enough to warrant control, will supply plenty of moths to produce lots of second-generation borers.

In central Illinois, there are a few borers in corn on the east side of the state, but not enough to warrant control. An occasional field of the most-advanced corn on the west side of the state may warrant treatment. A few egg masses can still be found in these fields; survival of borers hatching from these eggs will be high.

In northern Illinois, only a very few fields have enough corn borers to warrant chemical control. Moths and eggs are scarce.

Fields with tassel ratios approaching 50 and having 40 percent or more whorl feeding with an occasional egg mass still to hatch warrant use of an insecticide. Use diazinon or carbaryl (Sevin) granules.

Corn rootworms were found hatching all the way to the northern boundary of Illinois this week. Have excessive rains killed newly-hatched worms? Small rootworms will likely be killed, where water stands in ponds. Newly hatched rootworms will probably drown in those fields where the soil is saturated and water stands between the rows for a day or two. Since the hatch of worms extends over a 3-week period, these rains may help reduce rootworm populations, but the rains are not likely to completely control rootworms.

Rains may have decreased the effectiveness of insecticides applied at planting time. Examine the roots right away. If you find 5 or more rootworms per plant, it will pay

to make a basal application of an insecticide immediately, using the cultivator to cover the insecticide. Within a week, it will be too late. Use BUXten, carbaryl (Sevin), diazinon, disulfoton (Di-Syston), parathion (Niran), or phorate (Thimet). Direct these at the base of the plant and cover with dirt.

Corn blotch leaf miners are still being reported. They are extremely numerous in some fields this year. Whether or not they are of economic importance is questionable, but they are often confused with other problems. The adult, which is a fly, makes tiny elongated punctures in groups about 1/16 of an inch long--usually in the tip of the leaf. The maggot mines between the upper and lower leaf surfaces. A dirty-yellow maggot can usually be found in these mines.

An insect with the scientific name *Smyra henrici* is now present in cornfields. This caterpillar and others strip the chlorophyll from the lower leaves of the corn. Later, they devour the entire leaf. Although not of importance, the damage is often erroneously thought to be caused by corn borer.

Corn flea beetles can still be found in cornfields. They will gradually become more abundant late in July and August.

Corn leaf aphids were found in Pulaski and Alexander counties on sorghum this past week, and in central Illinois this week. None have appeared on corn as yet, but several other aphids (English grain aphid and potato aphid) have been collected from corn. Fortunately the corn leaf aphids in Pulaski and Alexander counties were heavily parasitized by a small wasp. No control measures are recommended for this week.

Thrips are very common in whorls of corn. No economic damage has been observed.

SOYBEAN INSECTS

Bean leaf beetles have been feeding in soybeans, but damage is not severe. They eat holes in the leaves. This green to red beetle is hard to find; they drop to the ground at the slightest disturbance. No control is needed now.

Small grasshoppers can be found in hay-crop fields, in fence rows, and in some cases they are feeding on the leaves of soybeans in the edge of rows. No controls are recommended now.

Southern corn rootworm adults (also known as the spotted cucumber beetle) are present in soybean fields. They eat the surface of the leaves. They are not of enough importance to warrant control.

LIVESTOCK INSECTS

Barn flies are bothersome particularly in central and southern sections, and populations are expected to increase sharply with the warmer weather. The house fly and the blood-taking stable fly (needle-like beak) make up the barn fly complex. Both flies spend 90 percent of their time sitting on barn walls, support posts, fences, etc., and only about 10 percent of their time on the animals. Therefore, there is no need to spray cattle kept on dry lot. Begin controls now before the flies become too numerous. The following program will provide good results:

1. Practice good sanitation. Eliminate fly-breeding materials--such as manure, rotting straw, wet hay and feed--as often as possible. Spreading this refuse where it can dry makes it unsatisfactory for fly development.

2. Apply a barn spray to the point of run-off to the ceilings and walls of all livestock buildings. Also spot-spray outside around windows and doors and along fences in the lot. The following insecticides are suggested for this purpose:

Insecticide	Amount per 100 gallons of water	Length of control
Diazinon, 50-percent wettable powder	16 pounds	2 to 4 weeks
Dimethoate, 23-percent (Cygon) liquid concentrate	4 gallons	4 to 6 weeks
Rabon, 25-percent liquid concentrate	4 gallons	4 to 6 weeks
Ronnel, 24-percent (Korlan) liquid concentrate	4 gallons	1 to 3 weeks

Use only ronnel in poultry houses. All materials are cleared for use in dairy, beef, swine, sheep, and horse barns. Always caution farmers to cover feed and water troughs before spraying. Do not spray animals with these materials at the dosages suggested. Remove animals before spraying the barns. Do not spray the milk storage room.

3. Supplement good sanitation and barn sprays with a spray bait material. Use 2 to 4 ounces of dichlorvos (DDVP) or naled (Dibrom) in a mixture of 1 gallon of clear corn syrup and 1/2 gallon of warm water. Apply this from a small tank sprayer to the favorite fly roosting areas.

Barn foggers using insecticides like dichlorvos (DDVP), pyrethrum, or naled (Dibrom) give a quick kill of flies during the fogging operation (10 to 20 minutes), but the effect is not lasting. When fly populations become intense, even twice a day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, fogging does not leave enough insecticide deposit on the animals to protect the cattle from flies when on pasture. Coarse sprays applied to the animals are best for this purpose.

WEEDS

As soon as you're through cultivating, catch your breath, then sharpen the hoe and go after the volunteer corn in soybeans while it's still small enough to chop off with one whack. When soybeans quit growing, you may see velvetleaf or jimson weed popping above the beans. If you only have 37 such weeds in a 40-acre bean field, a sharp hoe is usually the most-practical and easiest means of control.

Don't forget good fencerow weed control. Two miles of fencerow 4 feet wide is about an acre. Five pounds of Dowpon plus a quart of 2,4-D (1 pound active) in 50 gallons of water, applied as a coarse spray, can control both broadleaved and grass weeds in a two-mile stretch. This combination makes an easy and inexpensive control program. You can kill poison ivy in fencerows with amitrole or amitrole-T.

DELAY-SCHEDULE INFORMATION

After applying some herbicides on corn, you'll have to wait awhile before the crop can be cut for silage. Here's a rundown:

AAtrex--OK for silage corn. AAtrex can also be used for grain and forage sorghum and sorghum-sudan hybrids. Do not graze treated areas or feed treated forage to livestock for 21 days after application.

Ramrod--OK for silage corn. Do not graze or feed sorghum (milo) forage or silage from treated fields to dairy animals.

Ramrod/atrazine mixture--same as for Ramrod.

Lasso--Wait 12 weeks after treatment before harvesting immature corn forage or feeding it to cattle.

Randox-T--OK for silage corn. (Silage corn not listed on Randox label.)

Sutan--OK for silage corn.

Knoxweed--OK for silage corn.

Londax--Restriction for nonuse on silage corn has apparently been lifted.

There are inconsistencies between labels that may be difficult to interpret. Some labels specifically state the corn types on which a herbicide may be used--such as hybrid seed corn, field corn, sweet corn, silage corn, and popcorn. Other labels are vague, and may simply say that "corn" or "field corn" includes a broader classification. Read the fine print carefully for possible restrictions and limitations.

CAUTION: BEFORE USING PESTICIDES, READ AND HEED THE LABEL.

SPECIAL MEETING ANNOUNCEMENTS

CORN ROOTWORM INSECTICIDE DEMONSTRATION PLOTS

We will examine roots and count worms per plant for different insecticides applied at planting and during cultivation. Come and help make these counts to determine control with different insecticides. It will be a regular "rootworm search party."

July 8, Livingston County:	1:00 p.m., Barth Farm. Go east of Pontiac on Route 116. Between Graymont Road and Flanagan on south side of road.
July 9, Warren County:	1:30 p.m., Moore Farm. West of Roseville. Liquid insecticide in liquid fertilizer plots. Contact James McCurdy, Extension adviser, Monmouth for directions.
July 10, Warren County:	9:00 a.m., Twomey Farm. Early planting. Go west of Roseville 5-1/2 miles on Route 116 to Smithshire Road.
	1:30 p.m., Hennetent Farm. Late planting.

July 10, Stark County: 9:00 a.m., Cox Brothers Farm. South of Wyoming on Route 91 to curve (about 2 miles) and west 1/2 mile on side road.

July 11, Knox County: 9:00 a.m., Maurice DeSutter Farm. South of Woodhull 2 miles and west 1/2 mile.

July 14, DeKalb County: 9:00 a.m., John L. Pigott Farm. North of DeKalb on 1st Street to Rich Road and west 1/2 mile.

July 14, Hancock County: 1:00 p.m., Crose Farm. 3 miles east of Carthage, north on blacktop to first turn east, 1/2 mile.

July 15, McHenry County: 9:00 a.m., Earl Hughes & Sons Farm. About 5-1/2 miles northwest of Woodstock on the Dunham Road, just off Route 14.

July 16, Boone County: 9:00 a.m., Nelson Farm. On the road east of Chrysler plant, just south of interstate highway.

1:30 p.m., Flanders Farm. Liquid insecticide in fertilizer. North on Route 176 to Blaine Road, east to Blaine, north 1 mile, and west 1/2 mile. Up long lane.

July 16, JoDaviess and Stephenson Counties: 8:30 a.m., Cecil Creighton Farm. North of Stockton, 3 miles north of Route 20 on Route 78 and 1-1/2 miles east.

July 17, Carroll County: 8:30 a.m., Woesnner Farm. East of Shannon 3 to 4 miles and north 1/2 mile.

Rayner Moser Farm. Liquid insecticide in liquid fertilizer. In the afternoon after completion of Woesnner field counts. West of Milledgeville on Route 88 to curve north. East side of road.

July 18, Ogle County: 8:30 a.m., Hugh Hermes Farm. On Route 2 east of Sterling. First farm on north side of road, west of Emerald Hills Country Club.

July 18, Bureau County: 8:30 a.m., Anson Farm. East edge of Dover on Route 34.

BRING YOUR POCKET KNIFE TO SPLIT ROOTS FOR "WORM SEARCH."

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 16, July 11, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Fall armyworms are damaging late-maturing corn, particularly in the southern sections of the state. These dark-brown to dull-green, smooth-skinned worms feed in the whorl, giving plants a ragged appearance as the leaves emerge. A series of plants in a row will show damage, and these patches of infested plants will usually be over the entire field. The adult moths deposit a cluster of eggs on one plant; after hatching, the worms move to adjacent plants. You will find only one worm per plant since they eat one another.

In general, infestations are light and control is not needed. Treatment is justified in fields having 20 percent or more of the plants infested. Before applying insecticides, be sure the worms are still present, and that most of them are not more than 1-1/4 inches long. When they reach about 1-1/2 inches, they are mature; at that size, they stop feeding, drop to the ground, enter the soil, and pupate.

For control, use granules of either carbaryl (Sevin) or toxaphene at 1-1/2 pounds of actual chemical per acre. Sprays provide erratic results, so the granular form is preferred. Do not feed toxaphene-treated forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to livestock to within 28 days of slaughter.

First-generation European corn borers are pupating in the southern sections, and second-generation moths will begin to emerge this week (July 13). Check late-maturing corn for whorl damage--the last week of July and early August.

In the central section, the borers are just beginning to enter the stalk, and it will soon be too late (end of the week of July 13) for effective control. Occasional small borers can still be found, along with those about half grown. Between 10 and 50 percent of the plants are infested with borers in the more-mature fields in this area, representing about 0.5- to 2-percent yield loss in these fields. Occasional fields have 70 to 80 percent of the plants infested. These can be profitably treated, if it is done immediately.

In the northern section, populations appear to be lower. The more-mature fields have between 5 and 30 percent of the plants infested. The borers are still small and have not yet tunnelled into the stalks.

In general, there is a light to moderate number of corn borers in most of the more-mature fields (over half the acreage) throughout the state. Corn borers are also surviving in crops other than corn. Most hollow-stemmed weeds, small grains (like oats), certain vegetables, and even flowers (as well as many other plants) are suitable hosts for corn borers. A report was received this week of potatoes in a home garden being severely damaged by corn borers. With good survival of this first generation, we could experience severe second-generation corn borer problems in many of the late-maturing fields.

Corn rootworm larvae are increasing in number as the hatch of overwintering eggs continues. Untreated plants in one of our demonstration fields averaged 13 worms per plant. Approximately 4 percent of the larvae have pupated in the central section. Egg-hatch is expected to continue for another 2 to 3 weeks, and the number of larvae will continue to rise during the next week or two--then level off as more larvae reach the pupal stage. Damage to roots is beginning to show and will become progressively worse over the next 2 to 3 weeks. Rootworm development is about a week later than last year.

Except for extreme conditions, it is generally too late to apply a basal treatment off the cultivator, since corn plant breakage and root pruning would be too great. The prospects of effective control by broadcasting the insecticides without cultivation are not good.

Corn leaf aphids are beginning to appear on corn in the central section. Individual, winged aphids were found on a few plants. These winged females will now give rise to young-producing, small colonies of aphids within a few days. Aphid predators like lady beetles, aphis lions, and insidious flower bugs are present. These predators will feed on the developing aphids. It is too soon to predict the severity of corn leaf aphid infestations.

Corn leaf aphids suck the juices from the plants causing the ears to be stunted and shriveled. Injury to the plants usually occurs just prior to and during tasseling.

Early treatment is best. Treatment is warranted when corn is in the late-whorl to early tassel stage and when 50 percent or more of the plants have a light to moderate number of aphids. At the latest, treatment should be made prior to brown silks.

Spray treatments by ground or air, with 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre, are effective. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. If corn is in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Common stalk borers can still be found in corn plants along the edges of fields. They come from the weeds and grasses bordering on these fields. This is one of the heaviest years on record for stalk borer. Preliminary damage studies conducted last year by Stephen Sturgeon, Survey Entomologist, showed a yield reduction of 37 percent for damaged plants, compared to undamaged plants in the same field. Only a small percentage of the total plants are generally infested. By the time the damage is found, the worms are deep in the whorl and control is difficult. It would help to keep weeds and grasses bordering the cornfields well mowed in August and September, thus discouraging stalk-borer moths from laying their eggs for next year's crop of worms.

SOYBEAN INSECTS

Seed corn maggots continue to damage a few fields of late-emerging soybeans. Skips appear in the row of damaged fields. Small, white maggots can usually be found inside the damaged seed. It is too late to control the maggot when damage is observed. The warm, wet weather should help slightly damaged plants to recover.

HOMEOWNER INSECT PROBLEMS

Millipede

Millipedes are moving into homes from shrubbery beds, lawns, storm sewers, and nearby wasteland with a heavy trash cover. These migrations are somewhat earlier than normal (August and September), and are probably the result of recent heavy rainfall. It is usually the cool weather that causes them to seek shelter in homes. These brown or grey, hard-shelled, slow-moving, worm-like animals have two legs per body segment. They are sometimes called "thousand-leggers," and will curl up in a tight coil when disturbed. Although harmless, they make a general nuisance of themselves in the home, clustering in basements and garages.

In cases of heavy migrations, spray lawns and shrubbery beds with carbaryl (Sevin), diazinon, or trichlorfon (Dylox). This provides a barrier zone in which the millipedes are killed, and prevents them from gaining access to the house. If migrations persist, repeat the treatment in a week or two. For minor problems, spray shrubbery beds and a 3- to 4-foot wide area around the foundation of the house for control. The general lawn treatment will also control sod webworms and leafhoppers, but it is ineffective against grubs.

Picnic beetles are becoming numerous at the present time. These black beetles with four yellow spots are attracted to food odors and decaying or overripe fruit and vegetables. They are commonly found around garbage cans and on window screens.

For control in home yards, harvest fruits and vegetables before they become overripe. Dispose of any spoiled produce. To kill the adult beetles, spray with malathion, diazinon, or carbaryl (Sevin) in and around garbage cans. Spraying shrubbery and tall grass with the same insecticides before a cookout will greatly reduce the number of these beetles. Follow directions on the label. Check plants that may be injured if sprayed with the insecticide you are using. Either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) spray in pressurized cans will give a quick knockdown of beetles that suddenly move into an area.

WEEDS

Wet is the word from all over the state. If you did not complete your cultivation before the rains, corn and beans are likely to be too large in many fields to finish cultivating when it dries up.

2,4-D can still be helpful in many late-maturing cornfields. So far, fewer farmers have reported 2,4-D injury to corn this year than last. A few areas, however, have reported rather severe injury--some where 2,4-D was sprayed July 3 and 4 during exceptionally hot and humid weather followed by wind.

Avoid spraying 2,4-D during such hot, humid periods. Be sure application rates are correct. We suggest 1/6 lb./A., low-volatile ester; 1/4 lb./A., high-volatile ester; or 1/2 lb./A. of amine. (If you're using a 4 lb./gal. concentrate, 1/4 lb. is a half pint and 1/2 lb. is one pint.)

High-clearance equipment will be needed in many fields and "drop nozzles" will usually be necessary. If nozzles are directed in toward the row, reduce the amount of 2,4-D and adjust the nozzles to prevent too much spray from being applied directly on the corn. Do not spray from the tasseling to dough stage. Because 2,4-D can make corn brittle for a week or so, it is best not to treat if windstorms can be expected during the next week.

There is always some risk involved when using 2,4-D. So follow the precautions carefully and realize that there may still be some risk beyond your control.

For the state as a whole, the benefits from 2,4-D will far exceed the disadvantages. Having weeds at harvest has its risks, too.

Forget about using atrazine and oil this late. If atrazine has been applied as late as July, do not plant soybeans next year, because of the likelihood of residue. Most grass weeds are now too large for control with atrazine postemergence. 2,4-D is more economical and practical for most broadleaved weeds now.

The rains have brought on late small weeds, both between and in the rows. With high populations and narrow rows, corn and beans should provide enough shade to discourage weed growth in many of these fields. However, some small weeds may come along; although not very competitive, they can produce seed. 2,4-D is still best for late-germinating broadleaved weeds in corn.

A few farmers have considered Dowpon or Lorox for grass, but not many of them have appropriate equipment; and care is needed to avoid corn injury. If very much Dowpon contacts corn leaves, it can translocate in the plant and adversely affect ear and grain development. To be effective, Lorox should be applied before the weeds are 8 inches high--preferably when they are 5 or 6 inches high. Corn should be at least 15 inches high and you must carefully direct the spray to avoid corn injury.

Postemergence herbicides for soybeans were discussed in the *Insect, Weed, and Plant Disease Survey Bulletin No. 12* (June 13, 1969), on page 6. The portion on 2,4-D should have read 2,4-DB. You can still use 2,4-DB for really serious cocklebur, annual morning glory, and giant ragweed in soybeans. But check the timing and rates carefully.

There seems to be increased interest in Banvel this year. It is approved only for corn up to 36 inches high and has done well on smartweed and many other broadleaved weeds. Corn has relatively good tolerance to Banvel postemergence, but the problem of possible injury to nearby plants (such as soybeans) still discourages its use.

Because of damage from 2,4-D plus atrazine and oil, we have suggested not to add Banvel to an atrazine-and-oil mixture. Atrazine does so well on smartweed that there is little reason to add the Banvel. Banvel has been cleared for pasture and rangeland use too. It is better than 2,4-D on some perennial weeds.

There is no waiting period between treatment and grazing for animals other than dairy cows, but do not graze meat animals in treated fields within 30 days of slaughter. And do not use the seed from treated grass for feed or food.

The restrictions on dairy cattle grazing and dry-hay usage are shown on the following page.

Treated Pasture Grasses Grazed by Dairy Cattle

Waiting period	Rates	
	Lb. acid equivalent/acre	Quart/acre (lb./quart)
7 days	0 to 1/2	1/2
21 days	1/2 to 1	1/2 to 1
60 days	1 to 8	1 to 8

Treated Pasture for Dry-Hay Usage

Wait to cut	Rate
	Lb. acid equivalent/acre
37 days	0 to 1/2
51 days	1/2 to 1
70 days	1 to 2
90 days	2 to 8

CAUTION: BEFORE USING PESTICIDES, READ AND HEED THE LABEL

SPECIAL MEETING ANNOUNCEMENTS

CORN ROOTWORM INSECTICIDE DEMONSTRATION PLOTS: We will examine roots and count worms per plant for different insecticides applied at planting and during cultivation. Come and help make these counts to determine control with different insecticides. It will be a regular "rootworm search party."

July 14, DeKalb County: 9:00 a.m., John L. Pigott Farm. North of DeKalb on 1st Street to Rich Road and west 1/2 mile.

July 14, Hancock County: 1:00 p.m., Crose Farm. 3 miles east of Carthage, north on blacktop to first turn east, 1/2 mile.

July 15, McHenry County: 9:00 a.m., Earl Hughes & Sons Farm. About 5-1/2 miles northwest of Woodstock on the Dunham Road, just off Route 14.

July 16, Boone County: 9:00 a.m., Nelson Farm. On the road east of Chrysler plant, just south of interstate highway.

1:30 p.m., Flanders Farm. Liquid insecticide in fertilizer. North on Route 176 to Blaine Road, east to Blaine, north 1 mile, and west 1/2 mile. Up long lane.

July 16, JoDaviess and Stephenson Counties: 8:30 a.m., Cecil Creighton Farm. North of Stockton, 3 miles north of Route 20 on Route 78 and 1-1/2 miles east.

July 17, Carroll County: 8:30 a.m., Woesnner Farm. East of Shannon 3 to 4 miles and north 1/2 mile.

Rayner Moser Farm. Liquid insecticide in liquid fertilizer. In the afternoon after completion of Woesnner field counts. West of Milledgeville on Route 88 to curve north. East side of road.

July 18, Ogle County: 8:30 a.m., Hugh Hermes Farm. On Route 2 east of Sterling. First farm on north side of road, west of Emerald Hills Country Club.

July 18, Bureau County: 8:30 a.m., Anson Farm. East edge of Dover on Route 34.

BRING YOUR POCKET KNIFE TO SPLIT ROOTS FOR "WORM SEARCH."

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake and M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 17, July 18, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Fall armyworms can still be found in some medium-maturing fields and in most late-maturing cornfields. Occasional fields have 20 to 50 percent infested plants, but in most fields the range is between 5 and 15 percent infested plants.

In the southern section, many of the larvae have already matured, stopped feeding, and pupated. Additional generations could still present further problems in late-maturing fields. After corn has tasseled, fall armyworms will attack the developing ears (like corn earworms), and some larvae will be present in ears until frost.

In the central and northern sections, the larvae were about half grown to nearly full grown this week, and pupation will now progress rapidly. Treatment is justified in fields having 20 percent or more of the plants infested. Before applying insecticides, be sure the worms are still present, and that most of them are not more than 1-1/4 inches long. When they reach about 1-1/2 inches, they are mature; at that size, they stop feeding, drop to the ground, enter the soil, and pupate.

For control, use granules of either carbaryl (Sevin) or toxaphene at 1-1/2 pounds of actual chemical per acre. Sprays provide erratic results, so the granular form is preferred. Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to livestock to within 28 days of slaughter. There are no restrictions for carbaryl.

Corn rootworm larval populations continue to increase as hatch of overwintering eggs reaches its peak, particularly in the northern section. As eggs continue to hatch, the number of larvae is expected to increase or hold about the same for the next 2 weeks. Pupation of larvae is progressing rapidly in many fields, and a few adults have emerged in the western and central sections. Pupation reached 4 percent this week in northern sections, but will progress rapidly from now on.

Damage to roots is becoming more evident, and goosenecking of plants as a result of larval feeding is now evident in a few fields. This will become increasingly evident in the weeks ahead, especially if strong winds or rains accompanied by strong winds occur. Thus far the insecticides recommended for resistant rootworms as planting-time and as basal treatments off the cultivator have generally provided good to excellent control of larvae in spite of the heavy rainfall in some areas.

Both the yellow-to-tan to pale-green northern corn rootworm adults and the yellow-and-black-striped western corn rootworm adults (northwestern section) will be found emerging and feeding on fresh silks during the next several weeks. These insects can reduce pollination. Particularly watch late-planted fields as these fields are most likely to reach the early-silk stage at the time of peak adult rootworm populations.

Treatment is justified if there are 5 or more beetles per plant and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemical per acre or 1/4 pound of actual methyl parathion per acre are effective. Methyl parathion should be used by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Carbaryl has no waiting period.

First-generation corn borers are pupating and emerging as moths in the southern half of the state. Check late-maturing fields for whorl feeding in late July and early August.

Pupation is just beginning in the northern half of the state, and it will be another week before the first moths begin to emerge. Borers ranged from small to nearly full grown, with most of them half to two-thirds grown. They are now beginning to tunnel into stalks, and most of them will enter the stalk within the next week. Check late-maturing fields for whorl damage or egg masses in early to mid-August.

Second-generation infestations in late-maturing fields can be handled in the same way as the first-generation problems. If 75 percent or more of the plants have whorl-leaf feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasseled, look for egg masses. If the average is 1 or more per plant, apply an insecticide after a few eggs have hatched.

Commercial applicators may prefer to use parathion at 1/2 pound per acre. Sprays by air or with high-clearance ground equipment are effective on tasseled corn. Allow 10 days between treatment and harvest when using diazinon and 12 days for parathion. Carbaryl has no waiting period.

Corn leaf aphids are slowly increasing in numbers, but populations are still light. Individual aphids and a few colonies were observed in about 1 to 3 percent of the plants in fields in the central section. Many fields of corn are now coming into tassel, and with aphid numbers low it is doubtful that these fields will have a serious problem. This is particularly true in areas that have ample soil moisture. In areas with low soil moisture, however, a late buildup of aphids could still be serious. In general, it does not appear that the corn leaf aphid will present as severe a problem as it did in 1966 and 1968. It is still early for reliable predictions, and the next week or two will more definitely determine the situation. Continue to check fields that have not yet reached the early tassel stage for aphid buildup. Treatment is warranted when corn is in the late-whorl to early tassel stage and when 50 percent or more of the plants have a light to moderate number of aphids. At the latest, treatment should be made prior to brown silks.

Spray treatments by ground or air, with 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre, are effective. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied by experienced applicators only. If corn is in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Large numbers of true armyworm moths have been flying northward within recent days. Be on the lookout during the next week or two for the presence of armyworm larvae in grassy cornfields in the northern section. The worms feed first on the grass and then move to the corn plant.

For infestations, apply carbaryl (Sevin) or toxaphene at 1-1/2 pounds of actual chemical per acre. Do not feed toxaphene-sprayed corn as forage to dairy cattle or livestock fattening for slaughter. Corn can be harvested as grain without any restrictions. There are no waiting periods or restrictions for corn treated with carbaryl.

SOYBEAN INSECTS

Grasshoppers have been observed feeding heavily on the marginal rows of soybeans. They have recently moved from fence rows, ditchbanks, and roadsides. Migrations of grasshoppers will continue from these areas particularly if conditions are dry. If large numbers are observed, spray the bordering grassy areas with 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre.

FORAGE INSECTS

Meadow spittlebug adults can be found in clover, alfalfa, and soybean fields. These large, wedge-shaped, tan-to-brown-to-black, leafhopper-type insects (about 1/4 inch) jump with an audible "pop" when disturbed. The females lay their eggs during late August and September in clover and alfalfa fields. These eggs will hatch next spring. The adult spittlebugs will continue to be present in these fields until mid- to late-September. Their feeding is of little importance.

HOMEOWNER INSECT PROBLEMS

Sod webworm moths are beginning to appear in increasing numbers, particularly in southern and central sections. These buff-colored moths rest in shrubbery and tall grass during the day and are seen flying in a zigzag pattern over the lawn near dusk. These are the second-generation moths that are laying their eggs at this time. If you find large numbers of these moths in your yard, plan to treat your lawn with an insecticide about 2 weeks later. Usually target dates for treatment are late July in southern sections, early to mid-August in the central section, and mid- to late August in the northern sections.

The larvae of the webworm are gray worms with brown spots and black heads. They are about an inch long when full grown and live for 3 to 4 weeks in the worm stage. The worms live in silken-lined burrows in the thatch of the lawn, clipping off grass blades at the base. Brown spots appear in the lawn and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late for control.

For control of webworms, apply a spray or granules of 2 pounds of actual carbaryl (Sevin), 1 pound of actual diazinon, or 1-1/4 pounds of actual trichlorfon (Dylox) per 10,000 square feet. Use about 25 gallons of water to distribute the insecticide over the 10,000 square feet when spraying. Do not water the lawn for at least 3 days after treatment. If heavy rains occur within 3 days of application, a repeat treatment may be needed.

Tomato fruitworms (same as corn earworm) and tomato hornworms are common in tomatoes particularly in southern sections. Tomato fruitworms are more numerous than normal this year, and damage to developing tomatoes will likely be severe during August and

even into September over much of the state. Sprays of carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of water, are effective. When worms are present, spray the tomato plants every 5 to 7 days. There is no waiting period between treatment with carbaryl and harvest of the tomatoes.

An assortment of insect pests like flea beetles, bean beetles, striped and spotted cucumber beetles, and other leaf-feeding beetles can be found attacking vegetables in home gardens. Carbaryl (Sevin) or malathion will control these insects. Use 2 tablespoons of 50-percent carbaryl (Sevin) wettable powder or 2 teaspoons of 50- to 57-percent malathion liquid concentrate per gallon of water. Follow label directions for the waiting period between spraying and harvest and for other precautions. Make the applications in early evening to avoid injury to bees.

WEEDS

Weeds are still bad news in many fields where adequate cultivation and spraying have not been possible because of wet weather.

2,4-D is about the only spray to consider for corn at this late date. Usually we are not very enthusiastic about late spraying, but much more than normal may be justified this year.

Most 2,4-D labels say, "Do not apply from tasseling to dough stage." This statement is apparently based on early research which showed that spraying at certain critical stages might interfere with development of grain. In one Iowa study, 2,4-D was sprayed on corn plants at various stages. Applying 2,4-D when tassels were beginning to emerge resulted in inhibition of ear shoots. And application of 2,4-D 1 to 4 days before silk emergence caused severe inhibition of seed set on the developing ear.

Each year, 2,4-D causes some brittleness and breakage of corn, some onion-leafing, and some malformation of brace roots. But we have had very few reports from farmers' fields of 2,4-D affecting ear and grain development. Perhaps this is partly because of precautions to avoid spraying during the critical period, more resistant hybrids, and minimal amounts of 2,4-D applied directly to the corn leaves.

But it still seems safest to avoid spraying during the critical stages, especially during early development of the ear shoots (this is about the time tassels begin to emerge) and just before silks emerge.

Silks are usually pollinated very soon after they emerge. After fertilization and when the silks are drying, there is apparently less risk of injury from 2,4-D. However, fertilization is followed by a period of rapid nutrient uptake and movement of food materials to the grain. Stress conditions or injury of various kinds during this stage may interfere with normal kernel development.

Although weeds will usually be large, "tough," and harder to kill with 2,4-D, spraying can be resumed after the grain is well on its way and in the dough stage. The dough stage begins about 3-1/2 weeks after silks begin to emerge. During the dough stage, the silks are dry, kernels are still developing, and starch is accumulating.

But remember that by the time corn reaches the dough stage, many weeds already will have done most of their damage through competition for nutrients and moisture. Many weed seeds will also be developed sufficiently to be viable. The late spraying may make harvesting a little easier, however.

Banvel use appears to have increased this year. Reports have started coming in of injury to nearby soybean fields. Symptoms are cupping and crinkling of soybean leaves. Some of the top leaf buds may not open normally. Yields may be affected, but not always as much as you would anticipate by the appearance of the field. There's not much you can do except to get a good book on how to win friends and influence people.

NOT FOR PUBLICATION--SPECIAL NOTE TO COUNTY EXTENSION ADVISERS

Fly control at county fairs: We have modified the following portion of a Purdue Insect Newsletter on this subject to fit Illinois conditions:

1. Fair officials will need to be sure that manure, garbage, refuse, and soft-drink bottles are removed from the grounds every day. This is a must.

2. A few days before the fair starts, spray livestock sheds, outdoor privies, empty food tents, and other buildings that may harbor flies with dimethoate (Cygon), diazinon, or ronnel (Korlan). A farm crop sprayer, equipped with a lead of hose and a spray gun, can be used for this purpose. Apply the spray to the ceilings and walls to the point of runoff. Most rotary pumps on these sprayers can be adjusted to operate at 250 to 300 pounds of pressure. If the water pressure is good (30 p.s.i. or more), a spray gun that fits on the end of the hose will do a good job of applying the insecticide.

   Sprays should also be applied to refuse containers, garbage cans, and the like before and during the fair. A couple of young boys with compressed-air tank sprayers can do this job.

3. Flies are attracted from great distances to animal waste and food odors. These flies are not killed until they land on a treated surface. For quick knockdown of these incoming flies in animal shelters and other places, use a small electric fogger with oil- or water-base pyrethrum or dichlorvos (DDVP). These fogs are best applied in the early morning when no people are around. Animals need not be removed, although horses may be frightened by the fog.

4. Urge that food stands keep some pyrethrum or dichlorvos in a pressurized spray can for quick kill of adult flies. These sprays should be used at night after the stands close. The local health department should insure that all stands maintain the required standards of cleanliness.

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake and M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

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COLLEGE OF AGRICULTURE
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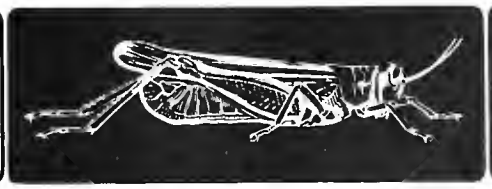


INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 18, July 25, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Armyworms are invading cornfields in western and northern Illinois. The moths, abundant for the past 2 to 3 weeks, deposited eggs on grasses in cornfields, on oats in lodged spots, and on oats and grasses in government acres. These worms have fed for some time, have stripped the grasses, and are now migrating in search of food. If they migrate into a cornfield, they often strip the plants, leaving only stalks and midribs. When corn is small, this leaf loss may not be serious, but at this late date, it is as plants are under stress during pollination and silking. Thus damage could be serious. Fat worms, 1-1/4 to 1-1/2 inches long, are mature and have already done their damage; but if you have many small worms in a field, an insecticide for control may be wise. Above all, examine plants and soil carefully for worms before treating. Be sure you have a problem and do not treat just to be treating. Watch for shriveled or dying worms. Virus disease, wasp parasites, and fly parasites may help control this pest.

If you need an insecticide, use 1-1/2 pounds of actual toxaphene or carbaryl (Sevin) per acre as a spray. Do not apply carbaryl (Sevin) near bee yards or on pollinating plants frequented by bees. Do not apply toxaphene to, or adjacent to, fish-bearing waters. Do not feed toxaphene-treated corn for ensilage or stover.

Fall armyworm damage to corn is still visible but plants are recovering. Usually several plants in one spot are affected. Leaves are fed upon, and plants have a ragged appearance. But the worms have now matured and are conspicuous by their absence. A later generation may enter ears of late corn, alfalfa, or soybeans. However, this damage from the later generation is usually not severe except in extremely late corn.

Control is not recommended when the worms are gone, but if you find these worms in the whorl of the plants, you can control them with granules of either carbaryl (Sevin) or toxaphene at 1-1/2 pounds of actual chemical per acre. Sprays provide erratic results, so the granular form is preferred. Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to livestock to within 28 days of slaughter. There are no restrictions for carbaryl.

Corn rootworms have begun to emerge as adults, but in the meantime the worms still present in the soil are feeding on the roots; plants in many fields are tipping over because of this root pruning. If moisture continues to be plentiful, the plants will partially recuperate, but, if moisture becomes short, damage will be severe.

Our next concern will be the green, yellow, or striped rootworm beetles that feed on silks. If they are abundant in fields less than 50 percent silked, damage to pollination will be measurable. Treatment is justified if there are 5 or more beetles per plant and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemical per acre or 1/4 pound of actual methyl parathion per acre are effective. Methyl parathion should be used by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Carbaryl has no waiting period.

Corn leaf aphids are more plentiful than last week, but the situation is not alarming. In most fields infestations ranged from 0 to 6 percent this week. In one field we found 15 percent of the plants infested. Infestations are much lower than in 1966 and 1968.

Aphids multiply fastest when corn is in the pretassel or late-whorl to brown-silk stage. Since most of our corn is now beyond this susceptible stage or rapidly approaching the nonsusceptible stage and aphid populations are low, we do not anticipate a severe general problem. However, examine late corn, particularly in the drier areas of Illinois. Aphid populations may still increase and damage these fields severely. Treatment is warranted when corn is in the late-whorl to early tassel stage and when 50 percent or more of the plants have a light to moderate number of aphids. At the latest, treatment should be made prior to brown silks.

Spray treatments by ground or air with 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre are effective. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied by experienced applicators only. If corn is in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

European corn borers are in between broods except in extreme southern Illinois, where second-generation borers were found this week. In northern Illinois expect second-generation moth flight to begin about August 5 to 10; in central Illinois, August 1 to 10. Moths will be present in southern Illinois from now on.

Insecticide applications may be justified to control second-generation borers in late corn this year. In southern Illinois check late fields now.

Second-generation infestations in late-maturing fields can be handled in the same way as the first-generation problems. If 75 percent or more of the plants have whorl-leaf feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasseled, look for egg masses. If the average is 1 or more per plant, apply an insecticide after a few eggs have hatched.

Commercial applicators may prefer to use parathion at 1/2 pound per acre. Sprays by air or with high-clearance ground equipment are effective on tasseled corn. Allow 10 days between treatment and harvest when using diazinon and 12 days for parathion. Carbaryl has no waiting period.

Southwestern corn borers are present in late corn in extreme southern Illinois. Late fields averaged 21 percent stalk infestation in fields in the southern tip of Illinois this week. Examine these late plantings for this spotted worm. Carbaryl or diazinon granules may be helpful in control if you find 25 percent or more of the plants infested.

Picnic beetles are invading corn silks in central and northern Illinois. They are usually attracted to the rotting plant material in fields that have been damaged by other insects. We doubt that they are damaging pollination and do not consider them a primary pest of corn. Under certain conditions, they may feed on ear tips that have been exposed.

Woollybear caterpillars of various colors may soon be found feeding in the silks or on the leaves. Thus far they have never been of economic importance.

SOYBEAN INSECTS

Grasshoppers seem to have survived the earlier rains successfully and are present in some legume and soybean fields. They can also be found in fence rows and ditch banks. If large numbers are observed, spray marginal soybean rows and adjacent grassy areas with 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre.

HOMEOWNER INSECTS

We have received several inquiries from small communities about mosquito control. The following control program is suggested:

1. Keep drainage ditches, roadside ditches, and storm sewers properly cleaned and drained to avoid water pockets.

2. Remove grasses, weeds, lilies, and other vegetation from along the margins (5 feet from shore) of nearby ponds and lakes. Drain or fill nearby wet land areas if possible.

3. Urge homeowners to eliminate standing water in their yards in such places as eaves, troughs, old tires, tin cans, children's toys, and like places.

4. Spray tall grasses, weeds, and shrubbery in and around the community with malathion to eliminate adult mosquitoes. There are many insecticides that effectively kill mosquitoes. We have selected malathion first on the basis of safety and then effectiveness. It will kill mosquitoes for approximately 1 to 3 days after application depending on weather, and is no more toxic to man and animals than aspirin. Malathion has a somewhat noticeable odor, but in the diluted form used for mosquito spraying, it should not be objectionable.

5. Malathion may be effectively applied by a conventional high-pressure sprayer, aircraft, mist blower, or fogger. Plan on applying approximately 1/2 pound of actual malathion per acre.

6. Notify residents of the method, date, and time of application. Do not apply malathion to fish-bearing waters or water used for drinking purposes.

Armyworms are extremely abundant in lawns in some areas. Carbaryl sprays can be used in and around house yards if worms are devouring the grass and becoming a general nuisance. Do not spray if worms are mature.

Picnic beetles are nuisances when they visit your picnic table. They also invade gardens where they attack fruits and vegetables damaged by weather or other insects. They particularly like to penetrate ripe tomatoes with growth cracks.

These black beetles with the four yellow-to-orange spots on their backs are difficult to control. Sprays of carbaryl (Sevin) may be helpful. Use 2 tablespoonfuls per gallon of water in your garden. Diazinon sprays around garbage containers and in some vegetables may also be helpful. Do not harvest tomatoes for at least 24 hours after application. Follow label directions for use in home gardens.

Fall webworms are beginning to appear on shade trees. They spin webs around the ends of branches, especially of birch, ash, and elm. Tawny-colored hairy caterpillars skeletonize the foliage inside the webbing. They continue to extend the web to take in fresh foliage. Prune out infested limbs and burn webs where larvae are located, or break open web and spray with malathion at the rate of 2 teaspoonfuls per gallon of water.

WEEDS

2,4-D drifting to gardens. Each year 2,4-D affects some vegetables and fruits in adjacent or nearby cornfields. Should the produce be eaten? In most situations it is probably all right.

The LD_{50} for various 2,4-D formulations varies from about 375 to 850 mg./kg. For 2,4-D ester, the LD_{50} is about 650 mg./kg.--the equivalent of about 1 ounce per 100 pounds. So, if a 100-pound person consumes 1 ounce of 2,4-D ester, he should be concerned. The amount could be lethal.

The amount of 2,4-D that drifts to a garden varies considerably with spray pressure, volume of water used, wind direction, and other factors.

As an example, let's assume you apply the recommended rate--1/4 pound of 2,4-D, or one-half pint of concentrate, per acre--to a cornfield. Assume that 25 percent--a highly exaggerated rate--of the 2,4-D drifts to the garden. Such a drift level would result in 1 ounce (by weight) of actual 2,4-D being spread over a full acre, or 2 fluid ounces (4 tablespoons) of the liquid 2,4-D concentrate on a full acre.

This small amount of 2,4-D might have some effect on plants, but it is unlikely that it could cause an acute toxicity problem to humans. Only a portion of the 2,4-D would be on the edible plant parts and it would be impossible for one individual to consume the produce from an acre at one sitting.

Of the 2,4-D that drifts to a garden, some will be deposited on the soil, some on the non-edible plant parts, and only a portion on some of the edible plant parts.

2,4-D is not very persistent and usually decomposes rather fast during a few weeks of warm moist weather. Its effect on plants may be evident for some time, however.

Accidental ingestion of the liquid concentrate because of improper storage and handling is the major concern. All concentrates should be properly stored and carefully handled, especially around children.

Although eating plants affected by 2,4-D does not seem a cause for alarm, there are two other considerations. Some individuals may be allergic or particularly sensitive to certain herbicides just as some individuals are sensitive to bee stings, drugs, plants, and pollen. Little research has been done on this relationship for herbicides, so be careful.

Secondly, the psychological effect may be one of the most important aspects. A person may eat some affected vegetables or fruit and then start worrying or losing sleep. He may develop a sore throat or headache from some entirely unrelated cause and associate his discomfort with having eaten the produce.

Strained relationships between neighbors is another problem. So it's best to use considerable precaution to avoid getting 2,4-D on gardens and ornamentals.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

Special Announcements:

MEETING TO RATE CORN ROOTS DAMAGED BY ROOTWORMS

July 29 8:30 a.m.--noon. McHenry County. Louis Engelbrecht, Extension Adviser. Location: Earl Hughes & Sons Farm, northwest of Woodstock on Route 14 to Dunham road then west about 1 mile.

Fifteen insecticide plots to be compared with roots from untreated plots. Lodging also to be rated.

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign and Illinois Natural History Survey.

WEEDS: E.L. Knake and M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 19, August 1, 1969

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

True armyworms in corn rate the insect-of-the-week award. The problem area lies north of Route 36. They are damaging corn where grasses were thick in the row and cornfields planted adjacent to government acres which contain grasses or oats. The worms strip the lower leaves first, leaving only the stalk and midribs. Sometimes they chew silks and work the tip of the ear.

Worms of all sizes were found this week (the worm stage lasts 2-1/2 to 3 weeks), with about 1/2 to 2/3 of them nearly full grown. The worms should begin to disappear as pupation progresses rapidly. The next generation of moths will roll on northward and should present no further problems in these same areas.

Before applying an insecticide, examine the field closely for the presence of worms and assess the prospects for further damage. In many fields, the damage is confined to localized grassy spots. Virus diseases, wasp parasites, and fly parasites can reduce populations quickly. So, watch for shriveled or dying worms on the leaves. Diseased worms were observed in several fields this week. If the disease becomes widespread, worm populations will disappear almost overnight.

If worms are still present, particularly many small to half-grown ones, and feeding is pronounced, apply 1-1/2 pounds of actual carbaryl (Sevin) or toxaphene per acre as a spray. Malathion at 1 pound of actual per acre is also effective. Do not apply carbaryl near bee yards or on pollinating plants frequented by bees. Carbaryl has no waiting period. Do not apply toxaphene on or adjacent to fish-bearing waters. Do not feed toxaphene-treated corn as ensilage or stover to dairy cattle or to livestock fattening for slaughter. Corn may be fed as grain from toxaphene-sprayed fields. Do not harvest corn treated with malathion as feed or forage for 5 days after treatment.

Corn rootworm adults are beginning to emerge in cornfields, where they are feeding on silks. Species include the tan or pale-green northern, yellow and black striped western, and 12-spotted southern corn rootworms. Since adult emergence is just beginning, populations can be expected to increase. In many of the problem fields, the corn is lodged (especially if rains and winds have occurred recently) and root damage is severe, due to feeding by the larvae.

If rootworm beetles are numerous, they can reduce pollination. Medium to late-maturing fields will likely be most seriously affected, since beetle numbers are likely to be higher in these fields during the critical pollinating period. Treatment is justified if there are 5 or more beetles per plant and if not over 50 percent of the plants have silked. Sprays of carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemica per acre, or 1/4 pound of actual methyl parathion per acre are effective. Methyl parathion should be used by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Carbaryl has no waiting period.

If you want to estimate the prospects of rootworm problems for next year, make a check on the number of rootworm beetles and rootworm damage during the next week or two. If you find lots of beetles (5 or more per plant), or if the roots are moderately to severe damaged, then there may be enough rootworms in the field to cause economic losses in 197 if the field is planted to corn again.

Notify your county extension adviser if you have had failures with one of the organic phosphate or carbamate insecticides used for the control of resistant rootworms. Also report any fields of first-year corn that have been damaged by rootworms.

Corn leaf aphids are increasing slowly but populations are still not alarming. In most fields aphid infestations on plants ranged from 5 to 10 percent this week. One field was reported to have up to 30 percent of the plants lightly infested. Aphids multiply fastest when corn is in pre-tassel or late-whorl to brown silk stage. Since most of our corn is now, or soon will be, beyond this susceptible stage, and since aphid populations are low, we do not anticipate a generally severe problem. Continue to examine late corn particularly in the drier areas of Illinois. Aphid populations may still increase and damage these fields. Treatment is warranted when corn is in the late-whorl to early tassel stage and when 50 percent or more of the plants have a light to moderate number o aphids. At the latest, treatment should be made prior to brown silks.

Spray treatments by ground or air, with 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre, are effective. Allow 5 days for malathion, 10 days for diazi and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied by experienced applicators only. If corn is in the late-whorl stage, seed producers may prefer to use 1 pound per acre of either diazinon or phorate (Thimet) as granules. To avoid potential hazards to detasselers, use phorate only on male-sterile corn.

Second-generation European corn borer moth emergence is well under way in southern sections, and eggs are being laid. Moth emergence is just beginning in the central section Pupation reached about 20 percent in the northern section. Now is the time to check late-maturing fields for egg masses or whorl feeding in the southern section. Wait abou a week in the central section and about 2 weeks in the northern section. Treat whorl-stage corn if 75 percent or more of the plants show recent whorl feeding. Apply carbaryl (Sevin) or diazinon as granules. Treat tasselled corn if the egg mass per plan averages one or more. Apply an insecticide after a few eggs have hatched.

Commercial applicators may prefer to use parathion at 1/2 pound per acre. Sprays by air or with high-clearance ground equipment are effective on tasselled corn. Allow 10 days between treatment and harvest when using diazinon and 12 days for parathion. Carbaryl has no waiting period.

SOYBEAN INSECTS

Grasshoppers continue to damage fields of soybeans and corn. They can also be found in fence rows, ditchbanks, and roadsides, from where they may move to soybeans or corn at any time. If grasshoppers are damaging soybeans or corn, they can be controlled with a spray of 3/4 pound of actual carbaryl (Sevin) or 1-1/2 pounds of actual toxaphene. Allow 21 days between treatment with toxaphene and the harvesting of soybeans for grain. Do not feed toxaphene-treated soybeans or corn as forage to dairy cattle or livestock fattening for slaughter. Carbaryl has no restrictions. For treatment of ditchbanks and roadsides, use one of the same insecticides listed above. It is wise to control grasshoppers in these nonagricultural areas before they have a chance to move into croplands.

HOMEOWNER INSECT PROBLEMS

Oystershell scale eggs will be hatching soon in the central section. The young crawlers set up housekeeping on shrubs like lilac and dogwood. They suck the juices from the plant and if abundant, they can seriously retard growth and even kill the plant. This is the second generation of this scale and the build-up is often heavy. If you have had a history of problems in your yard, spray the shrubs thoroughly with malathion using 2 teaspoons of the 50- to 57-percent liquid concentrate per gallon of water. Target dates for spraying are right now in the southern sections, August 10 in the central section, and August 20 in the northern section.

Sod webworm moths are increasing in numbers as emergence continues in the central section. There are still more to come. These buff-colored moths rest in shrubbery and tall grass during the day and are seen flying in a zigzag pattern over the lawn near dusk. Second-generation moths are laying their eggs at this time. If you find large numbers of these moths in your yard, plan to treat your lawn with an insecticide about 2 weeks later. Usually target dates for treatment are now in southern sections, early to mid-August in the central section, and mid- to late August in the northern sections.

The larvae of the webworm are gray worms with brown spots and black heads. They are about an inch long when full grown and live for 3 to 4 weeks in the worm stage. The worms live in silken-lined burrows in the thatch of the lawn, clipping off grass blades at the base. Brown spots appear in the lawn and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late for control.

For control of webworms, apply a spray or granules of 2 pounds of actual carbaryl (Sevin), 1 pound of actual diazinon, or 1-1/4 pounds of actual trichlorfon (Dylox) per 10,000 square feet. Use about 25 gallons of water to distribute the insecticide over the 10,000 square feet when spraying. Do not water the lawn for at least 3 days after treatment. If heavy rains occur within 3 days of application, a repeat treatment may be needed.

There are a large number of mosquitoes in most areas of the state. To reduce the number of mosquitoes in home yards, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc., (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2" x 10") containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. As an added precaution, hang the strips where children cannot reach them and away from fish bowls and food counters. A 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of

the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most-effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

WEEDS

Johnsongrass grows actively with the current moist and warm weather. Now is a good time to treat. If you have Johnsongrass growing in small-grain stubble, in drowned-out bottomlands, or in idle acres, here is a good control program:

1. Chop or clip the Johnsongrass a time or two. This is not essential, but when the tops are cut, food reserves are drawn from the roots and rhizomes, making chemical treatment more effective.

2. Let the Johnsongrass regrow to about a foot high.

3. Spray with Dowpon. Use 8 pounds of Dowpon commercial product in 30 to 40 gallons of water per acre; 5 pounds may be adequate, though not as effective as 8 pounds. Dowpon contains a wetting agent, but additional nonionic surfactant or wetting agent may improve performance on grass leaves that are difficult to wet.

4. Wait at least 3 days before disking or plowing. The delay gives Dowpon time to move from the leaves to rhizomes for more complete kill. Then disk or plow. Tillage provides further control.

5. The area can be planted to corn or soybeans next spring. To control seedling Johnsongrass in corn, use a preemergence herbicide such as Eptam or Sutan. For soybeans, use Treflan, Planavin, or Vernam.

The above program is one of the best for Johnsongrass control. You can use a similar program in the spring, but the program is not nearly as practical. You must delay corn and soybean planting at least 3 weeks after applying Dowpon to give the chemical time to decompose.

Start your quackgrass control program this fall. Five pounds of AAtrex 80W applied at least 3 weeks before freezing usually gives excellent control. We still get many questions on how to control quackgrass after corn is planted. You just can't get good control then.

So plan ahead with the fall or early spring applications. Dowpon and amitrole-T are other possibilities for quackgrass control. See Illinois Circular 892.

DISEASES

Phyllosticta yellow leaf blight has been found recently for the first time in Illinois in the northern tier of counties. This new disease of corn has been reported in Wisconsin, Michigan, Missouri, Minnesota, Indiana, New York, and Pennsylvania. This disease has so far been found on the earparent in seed production fields, and is not likely to appear in farmers' fields.

Its symptoms are similar to those of southern corn leaf blight. In its early stages, yellow leaf blight produces symptoms that resemble those of nitrogen deficiency, especially on the lower leaves. Close examination, however, shows that the chlorosis is caused by a large number of individual elongated yellow spots. The spots, 1/4 to 1/2 inch long, are elliptical to oval and have tan to cream-colored centers. You can expect the disease to move to the upper leaves and the leaves of more susceptible varieties and inbreds to die. Aerial application of Dithane M-45 has been recommended as a control by Wisconsin plant pathologists although its effectiveness has varied somewhat.

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Stephen Sturgeon, University of Illinois College of Agriculture, Urbana-Champaign, and Illinois Natural History Survey.

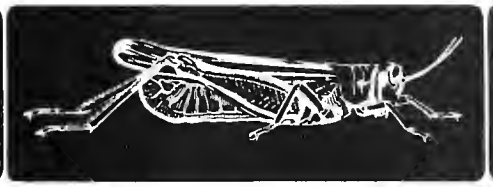
WEEDS: E.L. Knake and M.D. McGlamery, Department of Agronomy.

DISEASES: E.E. Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 1, April 3, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevil development is slow because of the cool weather. There are about the same number of eggs per square foot in southern Illinois alfalfa fields now as a year ago. Further north, in central Illinois, egg counts are higher than last year. If the alfalfa begins to grow before weevil hatch, alfalfa growers may be able to get by with only one spray application; also, the later the hatch, the larger the number of parasitic wasps to attack and kill the alfalfa weevil larvae.

In 1969, the first applications of insecticides began the week of April 18 in southern Illinois. Unless temperatures moderate rapidly, this year will be like last year--both in the timing of the insecticide applications and the intensity of the attack. Although some alfalfa fields required an insecticide application in 1969, many others needed no insecticides at all. The weather during the next few weeks will be very important in determining the importance of the alfalfa weevil to the 1970 alfalfa crop.

Clover leaf weevil larvae, green worms with a white stripe down the back, resemble the alfalfa weevil larvae--except that the head of the alfalfa weevil is black and that of the clover leaf weevil is brown. Furthermore, the clover leaf weevil feeds at night and hides in the ground debris during the day, and the alfalfa weevil larvae are on the plants all day long.

If red clover is covered with straw and other debris and growth is retarded, these clover leaf weevil larvae can cause severe damage during extended periods of cold weather. On the other hand, warm, humid weather promotes plant growth as well as a fungus disease that kills these pests. Clover can usually grow away from damage; but if growth is slow and leaf feeding is severe, a spray of 1 pound of malathion per acre (or mixtures of malathion or diazinon and methoxychlor) will reduce the insect population and allow the plants to grow. Malathion alone is most effective when the air temperature approaches 60° F.

CORN INSECTS

European corn borer winter survival is higher than usual. At this time of year, 20 to 30 percent of the borers found in the old corn stalks are usually dead. This

year in the southeastern, southern, and west-southwestern sections of Illinois, survival is high and mortality is less than 10 percent. Preliminary surveys this week in western Illinois indicate a 15-percent mortality.

CLARIFICATION OF SOIL INSECTICIDE USES

Our suggestions for using soil insecticides in Illinois cornfields have been:

1. Where rootworms are not a problem: As a minimum use a diazinon seed treatment. Otherwise apply 1.5 pounds of diazinon or 1 pound of Dasanit, Dyfonate, or phorate (Thimet) at planting time in a 7-inch band on the soil surface ahead of the press wheel. If you suspect that garden symphylans are present, use Dyfonate at planting time.

2. In fields where rootworm problems are anticipated: Apply Dasanit, Dyfonate, or phorate (Thimet) as a 7-inch band on the soil surface ahead of the press wheel; or, treat the seed with diazinon and apply BUXten or carbofuran as a 7-inch band ahead of the press wheel; or treat the seed with diazinon and make a basal application of BUXten, Dasanit, or phorate in June.

3. We suggest that present supplies of aldrin and heptachlor be used up by applying them to fields of grass sods being plowed up for corn, to clover sods to be planted to corn, or to fields to be planted to corn, where white grubs are a problem.

4. The reason for dropping aldrin and heptachlor from our general use soil-insecticide recommendations is based on low yield returns for treatments, the continual appearance of insect strains resistant to these chemicals, low wireworm populations, and the continual environmental contamination of insecticides with a long residual life.

In twelve fields where picker yields were compared in 1969, we had the following results:

Organophosphates--118.7 bushels per acre
Only diazinon seed treatment--111.9 bushels per acre
Nothing--109.9 bushels per acre
Chlorinated hydrocarbons--106.3 bushels per acre

Seven of these fields had sufficient corn rootworm populations to affect yields, but five did not. Thus, we attribute these yield differences to the control of or the failure to control rootworms, seed beetles, seed maggots, garden symphylans, and perhaps other insects we failed to observe. Wireworms, cutworms, grape colaspis, white grubs, corn root aphids, and sod webworms were not present in these fields.

Wireworms, grape colaspis, corn root aphids, and sod webworms have not been a general problem in Illinois for several years. Cutworms usually affect no more than 1 to 2 percent of the total corn acreage in Illinois.

These facts influenced our thinking in making our 1970 suggestions to Illinois farmers for soil-insect control practices in cornfields. For further information, see Circular 899, *Insect Control for Field Crops*. It is available from your county Extension adviser.

HOMEOWNER INSECTS

Garden soil insects (including wireworms, seed and root maggots, and white grubs) can be controlled by mixing in 4 ounces of 25-percent diazinon per 1,000 square feet of garden area. Do not use aldrin, heptachlor, phorate, or other insecticides that are labeled for corn soil insect control.

Reports of cluster flies have been numerous this spring. These sluggish adult flies, slightly larger than the common house fly, moved into houses during the fall. They are now becoming active, moving out of wall partitions, and clustering in large numbers at windows in the attic or upstairs area. To control these flies, hang 20-percent dichlorvos (DDVP) resin strips in attics or other areas where they are present--but not in kitchens, or other areas where food is present, nurseries, or rooms where infants, those who are ill, or elderly people are confined.

One strip per 1,000 cubic feet will provide control for four to six weeks. A pressurized spray can containing 0.1-percent pyrethrin, used as a space spray, will give a good kill of the flies present, but will not provide residual protection in the area.

Spring cankerworms, dark-brown to dark-green measuring worms, will be feeding soon on trees like American elm and apple, as well as on other fruit and shade trees. They attack early, feeding on developing leaf buds and newly developing leaves. Sometimes they completely strip a tree of foliage, while other trees are only partly defoliated. When full-grown, the worms drop to the ground by means of silken threads that appear like streamers in the wind. By this time, it is usually too late for control.

As a foliage spray, use either carbaryl (Sevin) with 2 pounds of 50-percent wettable powder or lead arsenate with 4 pounds in 100 gallons of water.

PLANT DISEASES

MERCURY SEED TREATMENTS

As you probably have heard by now, mercury seed treatments (Panogen, Ceresan, Ortho LM, and Chipcote--the ones we have recommended) should no longer be applied to small grain seed, except to use up present supplies. We suggest the use of Vitavax, preferably with thiram or captan added. Any seed-treating establishment or farmer can treat up to 10,500 pounds of any small-grain seed under the current Vitavax label. By itself, Vitavax does a good job against external and internal smuts and some other seedling blighters, but is much less effective against other fungi that help reduce stands and yields. This is where the addition of captan or thiram will help give broad-spectrum control. Full clearance of these products is expected by mid-summer, in time for treating winter wheat seed.

GENERAL INFORMATION

Cautions: Be careful when filling sprayers near wells. Many accidents have occurred in the past. Keep the hose from the well out of the spray tank--back siphoning can occur. Be careful not to spill concentrates alongside the well. Do not drain sprayers by the well. Following these and other precautions may prevent problems this year.

Farmers are now using some of the newer insecticides. These should be handled with respect. Wear rubber gloves when handling, never pour by holding a container above your head, and always pour granules into hoppers so that the wind will blow any dust away from you.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

PLANT DISEASES: M.C. Shurtleff, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMEMT OF AGRICULTURE COOPERATING

OR IMMEDIATE RELEASE

No. 2, April 10, 1970

his series of weekly bulletins provides a general look at the insect, weed, and plant isease situation (fruit and commercial vegetables excepted), along with suggested, ab-reviated control measures. Each individual should check his own fields to determine ocal conditions.

INSECTS

ORAGE INSECTS

lfalfa weevil eggs began to hatch this past weekend with the warm weather, but cool eather could bring weevil development to a stand still. Populations of this pest will ary greatly from area to area, even from field to field. No statement can be made that ill apply to all fields in any one area. A few noticeably damaged fields may be pre-ent as far north as Kankakee on the east and Pittsfield on the west. However, the more-evere and general infestations, as expected, will be in the southern part of Illinois.

mall larvae can now be found in the southern part of the state, but feeding at present s minor and almost unnoticeable. When 25 percent of the tips show feeding, apply an nsecticide unless the crop is within 10 days of harvest. Treatments may be needed at he earliest in a week to 10 days in extreme southern sections, in about 10 days to 2 eeks in the south central section, and in 2 to 4 weeks in the central section.

he insecticide recommendations are:

. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

lover leaf weevils are green worms with a white stripe down the back. They resemble lfalfa weevils. They often feed on red clover, however, and do feed at night--hiding in oil debris during the day. Clover can usually grow away from damage; but if growth is low and leaf feeding is severe, a spray of 1 pound of malathion per acre (or mixtures of alathion or diazinon and methoxychlor) will reduce the insect population and allow the lants to grow. Malathion alone is most effective when air temperatures are 60° F. or ove.

CORN INSECTS

Corn seed beetles may again be a problem if germination is slow. This is when their attack can reduce stands, sometimes seriously. Usually, but not always, this is more of a problem with corn planted early.

Soil applications of Dasanit, diazinon, Dyfonate, and phorate (Thimet) will control this beetle. You can no longer depend on aldrin and heptachlor soil treatments to do the job. Diazinon seed treatments alone will also control seed beetles. About 10 percent of the people who used this method in 1969 complained about the effect on seeding rates. Adding a dust to the seed may pose a reduced seeding-rate problem. To avoid this, when using seed treatments:

1. Treat seed in a separate container, so excess dust will not be in the planter box.

2. Empty planter boxes frequently, to prevent powder from accumulating in the bottom. On plateless planters, clean out the trap often. Clean up plastic plates and other plante box mechanisms at the end of the day.

3. Do not overdose.

4. Check frequently for wear or chemical caking on the planter plates, particularly on plastic plates. Some plastic plates also become "gummy" from chemical reaction.

5. In some instances, using plates with a size-larger cell may be helpful. Adding some extra graphite may also help maintain the seeding rate.

When to use diazinon seed treater:

1. Use it if you are using no soil insecticide at all, or when you are using aldrin, heptachlor, or BUXten. Furadan may or may not control the beetles.

2. You do not need diazinon seed treater if you are applying Dasanit, diazinon, Dyfonate, or phorate (Thimet) as a soil insecticide.

Soil Insecticides: Aldrin and heptachlor no longer satisfactorily controls the three corn rootworms, seed beetles, seed maggots, or garden centipedes (symphylans); but do control grape colaspis and wireworms with row or broadcast treatments. Aldrin and heptachlor also control cutworms and white grubs, if broadcast and disk-in prior to planting.

Dasanit, Dyfonate, and phorate (Thimet) control the rootworms, seed beetles, and seed maggots, and provide some protection against garden centipedes. Diazinon will do the same, except that it will not control the corn rootworms. Dyfonate will provide the best protection against garden centipedes. All four will give some protection against wireworms and corn root aphids, very little control of cutworms, and no control of white grubs.

Our Illinois recommendations are printed in Circular 899, *Insect Control for Field Crops*.

Cautions: Do not apply the newer insecticides in the planter shoe next to the seed, as you have done with aldrin or heptachlor. With some, the germination of the seed may be affected. Apply them in a 7-inch band just ahead of the press wheel.

)MEOWNER INSECTS

ngus gnats will soon appear, attracting the attention of many people. These small, gnat-ke flies develop in wet, decaying organic matter. They get into homes and are nuisances. ıside the home, a spray of 0.1-percent pyrethrins applied from a pressurized can will give ımporary relief.

WEEDS

:W CLEARANCE

)nsanto has announced new clearances for alachlor (Lasso). Lasso is now cleared for tank xing with atrazine (AAtrex) for corn and with linuron (Lorox) for soybeans. The rate .earance for clay soils and soils with over 3-percent organic matter has also been in-:eased to allow the useage of 3- and 4-pound rates per acre. Most of the material avail-)le in 1970 will not have this information on the label.

/ACKGRASS

: you are in quackgrass country (northern Illinois), it is still not too late to think)out a control program in corn. Atrazine (AAtrex) is the key to quackgrass control. The ıte is 5 pounds per acre of the 80-percent wettable powder. This can be applied as a ıngle application preplant, or as a split application of 2-1/2 pounds per acre in the)ring and 2-1/2 pounds per acre at planting time.

:GETABLE GARDENS

. Cultivation and mechanical removal. THIS METHOD IS THE MOST-USED AND SAFEST ONE FOR THE HOME GARDEN. It must be repeated several times through the growing season of a crop. Vacations or absence from the garden is a negative factor for this method.

Mulching or smothering weeds. This prevents light from reaching the weed seedlings. Several opaque materials used are--Kraft papers, black polyethylene, ground corn cobs, week-seed-free straw, other fresh vegetation, and composted vegetation.

. Use of herbicides. This is not practical in small vegetable gardens with several crop species. Different vegetables and weeds vary in their tolerance to herbicides. Thus, ideally, several herbicides should be used. Certain desirable herbicides for certain vegetables remain in the soil longer than one growing season, and may kill or injure different vegetables the following year. Applications must be carefully controlled when a herbicide is used on a small area. The tendency is to apply additional amounts if the quantity measured-out "looks" as though it is not enough.

ıny home vegetable gardens are not large enough to make buying several herbicides worth-ıile. But Dacthal, Amiben, or Treflan can be used by the home or small commercial gardener ıo doesn't want to hand weed but wants to use a herbicide. Dacthal, Amiben, or Treflan are)t the most desirable herbicides for a large planting of an individual species. The most-:sirable ones for individual vegetable species are listed in Circular 907, *Herbicide Guide)r Commercial Vegetable Growers*.

ıcthal can be used on snap or garden beans, broccoli, brussel sprouts, cabbage, cantaloupe, ıuliflower, collards, cucumbers, eggplant, lettuce, mustard greens, onions, peppers, potatoes, quash, strawberries, sweet potatoes, tomatoes, turnips, and watermelons. Dacthal must be)plied to weed-free soil, because it is a weed-seed germination inhibitor. Best results

are obtained if it rains if you irrigate 2 to 3 days after application. The best application time varies with species. Follow label suggestions on the Dacthal container for time of application.

Amiben, (also sold as Begiben) is a herbicide used in soybean culture. It can also be used on the following vegetable species: dry and lima beans, peppers, pumpkins and squash sweet potatoes, and tomatoes.

Treflan is also used in soybean culture, and can be used on the following vegetable species: snap, dry and lima beans, broccoli, brussel sprouts, cabbage, cauliflower, carrots, kale, mustard greens, okra, peas, peppers, tomatoes, and turnip greens. Treflan must be worked into the soil before transplanting or seeding. To insure uniform incorporation, use a rototiller or double-disk the soil at right angles. For more information, contact your local Extension adviser or the UI Department of Horticulture, 124 Mumford Hall, Urbana 618. Ask for VG-4, *Weed Control in the Vegetable Garden*.

MACHINERY

GRANULAR INSECTICIDES

Now is the time to get granular pesticide applicators ready. If you plan to use insecticides such as BUXten, Dasanit, diazinon, Dyfonate, Furadan, or phorate (Thimet), have the 7-inch spreading devices or banders positioned ahead of the press wheel. Your equipment dealer should have these available for your planter.

To calibrate a granular applicator, get the recommended setting for your unit from the dealer. Use the setting as a start, then calibrate the units in the field by collecting and weighing the granules dispensed over a known acreage. Remember, the application rate will vary with the ground speed, moisture content of the granules, and many other factors.

Don't expect the setting to be the same for each applicator unit. To check the application rate of each unit, place a strip of masking tap vertically on the inside of the applicator hopper, then fill the hopper a pound at a time. After each pound is added, shake the hopper to settle the material and mark the tape at the level of the chemical. Then, the amount of material used can be easily checked by simply reading the level of the chemical before and after planting a known acreage.

SEED TREATMENT

Preliminary tests for potential seeding problems with diazinon corn-seed treater indicate that diazinon mixed with the seed before being placed in the planter hopper gives the fewest problems. In some instances, attempts to mix the treatment and the seed in the hopper have resulted in extreme variations in the amount of treatment on the seeds and excess dust in the bottom of the planter box.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

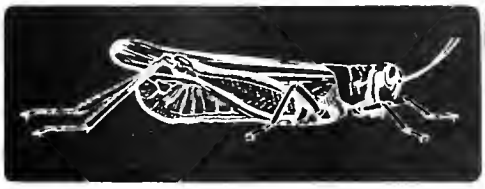
MACHINERY: J.C. Siemens, Department of Agricultural Engineering.

WEEDS: M.D. McGlamery, Department of Agronomy, H.J. Hopen, Department of Horticulture.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 3, April 17, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil development is slightly behind last year. Generally, alfalfa growth is good, and damage from alfalfa weevil larvae should not be much different than last year. These green larvae have a light stripe down the back and shiny black head.

In southern Illinois this week, they were still very small and hardly noticeable at a quick glance. Some feeding was observed, but only by careful examination of the new shoots. Applications of insecticides, where needed, probably should not be made until late next week at the earliest.

In south-central and central Illinois, an occasional larva can be found. The adults, now present in moderate numbers, are laying their eggs. With normal temperatures, treatments with insecticides will not be needed for at least 10 days to two weeks in south-central Illinois, and not for 3 weeks in central Illinois.

When there is feeding on 25 percent or more of the terminals and the field is more than two weeks from harvest, an insecticide application is justified.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

Clover leaf weevil larvae are very numerous in some red clover fields in southern Illinois. The clover is growing, however, and damage is still minor, although it may become more apparent soon.

A disease of clover leaf weevil in epidemic form can eliminate this pest as a problem, whe the weather is warm and "muggy." The first indication of this disease is when the normall green larvae appear yellow, then brown. The dead and dying larvae cling to the stems and leaves.

If the weevils are dying, no insecticide is needed. If severe feeding is taking place, a spray of 1 pound of malathion per acre (or mixtures of malathion or diazinon and methoxych will reduce the insect population and allow the plants to grow. Malathion alone is most effective when the air temperature is 60° F. or above.

HOMEOWNER INSECTS

Now that spring yard work has begun, many questions are coming in about insect pests on ornamental plants. Euonymus scales, common on several shrubs like winter creeper, and euonymus evergreen ground cover may be confused with insect eggs. Saw dust castings from borers in the trunks of trees and shrubs can be found on the bark or accumulating at the base of the trunk. Although nothing can be done to control these pests now, a spray of malathion after the eggs of these scales hatch will be helpful--about early June in the central section of the state. The tunnels of the borers can be probed with a wire to kill the borers, or dimethoate sprays can be used later to prevent reinfestation. But right now is the time to pick last year's bagworms from the evergreens or other trees and burn them. About half of these bags will be full of eggs that will hatch in 4 to 8 weeks, then the small worms will begin to devour the needles. The more eggs you destroy now by pulling off the bags, the easier it will be to control the bagworms later.

As you rake the old leaves around shrubs and the foundation of the house, you may find adult elm-leaf beetles and lady beetles. The elm-leaf beetle has a brownish-black body with yellow stripes on the wings. The yellow elm-leaf beetle larvae will appear later on Chinese elms. They skeletonize these leaves. No control of the wintering adults is needed Lady beetles are yellow, orange, or red insects, hemispherical in shape, with black spots. They are beneficial, since they eat other insects.

Clover mites appeared in great numbers this week. They have spent the winter under the siding of the house and in other protected areas. These minute brown or orange mites are present by the thousands on the sides of some houses, and often appear in huge numbers inside the windowsills. Use a vacuum sweeper to collect them inside the house or spray with a pressurized spray can containing 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP). Spray on the outside of the house and along the foundation with 1-ounce of dicofol (Kelthane 18.5 W) or 4 ounces of chlorobenzilate per 3 gallons of water. Later this spring remove the grass and weeds next to the foundation for a strip 18 inches wide and plant this in flowers. Very few clover mites will cross this 18-inch barrier in the fall.

Winged ants, often confused with termites, are now appearing in large swarms. Under Illinois conditions, if the body of the insect is yellow, red, or brown, it is almost certain to be an ant. If the winged insect is black, it could be a swarming termite. If the wings have many veins and there is no waist in the middle of the body, it is usually a termite.

For identification contact your county Extension adviser, a local pest-control operator, or send the insect to 280 Natural Resources Building, Urbana, Illinois 61801, and we will identify it.

WEEDS

2,4,5-T REGISTRATION

The registration of liquid formulations of 2,4,5-T for use around the home and on lakes, ponds, ditches, and banks has been suspended. Nonliquid formulations for use around the home and on all food crops intended for human consumption may also be cancelled. The registered use of 2,4,5-T for controlling weeds and brush in ranges, pastures, forests, or on rights-of-ways and other nonagricultural uses are not affected at this time. More details are expected later.

ORGANIC-MATTER CONTENT AND HERBICIDE RATES

Herbicide rates are often varied by the texture and organic-matter content of the soil. Some of the herbicides most affected by the amount of organic matter are atrazine (AAtrex), simazine (Princep), linuron (Lorox), trifluralin (Treflan), and nitralin (Planavin)--as well as combination products such as linuron/propachlor (Londax) and propachlor/atrazine (Ramrod/atrazine).

You can estimate the organic-matter content by using the *Color Chart for Estimating Organic-Matter in Mineral Soils in Illinois* (AG-1941). This information is also available from some soil test reports. The "1970 Weed Control Guide" section of the *1970 Illinois Agronomy Handbook* has suggested rates for some herbicides, and can be used as a guideline. Tank-mix combinations present special problems because the different ingredients may be affected differently by the organic-matter content.

Herbicides such as linuron (Lorox) and nitralin (Planavin) are not recommended for soils above 3- to 4-percent in organic-matter content. Other herbicides like propachlor (Ramrod) do not perform as well on soils of low-organic matter content as on those whose organic-matter content is medium to high.

Organic-matter content is only one of the factors to consider in choosing a herbicide. Also consider the weeds to be controlled, and consult the *1970 Weed Control Guide*.

PREPLANT APPLICATIONS

AAtrex can be incorporated into the soil, but doesn't have to be. Applications can be made 3 weeks before planting; usually, the closer to planting time the better.

Apply Sutan just before planting and incorporate it right away. A spray boom just in front of the disk works well. Cross-disking is not essential.

Be sure to apply Sutan accurately, uniformly--whether it is used alone or in combination with atrazine. This is especially true when liquid fertilizer equipment is used. Although not considered as a serious or extensive problem, we have had a few past cases of corn injury caused by overdosing and overlapping.

Sutan plus atrazine has given good control of both grass and broadleaf weeds. Follow the same procedures and precautions as with Sutan alone.

Lasso is now cleared for preplant incorporation for corn or soybeans, within 7 days before planting. The time of incorporation for Lasso is not critical. Present research suggests that preplant-incorporated applications of Lasso may be beneficial for controlling nutsedge. But for the control of annual grasses like panicum and foxtail, surface applications are probably best.

The Treflan label now gives up to 4 hours for incorporation. Be sure you get Treflan on the right fields--only on those to be planted to soybeans, not corn. Incorporate Treflan twice--once soon after application to reduce surface loss and again just before planting, to give final seedbed preparation, control of broadleaved weeds, and a more-uniform distribution.

If you want to use CIPC for added smartweed control, don't mix and incorporate it with Treflan. Apply CIPC to the soil surface at, or soon after, planting. Use 2 to 3 pounds per acre of active CIPC on a broadcast basis, either as liquid or granules. Apply proportionately less in a band.

NEW CLEARANCES

Lasso plus atrazine tank mix has been approved for corn. When used for preplant application, incorporate it like you would Lasso alone. There will probably be greater interest in surface applications at planting, since these provide broad-spectrum control of annual grasses and broadleaves. Use about 1-1/2 quarts Lasso plus 1-1/2 pounds atrazine 80W (broadcast basis) on light-colored silt loams with less than 3-percent organic matter. Use about 2 quarts Lasso and 2 pounds of atrazine 80W per acre for the darker, clay soils with over 3-percent organic matter.

Where Ramrod plus atrazine has performed well, growers should not be in too big a rush to switch to Lasso-atrazine, especially on the darker soils. However, the Lasso-atrazine combination would be less irritating to handle and better adapted to the light-colored, silt loam soils than Ramrod/atrazine. Because Lasso is available as a liquid, the amount of water required per acre may be less than with the Ramrod-atrazine wettable powder.

Lasso plus Lorox is also cleared as a tank mix for soybeans. This combination has performed well in research trials, especially on the light-colored silt loams. Adjust rates on the basis of the organic-matter content. The Lasso-Lorox combination should be applied only to the surface and not incorporated.

AQUATIC WEEDS

It is not too early to consider a program of aquatic plant control. Frequently, people wait until this problem is serious then wonder what happened. Actually, the problem has been developing and growing slowly since mid-April or earlier. When the warm weather comes, the water warms up rather quickly. Soon after, the weed infestation becomes severe.

Consider what has happened during the past few years. Take time to check the body of water frequently, to see if some aquatic plant is growing. If it is, identify the problem and obtain the necessary aquatic herbicide so you will be ready when necessary. If a particular body of water was weedy last year, it is reasonable to expect that it will be again this year.

HOMEOWNER PROBLEMS

Now is the time to apply herbicides for crabgrass control in the lawn. Many excellent chemicals have been put on the market recently for preemergence control of crabgrass and certain other annual grasses. These materials may also control certain broadleaved weeds.

Dacthal, Balan, Betasan, Bandane, Azak, Tupersan, and several other materials have given consistently good results in crabgrass control. All of these chemicals should be used as directed on the container. Most of the preemergence chemicals are in dry form, and may be applied with a lawn seeder. Be sure that the spreader doesn't overlap, or that you don't apply too much material in any other way. Calibrate the spreader before using it. An over-application of the chemical can damage the grass.

VEGETABLE GARDENS

Last week, we said amiben was also sold as "Begiben" for use in vegetable gardens. It should have been "Vegiben."

MACHINERY

SEED TREATMENT

Laboratory tests on the effects of the diazinon corn-seed treatment show that the effect on the cell fill is slight. Actually, this treatment increased cell fill about 3 percent, compared with that obtained using seed corn alone. A decreased in this percentage came about only when the diazinon was not well mixed with the seed and when excessive accumulation occurred in the bottom of the hopper. Therefore, it is important to treat the seed in a separate container and to use the treatment at the recommended rate.

The 3-percent increase in cell fill from diazinon is close to that from graphite. Other factors such as variations in ground speed, change in cell fill as the hopper empties, and many others will affect cell fill just as much. When properly used, the effects of the diazinon seed treatment on the planting rate should be of little concern.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and M.D. McGlamery, Department of Agronomy, J.D. Butler and H.J. Hopen, Department of Horticulture, R.C. Hiltibran, Illinois Natural History Survey.

MACHINERY: J.C. Siemens, Department of Agricultural Engineering.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 4, April 24, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations are still low and the alfalfa seems to be growing. Because of the lower number of weevils and good plant growth, perhaps no insecticide applications will be needed in many fields. Each field should be examined frequently, however.

In southern Illinois, south of Harrisburg, small- to medium-sized larvae were present this week. Some adults are still laying eggs. It is now time to examine fields carefully and decide whether you need an insecticide for weevil control. Continue this alert for at least two more weeks.

In south-central Illinois, some larvae are present. Adult weevils are easy to find, but feeding is hardly noticeable. Treatment, if necessary, will probably not be needed for one to two weeks, so begin to check fields this coming week.

In central Illinois, occasional larvae can be found, but adults are much more common. Weevil feeding is not yet noticeable. Treatment, if needed, will not be for two to three weeks.

When there is feeding on 25 percent or more of the terminals and the field is more than two weeks from harvest, an insecticide application may be justified.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

SMALL GRAINS

Armyworm moths are now flying. They will be depositing eggs on vigorously growing stands of grasses and grains, and will concentrate their egg-laying in spots within fields where the grain or grass is the most luxuriant. Examine such areas for the first indications of armyworms. No serious infestations are expected for some time.

CORN

Soil insecticide. Several have asked us to rate the corn rootworm insecticides. Before making our 1970 recommendations last fall, we checked 1969 results for percent of worm kill, root damage, pounds of pressure required to pull the plants from the soil, and yields. Since we were not able to differentiate on the basis of performance, we listed the materials alphabetically. If seed beetles are present, use a diazinon seed treater when you plan to use basal treatments, or planting time treatments of BUXten or furadan. Seed treatment is not needed if you use dasanit, dyfonate, or phorate (Thimet) at planting time.

We further recommend the use of dasanit, diazinon, dyfonate, or phorate in fields where there are no rootworms. Do not expect these insecticides to control black cutworms or white grubs. They will give some control of wireworms and other soil-inhabiting insect pests.

Nothing we have today will provide the overall insect control that aldrin and heptachlor did a decade ago; unfortunately, insect resistance now prevents these two materials from providing that same degree of control today.

Armyworms may defoliate corn planted the "no-till" way. Sometimes this damage can be serious. The armyworm moths may be laying eggs in these fields now, and this egg-laying may continue for a few weeks. The worms that hatch during the next two to six weeks will be hungry. They will devour the young corn plants in their search for food.

Applications of 1 pound of malathion or trichlorfon (Dylox) or 1-1/2 pounds carbaryl (Sevin) or toxaphene per acre will effectively control these pests. Toxaphene will probably give the longest protection--a week to ten days--against newly hatching worms.

Remember, toxaphene is extremely toxic to fish, but it is probably the safest insecticide for use around bees. Carbaryl is extremely toxic to bees, but it is not too toxic to fish.

HOMEOWNER

You'll hear the singing of the periodical cicada or seventeen-year locust this spring and summer, in the eastern part of the state and in the southern sixteen counties. They may also be heard in Morgan, Tazewell, Logan, Knox, and Dewitt counties in the central section, and in Kane and Lee counties in the northern section. This pest is due to appear in May in southern counties--June in the central and northern counties. Of the thirty different broods of cicadas in the United States, at least ten are present in Illinois. This particular one, Brood X, was severe in 1953 when the adults laid their eggs. These adults prefer oak, hickory, apple, peach, and pear trees as well as grapevines for laying their eggs. Damage occurs when the female cicadas make slits in branches and twigs and deposit eggs. The small twigs and branches turn brown, die, and sometimes break off. The young nymphs that hatch crawl into the soil for another seventeen years, and remain in the ground sucking the sap from tree roots.

Often, a wooded area infested in 1953 with cicadas, has since been cleared. The cicada will still emerge and cling to any vine, plant, or other upright object. When they emerge as adults, they will fly about in search of trees in which to deposit their eggs.

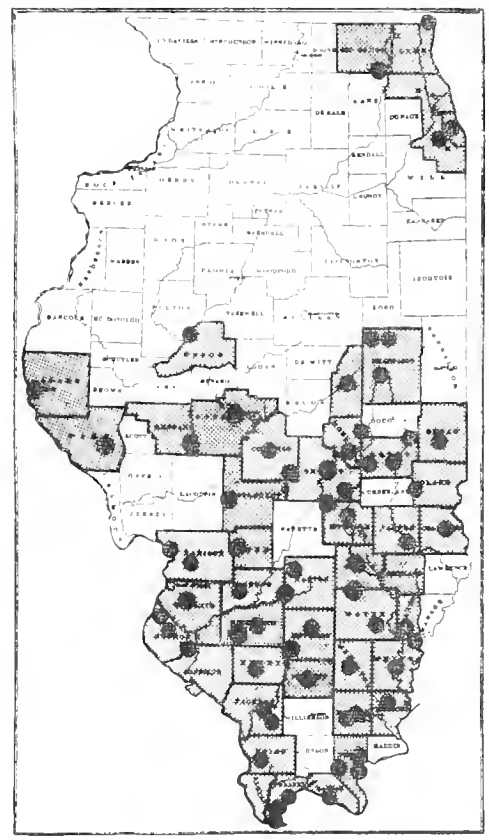
We are anxious to update our records on the distribution of this brood of cicadas in Illinois, in order to make more-accurate predictions for 1987. Please send us specimens of cicadas that you encounter, noting the date and location (nearest town). Please mail the specimens to Dr. Lewis J. Stannard, 285 Natural Resources Building, Urbana, Illinois 61801.

Protect young trees and shrubs by enclosing them in cheesecloth or mosquito netting. Carbaryl (Sevin) is effective as a spray. Use 2 pounds of the 50-percent wettable powder per 100 gallons of water. For smaller amounts, use 2 tablespoons per gallon of water. Apply the treatment when egg-laying begins, and repeat it 7 to 10 days later. Do not apply carbaryl to apple trees within 21 days after full bloom, because it may cause a thinning of the fruit. Do not apply to Boston Ivy. Repeated treatments with carbaryl may produce a buildup of mites, which will cause a russetting of the leaves. Adding 2 teaspoons of 57-percent malathion liquid concentrate per gallon of water to the carbaryl spray mixture will control these mites.

Brown recluse spiders. Much attention has been given the brown recluse spider during the past few years. Since detection in Illinois during 1957, Dr. J.D. Unzicker, Taxonomist of the Illinois Natural History Survey, has identified brown recluse spiders from 45 of the 102 counties in Illinois (see map).

The body of this spider is about 1/2 inch long, the leg span 1 to 1-1/2 inches. The color may vary from light fawn to almost dark brown, with a distinct, fiddle-shaped, dark marking behind the head (see picture).

This spider is poisonous, and is now considered to be of public health importance. It bites only when disturbed. The brown recluse spider has a habit of living in dark, sheltered areas (such as attics), in stored goods, basements, crawl spaces, and barns. Unlike other web-spinning species, it spins very small or irregular webs.



April 1, 1970, places where the brown recluse spider has been found in Illinois.

During the past year, we have received reports of bites that produced necrotic lesions that were painful and slow to heal. These have been attributed to the brown recluse spider. Consult your physician about any such bite. We are trying to catalogue the distribution of this spider and others, and we will identify all spiders sent to the Natural History Survey in Urbana. Please send such specimens to Dr. John Unzicker, Room 93, Natural Resources Building, Illinois Natural History Survey, Urbana, Illinois 61801. Include your name, address, and where the

spider was found. When spider bites occur, the spider responsible should be captured if possible and sent to Dr. Unzicker for identification.

WEEDS

FORAGE CROPS

Musk thistle is a biennial one that is now increasing in many areas of Illinois. April is the ideal time to control musk thistle, while the weed is still in the rosette stage and before the seed stalk forms. Usually, control is best when the plant is growing actively and temperatures are above 75° F.

For spot treatment, add 1 quart of 2,4-D ester (4 pounds per gallon) and 1 cup of household detergent per 25 gallons of water. Spray until moist. For larger infestations, use 1 to 1-1/2 quarts of 2,4-D ester in 20 or more gallons of water per acre.

SMALL GRAINS

Check small grains now to determine the need for chemical weed control. Used early, 2,4-D will control broadleaved weeds such as wild mustard.

If there is a legume underseeding, apply 1/2 quart per acre of 2,4-D amine (4 pounds per gallon of the formulation). Never use 2,4-D ester with a legume underseeding unless you want to control wild garlic or wild onion, and then expect some kill of the legume.

To control wild garlic and wild onion, use 1/2 quart per acre of 2,4-D ester. This will not completely control the weeds, but will reduce aerial bulblet formation and lessen the possibility of harvest-time dockage for "garlicky" wheat.

Banvel (dicamba) can also be used for controlling smartweed or wild buckwheat in wheat and oats, but it is weak on wild mustard. Don't use Banvel on small grain sown with a legume underseeding. Use 1/4 quart per acre when spring grains are in the 3- to 5-leaf stage. Use on winter wheat before it reaches the joint stage.

Treat small grains with 2,4-D after it has finished tillering in the spring but before it reaches the boot stage. That is about 4 to 12 inches in height.

Read the label and follow all precautions.

CORN AND SOYBEANS

Incorporating the herbicide early is important, since most annual weed seeds germinate in the top 2 inches of soil. Most herbicides of moderate solubility move into the weed-seed zone with normal rainfall. The primary purpose of herbicide incorporation is to prevent surface loss of volatile herbicides and to move the herbicides of low solubility down into the soil.

The tandem disk is the most-common tool used for herbicide incorporation. The disk should be operated at a depth of about 4 inches for best results. Using greater depths may cause excessive dilution of the herbicide. In general, field cultivators are not satisfactory for herbicide incorporation. The Treflan label does include the use of the mulch treader this year.

Most volatile herbicides, such as Sutan and Vernam, should be incorporated immediately after application. The Treflan label allows the use of a 4-hour delay in incorporation, but the sooner the better. Lasso and AAtrex can be incorporated, but this is not necessary unless you are trying to control yellow nutsedge.

Check fields for weedy spots in corn. Giant ragweed is now germinating. Smartweed will soon start. Giant foxtail and pigweed will start germinating in about one to two weeks, depending on the temperature.

If you find areas of high infestation, it may be worthwhile to consider broadcasting a herbicide. These areas are often along drainageways, turn-rows, headlands, and fence lines where it is most difficult to cultivate and use a rotary hoe. You can use a band application of herbicide, and cultivate the rest of the field.

Yellow nutsedge *(Cyperus esculentus)*, often called nutgrass, has become a serious weed problem in many areas of Illinois. It is a sedge (with a triangular stem and three-ranked leaves), rather than a true grass (with a round stem and two-ranked leaves). It overwinters primarily as tubers (nutlets), which sprout in the spring and form rhizomes. A coronal node is formed on the rhizome about 1 to 1-1/2 inches below the soil surface. The crown area forms roots, shoots, and new rhizomes. New rhizomes form more plants at first; later in the season, they turn down and develop new tubers for overwintering.

Thus, the crown area that develops below the soil surface is a critical area for yellow nutsedge control. The most-effective control program involves a combination of preplant tillage, an incorporated herbicide, and postplant tillage.

Nutsedge is usually found in low-lying, wet areas. It generally emerges about corn-planting time, or by the time the plants emerge.

The herbicides for nutsedge control in corn are alachlor (Lasso), butylate (Sutan), and atrazine (AAtrex). EPTC (Eptam) has provided adequate control, but corn tolerance has not been sufficient. The best treatments in research trials have been either butylate (4 pounds per acre), or alachlor (3 to 4 pounds per acre)--applied preplant incorporated and followed by an early postemergence treatment of atrazine (2 pounds per acre) plus nonphytotoxic oil (1 gallon per acre).

Nutsedge control in soybeans allows the farmer to locate the areas, use preplant tillage, and broadcast a herbicide just on these areas, because soybeans are planted later than corn. The two herbicides that have proven useful for nutsedge control in soybeans are alachlor (Lasso) and vernolate (Vernam). Both of these should be used at the highest recommended rate, and should be incorporated. Incorporation can be combined with preplant tillage.

Fall panicum is a grass weed that continues to germinate late in the season. Earlier planting and earlier "lay-by," combined with a greater dependence on chemicals and a reduction of tillage, have invited late-emerging weeds--especially in wide-row corn.

Fall panicum is a problem throughout the state, but the greatest difficulty is in southern Illinois--because of wider rows, longer growing seasons, and a greater dependence on atrazine as a herbicide there. Fall panicum is a particular problem on zero-tillage corn.

Simazine (Princep) is better than atrazine (AAtrex) on late-emerging grasses, such as fall panicum and crabgrass. Alachlor (Lasso) and butylate (Sutan) are two other herbicides with enough persistence to control late-emerging grasses. Many people are

combining atrazine or simazine with Lasso or Sutan to give broadleaf weed control. Remember, it is necessary to incorporate Sutan soon after application.

MACHINERY

SPRAYER CALIBRATION

The importance of properly calibrating the application equipment used with agricultural chemicals cannot be overemphasized. For sprayers, the factors to be considered include nozzle type and size, operating pressure, ground speed, and the concentration of the chemical in the tank. It is important to check all of the variables involved. Copies of Circular 837, *Calibrating and Maintaining Spray Equipment*, are available and may be helpful.

Several nozzle types are being used for applying herbicides. The regular, flat-fan nozzle is the most-popular one. It should be used at pressures between 15 and 30 p.s.i. never over 40 p.s.i. Nozzle spacing should be around 20 inches, with a boom height that provides about a 25-percent overlap.

A nozzle manufactured for the specific purpose should be used for band spraying.

Flooding, flat-spray nozzles are recommended for applying herbicides, especially where drift is hazardous because the particles are larger.

Flooding nozzles should be mounted on about 40-inch centers at such a height that the patterns of adjacent nozzles will overlap about 10 percent. If the boom can not be maintained at such a low height, the boom height can be increased to obtain double coverage. However, the spray will be more susceptible to drift and to distortion of the pattern because of the wind.

Other nozzle types are also available. With proper selection, adjustment, and the like, these can be used to apply herbicides satisfactorily.

All nozzles wear and require replacement. A brass nozzle tip should be replaced after it has been used to spray 100 acres.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey and George McKibben, Dixon Springs Experiment Station.

WEEDS: M.C. McGlamery, Department of Agronomy.

MACHINERY: J.C. Siemens, Department of Agricultural Engineering.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

SPECIAL NOTE TO RADIO AND TV STATIONS

Our automatic telephone answering service will provide the following insect situation recordings, starting on Monday, April 27:

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Southern Illinois Insect Situation--every Friday.

Calling time--9 a.m. Friday to 2 p.m. Friday.
Dial (217) 333-2614

Northern Illinois Insect Situation--every Friday through Monday.

Calling time--3 p.m. Friday to 8 a.m. Monday
Dial (217) 333-2614

Each of these will be 2 minutes long. In case of questions or difficulty, call (217) 333-4783.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 5, May 1, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevil larvae are common in southern Illinois alfalfa fields, and feeding damage was quite evident this week. In south-central Illinois, the larvae were numerous and feeding was noticeable. In central Illinois (particularly in the west), larvae could be found easily only on south and west slopes, where feeding was evident. However, alfalfa is growing rapidly and may outgrow the damage, except in fields where weevil populations are high.

Equally important is the presence of a number of wasp parasites, especially in south and south-central Illinois. We cannot now establish the effect these parasites may have. They are emerging early, and will attack the weevil larvae now present and may eliminate them. If this is the peak of the parasitic wasp emergence, late-hatching larvae will escape and we will then see a flare-up of damage; but if this is just the beginning of parasitic wasp emergence, the alfalfa weevil will be in for a rough time.

Do not apply insecticides unless they are needed. Examine each field regularly. When there is feeding on 25 percent or more of the terminals and the field is more than two weeks from harvest, an insecticide application may be justified.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

SMALL GRAINS

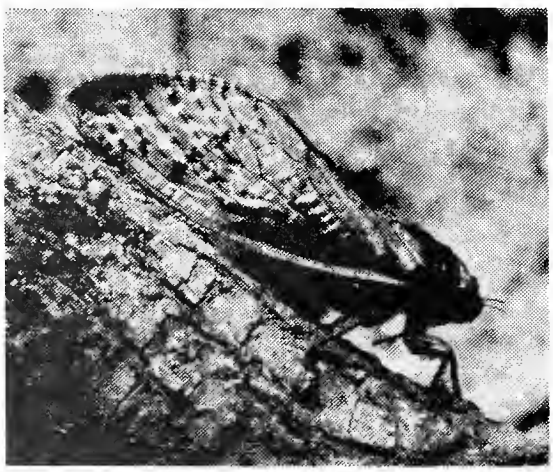
Cereal leaf beetles are present in isolated areas of Illinois. The Illinois and U.S. Departments of Agriculture are cooperating in a suppression program. Malathion will be applied at 3 ounces per acre. It is an insecticide commonly used by homeowners on flowers, shrubs, and vegetables, and is no more toxic than aspirin if ingested. However, this insecticide is extremely toxic to the beetle--also to mosquitoes and flies. Unfortunately, it is toxic to honey bees, too. Beekeepers have been warned by the State Apiary Inspector to cover hives or move them from areas to be sprayed. Spraying will begin on May 4.

Armyworm moth flight is increasing. Watch lodged spots in grain fields; also, grass fields with luxuriant growth. Moths concentrate their egg-laying in these spots, and the worms will appear there first. Worms should be noticeable in extreme southern Illinois within 2 to 3 weeks; in south-central and central Illinois, within 3 to 5 weeks.

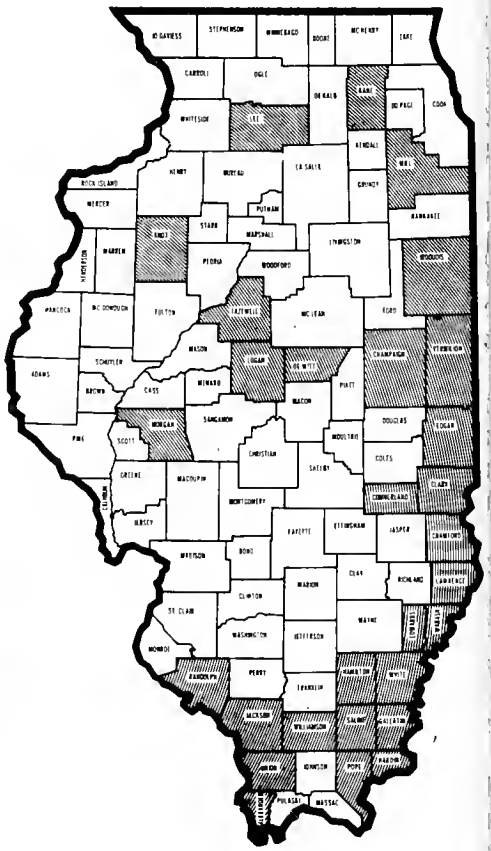
Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), 1-1/2 pounds of carbaryl (Sevin), or toxaphene will control armyworms. Do not apply carbaryl to small grains after the boot stage. Do not feed forage or straw treated with toxaphene or trichlorfon to dairy cattle, livestock being fattened for slaughter, or poultry. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

HOMEOWNER

The seventeen-year locust or periodical cicada, Brood X, was a problem in 1953. This brood, the largest one in the eastern United States, is due to appear by May 20 in southern Illinois, and by about June 10 in the northern part of the state. Emergence will reach a peak a few weeks later.



In 1953, these periodical cicadas, were present in swarms in Vermilion, Edgar, Clark, Crawford, Lawrence, Wabash, Edwards, White, Williamson, Randolph, Morgan, Knox, and Lee counties. They were present from a few specimens to swarms in other counties, as indicated on the map.



Infestation during 1970 may well follow the 1953 pattern. We are anxious to update our records on distribution of this brood of cicadas in Illinois, in order to make more-accurate predictions for 1987. Please send us specimens of cicadas that you encounter, noting the date and location (nearest town). Please mail such specimens to Dr. Lewis J. Stannard, 285 Natural Resources Building, Urbana, Illinois 61801.

Spider mite damage to Junipers has been reported. At first, the damaged foliage appears to be finely mottled--then grayish, dry, and brown. To detect mites, strike a few branches of the plant sharply with one hand while holding a white dish or piece of paper under the branches with the other. If mites are present, they can be seen running about on the paper or dish when it is held in bright light. Apply dicofol (Kelthane 18.5-percent emulsifiable) at 2 teaspoonsful per gallon of water. Spray to runoff.

Oyster shell scale young will soon begin hatching and crawling out from under the old scales on shrubs like lilac. These crawlers will feed on new growth by sucking the plant sap. Make two applications of malathion, 10 to 14 days apart, beginning about May 10 in southern Illinois, May 15 in the central section, and May 25 in the northern portion of the state.

Grape flea beetles are feeding on the new foliage of grapes in many home gardens. Sprays or dusts containing carbaryl (Sevin) will control these tiny, greenish-blue beetles that jump when disturbed.

WEEDS

USE OF HERBICIDES IN GREENHOUSES

Do not use a volatile herbicide inside greenhouses. When used under field growing conditions, most herbicides do not injure plants, because of volitalization from the soil surface. Under greenhouse conditions, soil surfaces are kept moist, which increases the volitalization of most herbicides, and the vapors are not swept away by air currents. Many herbicides not considered volatile under field conditions can cause damage when contained in a greenhouse environment. The safest means of controlling weeds under greenhouse conditions is to remove them by hand, mulching, or using weed burners.

If damage is noted from volatile chemicals, the soil should be removed as soon as possible. (This is often not practical immediately.) Or, the soil should be drenched with 0.5 gram of activated charcoal per 5 pounds of soil (or 1 pound of activated charcoal per 1,000 pounds of soil). The activated charcoal may tie-up some soil nutrients. If nutrient deficiencies are noted, foliar feeding should be employed.

Volatile herbicides (particularly the phenoxy types--2,4-D/2,4,5-T/etc.--should be stored in structures completely separated from greenhouses and the like. A broken bag or leaking can will often cause phenoxy injury to sensitive flower or vegetable crops grown in close proximity to stored herbicides.

HOME USE OF 2,4,5-T SUSPENDED

The U.S. and Illinois Departments of Agriculture, Interior, and Health, Education, and Welfare have suspended the use of liquid 2,4,5-T, around the home, on lakes, ponds, or ditch banks. Cancellation for uses of nonliquid 2,4,5-T around the home and on all food crops intended for human consumption is expected.

These actions are based on the opinion that using 2,4,5-T around the home and in water areas could constitute a hazard to human health. New information indicates that 2,4,5-T, as well as its contaminant, dioxins, may produce abnormal development in unborn animals. Nearly pure 2,4,5-T was reported to cause birth defects when injected experimentally at high doses into pregnant mice, but not in rats. No data on humans are available.

The use of 2,4,5-T on range, pasture, and forests or on rights of way and other non-agricultural land is all right, but it should not be used near homes or recreation areas. A review is being made of registered uses, to make certain that these include adequate precautions against grazing in areas so that no contaminated meat or milk will result. The main concern is the length of time between treatment by 2,4,5-T and grazing by animals.

While residues of 2,4,5-T in meat and milk are very rare, they are illegal and make contaminated products subject to seizure. There is no tolerance for 2,4,5-T on meat, milk, or any other feed or food.

The USDA will issue guidelines for disposing of household products containing 2,4,5-T. This chemical is biologically decomposed in a moist environment.

Research in November and December, 1969, indicates that 2,4,5-T has produced a number of birth defects when fed or injected into certain strains of mice and rats, but the birth abnormalities could not be attributed with certainty either to 2,4,5-T, or to the impurities, dioxins, known to be present. Evidence of the extreme potency of the impurities as toxic agents was shown, and the 2,4,5-T now being marketed is of greater purity than that which was tested.

Studies have been initiated to determine whether 2,4,5-T itself, its impurities, or a combination of both caused the earlier findings, and whether the 2,4,5-T now being marketed produces birth abnormalities in mice and rats.

Taken separately the dioxin impurities and the 2,4,5-T, as it is now manufactured, both produced birth abnormalities in the experimental mice. Because absolutely pure 2,4,5-T was not available for testing, it is only possible to infer from certain of the observations that the pure 2,4,5-T probably would be teratogenic if tested. However, since pure 2,4,5-T is not marketed and could not be produced in commercial quantities, this is not a practical issue for consideration.

The measures being taken are designed to provide maximum protection to women during the childbearing years by eliminating formulations of 2,4,5-T from use in household, aquatic, and recreational areas. Its use on food crops will be cancelled, and will be controlled on range and pastureland. Maximum surveillance of water supplies and marketed foods will be maintained, as a measure of the effectiveness of these controls. Details will be announced shortly in the *Federal Register*.

TANK-MIXING HINTS

Many herbicides are being applied with liquid fertilizers. Problems of compatability sometimes arise when emulsifiable concentrates (EC's) are mixed with liquid fertilizers, because the emulsifier is not salt-stable. Some manufacturers have special, pesticidal formulations for liquid-fertilizer application. Others specify the emulsion stability should be checked, and that a compatability agent (such as Compax or Spento 68) should be added if needed.

If you can determine dilution factors, you can check compatability in quart jars before mixing a whole tank. First, determine the volume of spray per acre. With liquid fertilizers, this will depend on the analysis used and the rate desired. Next, determine the volume or weight of the pesticide to be applied per acre. Then, convert the number of quarts or pounds of additives and gallons of spray carrier to an amount per pint of spray. Useful small measurement units are grams and milliliters. There are 454 grams

per pound, and 946 milliliters per quart. Measuring spoons can be used for approximation, if scales or pippetes are not available. One level teaspoon holds about 5 milliliters or approximately 2 to 3 grams of wettable powder (WP), although wettable powders (WP's) do vary in density.

1 quart/25 gallon = 4.7 ml./pint = 1 tsp./pint
1 lb. (WP)/25 gallon = 2.2 gram/pint = 1 tsp./pint

To list the mix for adding 1 quart of EC and 1 pound of WP per 25 gallons, you would add 1 teaspoon of EC and 1 teaspoon of WP to 1 pint of the liquid fertilizer.

Procedure:

1. Place 1 pint of carrier into a quart jar.

2. Add the proper amount of each pesticide.

3. Close the jar and mix, by shaking or inverting it.

4. Observe the mixture at once, and again after 30 minutes, to determine compatability and suspension stability.

If the materials remain suspended or are easily resuspended, then uniform application will be possible with good agitation. If they separate, precipitate, or form "gunk," you need to rerun the test with the addition of a compatability agent, such as Compax (1/2 teaspoon per pint), to determine if this will solve the problem.

Mixing procedures can make the difference between success and failure. Partially fill the tank before adding pesticides. Wettable powders should be preslurried, emulsifiable concentrates preemulsified, with water (separately) before being added to liquid fertilizer. Add wettable powder to the tank before the emulsifiable concentrates. Always have the agitation system operating when the pesticides are added to the tank.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and M.C. McGlamery, Department of Agronomy, and Herb Hopen, Department of Horticulture.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 6, May 8, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevil larvae are now very numerous in the southern third to half of Illinois. Pupation has already begun. Severe damage has occurred to some alfalfa fields in the southern third of the state. Damage is common within most fields in that area. Treatments started late last week in fields where the weevils developed early. Treatment may still be profitable in some fields, but damage and crop growth may have progressed so rapidly that if the field is within ten days of harvest, it might be best to cut and treat the second growth--should this become necessary.

In the central third of the state (latitude, St. Louis to Peoria), weevil development has progressed rapidly and damage is heavy. Now is the time to treat fields in that area.

In the northern third of Illinois, only moderate damage is expected. Although alfalfa weevils are a severe problem in producing the first cutting of alfalfa in southern Illinois, they may be a second-cutting problem in the north. Therefore, watch the second growth of alfalfa in the northern section.

Examine each field regularly. Do not apply insecticides unless they are needed. When there is feeding on 25 percent or more of the terminals and the field is more than two weeks from harvest, an insecticide application may be justified.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

Spittlebugs have been hatching for some time now. Control with insecticides has not been profitable for several years. However, if there is more than one spittlebug nymph per stem, treatment may be justified. Use 1/2 pound of methoxychlor per acre at least one week before harvest.

CORN

Flea beetles will pounce on corn as soon as it emerges, particularly in southern Illinois. The winter may have been severe enough to kill some of them, but the snow cover may also have protected them. These small, black beetles jump when disturbed and are difficult to find on corn leaves, since they leave the corn before you get to the plant. They eat or strip the green from the plant leaf--leaving tiny, white, elongated scratch marks on the leaves. Damaged plants will generally turn silvery, then brown. If enough plants are being killed to warrant the cost of insecticides, apply 3/4 pound carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre, as a hand spray over the row.

Slender seed-corn beetles are active throughout the state. The phosphate insecticides [diazinon, dasanit, Dyfonate, and phorate (Thimet)]--applied as a 7-inch band ahead of the press wheel--will control them. Diazinon seed-treater will also prevent seed and seedling damage.

European corn-borer pupation reached the 50-percent level this week--as reported by Earl Lutz, the Gallatin County Extension Adviser, at Ridgway. Further north, pupation is well underway. Emergence in northern Illinois should be underway in 2 to 3 weeks, depending on the temeprature. Not much corn will be susceptible to first-generation damage.

HOMEOWNER

You can prevent ants, water bugs, spiders, crickets, and other insects from entering your home by spraying the outside foundation wall with a 2-percent chlordane water emulsion. Purchase chlordane as a liquid concentrate and mix it with water to the proper strength (1 pint of 45-percent chlordane in 3 gallons of water gives a 2-percent solution). Spray the foundation wall from the soil to the sill area, or along the outer wall for a distance of about a foot above the soil to the point of runoff. In addition, spray 3 to 4 inches of soil adjacent to the wall and the expansion joints along porches and steps, plus the edges of walks. In homes with a crawl space, spray the inside wall of the foundation and any supporting pillars. Do not spray shrubbery or flowers, because the oil in the spray may burn the tender foliage.

Three gallons of finished spray should do for the average house. The need for using insecticides inside the home will be greatly reduced by using this type of treatment.

Ticks are annoying campers, picnickers, hikers, fishermen, and other persons. They cling to the vegetation along paths in and near wooded areas, waiting for man or other warm-blooded animals to come along. They attach themselves by embedding their mouth-parts into the skin. When entering wooded areas or ones suspected of being tick-infested, use a repellent on socks, pants, pants cuffs, and exposed parts of the body to prevent tick bites. DEET (diethyltoluamide) is one of the best tick repellents. To control ticks in the home yard as well as in parks or playground areas, spray the grass, shrubs, and flowers with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to Cannaert red cedar, or carbaryl to Boston ivy.

There are scattered reports of eastern tent-caterpillar infestations. These insects form nests of webbing in the crotches of tree limbs--especially wild cherry, willow,

and fruit trees. The caterpillars feed on the foliage outside their web nests, often completely defoliating the trees. If control is necessary, apply a spray containing carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of spray.

Tree borers--attacking oak, ash, apple, birch, and similar trees--have previously been controlled by DDT. DDT is now prohibited for sale or use in Illinois. Other control measures include keeping the trees in a vigorous growth condition by applying fertilizer or by wrapping the trunks of newly planted trees and other young ones with special paper. Dimethoate (Cygon) has been effective against these borers--especially the bronze birch borer. Treatment of infested trees should be made in mid- to late May.

Euonymous scale hatch has begun, and these crawlers are moving onto new leaves and stems. Another name for euonymous is wintercreeper. Where this insect is a problem, apply malathion as a spray--thoroughly covering the bark and leaves. Make two to three applications on the infested shrubs. Space the applications about 10 days apart. The first application should be in mid-May in the southern part of the state, during the latter part of May in the central section, and in early June in the northern area.

WEEDS

Several new herbicide names are appearing. Many of the products are not new, but are combinations of existing products. Some of these are listed below:

Solo.....naptalam (Alanap) + chlorpropham (Chloro-IPC)
Whistle.....Same as above
Amoco Soybean Weed Killer.....Same as above
Noraben.....norea (Herban) + chloramben (Amiben)
Shamrox.....DCPA (Dacthal) + linuron (Lorox)
Amilon.....chloramben (Amiben) + linuron (Lorox)
Londax.....propachlor (Ramrod) + linuron (Lorox)
Primaze.....atrazine (AAtrex) + prometryne (Caparol)

The primary purpose of herbicide combinations is to control more weeds under a wider range of soil and climatic conditions, while reducing crop injury and sometimes cost.

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

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In 7

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 7, May 15, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Alfalfa weevils are heavier this spring than during either of the last two years. Populations are high, and damage is evident in most fields south of U.S. Highway 136. Pupation is progressing rapidly. Wasp parasites are helping some to reduce the number of weevils. Eggs are still hatching, however, so populations are expected to remain high for another two to three weeks.

Larvae can be found north of U.S. Highway 136. Feeding is noticeable but not severe. Some fields north of this line may need treatment within the next week or two. The greatest injury in this area could be on the new growth of second-crop alfalfa.

As you continue to check fields for damage, judge each field separately. The weevil population varies greatly from field to field. Do not apply insecticides unless they are needed. Applying insecticides is justified when there is apparent feeding on 25 percent or more of the terminals and the field is more than two weeks from harvest. If the field is showing moderate to severe damage and is less than two weeks from harvest (particularly in the southern section), cut and remove the crop. Cutting will often reduce the weevil population, since many eggs are removed and a good many larvae are either killed or forced to pupate by exposure to the sun. Watch the new growth closely; if it does not green-up within a few days and if worms are still present, apply a treatment promptly.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Azinphosmethyl or methyl parathion should not be used on fields close to harvest that need treatment. Switch to one of the other suggested insecticides, such as malathion, that has no waiting period.

Clover leaf weevils are present in all clover and alfalfa fields. Populations are generally low. A fungus disease has killed many of them in the central and southern sections.

Pea aphid populations on clover and alfalfa remain light, and no damage is evident. Some pea aphids are being killed by parasites. These are the brown ones (not green) that are attached to the leaves.

Potato leafhoppers are continuing to migrate into Illinois from the south. These are the tiny, green, wedged-shaped insects that skid sideways when disturbed. They cause a yellowing of second- and third-crop alfalfa. No control measures are needed now.

CORN

Black cutworm moths have been flying for several weeks. Watch the spots in cornfields that are low or wet, or the poorly drained, for damage. Cut or missing plants are a sign that cutworms may be at work. If damage appears, use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre, and to cover the spray band by throwing soil at the base of the plants with a cultivator.

Bristly cutworms and sod webworms are feeding on corn planted on sod. The worms are cutting the plants above the growing point, but the plants will recover. In two fields in the western section, feeding was observed on as much as 10 to 20 percent of the plants. No control will be needed unless the worms begin to eat the heart, causing the plants to die. Carbaryl (Sevin), diazinon, and trichlorfon (Dylox)--applied as suggested for black cutworms--should provide effective control for these insects.

Seed corn beetles are numerous in many cornfields or in those soon to be planted. Diazinon, Dasanit, Dyfonate, and phorate (Thimet)--applied as a 7-inch band ahead of the press wheel--will control these beetles. Diazinon seed-treater will also prevent damage from this insect.

Corn flea beetles were found feeding on newly-emerged corn this week. No serious injury has yet been reported. Watch closely sweet corn in the southern section that was planted early. These small, black, shiny beetles that jump when disturbed leave white scratch marks on the leaves. Damaged plants first turn white or silvery, and are sometimes killed later on. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. To prevent additional flea beetles from moving into the corn, treat the grassy areas bordering the field. Do not use carbaryl near bee hives or toxaphene near fish-bearing waters.

Corn borer pupation is well along in the southern part of the state, and a few moths have emerged. Pupation is just beginning in the central section. No pupation of borers has occurred in the northern area. Reports on corn-borer development were received this week from Les Rogers at Salem, Charles Orcutt at Marshall, Warren Bundy at Edwardsville, Bob Hayward at Mt. Sterling, Bill McAllister at Carlinville, Earl Lutz at Ridgway, and Jim Paullus at Rochelle. There are many overwintering borers in the southern and western sections.

SMALL GRAINS

Flights of true armyworm moths continue from states to the south. These moths are laying their eggs in grassy areas and in thick, rank stands of wheat, barley, and rye. Small worms were found in southern and south-central sections this week. Cool, wet weather favors the development of this insect.

Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were found in many wheat fields this week. They do not damage wheat plants enough to require control.

Treatment is justified if there are six or more armyworms per foot of drill row, as an average over the field. Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), 1-1/2 pounds of carbaryl (Sevin), or toxaphene will control armyworms. Do not apply carbaryl on small grains after the boot stage. Do not feed forage or straw treated with toxaphene or trichlorfon to dairy cattle, livestock being fattened for slaughter, or poultry. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

HOMEOWNER

Aphids are already appearing on some shrubs and trees. These small, soft-bodied insects (green-yellow, black, or red) suck the sap from terminal leaves, causing them to curl. You can control them by spraying the foliage thoroughly, using 2 teaspoons of 50- to 57-percent malathion or 25-percent diazinon emulsion concentrate per gallon of water. Do not use malathion on African violets or cannaert red cedar. Do not use diazinon on ferns or hibiscus plants.

Tent caterpillars are feeding on a variety of trees. Two kinds, the eastern tent and forest tent caterpillars, are active right now. The forest tent caterpillars make no tent. Many worms (2 inches long) are now reaching maturity, and will stop feeding and spin cocoons--usually on the tree trunks. If most of the worms are large, no insecticide treatment is needed. If most of them are still 1/2 to 1-1/2 inches long, they can be controlled by spraying with carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of water.

Mosquitoes have become bothersome in many areas because of the wet weather. These are mainly the so-called "floodwater" mosquitoes. They breed in back-water areas or in the water standing in drainage ditches, low lands, and other temporary water-pool spots. Floodwater, or "temporary-pool," mosquitoes move from outlying to urban areas, and are more difficult for the individual homeowner to control.

To help reduce mosquitoes in home yards, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc., (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed., (3) Keep the screens on doors and windows in good repair., (4) Hang plastic resin strips (2 by 10 inches) containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for 4 to 6 weeks. Do not use these strips in kitchens or other areas where food is handled. Do not

use them in any room where infants, the ill, or aged persons are confined. A 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods., (5) When entering mosquito-infested areas, use a repellent. One of the most-effective mosquito repellents is DEET (diethyltoluamide)., (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) solution as an oil- or water-base, space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Cereal product insects may be having lunch in your kitchen cabinets as uninvited house guests. Many kinds of beetles and moths attack stored food products. They can be found not only in packages or containers of food, but also in the cracks and crevices in and around cabinets or cupboards. Follow these three simple steps:

1. Remove all food packages from the cabinets and examine a small amount from suspect packages under a bright light for signs of insects.

2. Vacuum or carefully brush-out all cabinets and shelving.

3. Spray the entire inside surface of the empty cabinets with a 0.5-percent diazinon or 5.0-percent methoxychlor-oil solution from a pressurized spray can.

WEEDS

DELAYED HERBICIDE APPLICATION

How late after corn planting can you still apply a "preemergence" herbicide? This is a common question, particularly because of the recent rains. If the weeds and corn have not emerged and there is adequate moisture for herbicide activity (and there probably is), most herbicides will still be effective.

If the corn and weeds are just emerging, avoid using some of the herbicides with close crop tolerances, such as Knoxweed, Londax, and Primaze. If the weeds and corn have just emerged, consider rotary hoeing--where possible--along with a herbicide treatment. The rotary hoe will control some of the emerging weeds; the incorporation will also improve the effectiveness of the herbicide you use.

If the grasses have emerged but have not reached the two-leaf stage, you can apply Ramrod 65W (liquid form) and Ramrod/atrazine as an early, postemergence treatment. These treatments still require rain within 5 to 7 days for best results.

If weeds are past the one- to two-leaf stage, consider an early, postemergence herbicide treatment such as atrazine and oil. An AAtrex (atrazine) plus oil treatment is most effective when the weeds (especially grasses) are no more than 1 to 2 inches tall. The usual rate for grass control is 2-1/2 pounds, per acre of AAtrex 80W, plus 1 gallon of special oil formulated for crop spraying. Occasionally, this treatment has injured corn, under stress conditions such as excess moisture.

The most-economical and effective postemergence treatment for most broadleaved weeds in corn is 2,4-D. You can spray over the top until the corn is 8 inches high. On taller corn, use drop nozzles (extensions) to keep the 2,4-D out of the corn whorls. Be sure to apply no more than the recommended rate. For 2,4-D, that varies with the formulation and the strength (the number of pounds per gallon).

Banvel (dicamba) is less likely to injure corn than 2,4-D, but is much more likely to drift and injure nearby soybeans, vegetables, or ornamental plants. Banvel controls smartweed better than 2,4-D, but is more expensive.

HERBICIDES ON SEED BEANS

Several herbicides are cleared for use on "seed beans." This restriction on a label means that soybeans harvested from land treated with such a herbicide can be used for replanting next year. They cannot be used for feed, food, or oil purposes, unless this restriction should be removed before such sale or usage. Preforan, Ramrod, and Londax are three herbicides that carry the "seed bean" restriction.

MACHINERY

CLEANING SPRAYERS

Corrosion in sprayers occurs naturally anytime the equipment is left idle, especially when chemicals are also left in it. We suggest that sprayers be cleaned after each period of use. When you change chemicals, it is also important to clean-out the residue of the previous chemical. This will avoid the chance of reactions occurring between different chemicals, and of resulting contamination or damage to crops.

When chemicals are being added to the tank, try to mix only the amount of spray materials you will be able to apply that day. And especially for the last tank, try to mix only enough chemical to finish the spraying job. Avoid having left-over spray material.

Depending on conditions, it is a good idea to clean all screens and nozzles frequently. Do not use a metal object to clean nozzles. Clean them with air, water, or a toothpick. Nozzle openings are manufactured to close tolerances. One thrust with a metallic object will make a nozzle useless for accurate spraying. A damaged nozzle is difficult to detect; but if the pattern shows streaks, the nozzle has been damaged and should be replaced.

To clean a sprayer, mix a small box, or about 2 pounds, of a nonsudsing detergent with 30 gallons of water in the sprayer tank. Circulate this mixture through the by-pass for 30 minutes. Then drain, allowing some to pass through the boom and the nozzles.

If the spray material is water-soluble, a water rinse is sufficient after circulating the detergent. But if phenoxy herbicides such as 2,4-D or brushkillers are being used, an ammonia or charcoal rinse is necessary.

For an ammonia rinse, fill the tank at least a third full with a solution of 2 quarts of household ammonia per 25 gallons of water. Circulate the ammonia solution and allow a small amount of it to flow through the nozzles. Let the remaining rinse stand overnight, and then run it out through the nozzles. After that, rinse the tank thoroughly with clean water.

When you finish using the sprayer for the season, remove the nozzles and screens, coat them with oil, and store them with the sprayer booms and hoses in a cool, dry place.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

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The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 8, May 22, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations continue high in fields south of State Highway 17. Damage is moderate to severe in fields south of U.S. Highway 40. Most fields in this area have been sprayed at least once; in some fields damage to the second crop is already severe and treatment is needed. Although the number of weevils is high, it has leveled off and is beginning to decline, as the pupation of the larvae continues and as the wasp parasites take their toll.

In the area between highway 40 and 17, damage is light to moderate; most fields are close to harvest. Cutting alone, especially when temperatures are high, will reduce the number of worms, but watch the new growth closely. If it does not green-up within 2 to 4 days and worms are present, apply a treatment promptly. The number of worms is likely to remain high for another week or two in this area.

North of State Highway 17, feeding is noticeable but is not of economic importance. Some fields may need treatment within a week or two. The greatest chance of injury could be on the new growth of the second crop.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion). Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use (1) Imidan at 1 pound per acre, (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre, (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre, or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

Spittlebug froth masses are numerous in many new seedlings of clover and alfalfa in the eastern and northern sections of Illinois. If there is an average of one or more nymphs per stem, control is profitable. Since it is best to control spittlebugs when the nymphs are still small and just beginning to form these froth masses, control with an insecticide is now late and should be used only if infestations are severe. For control, apply 3/4 pound of methoxychlor per acre. Allow one week to elapse between treatment and harvest when using methoxychlor.

CORN

Corn flea beetles are causing damage in an occasional field. These small, black, shiny beetles that jump when disturbed cause plants to turn white or silvery; some plants are killed. Corn can usually outgrow flea-beetle damage once it reaches a height of 10 to 12 inches. If damage is severe and plants are being killed, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. To prevent additional flea beetles from moving into the corn, treat the grassy areas bordering the field. Do not use carbaryl near bee hives or toxaphene near fish-bearing waters.

Black cutworms are present in corn fields, but no serious damage has been reported as yet. Watch the spots in corn fields that are low or wet, or poorly drained, for damage. Cut or missing plants are a sign that cutworms are at work. If damage appears, use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre, and to cover the spray band by throwing soil at the base of the plants with a cultivator.

European corn-borer pupation is nearly complete in the southern section, and moth emergence is underway (17-percent emergence at Ridgway). In the central section of the state, approximately 60 to 90 percent of the borers have pupated. This is somewhat ahead of the normal cycle. Pupation is just starting in the northern section.

These reports on corn borer development were received from Jim Paullus at Rochelle, Bob Hayward at Mt. Sterling, Charles Orcutt at Marshall, Warren Bundy at Edwardsville Earl Lutz at Ridgway, Paul Wilson at Pontiac, and Mike Sager at Eureka. Large, overwintering borer populations exist in the southern, west-central, and northwest sections of Illinois.

In the southern section, first-generation corn borer problems should be light since only a few corn fields are mature enough for good borer survival. Peak egg-laying in this section is expected to occur during the first week of June.

In the west and southwest parts of the central section and in the northwest section, the few fields of corn that were planted early could be seriously damaged by first-generation corn borers. However, if borers continue to develop ahead of schedule, the threat of severe damage will diminish. In these areas, be prepared to examine the fields that were early for borer feeding damage. Such fields should be examined in mid- to late June.

June beetles, the adult stage of white grubs are the large, brown, hard-shelled beetles (nearly an inch long) that fly toward lights at night and bump against windows and screens. They are emerging in large numbers from sod fields and others that were in soybeans in 1967. These beetles have a three-year life cycle. The adults will now lay eggs, and small white grubs will hatch and feed on plant roots. Little damage is expected in soybeans or corn this year, since the grubs will still be small. Next spring (in their second year), the grubs will be half to two-thirds grown, and will feed heavily throughout the season. Some fields in which corn and soybeans are rotated and where corn follows sod are likely to be damaged next year.

SMALL GRAIN

True armyworms can be found in thick, rank stands of wheat, barley, rye, and various grasses in the southern half of the state. Some fields may be heavily infested. Counts averaging as high as 6 per linear foot of row were observed in fields this week. Look in the thick or lodged spots first when checking for armyworms. They will be hidden in the dead leaves and other trash at the base of the plants. If you find lots of worms, make a count in several places in the field and figure the average number of worms per foot of drill row. If you find no worms or an occasional one in the thick or lodged spots, there is no need to look further.

Continue to check for armyworms during the next week or two, since there could be additional egghatch.

Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were found in many wheat fields this week. They do not damage wheat plants enough to require control.

Treatment is justified if there are six or more armyworms per foot of drill row, as an average over the field. Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), 1-1/2 pounds of carbaryl (Sevin), or toxaphene will control armyworms. Do not apply carbaryl on small grains after the boot stage. Do not feed forage or straw treated with toxaphene or trichlorfon to dairy cattle, livestock being fattened for slaughter, or poultry. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

HOMEOWNER

Chiggers will be a problem soon. They annoy campers, hikers, picnickers, fishermen, berry pickers, and even homeowners in their own yard on occasion. These tiny mites cling to grasses and weeds, transfering to persons who happen to brush against them. When entering areas that may be infested, use a repellent such as DEET (diethyltoluamide). Apply the repellent on socks, pants, pant cuffs, as well as on exposed ankles and calves. Take a warm, soapy shower or bath as soon as possible after returning from a chigger-infested area. It takes the mites several hours to penetrate the skin; they can often be washed off before becoming imbedded.

To reduce the number of chiggers in a home yard, spray malathion or diazinon lightly over the grass, low flowers, and shrubs. Do not apply diazinon to ferns or hibiscus, or malathion to cannaert red cedar.

The number of fleas on dogs and cats is increasing. If left uncontrolled, they can become a serious problem in a home or home yard by late summer. In the worm (larva) stage these fleas live in the bedding of dogs and cats, rugs, upholstered furniture, and even in the dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals. Your dog or cat is a walking bait station for fleas. Bust them at least once a month during the warm weather (May to October) with either 4-percent malathion or 5-percent carbaryl (Sevin). Treatments should also be made once or twice during the colder months (November to April) for added protection.

Clothes moths and carpet beetles are getting ready for a summer's feast on improperly stored woolens. A small hole chewed in a piece of clothing may destroy its entire value. To keep woolens safe from damage by these insects, follow these suggestions.

1. Dry-clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.

2. Woolens that are not dry-cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes), vacuum the container thoroughly and spray all inside surfaces with 0.5-percent diazinon, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill the larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Either napthalene or PDB (paradichlorobenzene) is the fumigant commonly used in moth crystals, flakes, or balls. Use at least 1 pound of crystals, flakes, or balls for every 100 cubic feet of space.

5. Woolens not placed in insect-free containers can be protected by treating in light amounts with 0.5-percent diazinon, from a pressurized spray can, or liberally moistened with fluoride-base fabric solution. Protection will last a year or more, unless the woolens are washed or dry-cleaned. Caution: Infants clothing should be washed or dry-cleaned before use.

6. Good housekeeping practices will help reduce the number of these insects. Clean frequently to prevent lint and hair from accumulating, especially around radiators, baseboards, heating vents, and closets, as well as beneath large furniture and other hard-to-get-at places. If these places become infested, a light application of 0.5-percent diazinon will insure protection.

Sawflies are feeding on pine needles, especially in Christmas tree plantings. If these dark-green caterpillars are defoliating pine trees, use carbaryl (Sevin) or diazinon.

WEEDS

FIELD WEED CONTROL

Corn. If you did not get your herbicide on at planting time, you may still have some flexibility. Ramrod or Ramrod-atrazine can be applied until grass weeds are in the two-leaf stage. Corn that is up has enough tolerance to Ramrod and atrazine, so let weed size be your guide. Atrazine and oil can be used until the weeds are 1-1/2 inches tall. But there has been occasional corn injury with atrazine and oil--especially under wet, cool stress conditions. Do not add 2,4-D or Banvel to atrazine and oil, because of the increased risk of corn injury. Another "no no" is Lasso after corn emergence.

If you used Sutan and if some grasses have started to emerge, do not get excited prematurely. They will probably curl and die. With atrazine, too, some weeds may emerge and then die. You need not spend too much time trying to "start them down." The rotary hoe will usually do much more good than harm, even if a herbicide has been used for corn or beans.

One of the major weaknesses of using Ramrod-atrazine is often the lack of velvetleaf control. If velvetleaf gets started, use good cultivation and/or 2,4-D as an early postemergence treatment.

If the weather should turn wet and cool, avoid spraying 2,4-D on corn under stress conditions.

Smartweed. It is prevalent in many areas again. A lot of folks have asked about spraying this weed with 2,4-D or Banvel before working the seedbed. Smartweed is not easily controlled with 2,4-D. If you are considering Banvel, be certain there are no susceptible plants in the area. Modern tillage equipment should give a weed-free seedbed in most fields. And atrazine applied almost any approved way--alone or in combination, surface or incorporated, pre- or postemergence--usually can be counted on for good smartweed control.

If you expect to have smartweed problems in soybeans, kill any existing weeds with good seedbed preparation. And remember the value of Chloro IPC--used at 2 to 3 pounds per acre active on a broadcast basis, or proportionately less in a band. It comes as a 4-pound-per-gallon EC, or as granules. Apply it to the surface. Do not incorporate. Chloro IPC can be used alone or following previously incorporated Treflan. Some of the other Chloro IPC combination treatments are being tested more extensively this year.

Do not use Banvel on smartweed where you plan to plant soybeans. The use of 2,4-D on smartweed before soybean planting may or may not give good results. The 2,4-D may or may not affect soybeans, depending on the rate and formulation, rainfall, soil moisture, temperature, and the interval between application and planting.

Soybeans. Since some corn herbicide applications were delayed because of rain, soybean herbicides need to be on before or at planting time. If this is not done, we do not have many alternative postemergence herbicides to suggest for soybeans. Dinitro is only for very early postemergence use. Tenoran can be used on broad-leaved weeds up to 2 inches tall, and may help some on small grass. Tenoran may have some noticeable effects on beans, but damage to them usually is not severe. 2,4-DB is a possibility a little later. Although these postemergence treatments for soybeans may be helpful in certain situations, none of them have had much acceptance in Illinois.

Silage corn. AAtrex, Ramrod, Ramrod-atrazine, Sutan, Sutan-atrazine, Lasso, Lasso-atrazine, Londax, Eptam, and Knoxweed are all cleared. (For Lasso, at least 12 weeks must elapse before harvesting or feeding immature corn forage to cattle.) AAtrex is also cleared for popcorn. For sorghum, check the details on the Ramrod and AAtrex labels; for sorghum-sudan, check the AAtrex label.

2,4,5-T. This should no longer be used around homes, lakes, ponds, or ditchbanks. Consider substituting silvex, which will control many of the same species plus some others.

Marihuana. It is now about 6 to 12 inches high in some areas, and this is a good time to spray with 2,4-D--"before it grows to pot."

PASTURE WEED CONTROL

The most-common herbicide spray for pasture weed control is 2,4-D, unless woody species are present; then, a mixture of 2,4-D and 2,4,5-T (brush-killer) is generall used. Choose the rate of 2,4-D to fit the weed problem. Most annual broadleaved weeds can be controlled with 0.5 pound per acre of 2,4-D (1/2 pint of a 4-pounds-to-the-gallon mixture).

Most of the other pasture weeds (biennials and perennials) can be controlled with 1 to 2 pounds per acre of 2,4-D. This rate will eliminate most of the legumes in a grass-legume pasture. Do not spray seedling grasses or grasses in the boot stage (if for seed production). Do not graze dairy animals on treated areas for 7 days after treatment.

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WEEDS: Ellery Knake and M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

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FIELD MEETINGS

This year, we applied five soil insecticides in different ways to corn planted after sod. You are invited to view these fields during the first two weeks of June at 1:30 p.m. on the following dates--insect infestation may or may not be noticeable, but we will dig for insects and count stands at that time:

June 2. Pike County--Barry, Perry Metcalf farm. Contact Extension Adviser Harry Wright in Pittsfield.

June 3. Knox County--Wataga, Robson farm. Extension Adviser Don Teel, Galesburg. Field 1/4 mile west and 1 mile north of junction of Highway 34 and the Wataga-Henderson Road.

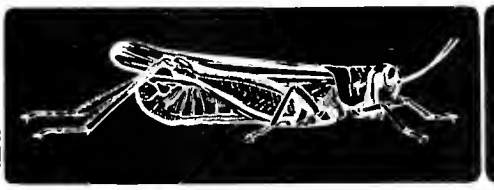
June 4. Livingston County, Mannville, Wilbur Burge farm. Contact Extension Adviser Paul Wilson in Pontiac, for the location near Long Point.

This is a tentative schedule for meetings to be held in other counties:

June 8, Ogle; June 9, Perry and Carroll; June 10, Tazewell and Winnebago; June 11, Boone; June 12, Vermilion and Kane.

In 7

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 9, May 28, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

Because of the long weekend this bulletin is being written one day earlier than usual. We hope no last-minute problems are overlooked.

INSECTS

SMALL GRAINS AND GRASSES

Armyworms are now present in wheat fields in many areas. Some luxuriant fields of wheat are infested as far north as central Illinois, but high temperatures are speeding up worm development as well as a disease that may kill many of the worms. Parasites are also present. The worms are still small in wheat fields along the east side of the state and there are many of them. Populations are lower and the worms are more mature in the western and southern sections. Although the time for maximum benefit is about over, some fields may still warrant the use of an insecticide.

To determine the need for treatment, strike the plants vigorously, then count the worms on the ground or in the debris--even in the cracks and crevices in the row. If the average count is 6 or more worms per linear foot of drill row throughout the field, apply an insecticide when the worms are about 3/4 of an inch long. An armyworm eats 39 linear inches of wheat leaf in its lifetime, but 80 percent of that feeding occurs after the worm is over 3/4 of an inch long. Leaf feeding is not serious when worm populations are low, but an average population of less than 6 worms per linear foot of drill row can still be damaging if the worms are cutting off the heads of the wheat. Also if most worms are about 1-1/4 to 1-1/2 inches long and are fat, they are through feeding. Do not use insecticides then; it is too late.

Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were found in many wheat fields this week. They do not damage wheat plants enough to require control.

Treatment is justified if there are six or more armyworms per foot of drill row, as an average over the field. Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), 1-1/2 pounds of carbaryl (Sevin), or toxaphene will control armyworms. Do not apply carbaryl on small grains after the boot stage. Do not feed forage or straw treated with toxaphene or trichlorfon to dairy cattle, livestock being fattened for slaughter, or poultry. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

Remember, toxaphene is very toxic to fish. Do not use it near fish-bearing waters. If there are honey-bee colonies adjacent to fields to be treated, toxaphene is the

safest of the four to use; carbaryl is the most-dangerous one to use around the bees.

CORN

Black cutworm damage is still slight, and we are uncertain about activity by this pest. They cannot be written off yet as a potential problem. Five reports of damage thus far involved (1) no treatment; (2) aldrin, broadcast; and (3) failures of aldrin, diazinon, and phorate (Thimet) as band or row treatments. Broadcasting aldrin usually controls cutworms, as does diazinon on late-planted corn. However, aldrin and phorate applied in the row will not provide satisfactory control.

Corn that was planted early can be severely damaged. When cutworms slice off the plants below the growing point the plant dies. This happens when the corn approaches 12 inches in height. Thus, stands of early corn could be hurt now by cutworms, but corn planted recently or that being planted now may escape damage for at least another two weeks. When corn is cut off above the heart, the plant keeps right on growing--in fact, may not even be slowed down. However, a late infestation of black cutworms in mid-June, as we had in 1958, could be devastating to all corn.

If damage appears, use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre, and to cover the spray band by throwing soil at the base of the plants with a cultivator.

Common stalk borers attack corn alongside fence rows, grass waterways, and ditch banks, where they have overwintered as eggs. When the worms outgrow the grass or weed stems or the fence row is mowed, the borers migrate into the adjacent corn rows. Sometimes, an attack on young plants by the borers will wilt the plant; other times, will fail to produce an ear, even if it lives. These striped worms with a dark-purple band around their middle can be controlled by a spray of carbaryl (Sevin) as they migrate. It is too late to spray once they are in the corn plant and leaf ragging is apparent. Control is justified only in severe infestations.

European corn borer pupation and emergence is a little earlier than usual, but the moths may concentrate in fields that were planted early to lay their eggs. Such fields can be found in most areas, and may suffer severe first-generation borer damage. However, any weather conditions that would delay the emergence of the moths and egg-laying could change this situation, increasing the possibility of a greater infestation.

The pupation of overwintering corn borer is complete in southern Illinois, where the moths are flying and egg-laying is well underway. Pupation is almost complete in central Illinois, moth emergence has begun, and egg-laying will start soon. In northern Illinois, pupation is progressing rapidly, but no moth emergence has been noted as yet.

The egg-laying period is usually about three weeks. Insecticides to control first-generation corn borers should not be applied to field corn until almost all eggs have hatched. Thus insecticide applications are usually made about three weeks after egg-laying begins.

If corn is 50 inches tall (leaves extended) or more at that time and if 75 percent or more of the plants show any fresh whorl feeding, apply carbaryl (Sevin) or diazinon as granules.

CLOVER AND ALFALFA

Alfalfa weevil development has been extremely rapid this week. In the northern part of the state, it is better to cut the first growth than to use an insecticide. Watch new growth carefully, and apply an insecticide if this is necessary to save the crop. Some new growth has already been damaged seriously. Now is also the time to think about an application of methyl parathion in November to kill overwintering adults, before they lay eggs for the 1971 alfalfa crop. This practice will prevent killing weevil parasites.

Lesser clover-leaf weevil larvae are now feeding on buds and tunnelling into the stems. Their feeding leaves dirty-looking channels. Stems often break over at the feeding point, and the stem dies. No control is needed. This insect usually arouses more curiosity than it does overall damage.

HOMEOWNER PROBLEMS

Armyworms are now feeding in lawns. The damage from these worms can be confused with that of lawn webworms. Although many of the armyworms are parasitized, control may be necessary. Use carbaryl (Sevin) at the rate of 2 ounces of 50-percent wettable powder per 1,000 square feet of lawn area. Apply with at least 3 gallons of water per 1,000 square feet.

Elm leaf beetle eggs are being laid, especially on Chinese elms. These eggs will hatch into dirty-yellow to black worms that will skeletonize the leaves from the underside. Spraying the tree with carbaryl (Sevin) when damage begins to appear will provide control.

Dusting or spraying new plants of vine crops, such as melons and cucumbers will prevent injury from cucumber beetles, as well as from the bacterial wilt disease that these insects spread from plant to plant while they feed. Use carbaryl, 5-percent dust, or mix 2 tablespoons of the 50-percent wettable carbaryl powder per gallon of water.

WEEDS

WEED CONTROL

Because of the poor corn stands caused by flooding or crusting, some farmers are replanting corn or changing to soybeans. Consider the existing stand and the date before you decide to start over. There is a yield reduction from late planting, as well as from poor stand.

If you decide to replant, consider the pesticides used on the first planting before choosing another crop and crop-protection program. Many of the pesticides cleared for use on corn are not cleared for soybeans. Some of the pesticides used on corn can significantly injure soybeans. Don't forget that double doses of chemicals with close crop tolerances can cause corn injury.

AAtrex, Primaze, Sutan-atrazine, Ramrod-atrazine, or any other combinations with atrazine (AAtrex) will cause serious soybean injury if the soybeans are planted where the chemicals have been used earlier in the spring. Lasso and Lorox are cleared for use on corn and soybeans, but Ramrod and Londax only have a "seed bean" clearance for soybeans. Knoxweed is a mixture of EPTC and 2,4-D; and both materials can injure soybeans.

If you broadcast your herbicide, you probably should not use another herbicide application, even though you've lost two to three weeks of effective weed control. If you banded the herbicide, consider "splitting the centers" between previous rows and using a second herbicide application.

Remember to read the label and follow the instructions. The rates specified are the basis for crop clearances and tolerances.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

ANNOUNCEMENTS

See last week's letter for June 2-4 soil insecticide field meetings. Meetings for the week of June 8 at 1:30 p.m. are:

June 8. Ogle County. The Herb and Rich Coffman farm. Contact Extension Adviser Stan Eden in Oregon for the location. (815) 732-2191.
June 9. Perry County. Contact Extension Adviser Charles R. Howell in Pinckneyville for the location. (618) 357-5671.
June 9. Carroll County. The Ron Iske farm near Brookville. West of the junction of Routes 52 and 64, on the gravel road--second farm on the south side. Harold Brinkmeier, Extension Adviser, Mt. Carroll.
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June 12. Vermilion County. The Richard Fourez farm. Contact Extension Adviser John Bicket in Danville. (217) 442-8615.
June 12. Kane County. The James Foley farm. First set of buildings north of the junction of Rt. 31 and the Red Gate Road--west side of Rt. 31. Philip Farris, Extension Adviser, St. Charles.

[Special note to Extension advisers: We have had, as usual, an occasional report of fish being killed in farm ponds. Please check these out and notify us of the insecticide used in adjoining fields; also, about the fertilizer and formulation used, the herbicide used, the presence of barnyard runoff, and any other factors that might be peculiar to the situation.]

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AND NATURAL HISTORY SURVEY
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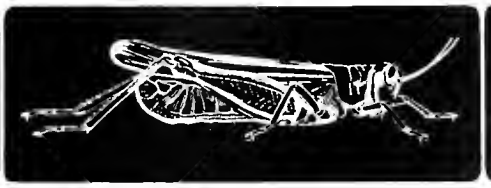

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 10, June 5, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

Cutworms are the major insect problem this week--primarily the black species, with an occasional infestation of the variegated species. These worms have been cutting off corn plants at or below the soil surface. They are not necessarily confined to the low areas of fields as is usually the situation but are found throughout a corn field. Also, the size of the worms in an infested field may range from ones almost full-grown (about two inches long) to young worms (a half inch or less in length). Where soil moisture is low, the worms are feeding below the surface of the soil. Where the soil surface is moist, however, the worms are feeding on or near the surface.

In many instances, worms tunnel into the base of taller plants and kill them. Corn plants cut off below the growing point will die. In general, corn that is less than 12 inches tall will recover from cutworm damage. But if many small worms are present (as in many fields now), cutworm damage could continue for another 10 to 14 days.

Some of the cutworm-infested fields were treated with a row application of either aldrin or heptachlor at planting time. Decisions on applying emergency treatments will vary from field to field. It is important to check the fields closely and to carefully evaluate the damage being done. Some infested fields are wet, thus preventing any ground application of an insecticide. Don't depend on aerial applications of cutworm emergency treatments to give consistent control. If the corn is more than 8 inches tall and 20 percent or more of the plants have been attacked, emergency treatment is warranted. Use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 or 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre, and, if possible, to cover the spray band by throwing soil at the base of the plants with a cultivator.

If replanting becomes necessary, the cutworms will probably still be present when this is done. Diazinon or Dyfonate granules will probably provide the best control. Use them at 2 pounds of actual insecticide per acre, banded ahead of the planter press wheel.

European corn-borer development continues to progress more rapidly than usual. Egg-laying in the southern part of Illinois probably peaked during this past week. The

emergence of the moths is complete in the south-central section, three-fourths complete in north-central Illinois, and just beginning in the northern area.

If treatment is needed in southern Illinois, this would probably be applied during the week of June 8. Cool temperatures can slow-down borer development, allowing the corn plants to reach a more desirable height. If corn is 50 inches tall (leaves extended) or more by the week of June 8, and if at least 75 percent of the plants show any whorl feeding, apply carbaryl (Sevin) or diazinon as granules.

Rootworm eggs have already begun to hatch. If you plan to apply a basal application of soil insecticide, this should be done immediately; if possible, also cultivate in order to incorporate the insecticide. We have had many questions about the effect of heavy spring rains on planting-time treatments of soil insecticides. The insecticides we have suggested for 1970 performed well during 1969 under heavy rainfall conditions. We expect the same to be true this season.

SMALL GRAINS AND GRASSES

Armyworms can still be found in many wheat fields in southern and central Illinois. The greatest number is along the eastern side of the state. One disease and a number of parasites are killing many of the worms. In some localities, armyworms have migrated to corn fields from wheat fields or grass areas. Although no report of cutting-off wheat heads has been received, this could happen as the wheat begins to ripen.

To determine the need for treatment, strike the plants vigorously, then count the worms on the ground or in the debris--even in the cracks and crevices in the row. If the average count is 6 or more worms per linear foot of drill row throughout the field, apply an insecticide when the worms are about 3/4 of an inch long. An armyworm eats 39 linear inches of wheat leaf in its lifetime, but 80 percent of that feeding occurs after the worm is over 3/4 of an inch long. Leaf feeding is not serious when worm populations are low, but an average population of less than 6 worms per linear foot of drill row can still be damaging if the worms are cutting off the heads of the wheat. Also if most worms are about 1-1/4 to 1-1/2 inches long and are fat, they are through feeding. Do not use insecticides then; it is too late.

Treatment is justified if there are six or more armyworms per foot of drill row, as an average over the field. Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), 1-1/2 pounds of carbaryl (Sevin), or toxaphene will control armyworms. Do not apply carbaryl on small grains after the boot stage. Do not feed forage or straw treated with toxaphene or trichlorfon to dairy cattle, livestock being fattened for slaughter, or poultry. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

Remember, toxaphene is very toxic to fish. Do not use it near fish-bearing waters. If there are honey-bee colonies adjacent to fields to be treated, toxaphene is the safest of the four to use. Carbaryl is the most dangerous one to use around bees.

Where there is migration into corn, spray the infested rows as well as a 25- to 30-foot strip of wheat adjacent to the corn.

CLOVER AND ALFALFA

Alfalfa weevil damage is common in many unmowed fields in the central section of the state. In the southern third of Illinois, weevil activity has slowed down very much. Some newly-mowed fields show damage to the new growth of the second crop. It is better to cut the first crop and spray the new growth before it is damaged.

SOYBEANS

Bean leaf beetles are feeding in some soybean fields, on the underside of bean leaves. Unless feeding is severe, no control is needed at this time. Sprays of carbaryl or toxaphene will control these beetles.

LIVESTOCK INSECTS

Pasture flies are increasing, particularly in the central and southern sections of Illinois. Horn flies, stable flies, and face flies rob you of milk or beef production. Don't let flies pick your pocket. Follow these suggestions.

For control on dairy cattle, apply Ciodrin as a 2-percent oil or water-base spray--at a rate of 1 to 2 ounces per animal two to four times per week. A 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrum spray, applied at 1 to 2 ounces per animal each day, can also be used. Pay particular attention to the animal's legs and undersides when spraying. For dry stock and young stock on pasture, or for lactating animals, use a 1-percent Ciodrin, water-diluted spray. Apply 1 to 2 pints per animal, as often as once per week if needed. Ciodrin is the most-effective insecticide for face-fly control. All of the above insecticides provide good control of horn flies and fair control of stable flies.

To control pasture flies on beef cattle, apply a water-base spray of 0.5-percent toxaphene, using 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies.

If face flies become a serious problem, use Ciodrin as suggested for dairy cattle. A canvas or burlap head-oiler or back-oiler, saturated with a solution 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER PROBLEMS

Bagworms are starting to hatch from eggs that overwintered in spindle-shaped bags on trees and shrubs, especially junipers. The newly-hatching worms feed on foliage, grow, and construct their bag. In southern Illinois, the hatch should peak during the first week in June. The peak will hit central Illinois by June 15. In northern Illinois, egg-hatch should be almost complete by the end of June. If treatment is necessary, apply a spray containing carbaryl (Sevin), diazinon, or malathion. Do not use malathion on cannaert juniper. For best results, apply sprays while the worms are small.

Grape flea beetles are still feeding on grape leaves. Both bluish-green adult beetles, which jump when disturbed, and their young larvae are commonly found feeding on the new grape foliage, thus stunting the new cane growth. Either carbaryl (Sevin) or malathion sprays or dusts will control this insect pest.

Bronze birch borer adults, a pest of birch trees, are emerging from under the bark of the upper limbs. The symptoms of bronze borer damage first appear in the tops of affected trees. The upper limbs become weak and die as the borers tunnel under the bark, leaving characteristic raised rings around the limbs. These raised areas may be present on limbs that appear to be healthy, but are infested with borers. If borer symptoms are present, apply treatment during early June with a spray containing dimethoate (De-Fend and Cygon). Follow the directions on the container for mixing the spray. Repeat the treatment two weeks later. Keeping the birch trees in a vigorous growing condition will reduce the chances of borer injury.

Sawflies are now about half-grown. They are feeding on and defoliating pine plantings especially white pines in eastern Illinois. These worms can be controlled with a mixture of 2 pounds of carbaryl (Sevin) per 100 gallons of spray.

WEEDS

ATRAZINE-OIL TREATMENTS

The wet spring and the rush to plant corn has caused many farmers to put off the application of a preemergence herbicide. The resulting weed problems have created a renewed interest in the atrazine-oil treatment.

The phytobland (nonphytotoxic) oils used in this treatment should meet certain standards for purity, viscosity, and emulsifier content. Purity is expressed as an unsulfonated residue (UR) value. A 90-percent UR value indicates a 10-percent content of aromatic sulfonated residue. Phytobland oils should have a UR value of more than 90 percent.

Viscosity is expressed as SSU (Seyboldt Seconds Universal) values, indicating the time required for a given quantity of oil to pass through a funnel orifice test. A 100 SSU oil is more viscous than a 70 SSU one. Common viscosities for these oils are 90 to 130 SSU.

The oils are used at the rate of 1 gallon mixed with about 20 to 40 gallons of water per acre. Thus, an emulsifier must be added so the water and oil will mix completely. The usual emulsifier content is 1 to 2 percent. The emulsifier must be kept free from water until final mixing occurs, otherwise the oil may not emulsify with the water.

Agricultural surfactants are sometimes used rather than oil. Surfactants offer the advantage of a lower quantity of spray additive, because they are used at the rate of 1 to 2 quarts per 100 gallons of spray. The comparative performance of oils and surfactants are often about equal; if there is a difference, it is usually in favor of the oils. Thus there is current interest in a 4-to-1 ratio of oil and surfactant, used in combination at the rate of 1 quart per acre--combining the advantages of both oil and surfactant.

Some spray applicators use household detergents rather than oils or agricultural surfactants. These are usually more expensive and less effective than agricultural surfactants or phytobland oils. Some detergents also cause problems with foaming of sprays and surging of pumps and nozzles.

The AAtrex (atrazine) rate is 2-1/2 pounds per acre 80W (2 pounds per acre ai). For maximum results, the treatment should be applied before grass weeds are 1-1/2 inches tall. The atrazine-oil postemergence treatment sometimes causes corn injury--especially on corn that has been under stress from prolonged cold, wet weather prior to spraying and that begins its active, succulent growth after spraying.

HERBICIDE INJURY

How do you recognize herbicide injury? Agronomy Fact Sheet W-31, *Recognizing and Reducing Herbicide Injury* (which was included in the Pesticide Dealer and Applicator Clinic packets), helps answer that question. It is also available from the Agronomy Department. This fact sheet covers the causes and symptoms of herbicide injury and the methods of reducing it.

When you go to diagnose a case of crop injury, be sure to look at roots as well as the tops. Also take into account all the potential sources of injury, such as herbicides, insecticides, diseases, insects, water damage, wind erosion, compaction, and crusting. Be sure to get all the facts.

MARIHUANA IDENTIFICATION

There have been several reports of weeds that resemble marihuana, but are hairy and have yellow flowers. These plants are upright cinquefoil (*Potentilla recta*)--not marihuana (*Cannabis sativa*). They both have digitately compound leaves, but cinquefoil is a perennial and marihuana is an annual.

Marihuana also has separate male and female plants (dioecious) and blooms much later than cinquefoil, which is beginning to bloom now. Some of the buttercups (*Ranunculus spp.*) are often confused with cinquefoil. They have deeply divided leaves and could also be mistaken for marihuana.

WELL SAFETY

We have received questions about chemicals getting in wells. The most-frequent causes are the flushing or overflowing of sprayers near wells or the siphoning of hoses while filling sprayers. It would also be possible, if a loss of pressure occurs, to get chemicals from a spray tank into a muncipal water supply by siphoning.

Prevention is cheaper and easier than the cure. Here are some suggestions:

1. Do not leave the sprayer unattended when filling the tanks.

2. Do not flush tanks where a chemical will drain into wells.

3. Do not place the hose in the tank. A bracket to hold the hose and the tank will prevent siphoning. The inovative handyman can probably design an anti-siphoning device.

What to do if the material gets into the well is another matter. First, determine the use of the well. Is the water used for human or animal consumption? Is the well used to irrigate a garden? Second, determine the chemical(s) involved and their toxicity. Third, start pumping the well as soon as possible, and dispose of the water in a suitable manner. Some materials such as Treflan, Lasso, or 2,4-D ester will be visible in water in very dilute amounts.

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

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June 12. Kane County. The James Foley farm. First set of buildings north of the junction of Rt. 31 and the Red Gate Road--west side of Rt. 31. Philip Farris, Extension Adviser, St. Charles.
June 15. Menard County. The Elmer Behrends farm near Petersburg. It is located 4-1/2 miles west of Petersburg on the Snake Hollow road, north side of the road. Contact Extension Adviser Elmer Rankin in Petersburg. (217) 632-7491.
June 17. Ford County. The Paul Malone farm, two miles north of Cabery on Route 115. Go 1-3/4 miles west on the campus blacktop. Contact Extension Adviser James Neuschwander in Melvin. (217) 388-7791.

[Special note to Extension advisers: We have had, as usual, an occasional report of fish being killed in farm ponds. Please check these out and notify us of the insecticide used in adjoining fields; also, about the fertilizer and formulation used, the herbicide used, the presence of barnyard runoff, and any other factors that might be peculiar to the situation.]

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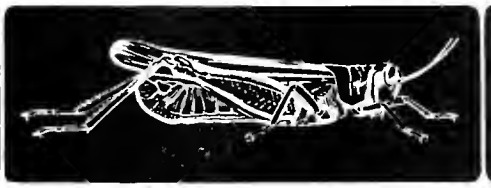


INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 11, June 12, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

Black cutworms still rate the "insect of the week" award. However, the worms are maturing rapidly and damage should decline. Check your corn for cut or missing plants--a sign that the cutworms are at work. If plants are being cut above the growing point and if the worms are larger than 1 inch, the outbreak will be over shortly and the corn will continue to grow. However, immediate treatment is needed if the plants are being cut below the growing point and if many of the worms are less than an inch long. Use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 to 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre and to cover the spray band by throwing soil at the base of the plants with a cultivator.

Corn-borer development generally appears to be ahead of the corn, thus lowering borer survival and reducing the threat of serious damage. However, in many areas, the most-mature corn fields may become heavily infested.

In the southern section of Illinois, egg-hatch reached its peak this week. Most of the corn in that area is too small for borer survival. The tiny borers already present in fields where the corn is less than 40 inches high will die. In many of the fields of 50-inch or taller corn, 75 to 100 percent of the plants are infested. If needed, treatments should be applied now.

In the central section, moth-emergence is nearly complete and egg-laying is reaching its peak. Treatments, if needed, should be applied during the week of June 21.

In the northern section, 40 to 60 percent of the moths have emerged and egg-laying is underway.

To determine the need for treatment, measure the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre of 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Reports on corn-borer development were received from Warren Bundy at Edwardsville, Bob Hayward at Mt. Sterling, Jim Paullus at Rochelle, and Mike Sager at Eureka.

Corn rootworm egg-harch will continue over the next several weeks. The peak number of larvae is expected in early to mid-July. Many fields of continuous corn in the northern half of Illinois may be affected, even though there were fewer adult rootworms in 1969 than for several years. Fields of second-year corn, north and west of a line from Carthage to Bloomington, to LaSalle, to Joliet may be damaged by the western corn rootworm. The concentration of northern corn rootworms is greatest north of U.S. Highway 36, often presenting a problem where corn has been grown continuously for three or more years in the same field.

If you know about or suspect that you have a rootworm problem and did not use an organic phosphate or carbamate insecticide at planting time, apply one within the next two weeks. Use granules applied at the base of the plants, and cover them by cultivation. The insecticides suggested for basal treatment are BUXten, Dasanit, or phorate (Thimet)--at the rate of 1 pound of actual chemical per acre.

Common stalk borers are moving out of the grasses and weeds found in fence rows, roadsides, grass waterways, and ditchbanks and into the border rows of corn. These whitish-brown, striped worms with a distinct purple band around their middle feed in the whorl of the corn. The emerging leaves will have irregular holes in them. Plants may be severely damaged, sometimes killed, by these insects. Control in corn is difficult, because the worms are usually too deep in the whorl for insecticides to reach them. In cases of severe infestations try the following suggestion:

Mow the grasses and weeds from which the borers are migrating. A rotary mower would be best, in order to help kill some of the worms during cutting. This will drive the worms out of these areas and into the corn. Therefore, spray the mowed area and the first few rows of corn immediately with 1-1/2 pounds of actual carbaryl (Sevin) per acre. This should help reduce further infestations and additional damage.

Thrips are common in corn whorls, especially in the southern section of the state. Both the yellow and black grass thrips are present. They are tiny (about 1/16 of an inch) and leave tiny streaks of white mottling on the leaves. The feeding damage is being mistaken for that caused by flea beetles, which leave a more-distinct, white groove or scratch mark on the leaves. When numerous, the thrips, cause a field to take on a silvery appearance. Insecticides are seldom needed to control thrips on corn. However, if severe damage occurs, a spray of 1 pound of malathion per acre directed into the whorl should control them.

SMALL GRAINS

The threat from true armyworms is subsiding as the worms mature and various diseases and parasites take their toll. Scattered reports have been received of armyworm migrations from grass pastures, hay fields, and wheat into corn. Large areas of small corn can be damaged overnight by a hungry horde of armyworms.

Watch for armyworm migrations as your wheat begins to turn and ripen, or when you mow grassy areas if these are adjacent to small corn. If migration occurs, spray the corn as far out as the worms have migrated. Also, spray 2 to 3 rods into the wheat or grassy area, as well as all over any fence row or lane through which the worms are moving. For migrations from wheat to corn, use 1-1/2 pounds of toxaphene per acre. For migrations from grass fields into corn, use 1-1/2 pounds of carbaryl (Sevin) per acre. Remember that toxaphene is toxic to fish and that carbaryl is toxic to bees.

FORAGE CROPS

The alfalfa weevils still need watching. In the southern section, a large number of adult weevils are damaging the new growth of the second crop in fields that have been cut recently. These adults will continue to feed for another week or two before taking their summer siesta. Most of the insecticides used for larval control are not effective against the adults. Methyl parathion is effective, but should be applied only by commercial applicators. Be sure to allow 15 days between treatment and harvest or pasturing.

In the central, north-central, and northern sections of Illinois, the larvae are causing economic damage in many fields of first-crop alfalfa. It would be best to cut and remove the crop and to watch the new growth for damage. If that new growth does not green-up within 2 to 4 days and if worms are present, apply an insecticide promptly.

For control, farmers making their own applications should use malathion; Imidan, a mixture containing malathion and methoxychlor; or a mixture of methoxychlor and diazinon (Alfatox). Commercial applicators can use the above materials or one of the more-toxic insecticides, such as methyl parathion or azinphosmethyl (Guthion).

Follow label directions for dosages, harvest limitations, and precautions.

Small grasshoppers are appearing in fence rows, ditchbanks, grassy waterways, and hay fields--particularly in the southern section of the state. There is a greater number of overwintering grasshopper eggs than has existed for several years. The southwestern, southern, and western sections are the ones where problems are most likely.

Many more grasshoppers will be hatching during the weeks ahead. Hot, dry weather is favorable for survival during the hatching period. If you notice lots of tiny 'hoppers in grassy areas or hay fields, plan to control them before they move into more-valuable crops, such as corn and soybeans. Spray grassy areas with 1-1/2 pounds of toxaphene or 3/4 pound of carbaryl (Sevin) per acre. Use carbaryl (Sevin) on hay fields or pastures. There is no waiting period for carbaryl (Sevin).

Mites, probably two-spotted spider mites, are damaging soybeans in the west-southwest section. Hot, dry weather favors their development. Rain would tend to lessen their number, and would allow the plants to grow out of the damage. The mites appear as small, orange or black spots on the undersides of the leaves. Usually, a fine web is also present. Affected soybeans show stunting, yellowing, and eventual browning of the leaves.

If damage is severe and treatment is needed, spray with 1/2 pound of azinphosmethyl (Guthion) or 3/4 pound of carbophenothion (Trithion) per acre.

These insecticides should be applied only by experienced operators.

Azinphosmethyl has a 21-day waiting period between treatment and harvest; carbophenothion, a 7-day waiting period. Do not feed soybeans sprayed with these insecticides as forage to dairy cattle or livestock being fattened for slaughter.

Potato leafhoppers, both nymphs and adults, are numerous in some alfalfa fields. They reduce hay yields as well as the quality of the hay by lowering the content of Vitamin A and protein. These leafhoppers cause a yellowing of second- and third-crop alfalfa. Treatment is indicated if swarms of these small (1/8 inch), green, wedge-shaped insects are observed during cutting or on the new growth of the second crop. Use either carbaryl (Sevin) or methoxychlor, at 1 pound per acre. When using methoxychlor, allow 7 days to elapse between treatment and harvest. There is no waiting period for carbaryl (Sevin).

STORED-GRAIN INSECTS

Stored-grain insects are lying in wait for the wheat harvest, which is just around the corner in the southern part of Illinois. To protect stored wheat from insect damage, follow these steps:

1. Sweep-up and clean-out all the old grain, chaff, and other debris from inside and around the outside of the storage bin. Also clean-out the combine, auger, and other grain-handling equipment. You can clean the combine by discarding or feeding to livestock the first 2 or 3 bushels that pass through.

2. To the ceiling, walls, and floor of the bin, apply a water-base spray of 1.5-percent, premium-grade malathion (mix 3 ounces of 50- to 57-percent, malathion-emulsion concentrate per gallon of water), or a 2.5-percent methoxychlor spray (mix 14 ounces of 25-percent, methoxychlor-emulsion concentrate per gallon of water).

3. If the wheat is to be stored for a month or longer, treat it with a premium-grade malathion dust (40 to 60 pounds of 1-percent dust per 1,000 bushels), or spray (using 1 pint of 50- to 57-percent emulsion concentrate in 3 to 5 gallons of water per 1,000 bushels). The dust can be applied best to the wheat when it is in the combine hopper; the spray, as the wheat is augered or elevated into the bin. Give the surface grain a light treatment after all the grain is in the bin.

4. Reinspect the grain once each month to be certain that your control program is effective. Last year some stored wheat that had been treated with premium-grade malathion became infested with Indian meal moths by mid- to late August, indicating a possible resistance of this insect to malathion.

Use malathion as directed. A report has been received that one large grain company refused to buy wheat treated with malathion because of the objectionable odors. Be sure the malathion you use is labeled for use in stored-grain insect control, and, therefore, is of the low-odor type. Do not overdose, and do not apply malathion if you plan to ship the grain within a week or two. Apply a grain fumigant for quick kill, if insects are present and the grain is to be shipped soon.

HOMEOWNER PROBLEMS

Sod webworm moths appeared this week around lights and in tall grass and shrubbery. They fly a zig-zag pattern over lawns during the early evening, laying eggs that

will produce the first generation of worms. This generation is seldom numerous enough to cause damage. But the second generation--that comes during late July, August, and early September--often presents problems. Watch the lawn for damage. If control is necessary, use carbaryl (Sevin), diazinon, or trichlorfon (Dylox) as sprays or granules.

Bagworms have hatched in the southern area of the state. Sprays should be applied immediately. In the central section, the target date for spraying is after June 15; in the northern portion, after June 30.

For best results, spray while the worms are still small and easy to kill and before damage is evident. Use carbaryl (Sevin), diazinon, or malathion. Malathion will also provide fair control of any mites that may be present. Follow the recommendations on the label and check carefully for the plants that could be injured by the insecticide you use.

Aphids are present on many trees and shrubs, and on some flowers such as roses. In most instances, the plant will not be seriously damaged by aphids. However, if the leaves begin to curl and dry, apply a spray using 2 teaspoons of 50- to 57-percent malathion or 25-percent diazinon liquid concentrate per gallon of water. Do not use malathion on African violets or cannaert red ceder. Do not use diazinon on ferns or hibiscus plants.

WEEDS

DIRECTED POSTEMERGENCE APPLICATIONS FOR EMERGENCY USE IN CORN

We have received several questions about grass-control materials, after it is too late to use the atrazine-oil treatment. The cultivator is still a valuable weed-control tool, and its use at the right time can take care of many of the weed problems.

Directed sprays of Lorox and Dowpon can be used in emergency situations, when grass weeds are too tall for control by cultivation. You must have a significant height differential between the corn and the weeds in order for these treatments to be effective.

Dowpon (dalapon) can be applied as a directed spray when corn is 8 to 20 inches tall, from ground to whorl. Use leaf lifters to keep the spray off the corn leaves. Dowpon will translocate into the corn plant, causing stunted and deformed plants. Do not let the spray contact more than the lower half of the stalk, and do not direct the spray more than 7 inches above the ground. The rate of use for Dowpon is 2 pounds of actual chemical per acre (broadcast basis). Use proportionately less, depending on the coverage. 2,4-D can also be added to the spray to control broadleaved weeds.

Lorox (linuron) may be applied as a directed spray after the corn is at least 15 inches high, but before weeds are 5 to 8 inches tall. Lorox will control both grasses and broadleaved weeds--if you cover the weeds with the spray and keep it off the corn as much as possible. Any corn leaves that are sprayed will be killed. Use 1-3/4 to 3 pounds per acre of 50-percent Lorox, on a broadcast basis, or proportionately less in a directed band. Surfactant WK should be added at the rate of 1 pint per 25 gallons of the spray mixture.

CLIMBING MILKWEED

This is sometimes called bluevine. It is a deep-rooted perennial vine, not an early emerging weed. Hence, it is necessary to control other weeds in the corn with preemergence herbicides or cultivation, or both, in order to get good spray coverage on

the climbing milkweed. Apply the treatment when the weeds are spreading on the groun and before they start to climp up the corn.

To obtain optimum coverage, use herbicides with a surfactant, enough water volume, and a suitable nozzle set-up. Use 2,4-D at 1/2 pound per acre (1 pint of 4-pound-per gallon product). The date of application will depend on plant development, but is usually in late June or early July.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery and E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

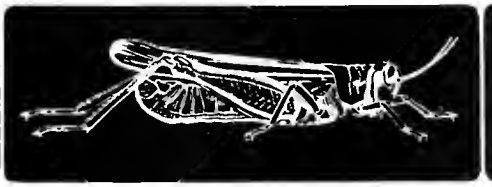
ANNOUNCEMENTS

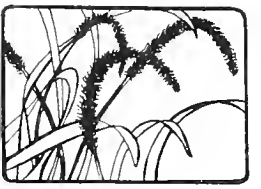
Soil insecticide field meetings for the week of June 15 at 1:30 p.m. are:

June 15. Menard County. The Elmer Behrends farm near Petersburg. It is located 4-1/2 miles west of Petersburg on the Snake Hollow Road, north side of the road. Contact Extension Adviser Elmer Rankin in Petersburg. (217) 632-7491.

June 17. Ford County. The Paul Malone farm, two miles north of Cabery on Route 115. Go 1-3/4 miles west on the campus blacktop. Contact Extension Adviser James Neuschwander in Melvin. (217) 388-7791.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS





INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 12, June 19, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

European corn-borer infestations should be watched carefully for the next three weeks. Wait until you are sure treatment is warranted, but do not allow fields to suffer noticeable economic loss.

A few cornfields (1 to 5 percent of the total) everywhere are much more advanced than others. In the south, west, and northwest parts of the state, such fields either show or will soon show noticeable feeding on the whorl leaves. In the east, central, and northeast sections (where overwintering borer populations were low), fewer fields will be affected.

In southern Illinois, small borers will soon leave the whorl as the tassels emerge and enter the stalk. Once there, they are difficult to reach with insecticides. This will occur within the next week in those very early fields. Thus, the time to apply insecticides has almost gone by in the area south of a line across the state opposite St. Louis. Eggs are still being deposited on corn north of this line almost up to Rock Island--with a few fields, particularly on the west side of the state, already meeting the standards for profitable insecticide application. The optimum timing will be during the next two weeks.

The emergence of moths is almost complete in northern Illinois, and egg-laying is just starting. A few fields will probably be damaged. The optimum time period for applications to field corn will probably start 10 days to two weeks from now.

In general, the storms of this past week killed some moths. This will help reduce the overall, first-generation borer population. Nevertheless, watch those early fields closely.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Southwestern corn borers in the extreme southern counties usually follow the pattern of the European corn borer. The number of southwestern borers is usually not serious until the second and third generations--from late July through September. No chemical control is recommended at this time.

Corn leaf aphids may be around this year. Some are already present. They certainly have a wide selection of planting dates from which to choose. No control is recommended as yet.

Armyworm moths--the brown or buff-colored, heavy-bodied moths--will become numerous within the next three to four weeks. They will be emerging from wheat fields in central and southern Illinois, where these worms were generally found. A few moths have already appeared. Cornfields with grassy weeds should be checked during late July and August for infestations. No control is needed now.

Cutworms are maturing rapidly. Corn that was cut off above the growing point is growing back; but in corn that was planted early, cutting was below the growing point and the plants died. Most worms are now 1-1/2 inches long or more, and will be pupating and emerging as moths later. Our fear is that with the wet weather, the moths that emerge from fields infested early may soon deposit their eggs in low spots within other fields. If this happens there could be serious damage. This is more likely to happen in northern Illinois than in the central or southern sections, since these moths tend to migrate northward.

If plants are still being cut above the growing point and if worms are larger than 1 inch, the outbreak will be over shortly and the corn will continue to grow. However, immediate treatment is needed if the plants are being cut below the growing point and if many of the worms are less than an inch long. Use a spray--directed at the base of the plants--of carbaryl (Sevin) at 2 to 3 pounds, diazinon at 2 pounds, toxaphene at 3 pounds, or trichlorfon (Dylox) at 1 pound of actual chemical per acre. It is best to use at least 20 gallons of water per acre and to cover the spray band by throwing soil at the base of the plants with a cultivator.

Corn rootworm eggs are now hatching. If you expect a rootworm infestation but did not use a rootworm insecticide at planting time, make a basal application as soon as you can get into the field.

As a result of the recent rains, we do not know whether the rootworm insecticides applied at planting will provide the usual control; also, whether the water standing in the fields has drowned some rootworms. Where the corn is still short, you can check for a basal application in about a week; where the corn is tall, it is already too late.

In general, in fields where a rootworm insecticide was applied at planting time, no basal application will be needed, unless there has been excessive soil erosion. For a basal application we suggest BUXten, Dasanit, or phorate (Thimet).

SMALL GRAINS

English grain aphids are showing up on the wheat heads in some fields, particularly on the east side of the state. The wheat is maturing rapidly, and these insects usually do very little damage after the kernels approach the dough stage. Therefore, insecticides should be used only in fields that are maturing exceptionally late. Even there, the average aphid count should be at least 25 per wheat head--an average of 50 may be more realistic.

LIVESTOCK INSECTS

Barn flies are becoming bothersome, particularly in central and southern sections. The population is expected to increase rapidly from now on, because of the excessive moisture and high temperatures.

The house fly and the blood-taking stable fly (needle-like beak) make up the barn-fly complex. Both flies spend 90 percent of their time sitting on barn walls, support posts, fences, and the like, and only about 10 percent of their time on the animals. Therefore, there is no need to spray cattle kept on dry lot. Begin control efforts now before the flies become too numerous. The following program will provide good results:

1. Practice good sanitation. Eliminate fly-breeding materials--such as manure, rotting straw, wet hay and feed--as often as possible. Spreading this refuse where it can dry makes it unsatisfactory for fly development.

2. Apply a barn spray to the point of run-off on the ceilings and walls of all livestock buildings. Also spot-spray outside around windows and doors and along fences in the lot. The following insecticides are suggested for this purpose:

Insecticide	Amount per 100 gallons of water	Length of control
Diazinon, 50-percent wettable powder. . . .	.16 pounds	2 to 4 weeks
Dimethoate, 23-percent (Cygon) liquid concentrate	4 pounds	4 to 6 weeks
Revap (Rabon plus dichlorvos), liquid concentrate	4 gallons	4 to 6 weeks
Ronnel, 24-percent (Korlan) liquid concentrate	4 gallons	1 to 3 weeks
Ronnel, 25-percent wettable powder. . . .	.32 pounds	1 to 3 weeks

Use only ronnel in poultry houses. All materials are cleared for use in dairy, beef, swine, sheep, and horse barns. Cover feed and water troughs before spraying. Do not spray animals with these materials at the dosages suggested. Remove animals before spraying the barns. Do not spray the milk storage room.

3. Supplement good sanitation and barn sprays with a spray bait material. Use 2 to 4 ounces of dichlorvos (DDVP) or naled (Dibrom) in a mixture of 1 gallon of clear corn syrup and 1/2 gallon of warm water. Apply this from a small tank sprayer to the favorite fly-roosting areas.

   Barn foggers using insecticides like dichlorvos (DDVP), pyrethrum, or naled (Dibrom) give a quick kill of flies during the fogging operation (5 to 10 minutes), but the effect is not lasting. When fly populations become intense, even twice a day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, fogging does not leave enough insecticide deposit on the animals to protect the cattle from flies when on pasture. Coarse sprays applied to the animals are best for this purpose.

HOMEOWNER PROBLEMS

Many tree leaf samples that are infested with galls have been sent in or observed. Some of the more-common ones include maple bladder on maple, various galls on oak, and pod gall on honey locust. These are warty-appearing growths that develop on the leaves. They rarely cause any damage to branches of the tree. Chemical control is difficult, since the tiny insect forming the gall is inside it. If treatment is desired, it will be most effective just before the gall is formed; in most instances, this is in the spring as the new leaves are emerging from buds. Hence, this should be planned for next spring.

Lecanium scale is appearing on oak trees as well, as on some yews and arbor-vitae shrubs. These dark brown or red, bead-like scales are found along the branches at the base of the leaves. Eggs usually hatch under these scales during late June, with the crawlers moving onto new growth. If such scales are present and are causing damage, spray now with malathion to control the young crawlers.

A species of spittlebug is feeding on juniper shrubs. These appear as small frothy masses of spittle on the needles; the insect is inside the frothy mass. These insects can be controlled with methoxychlor, carbaryl (Sevin), or malathion. Do not use malathion on cannaert red cedar.

WEEDS

ATRAZINE AND OIL

It is now too late for postemergence treatments with atrazine and oil. Most weeds are too large, and late applications increase the chance of residue problems next year--especially if the weather turns dry.

Preemergence or postemergence treatments with atrazine have helped to control smartweeds in many areas. Where smartweeds are still a problem, Banvel can help; but extreme precautions are needed in order to avoid injury to nearby soybeans and other desirable plants. If the Banvel moves into soybeans, it can cause considerable damage to the plants. The signs of damage are cupped and crinkled leaves; also, the leaf buds not opening normally. Yield reductions may result, especially if Banvel gets on the soybeans near the bloom stage.

2,4-DB may be used as a postemergence treatment on soybeans 7 to 10 days before bloom to mid-bloom, when soybeans are about knee-high. This can be helpful in controlling cocklebur, annual morningglory, and giant ragweed. But 2,4-DB can cause some wilting

and can increase lodging in soybeans. The stems may show some cracking and proliferation at the base. We suggest using 2,4-DB only where these weeds are serious and only if the grower is willing to risk some injury to soybeans.

POSTEMERGENCE TREATMENTS FOR CORN

2,4-DB and Banvel (dicamba) are the two top choices for broadleaved weed control in corn.

2,4-D will control most of the annual broadleaved weeds effectively and economically. Use "drop pipes," or nozzle extensions from the boom, to keep the spray out of the corn whorl if you spray after the corn is more than eight inches tall. Do not spray with 2,4-D after corn begins to tassel.

The rate of 2,4-D to apply depends on the strength of the concentrate and the type of 2,4-D used--amine or ester. If you use the amine form, apply one-half pound of the active ingredient per acre. That is 1 pint of the 4-pound material per gallon of material. If you use the ester form, apply one-sixth to one-fourth pound per acre.

The amine form is less likely to cause drift problems, but most farmers consider the ester form more active and less likely to wash-off with a rain. Weeds are easier to kill when they are small, so adjust the rate of application to the weed size.

CORN INJURY

Each year 2,4-D damages some corn. The symptoms are an elbowing of the stalk, abnormal brace roots, and "onion leafing." Corn seems most susceptible to 2,4-D damage when it is under cool, wet-weather stress, or when it is growing fast during hot, humid periods. Corn stalks are often brittle for 7 to 10 days after spraying with 2,4-D, so delay cultivation if possible.

Banvel is cleared for use on corn until the crop is 36 inches high, or until 10 days before the tassels emerge. Banvel is similar to 2,4-D, but it provides improved smartweed control. Banvel often affects soybeans near treated cornfields, causing a cupping of the soybean leaflets about two weeks after the drift occurs. The soybeans generally outgrow the injury, and yields are not affected. To minimize Banvel drift, use a low pressure and avoid spraying when the wind velocity is more than 5 miles per hour.

Both Banvel and 2,4-D can injure corn. Banvel is cleared for use over the top of the corn, but the use of drop nozzles generally lessens the chance of corn injury. Remember: injury most often occurs when the corn has been under cool, wet-weather stress.

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A REQUEST

Please put spiders and other insects in a separate, closed vial inside a mailing tube when you send them to us for identification. If desired, alcohol can be used in the vial. Please do not put live insects and spiders loose in a mailing tube. When the lid is taken off, they come out! (Good secretaries are hard to find!)

H.B. Petty

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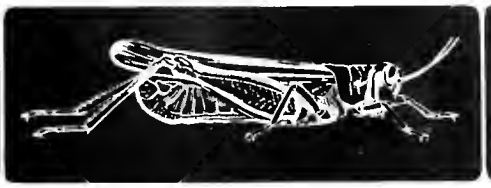
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 13, June 26, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

GENERAL

Grasshoppers increased noticeably last year, and deposited eggs that overwintered. The big, green differential grasshoppers deposited eggs in fencerows, grass sods, ditchbanks, and roadsides. The smaller, red-legged grasshopper layed eggs in alfalfa, clover, and other hay fields. These eggs are now hatching.

Hard, beating rains will kill newly hatched grasshoppers, but will not kill them after they are a few days old. Although some of the overwintering eggs may have hatched during the recent rains and some tiny grasshoppers may have been killed, the hatch continues. The grasshoppers hatched more recently may survive.

You may find these tiny grasshoppers all over where soybeans or corn was planted on hay-crop ground. Or, you may find them in this year's hay crop as the eggs were layed in it last fall. Of course, the tiny differential grasshoppers can still be found in fencerows and ditchbanks. If these tiny grasshoppers are very numerous, as they are now in many areas, it will be easier to control them now while they are small than it will be later.

In fencerows, apply carbaryl (Sevin), diazinon, malathion, naled (Dibrom), or toxaphene. In hay fields, use the same materials except for toxaphene. Cut the hay and drive the grasshoppers into an occasional uncut swath you have left. Then, spray it. Carbaryl and malathion at 1 pound per acre require no waiting period after application; naled requires 4 days; diazinon, 7 days.

Provide protection around the edges as the grasshoppers migrate into soybeans. If the migration is prolonged, you may have to spray the borders several times. Always read the label for more-detailed restrictions.

CORN

European corn borer populations were not too severe in any of the fields examined this week. In general, about 5 to 10 percent of the fields in any area are mature enough for a high survival of the borers. Only 10 to 20 percent of such fields have enough borers to warrant the use of an insecticide. In the area south of a line through St. Louis, it is too late for optimum results by using an insecticide. A

few eggs are still being deposited in the area north of St. Louis, south of Rock Island, and west of Route 51. The borers are entering the stalks, and the time for best results from applying an insecticide is almost over. In northern and eastern Illinois, the time to apply an insecticide will be this coming week. The number of borers is low in eastern Illinois, and only a few fields require protection.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be as granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Black cutworms are still around, although they seem to be decreasing in number. We had several calls from eastern Illinois this week. Again, we say that in fields of corn in the rotary-hoe stage, cutworms cut plants above the growing point or heart. About 60 to 80 percent of these plants will grow into healthy stalks. So, do not disk-up such fields. The taller corn plants may be killed, since the worms cut off the plant below the heart.

Control varies. We have had reports of failures from practically all planter-time treatments, including aldrin and heptachlor. In fact, we have had several complaints about failures of these materials even when they were broadcast. Sprays of toxaphene and carbaryl (Sevin) have given varying results. In some instances, control has been almost perfect; in others, control was only moderate. We hope to have methods next year that will provide more-consistent control.

Corn blotch leaf miners tunnel into corn leaves and make a narrow streak up and down the leaf between the upper and lower surfaces. You will usually find a dirty-yellow to green maggot in the tunnel. No damage is done, and this is usually more of a curiosity than anything else.

Leafhoppers are laying eggs in the tissue of corn leaves. The egg mass is usually fan-shaped, and each egg represents a fan rib. They will not scrape off, as corn-borer egg masses do. Leafhoppers are not important.

Lady beetle adults are present in corn fields, laying their orange eggs. These elliptical-shaped eggs are attached upright on the corn leaf, and are layed in clusters. Lady beetles and their young eat other insects.

Green lacewings deposit tiny white eggs individually on the stems of corn leaves. The young is the aphid lion, which eats aphids and other insects.

HOMEOWNER PROBLEMS

Cottony maple scale appears as a sticky, cottony mass on tree branches--especially those of maple and honey locust. At present, these are the adult scales with eggs inside the cottony area. They are sucking plant sap from the twig. The eggs will be hatching in early July, and the young will crawl out onto the underside of leaves. These crawlers will appear as tiny, yellow specks on the leaves. They will remain on the leaves, sucking plant juices until September. For control, spray in early to mid-July with malathion. Be sure to spray the leaves near twigs covered with the cottony masses thoroughly.

Mimosa webworms have begun to feed on mimosa and honey locust trees, and to construct web nests on the branches. Spraying with either malathion or carbaryl (Sevin) when the nests first appear will control this insect. A repeat treatment may be needed after two or three weeks.

WEEDS

Quite a bit of replanting has been necessary this year. Some areas are still wet, and there are still some fields to plant. What do you plant where atrazine was previously applied for corn and the field must be replanted?

Planting soybeans would not be in accordance with the label, and the risk of severe injury to soybeans is considerable. Sorghum would probably tolerate the atrazine, but you need a market or some use for the sorghum. Sorghum-sudan may tolerate the atrazine, but most farmers could not use a very large acreage. Although sorghum or sorghum-sudan may tolerate the atrazine that was applied earlier, strict interpretation of the label suggests that this practice is not clearly approved for Illinois. If you can use corn silage, that would be one of your best answers.

A short-season corn to be used for grain is also a possibility. Although yields may not be very good and drying at harvest will probably be necessary, this may be better than leaving the land idle. Raising sunflowers or buckwheat is not feasible on land treated with atrazine.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery and E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 15, July 10, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE

Grasshoppers may be scattered throughout some hay fields. Where there are 17 per square yard, they eat a ton of hay a day in a 40-acre field. Three to six per square yard are considered enough to cause economic damage. When cutting hay, leave several uncut swaths as traps. Spray these with 1 pound of malathion or 3/4 pound of carbaryl (Sevin) per acre. There is no waiting period between application and harvest.

SOYBEANS

Grasshoppers are present throughout some soybean fields that were grass or hay fields last year. The eggs were laid in these fields then, and have now been hatching for about two weeks. You can apply carbaryl, malathion, naled (Dibrom), or toxaphene. If grasshoppers are migrating from adjacent fields into beans, you can get the longest control with toxaphene, applied as a border spray. But do not apply toxaphene next to fish-bearing waters. Do not apply carbaryl near bee hives.

Green clover worms can be found in some bean fields. They are not numerous enough now to create any problem, but they do bear watching in late-planted beans. Their primary damage will be leaf eating. If they attack beans between the blossom and pod-fill stages, the damage is the same as with grasshoppers. However, these worms do die of a fungus infection and are found as white, dusty, mummified worms. They are also parasitized by a fly that deposits white, globular eggs on the backs of the worms behind the head. These two natural enemies help control this pest. No insecticides are needed at this time.

CORN

Grasshoppers have not been reported in cornfields. They may migrate into them later. Use the same insecticides as you would for soybeans. However, please note that diazinon now has a label for use on corn.

Corn rootworm adults are beginning to emerge. Although only a few western and northern adults have been seen, more will be present soon. From now on, keep an eye on silking. If there is an average of 5 or more beetles per silk and pollination is just beginning, an application of carbaryl or malathion will be profitable, in order to protect the corn during the pollinating period. Also, check the number of rootworm beetles, to have an idea of the rootworm prospects for that field in 1971.

Questions will soon be asked about corn leaf aphids. As yet, we have observed very few of them. They often appear first on grasses, then later on corn. The period of growth between pretassel and pollination is critical for corn. Pull 10 whorls in five places in the field and unroll them to see if aphids are present. If it is dry and 50 percent or more of the plants are infested, the use of diazinon or malathion is recommended to individuals. If aerial applications are made, parathion can be used if proper protective measures are taken. Do not use parathion in seed fields that are to be detasselled by hand.

SMALL GRAINS

Cereal leaf beetle infestations are reported by the Illinois Department of Agriculture as much-more common than in the past. New areas of infestation will be announced when survey work now underway is completed.

LIVESTOCK

Face flies are bothering pastured cattle in some areas. Cattle stop grazing, bunch up, mill about, switch their tails, and rub their heads as they fight these flies. At the very least, cattle with lots of face flies (15 to 20 or more per animal) usually develop eye problems. Face flies may also transmit pinkeye disease. For control on dairy cattle, apply a 2-percent, ciodrin oil-base spray at 1 to 2 ounces per animal as often as once a day, if needed. A 1-percent, ciodrin water-base spray--applied at 1 pint per animal per week--may be used in place of the oil-base spray. Dust bag treatments with insecticides like ciodrin or coral do give effective control of face flies.

For pastured beef cattle, the ciodrin water-base spray (as suggested for dairy cattle) should be considered. Otherwise, use a head- or back-oiler, wrapped with canvas or burlap and saturated with 5-percent solution of toxaphene in oil. This will afford partial relief from face flies. Keep the oiler in good repair and well saturated. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER PROBLEMS

Corn earworms are much more numerous than usual in the early fields of sweet corn in southern and central Illinois. Homeowners may need to treat silking sweet corn with carbaryl (Sevin); and if so, will need to continue spraying the ear zone every 2 to 3 days until the silks are brown.

Tomato fruitworms (same as corn earworms) could be a problem in ripening tomatoes. These caterpillars tunnel into the tomato fruit, usually next to the stem. Spraying with carbaryl will provide control. There is no time limitation between the last spray and harvesting tomatoes or corn.

Picnic beetles seem to be very common this year, especially as uninvited guests to picnics or backyard cookouts. These black beetles with four yellow spots are attracted to the odors of rotting fruit and vegetables, or to the smell of any food.

For control around the home, harvest fruits and vegetables before they become overripe. Dispose of spoiled produce. To kill the adult beetles, spray with malathion, diazinon or carbaryl (Sevin) in and around garbage cans. Spraying shrubbery and tall grass with any of these insecticides before a cookout will greatly reduce the number of these beetles.

Follow the directions on the label. Check plants that may be injured if sprayed with the insecticide you are using. Either 0.1-percent pyrethrin or 0.5-percent dichlorvos

(DDVP) spray in pressurized cans will give a quick knockdown of beetles that suddenly move into an area.

ANNOUNCEMENTS

CORN ROOTWORM DEMONSTRATIONS

July 14, Knox County. The Ed Bowman Farm, 1.5 miles North of Oneida on the West side of road. Don Teel, Extension Adviser. (309) 342-5108.

July 15, Ogle County. The Charles Mullen Farm, 1.5 miles North of Adeline on the West side of road. Stan Eden, Extension Adviser. (815) 732-2191.

July 16, Boone County. The Bob Newport farm. Go East on Belvidere-Poplar Grove blacktop, one-half mile North and East of Belvidere on the West side of road.

July 17, Boone County. The Ken Reeber farm, 1 mile North of Poplar Grove on blacktop, East side of road. Junction with the Quail Trap Road.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 16, July 17, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

Corn leaf aphids are numerous in some fields; they may seem to almost "explode" within the next two weeks, but this will vary greatly from hybrid to hybrid and from area to area. Limited surveys indicate the possibility of a serious problem; but, as yet, we cannot define any problem areas. The number of aphid predators is low, which will permit a faster buildup; but a disease is killing some aphids. Also, high temperatures have slowed reproduction.

Corn in the late-whorl and early tassel stages seems to have the most aphids. Early fields in which pollination is already occurring will escape damage. Corn injury usually takes place between the pretassel and pollinating stage. Aphids suck the juices from plants, causing stunting. With heavy infestations and stress conditions (particularly dryness), the plants will be barren, or at best produce a shrivelled ear.

Early treatment is best. Treatments should be made prior to brown silks. Many fields are in the late-whorl stage or are just now coming into tassel, and should be checked.

Do not panic. Do not spray unless it is justified. Examine all fields carefully. If 50 percent or more of the plants are lightly to moderately infested with aphids, the use of 1 pound of malathion or diazinon, or 1/4 pound of methyl parathion, per acre as a spray will be effective.

For best results, the spray should be applied just after the tassels begin to show. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied only by experienced applicators.

If corn is in the late-whorl stage, 1 pound of either diazinon or phorate (Thimet) as granules will be effective. Do not use phorate or parathion in seed fields that are to be detasselled by hand.

Picnic beetles are present in corn whorls in many areas. They are of little concern in field corn. But in sweet corn, they are getting into the ears and destroying the kernels.

Infestations of second-generation corn borers on late-maturing corn could be severe in the southern section of Illinois. Moth-emergence is underway, and peak egg-laying can be expected by about July 25 in that area. Some borers are present in most of the corn fields that were planted early, and the emerging moths will move to the late-maturing fields that are in the late-whorl to early silk stage to lay their eggs. Check these late-maturing fields during late July or early August for corn-borer egg masses or whorl feeding.

First-generation borers are pupating rapidly in the central section, and an occasional second-generation moth has emerged. Pupation is just getting underway in the northern section.

For corn in whorl stage, if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasselled, look for egg masses. If the average is 1 or more per plant, apply an insecticide after a few eggs have hatched.

Commercial applicators may prefer to use parathion at 1/2 pound per acre. Sprays by air or high-clearance equipment are effective on tasselled corn. Allow 10 days between treatment and harvest for diazinon and 12 days for parathion. Carbaryl has no waiting period.

SMALL GRAINS

Cereal-leaf-beetle quarantines have been imposed on the following, entire counties: Champaign, Christian, Clark, Coles, Cook, Cumberland, DeWitt, Douglas, DuPage, Edgar, Fayette, Ford, Grundy, Iroquois, Kankakee, Livingston, Macon, McLean, Montgomery, Moultrie, Piatt, Shelby, Vermillion, and Will. A quarantine is in effect for parts of these counties: North of a line along the north edge of Township 6 in Effingham; Grove Township in Jasper; Seward Township in Kendall; Road District No. 2 in Menard; East of a line along the East edge of Range 6, West in Sangamon; and Kansas Township in Woodford County. Continued surveys may reveal new infested areas; if so, these will be announced.

For further information on cereal-leaf-beetle quarantine and regulations, contact Mr. Rodney Anderson, Head, Division of Plant Industries, State Department of Agriculture, Emerson Building, State Fairgrounds, Springfield, Illinois 62706; Mr. Burhl McClung, Supervisor in Charge, Plant Protection Division, USDA, P.O. Box 98, Urbana, Illinois 61801; or R.M. Puyear, District Supervisor, Plant Protection Division, USDA Box F, Wyanett, Illinois 61379.

GENERAL

Grasshoppers continue to pose a threat in many areas. Hot, dry weather increases the likelihood of damage. They will tend to move to the more-succlent crops such as corn and soybeans as the vegetation dries out in roadside, ditchbank, fencerow, waterway, and hayfield areas.

For control in roadsides, ditch banks, fencerows, waterways, and other grassy areas (where no crops are involved), apply toxaphene at 1-1/2 pounds per acre. Do not apply it near fish-bearing waters.

For control in clover, alfalfa, and hayfields, apply 3/4 pound of carbaryl or 1 pound of malathion per acre. Do not apply to clover or alfalfa fields that are in bloom, since both insecticides are toxic to bees.

For control in corn and soybeans, apply carbaryl at 3/4 pound or toxaphene at 1-1/2 pounds per acre. Do not feed toxaphene-treated corn or soybeans as a forage to dairy cattle or to livestock being fattened for slaughter. Do not harvest soybeans as grain for 21 days after treatment with toxaphene. Carbaryl has no waiting period or other restrictions when used as directed.

LIVESTOCK

Under "Face Flies" in last week's bulletin (No. 10), the statement "Dust bag treatments with insecticides like ciodrin or Coral do give effective control of face flies" should have read "Dust bag treatments with insecticides like ciodrin or Coral do not give effective control of face flies."

HOMEOWNER PROBLEMS

Picnic beetles continue to plague home vegetable gardeners. They are damaging the kernels of ripening sweet corn. They will swarm to overripe vegetables or fruit.

To help reduce the problem, pick fruits and vegetables before they become overripe. For control on sweet corn, apply carbaryl (Sevin) as a spray to the ear zone and leaf axils. To mix, use 2 tablespoons of the 50-percent wettable powder per gallon of water. Do not expect to control the beetles that are deep in the silks; the insecticide will not reach them.

Additional treatments every 4 or 5 days may be needed to prevent further infestations. This treatment will also help prevent infestations by corn earworms and corn borers. Carbaryl or malathion may be used on other vegetables or fruits if picnic beetles present a problem. Follow the directions on the label for dosage, waiting period, and other restrictions.

WEEDS

2,4-D, POSTEMERGENCE IN CORN

Weeds are still bad news in some fields where adequate cultivation and spraying have not been possible. 2,4-D is about the only spray to consider for corn at this late date.

Most 2,4-D labels say, "Do not apply from tasseling to dough stage." This statement is apparently based on early research which showed that spraying at certain critical stages might interfere with development of grain. In one Iowa study, 2,4-D was sprayed on corn plants at various stages. Applying 2,4-D when tassels were beginning to emerge resulted in inhibition of ear shoots. And application of 2,4-D 1 to 4 days before silk emergence caused severe inhibition of seed set on the developing ear.

Each year, 2,4-D causes some brittleness and breakage of corn, some onion-leafing, and some malformation of brace roots. But we have had very few reports from farmers' fields of 2,4-D affecting ear and grain development. Perhaps this is partly because of precautions to avoid spraying during the critical period, more resistant hybrids, and minimals amounts of 2,4-D applied directly to the corn leaves.

But it still seems safest to avoid spraying during the critical stages, especially during early development of the ear shoots (this is about the time tassels begin to emerge) and just before silks emerge.

Silks are usually pollinated very soon after they emerge. After fertilization and when the silks are drying, there is apparently less risk of injury from 2,4-D. However, fertilization is followed by a period of rapid nutrient uptake and movement of food materials to the grain. Stress conditions or injury of various kinds during this stage may interfere with normal kernel development.

Although weeds will usually be large, "tough," and harder to kill with 2,4-D, spraying can be resumed after the grain is well on its way and in the dough stage. The dough stage begins about 3-1/2 weeks after silks begin to emerge. During the dough stage, the silks are dry, kernels are still developing, and starch is accumulating.

But remember that by the time corn reaches the dough stage, many weeds already will have done most of their damage through competition for nutrients and moisture. Many weed seeds will also be developed sufficiently to be viable. However, the late spraying may make harvesting a little easier.

2,4-D AND CORN INJURY

Quite a bit of corn was injured by 2,4-D this year. Some that was sprayed before the winds of June 16-17, was lodging because it lacked brace roots and because of stalk brittleness. 2,4-D injury occurs every year, but it appears to be more common during seasons of highly variable weather where we have cold-wet spells followed by very warm weather. Some corn hybrids are more susceptible than others.

Some of the precautions with 2,4-D are:

1. Be sure and use the proper rate. The rate varies with formulation and type. the standard formulation now is 4 pounds per gallon, but there are still some 2-pound-per-gallon and other formulations. It requires less of the ester type of 2,4-D than of the amino form.

2. Use drop nozzles if corn is more than 8 to 12 inches tall. If drop nozzles are directed into the row, use proportionately less material. Directed application is not the broadcast rate on the corn.

3. Check nozzles for proper gallonage, and calibrate the sprayer. You may have the right proportions in the sprayer, but if you put too much volume (gallonage), you will have too high a rate.

4. Do not spray corn after tasselling, the work is No-No from tassel to soft dough.

FENCE-ROW WEED CONTROL

Now is the time to push weed control in fencerows. Dalapon (Dowpon) can be used to control grasses and prevent seed production. You can add 2,4-D to control the broad-leaved weeds.

WEEDS IN SMALL GRAIN STUBBLE

With the small grain harvested, weeds such as foxtail and ragweed now have a chance for more-vigorous growth. If you don't plan to work the fields for a while, consider clipping or spraying to reduce the production of weed seeds. If you don't have a grass or legume seeding, consider spraying. A low-cost application of 2,4-D can check most broad-leaved weeds. A few pounds of dalapon (Dowpon) per acre--alone or added to 2,4-D--can reduce the seed production of grasses considerably. The smaller the grass, the less dalapon you'll need. If weeds have made much growth, it may pay to clip or chop the stubble before spraying.

If you have Johnsongrass in wheat stubble and plan to plant corn or soybeans in the field next spring, consider a dalapon application now for control. Clipping or chopping the Johnsongrass a time or two before spraying will help deplete the food reserves in roots and rhizomes; this generally improves control.

When the Johnsongrass is about a foot high and is actively growing during warm moist weather, spray with 8 pounds of dalapon in 30 to 40 gallons of water per acre. Wait at least a week or two before working the soil, in order to give the Dowpon plenty of time to translocate and act on the roots and rhizomes. Unless the Johnsongrass is making good, active growth when sprayed, results may be disappointing.

By spraying Johnsongrass this summer, you can control much of the old Johnsongrass without delaying planting next spring. But you should plan to follow up next spring with a preemergence application of Eptam for corn or Treflan for soybeans, to control Johnsongrass that may come from seed. See Illinois Circular 827 for more details on Johnsongrass control.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery and E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 17, July 24, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruits and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

Corn leaf aphid populations in general did not increase as much as expected during the past week, although they are causing problems in occasional fields. Furthermore, populations in some fields apparently began to decrease, and dead aphids can be found in unemerged tassels.

Infestations are generally low or non-existent in fields already in full tassel, present in very small numbers in fields in early tassel, and noticeably present in some fields in the pretassel or late-whorl stage of growth. However, only about 1 of every 10 or 20 of these fields has enough aphids to pose a potential problem.

Examine fields not yet in tassel carefully every 5 days until after tassel emergence. Tear open the whorls of 5 to 10 plants in each of 4 or 5 places in the field. If 50 percent or more of the plants are moderately infested with aphids, apply 1 pound of malathion or diazinon, or 1 4 pound of methyl parathion per acre as a spray. Apply just after the tassels begin to show. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied only by experienced applicators.

Thrips are numerous in corn whorls. Do not confuse them with the green aphids that move about very slowly. Thrips are trim insects that move very rapidly and are black, yellow, or orange. No control is needed.

Grasshoppers can now be found in cornfields. If they are abundant and devouring leaves, ears may be smaller than normal. If they feed on silks, they can affect pollination if it is not complete.

To control, apply carbaryl (Sevin), diazinon, malathion, or toxaphene. Other insecticides may do the job. Do not apply toxaphene to corn to be used for ensilage or fodder.

Picnic beetles, the black beetles with the 4 orange or yellow spots, are abundant in some cornfields. Usually they feed in decaying organic matter or possibly pollen. When they go to the silks, they do not affect pollination to any degree, but they may on

occasion in field corn get down to the tip of the ear where they can puncture a few kernels of corn. Most importantly this silk and kernel-tip feeding can open up the ear for decay later. They are more common in loose-husk hybrids. We do not usually recommend control. After the beetles are down in the silks, they are difficult to reach with chemicals.

Northern and western corn rootworm development is slightly ahead of 1969. Adults are emerging in abundance in northern and central Illinois and will continue to emerge from the soil for another 3 to 4 weeks. Pupation of larvae is progressing rapidly in many fields. Pollination damage by adults may occur in late-maturing corn since they tend to migrate to these fields to feed on fresh pollen and silks.

Check the silks for the presence of tan or green northern corn rootworms and the yellow- and black-striped western corn rootworm adults. Treatment is justified if there is an average of 5 or more beetles per silk and less than 50 percent of the plant have silked. Sprays of carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemical per acre or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be used by experienced applicators only. Allow 5 days between treatment and harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Carbaryl has no waiting period.

Rootworm infestations in the demonstration plots conducted by extension advisers in Boone, Mercer, Knox, Ogle, and Woodford counties this year were generally higher than in past years. Larval counts averaged 20 to 40 worms per plant in some of the untreated plots and extensive lodging was evident. If moisture is plentiful, the damaged plants will partially recover, but without moisture damage may be severe. Goosenecking and lodging of plants as a result of larval feeding are quite evident in some fields.

Make a note of the fields with lodging and adult rootworms, since these fields may have a recurring problem in 1971. Also, notify your county extension adviser if you have had failures with one of the organic phosphate or carbamate insecticides used for resistant corn rootworms.

Second-generation European corn borer moth emergence is nearing completion in the southern section of Illinois, and egg-laying by moths is beginning in some fields in the late-whorl to early-silk stage. Peak egg-laying can be expected about July 25 in that area. Check these fields for egg masses and whorl feeding since the second-generation moths prefer these fields to deposit their eggs in. For corn in the whorl stage, if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasselled, look for egg masses. If the average is 1 or more egg masses per plant, apply an insecticide after a few eggs have hatched. Aerial sprays on tasselled corn are effective, but on whorl-stage corn, aerial applications should be granules, not sprays. Use 1-1/2 pounds of carbaryl (Sevin), or 1 pound of diazinon. or 1/2 pound of parathion per acre. Allow 10 days between application and silage removal for diazinon and 12 days for parathion. Parathion should be applied only by experienced applicators. No waiting period is required for carbaryl.

In central sections, borers are pupating rapidly, and moth emergence is about one-third completed. An occasional moth has emerged in the northern section and pupation is underway.

Woolly bears and cattail caterpillars (brown, orange-striped, and bristly) are present in cornfields. The woolly bears like to feed on silks, the cattail caterpillar on leaves. Insecticide control is seldom needed.

Black cutworm damage is still occurring in a few late-planted cornfields. Insecticide control may be warranted in these fields to prevent further stand reduction, since replanting is no longer feasible.

LIVESTOCK

Face flies have continued to increase and dairy and beef cattle in some areas are suffering from these high infestations. Eye problems are apparent in cattle where large numbers are found. Counts last week averaged 20 face flies or more per animal, the highest observed since 1962. Cattle plagued by face flies usually develop eye problems such as pink eye, which is transmitted by this pest. For control on dairy cattle, apply a 2-percent, ciodrin oil-base spray at 1 to 2 ounces per animal as often as once a day, if needed. A 1-percent, ciodrin water-base spray--applied at 1 pint per animal per week--may be used in place of the oil-base spray. Dust bag treatments with insecticides like ciodrin or coral do not give effective control of face flies.

For pastured beef cattle, the ciodrin water-base spray (as suggested for dairy cattle) should be considered. Otherwise, use a head- or back-oiler, wrapped with canvas or burlap and saturated with a 5-percent solution of toxaphene in oil. This will afford partial relief from face flies. Keep the oiler in good repair and well saturated. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER INSECT PROBLEMS

Sod webworm moths are beginning to appear in increasing numbers, particularly in southern and central sections. These buff-colored moths rest in shrubbery and tall grass during the day and are seen flying in a zigzag pattern over the lawn near dusk. These are the second-generation moths that are laying their eggs at this time. If you find large numbers of these moths in your yard, plan to treat your lawn with an insecticide about 2 weeks later. Usually target dates for treatment are late July in southern sections, early to mid-August in the central section, and mid- to late August in the northern sections.

The larvae of the webworm are gray worms with brown spots and black heads. They are about an inch long when full grown and live for 3 to 4 weeks in the worm stage. The worms live in silken-lined burrows in the thatch of the lawn, clipping off grass blades at the base. Brown spots appear in the lawn and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late for control.

For control of webworms, apply a spray or granules of 2 pounds of actual carbaryl (Sevin), 1 pound of actual diazinon, or 1-1/4 pounds of actual trichlorfon (Dylox) per 10,000 square feet. Use about 25 gallons of water to distribute the insecticide over the 10,000 square feet when spraying. Do not water the lawn for at least 3 days after treatment. If heavy rains occur within 3 days of application, a repeat treatment may be needed.

WEEDS

TOMATOES, GRAPES, AND 2,4-D

Tomatoes have started ripening. And we have already seen the first samples of tomatoes and grapes injured by 2,4-D. Tomatoes and grapes are two of the most sensitive plants as far as foliar (leaf) symptoms. The leaves wrinkle and elongate into grotesque shapes.

Can you still eat the tomatoes or grapes if they have been injured by 2,4-D? The answer is "yes," if the fruits are still normal, even though the leaves are injured. A tiny amount of 2,4-D is enough to cause foliar damage, but larger amounts are required to injure the fruit. The amount necessary to injure a human consumer is much greater.

But be a good neighbor, don't spray 2,4-D esters--especially high-volatile ester--near a man's vineyard or home garden.

MARIHUANA

Marihuana is now classified as a noxious weed in Illinois. It is against the law for landowners to have it growing on their property. If landowners take this obligation seriously, we will have fewer pickers going to pot in Illinois.

Our slogan is "Swat Pot." Early control is most effective, but better late than never. Some plants are already producing seed. Pulling, mowing, or tillage is still an effective way to prevent further seed production.

Based on earlier research this year, 2,4-D ester, 2,4,5-T, silvex, Banvel, and amitrole-T were effective and probably would still be helpful if applied soon. Although 2,4-D can be effective if applied early, 2,4,5-T is a better choice now on the tougher plants.

Do not use 2,4,5-T around homes or on lakes, ponds, and ditch banks. Silvex does not have these restrictions and may be slightly more effective than 2,4,5-T on marihuana. Banvel has been effective, but be careful to avoid injury to nearby susceptible plants.

If you use 2,4-D, 2,4,5-T, silvex, or Banvel use about 1 pound per acre. Amitrole-T looked good earlier at a rate of 2 to 4 pounds (1 to 2 gallon) per acre. Tordon gives good control of marihuana, but risk of injury from drift or soil residue to soybeans or other susceptible plants discourages its use in many areas.

SOYBEANS

A lot of soybean fields look quite clean this year. The delayed planting, use of herbicides, rotary-hoeing, and good cultivation have all contributed.

Now is a good time to chop that volunteer corn out of soybeans. Relatively few fields have a serious problem.

As the beans stop growing, some of the taller-growing weeds (like velvet-leaf) will become more evident. Pulling these to prevent seed production will be well worthwhile in many fields. Pulling may not sound very "glamorous," but is still practical and economical in many fields. (And it will give the kids something to tell their grandchildren.)

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery and E.L. Knake, Department of Agronomy.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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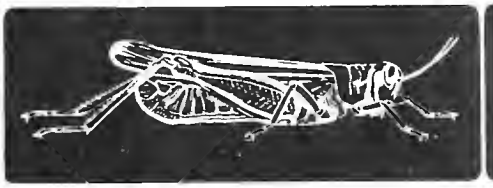

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 19, August 7, 1970

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

Fall armyworms are damaging late-maturing corn, particularly in the southern sections. These dark-brown-to-gray to dull-green, smooth-skinned worms feed in the whorl, giving plants a ragged appearance as the leaves emerge. A series of plants in a row will show damage, and these patches of infested plants will usually be over the entire field. The worms this week were one-third to one-half grown with another 7 to 10 days of feeding time left before they mature. Additional generations could still present further problems in late-maturing fields. After corn has pollinated, fall armyworms will attack the developing ears (like earworms), and some larvae will be present in ears until frost.

Treatment is justified in fields in which 20 percent or more of the plants are infested. Before applying insecticides be sure the worms are still present and that most of them are not more than 1-1/4 inches long. When they reach about 1-1/2 inches, they are mature; at that size they stop feeding, drop to the ground, enter the soil, and pupate.

For control, apply either carbaryl (Sevin) or toxaphene at 1-1/2 pounds of chemical per acre. Granules are preferred, especially if air applications are made. Ground applications with the spray directed into the whorl will provide fair to good results, depending on the size of the worms. The larger worms that are deep in the whorl are more difficult to reach with an insecticide, and control is poor. Smaller worms, many of which are on exposed leaves, are readily killed.

Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to beef cattle to within 28 days of slaughter. There are no restrictions for carbaryl.

Second-generation flea beetles are numerous in corn, particularly in southern Illinois. These shiny-black beetles (slightly larger than a pinhead) that jump when disturbed leave white scratch marks on the leaves. Some extremely late fields of corn (8 to 12 inches high) are being damaged by these insects. The beetles can also be found feeding in more mature corn, but the damage is not serious and no control is needed. Carbaryl

(Sevin) at 3/4 pound or toxaphene at 1-1/2 pounds of actual chemical per acre sprayed over the row will control them. Do not feed corn treated with toxaphene as ensilage or stover to livestock.

Corn leaf aphids are heavy in some fields in east-southeast Illinois and in occasional fields in other areas. Fields in pretassel have the most aphids. In general, corn leaf aphid populations are light, and in many fields the population has decreased as tassels emerged. A widespread outbreak of these aphids is not expected this year. However, there will continue to be occasional fields where aphids build up to damaging numbers.

In pretassel fields, if 50 percent or more of the plants have moderate numbers of aphids, treatment is justified. Apply the treatment just after tassels begin to show. In more mature fields, if 15 to 20 percent or more of the plants are heavily loaded with aphids (top third blackened) and the corn is under stress, treatment is also profitable.

For control, apply 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre as a spray. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied by experienced applicators.

European corn borer moths are laying eggs on late-maturing corn. Egg-laying will continue in southern Illinois for another week or two; in central Illinois for another 2 to 3 weeks and in northern Illinois for another 3 to 4 weeks. In southern and south-central sections, a third generation in late August and early September is likely. The moths will tend to concentrate their egg-laying in fields in the late-whorl to early-silk stage.

If corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasselled, look for egg masses. If the average is 1 or more egg masses per plant, apply an insecticide. Aerial sprays on tasselled corn are effective, but on whorl-stage corn, aerial applications should be granules--not sprays. Use 1-1/2 pounds of carbaryl (Sevin), 1 pound of diazinon, or 1/2 pound of parathion per acre. (Allow 10 days for diazinon and 12 days for parathion between application and silage removal.) Parathion should be applied only by experienced applicators. No waiting period is required for carbaryl.

Grasshoppers continue heavy in some areas, and migrations into corn and soybeans are occurring. For control, use either 3/4 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre. Do not apply toxaphene to corn or soybeans to be used as forage for livestock. Do not apply toxaphene near fish-bearing waters or carbaryl near bee yards.

STORED GRAIN INSECTS

Heavy infestations of Indian meal moth were observed in untreated wheat this week in southern Illinois. No meal moths were as yet present in wheat treated with malathion as a dust or spray. The Indian meal moth larva, which is yellow and about 3/8 inch long, webs several kernels of wheat together. These clumps of webbed kernels can be found on the surface of the grain or clinging to the side walls of the bin. The larva transforms to a brown, torpedo-shaped pupa (1/4 inch) from which the small copper-colored moth emerges. Small moths flying over the surfaces are also a sign of infestation.

For control, use a grade of malathion labeled for use on stored grains. If a dust is used, apply 15 pounds of the 1.0-percent dust per 500 square feet of surface. If a spray is used, mix 3 ounces of the malathion liquid concentrate in a gallon of water and apply 1 gallon of this mixture per 500 square feet. In addition, spray the walls and ceiling of the bin above the grain. A fumigant-type insecticide will kill the meal moths both on and in the wheat, but a fumigant does not prevent reinfestation.

HOMEOWNER INSECT PROBLEMS

Here is some good advice, slightly adapted, from the Purdue University Insect Newsletter. Large numbers of insects can be seen on warm evenings, swarming around lights. These insects find their way into homes and buildings, making a general nuisance of themselves. Insecticides are of little help, since within a few minutes after applying a quick-knockdown space spray, there are more insects back at the light. You can help lessen the problem by the type of lighting you use. Avoid strong, direct, white lighting. Indirect or more subdued lighting is preferable. Indoor lights that shine directly out of an opening should also be avoided. Colored walls that do not reflect light are preferable to glossy white. Where possible, use yellow bulbs. Also a bright light set in a tree, on a pole, or corner of a building some distance from doors and windows will attract most of the insects and help lessen the number that enter the building.

Leafhoppers attracted to lights have been particularly annoying recently. These are wedge-shaped green insects found by the hundreds at lights.

Second-generation sod webworm moths have been emerging and laying eggs in lawns. This egg-laying will continue for several more weeks. Apply ample fertilizer and water to the lawn to help lessen the possibility of serious damage by these insects. Once started, this program must be continued to avoid serious damage. If needed, an application of carbaryl (Sevin) or diazinon as a spray or granules will effectively control the worms for a week or two. A good time to apply the treatment is about two weeks after a heavy moth flight. An additional treatment may be needed if egg-laying continues heavy into late August.

Millipedes are moving into homes from shrubbery beds, lawns, storm sewers, and nearby wasteland with a heavy trash cover. These migrations are somewhat earlier than normal (August and September) this year. It is usually the cool weather that causes them to seek shelter in homes. These brown or gray, hard-shelled, slow-moving, wormlike animals have two legs per body segment. They are sometimes called "thousand-leggers," and will curl up in a tight coil when disturbed. Although harmless, they make a general nuisance of themselves in the home, clustering in basements and garages.

In cases of heavy migrations, spray lawns and shrubbery beds with carbaryl (Sevin), diazinon, or trichlorfon (Dylox). This provides a barrier zone in which the millipedes are killed, and prevents them from gaining access to the house. If migrations persist, repeat the treatment in a week or two. For minor problems, spray shrubbery beds and a 3- to 4-foot wide area around the foundation of the house for control. The general lawn treatment will also control sod webworms and leafhoppers, but it is ineffective against grubs.

PLANT DISEASES

LEAF BLIGHTS THREATEN CORN CROP

Three corn leaf blights--northern, southern, and yellow leaf blight--now threaten the Illinois corn crop. All three blights are caused by fungi that infect the leaves when

free moisture is present as rain, irrigation water, or dew. Where leaf blights are severe, corn ears may be immature and chaffy, feed value of fodder is lowered, and plants are predisposed to stalk rot.

If leaf blights appear before or soon after tasseling, the yield, grain quality, and feed value will be reduced. It will be at least three weeks before losses can be evaluated. If the weather turns hot and dry, the spread of blights will be checked. All three blights usually attack the older leaves first before moving to the upper leaves. Heavily infected leaves turn brown and die.

Northern leaf blight is recognized by long, elliptical, grayish-green to tan spots on the leaves, up to 1-1/2 inches wide and 6 inches long. Ears are not infected, although lesions may form on the husks. Northern leaf blight can now be found throughout Illinois, but the buildup to date has been light.

Yellow leaf blight is a new disease, occurring primarily in the northern part of the Corn Belt. It can now be found in Illinois in scattered locations as far south as the St. Louis area. It is favored by cool, wet weather and should not be a factor until later this fall. Yellow leaf blight lesions are oval to elliptical in shape and tan to cream in color, averaging about 1/2 inch long and 1/8 inch wide. Sometimes a distinct yellow margin surrounds each spot. Yellow leaf blight lesions are very similar to those of southern leaf blight (see below). The two diseases can be distinguished by putting pieces of infected leaves overnight in a tight plastic bag with a moist paper towel. If yellow leaf blight is present, small black specks (pycnidia) of the causal fungus appear scattered in the dead spots.

Yellow leaf blight is closely associated with hybrids having Texas male-sterility (Tms), a character commonly used by the seed trade as a means of avoiding mechanical detasseling. Tms brings susceptibility into inbreds and hybrids even though the standard versions are more or less resistant.

Southern leaf blight is an old disease that until 1969 was considered minor. A new race of the causal fungus has developed to which inbreds and hybrids having Tms are very susceptible. It is potentially the most serious disease of Illinois corn this year. Lesions on the leaves range up to 1/2 inch wide and 1-1/2 inches long, being oblong, parallel-sided, and grayish-tan to tan in color, surrounded by a yellow zone. Many lesions have dark brown to purplish margins.

The new race of southern leaf blight is causing lesions up to 6 inches long on the stalks and ear husks, especially in seed production fields. Lesions penetrate the husks and are now causing a powdery, charcoal-like rot of the ears in seed-producing fields. Infection is widespread but less destructive in commercial dent corn hybrid fields. Southern leaf blight is extremely destructive to corn throughout the southeastern states and can now be found in Illinois as far north as Chicago. It is most widespread and damaging at present in southern and central Illinois.

All three leaf blights are best controlled by growing resistant hybrids. Many inbreds and hybrids are available that resist northern corn leaf blight. Illinois scientists have found other types of male-sterile cytoplasm resistant to the fungi causing southern leaf blight and yellow leaf blight.

Seed treatment and crop rotation are not effective control measures because the spores of the northern and southern corn leaf blighting fungi can be carried a number of miles by wind currents.

Some major seed corn companies are now spraying their seed production fields by airplane on a regular 7- to 10-day schedule, using 2 pounds per acre of a maneb or maneb plus zinc ion fungicide. Spraying is not recommended, however, for commercial hybrid fields because of the cost.

Corn planted in rotation and continuous corn on clean-plowed ground have been infected less by leaf blights. Good soil preparation, proper fertility, and drainage should be practiced, for stress factors are known to increase severity of yellow leaf blight. Yellow leaf blight may be controlled by the same fungicides used to check northern and southern leaf blights, though control is generally not practiced except by seed producers.

Capsule summary: Leaf blights can now be found in practically all corn fields in Illinois. How severe these blights become will be determined largely by weather conditions during the next several weeks.

SPECIAL NOTE TO COUNTY EXTENSION ADVISERS

We now have a supply of self-addressed franked mailing tubes for use in sending us insect specimens. If you are in need of a supply of these mailing tubes, please let us know.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

PLANT DISEASES: E.E. Burns and M.C. Shurtleff, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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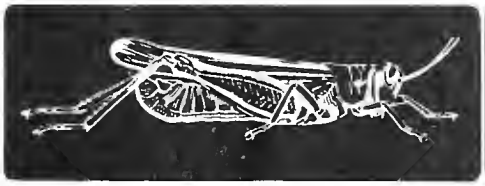

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 20, August 14, 1970

This is the last in this series of weekly bulletins. We have tried to provide a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

GENERAL

Grasshoppers are feeding on a variety of crops such as tomatoes, corn, soybeans, hay crops, and many flowers. In fact they will eat most anything that is green if they are hungry. They have been and still are migrating from fence rows, ditch banks, and other areas. As hay is cut, they migrate from hay fields. Malathion or carbaryl (Sevin) are two commonly used garden and flower insecticides that will control them. These along with naled (Dibrom) and toxaphene can be used on soybeans. These four insecticides and diazinon can be used on corn. Check the label for length of time required between application and harvest. Do not use toxaphene on forage to be fed to dairy cattle or livestock fattening for slaughter.

CORN

Fall armyworms continue to damage late-maturing corn. These gray to dull-green to dark-brown smooth-skinned worms feed deep in the whorl. Damaged leaves have a ragged appearance. In some fields, fall armyworms are entering ears. Many of the worms are now mature (1-1/2 inches) or soon will be. At maturity they stop feeding, drop to the ground, and pupate in the soil.

Control is difficult, especially with the larger worms that are deep in the whorl or ear. For best results on whorl-stage corn, use granules of either carbaryl (Sevin) or toxaphene at 1-1/2 pounds per acre. Sprays on whorl-stage corn provide erratic results. If a spray is used, place the nozzles over the row and direct the spray into the whorl. On tasselled corn, sprays should be directed at the ear zone and upper one-third of the plant.

Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to beef cattle to within 28 days of slaughter. There are no restrictions for carbaryl.

Rootworm beetles are abundant in some fields. If the corn is less than 50 percent silked, an insecticide will help prevent pollination injury. Use carbaryl (Sevin), diazinon, or malathion. Carbaryl is harmful to bees and although effective on beetles, should not be used if bees are frequenting the tassels for pollen. In this case, use diazinon or malathion late in the day.

Most importantly, from now on watch for beetles in silks, ear tips, and plants. If you find an average of 2 or 3 per plant, you may have a rootworm problem if you grow corn in that field in 1971. So check your fields for beetles now to determine what you may have next year.

European corn borers are still with us. As usual, some of the later fields will be hit hard. It is now difficult to select fields without making counts.

If corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. If the corn has tasselled, look for egg masses. If the average is 1 or more egg masses per plant, apply an insecticide after a few eggs have hatched. Aerial sprays on tasselled corn are effective, but on whorl-stage corn, aerial applications should be granules, not sprays. Use 1-1/2 pounds of carbaryl (Sevin), or 1 pound of diazinon, or 1/2 pound of parathion per acre. Allow 10 days between application and silage removal for diazinon and 12 days for parathion. Parathion should be applied only be experienced applicators. No waiting period is required for carbaryl.

SOYBEANS

Several insects are chewing on soybean leaves. If they defoliate the plants after pods are well formed and almost filled, damage is slight. However, if they are actually chewing on the pods, yield loss may be in proportion to pod damage. For plants in the stage of development from blossom to early pod fill, loss of 40 percent of the leaf surface can be important. If insects are defoliating plants during this period of growth, control may be in order. Control is indicated when 25 percent or more of the leaf surface has been eaten.

Grasshoppers can be placed in this category. If possible, spray to control them as they migrate into the field. Margin or border spraying is all that may be needed.

Green cloverworms may be a problem. Spray if beans are between blossom and pod fill, if 25 percent of the leaf surface has been eaten and there are 6 or more worms per linear foot of row. To count worms, jar plants over the middle of the row and count the worms on the ground. Also watch for dead or dying worms. They become sick with a fungus disease during periods of high temperatures and humidity. They will be noticed as white, dusty, mummified worms. This indicates that the population is decreasing.

ALFALFA

Webworms can ruin stands of fall-seed alfalfa. Webbing will be apparent and many young plants will be killed as the worms consume the leaves. Sprays of methoxychlor, malathion, carbaryl (Sevin), or several others readily kill these worms if the spray penetrates the webbing. As long as the alfalfa is not used for hay the year of spraying, residues will not be a problem.

HOMEOWNER PROBLEMS

Crickets may soon invade homes. Although there appears to be plenty of cricket food in the fields, some of them usually migrate. In so doing, they are attracted to lights. A foundation spray of chlordane will help reduce the number that enter the

home. You may also want to mist spray around doorways and windows. Spray the foundation of the house to the point of run-off with 1 percent chlordane spray made by mixing chlordane emulsion concentrate with the proper amount of water. Avoid spraying near dug wells.

This will control ants, spiders, Oriental cockroaches, and other pests that migrate into the house from outdoors.

Spiders are controlled by these foundation sprays. As they migrate into the house in the fall of the year, they usually cross the foundation. Numbers of spiders entering the home will be greatly reduced if the foundation has been sprayed with chlordane. We are still trying to determine where the brown recluse spider can be found in Illinois. Send spiders to Dr. J.D. Unzicker, Room 93, Natural Resources Building, Urbana, Illinois 61801, for identification.

Clover mites will be seeking winter quarters soon. This may be the side of your house as well as behind bark on trees. For permanent control, remove grass for an 18-inch strip around the house. You can plant flowers in this 18-inch strip next spring. You can also spray the foundation and out into the yard as soon as you see a few of these mites. Use chlorobenzilate or dicofol (Kelthane). Follow the directions on the lable.

Flies are more of a nuisance in homes than they have been all summer. Cool nights cause them to move in for warmth. The problem will continue for several weeks yet. You can help lessen this problem by following these suggestions:

1. In attached garages apply 0.1 percent or stronger pyrethrin or 0.5 percent dichlorvos (DDVP) from a pressurized spray can around and in trash barrels and around windows where flies tend to gather.

2. Keep screens on doors and windows in good repair.

3. Hang a plastic resin strip containing 20-percent dichlorvos (DDVP or Vapona), 1 strip per 1,000 cubic feet of space, or about 1 per room. These strips will kill most flies and mosquitoes for 4 to 6 weeks. Do not use these strips in kitchens or other areas where food is handled. Do not use them in any room where infants, ill persons, or aged persons are confined. A 0.1 percent or stronger pyrethrin space spray, applied from a pressurized spray can, can be used in place of the dichlorvos resin strips. Repeat treatments will be needed with the space spray.

4. If you have had a history of problems with cluster or attic flies in winter time, watch for swarms of flies under eaves and on the siding on the south and west side of your home in September. If large numbers of flies appear, spray the south and west sides of the house where the flies are active with dimethoate (De-Fend and Cygon). Mix 1 pint of the 25-percent liquid concentrate in 3 gallons of water. The spray will leave a white deposit, and on dark-colored surfaces this may be objectionable for awhile. Close all windows when applying the spray.

Walnut caterpillars are large black worms with gray hairs, that feed on the leaves of walnut, hickory, butternut, oak, honey locust, willow, and some fruit trees. Colonies of caterpillars feed downward on a branch and may completely defoliate it. They string webs down the trunk, shed their skins, and crawl back up the tree to feed some more.

Clumps of shed skins the size of a man's fist are left at the base of the tree. The caterpillars are about 2 inches long when full grown. At this time, they leave the tree, dig into the soil, and pupate.

A carbaryl (Sevin) spray, using 2 tablespoons of the 50-percent wettable powder per gallon of water, is effective if needed.

Slugs in gardens will eat holes in leaves or crowns of plants, leaving a slimy residue. They feed at night and are particularly abundant where the foliage is dense and close to the ground. A slug can be described as a snail without a shell.

For control, keep the garden or shrubbery bed free of old garden debris, such as leaves, stalks, poles, and boards. Slug baits recently shown to be most attractive are stale beer and fermenting grape juice. Stale beer seems to work best. Place a shallow pan or large jar top in areas where slugs are numerous. Imbed the container into the soil so that the upper edge is nearly level with the soil surface. Fill the container to a depth of 1/2 to 1 inch with beer. Any brand will do. The slugs are attracted to the fermenting beer, drop in, and drown (happily).

Oystershell scale egg hatch is complete in the central and southern sections. The young crawlers set up housekeeping on lilac, dogwood, birch, and other shrubs and trees. They suck the juices from the plant, and if abundant they can seriously retard growth and even kill the plant. This is the second generation of this scale and the build-up is often heavy. If you have had a history of problems in your yard, spray the shrubs thoroughly with malathion, using 2 teaspoons of the 50- to 57-percent liquid concentrate per gallon of water. Target dates for spraying are right now in the southern sections, August 10 in the central section, and August 20 in the northern section.

Diazinon and dimethoate may also be used. Follow the directions on the label.

WEEDS

2,4,5-T SUSPENDED

Since 2,4,5-T registration for use around homes, lakes, ponds, and ditch banks has been suspended, what alternatives are available--especially for control of brush on ditch banks?

Silvex is a phenoxy herbicide that will control many of the same plant species as 2,4,5-T. In fact, it is more effective for control of some species. Cost is usually only slightly higher than for 2,4,5-T. Silvex is still approved for many of the same uses as 2,4,5-T was previously used for.

STORING SPRAYS

1. Drain all spray material from tank, pump, boom, hoses.

2. Remove end plugs from boom (if present) so any accumulation there can be flushed out.

3. Fill spray tank with clear water, run pump, and flush water through the boom.

4. Again fill tank with water to which 1 ounce per gallon of either household ammonia or tri-sodium phosphate has been added, and run the pump to discharge

this through the boom. This will help to neutralize any herbicide residue still in the equipment.

5. Disassemble nozzles, clean screens, and store screens and nozzle parts dry or immersed in a jar of fuel oil.

6. Drain pump thoroughly and then coat the inside with a rust-proofing material such as soluble oil or regular auto radiator rust inhibitor. This will prevent a stuck pump. Be sure pump is dry so it will not be damaged by freezing.

7. If tank is susceptible to rust, also rinse or spray-coat the interior with soluble oil in water or other rust inhibitor. Do this whenever sprayer will be idle for a few days.

8. Support boom so it won't be damaged by other machinery. Avoid leaving aluminum boom material in contact with soil or manure accumulations.

9. Remove hoses, wipe clean of oil, and store them inside, coiled neatly in a 5-gallon pail or straightened out on a shelf. Avoid sharp kinks or hanging over a nail.--*From R.E. Doersch and O.I. Berge, University of Wisconsin.*

PLANT DISEASES

SPRAYING FOR SOUTHERN CORN LEAF BLIGHT

Should corn be sprayed to protect it against southern corn leaf blight? That is the question that farmers are now asking scientists at the University of Illinois. Perhaps the following will help you decide:

1. The suggested fungicide only gives protection. It does not eradicate infection present now on the leaves, ears, and stalks. Thorough coverage of all parts of the plants is essential.

2. No fungicide can be applied to corn that will be used as forage for dairy animals or animals being fed for slaughter. This means that only corn being harvested for grain can be sprayed with a fungicide.

3. Spraying will probably be of most value to late-planted corn that is not yet approaching the dent stage.

4. If corn has not dented, if the upper 5 leaves are free of southern leaf blight spots, and if less than 10 to 15 percent of the plants are affected, then 2 or more sprays applied at 7- to 10-day intervals--or until the corn is in the dent stage--may protect the plants against serious infection.

5. The suggested fungicide to use on corn intended for grain, to protect it against southern leaf blight, is 75-percent wettable zineb (sold as Dithane Z-78, Parzate C Zineb Fungicide, Ortho Zineb, Miller Zineb, Niagara Zineb, etc.). The manufacturer's recommendations as regards amount to use per acre (2 to 3 pounds) should be carefully followed. Federal agencies only permit use of zineb.

6. To ensure coverage of the foliage, use 5 gallons or more of water if spraying by airplane and 20 gallons or more if using ground equipment. High-clearance sprayers are probably preferable if available.

7. Use nozzles as small as possible to output. Because the fungicide is a wettable powder, the nozzles will tend to clog if their output is less than 0.3 gallon per minute at 40 p.s.i. Either hollow-cone or flat-fan nozzles may be used, but hollow cones are preferred on ground rigs.

8. On aircraft, point the nozzle outlets forward to promote maximum break up of the droplets.

9. On ground sprayers, use nozzles above the rows and drops between the rows to spray into the canopy.

10. The higher the spraying pressure, the better coverage and control you can obtain. Aircraft spraying pressures should be 30 p.s.i. or above. Ground spraying should be at 80 p.s.i. or above. Little will be gained by spraying above 100 p.s.i. with either ground or aircraft.

11. A pint of surfactant per 100 gallons of spray will reduce surface tension and improve coverage and hence disease control.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, Universtty of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: M.D. McGlamery, and E.L. Knake, Department of Agronomy.

PLANT DISEASES: E.E. Burns and M.C. Shurtleff, Department of Plant Pathology.

AG COMMUNICATIONS: Del Dahl.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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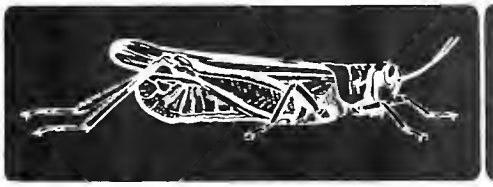

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 21, December 7, 1970

SPECIAL ISSUE

INSECT RECOMMENDATIONS FOR FIELD CROPS

We receive many inquiries about changes in suggested uses for insecticides before our recommendations are published in January. We are sending you these *Tentative Suggestions and Major Changes for 1971* to help answer such questions. Caution statements, time limitations between application and harvest, and other precautions are not included.

These tentative suggestions will appear in final form in University of Illinois College of Agriculture Circular 899, which will be sent to the printer by December 10.

This release was delayed this year waiting for the final decision on certain label clearances. Minor changes are anticipated. These suggestions are only tentative.

CHANGES IN THE SUGGESTIONS FROM 1970

Aldrin and heptachlor. We did not recommend the use of aldrin or heptachlor in 1970 as soil insecticides for corn fields urging that all existing supplies be used up. For 1971, we are advising against the use of aldrin or heptachlor as soil insecticides for corn. In arriving at this decision, we considered:

1. *The frequency of damage by those soil-inhabiting pests still controlled by aldrin and heptachlor, and the abundance of such pests in corn fields.* These insecticides no longer give practical control of wireworms, seed-corn beetles, or seed-corn maggots.

2. *The fact that wireworm populations in fields planted to corn in regular rotations are generally low.* The profitable use of either aldrin or heptachlor would be most likely on first-year corn, following established grass or clover sods. The insecticide would be broadcast at 1.5 pounds per acre and disked-in prior to planting. Wireworms and white grubs might be a problem in such a situation, and aldrin or heptachlor would be helpful as control agents.

3. *The previous history of use in Illinois.* This indicates that in the approximately 5 million acres that will be planted to corn, residues of dieldrin-aldrin or heptachlor epoxide-heptachlor now present may exert a depressing effect on the general pest population to the extent that continued applications would not be advisable.

4. *The difficulty encountered in selecting fields that would warrant the use of aldrin or heptachlor.* This creates problems. A few hundred thousand acres of corn could be profitably treated if aldrin or heptachlor were applied broadcast for the control of black cutworms. But these fields cannot be selected until damage has occurred, which is after planting. Therefore, to prevent this damage, it would be

necessary in Illinois at apply one of these insecticides to 3 or 4 million acres. It will be cheaper to apply control measures when cutworms appear.

When all treatments were compared with the untreated plots, the stands were so similar that seed-attacking insects apparently were not present in damaging numbers. The actual insect counts support this.

Corn Rootworms: Fields infested with corn rootworms were more common in 1970 than in 1969. Damage by rootworms would have been much more common if 2.7 million acres had not been treated with rootworm insecticides. The returns for treatment in demonstration fields were about 10 bushels per acre.

From our demonstration plots, we have drawn the following conclusions:

1. If a very severe rootworm infestation is anticipated, one pound of carbofuran (Furadan) per acre will provide the most-consistent results. This has been true for three years.

2. If light to moderately severe infestations are expected, any one of the following insecticides will provide practical control:

	Rate, actual/A.	
Insecticide	Planting time	Cultivation
BUX	1	1
carbofuran	3/4	...
Dasanit	1	1
Dyfonate	1	...
phorate	1	1

If insecticides are going to be used for cultivation-time treatments, use a seed treate at planting time.

Corn Seed Insects: We want to emphasize the importance of using seed treaters containi diazinon to protect against attack by seed-corn beetles and seed-corn maggots. In many fields with a long history of aldrin and/or heptachlor use, this may be sufficient--except for corn rootworm infestations.

Fields Where Rootworms Are Not a Problem: For those who feel that the seed treatment is not sufficient, we suggest instead planting-time treatments as a 7-inch band on the soil surface:

Chemical	No. lb. actual ingredient/A.
diazinon	1.5
Dasanit	1
Dyfonate	1
phorate	1

We do not have data on the performance of carbofuran under conditions of severe infestations, and therefore cannot recommend it for protection against these two seed-attacking insects.

Other Insects: If symphylans are present, Dyfonate has label approval. However, the organophosphates and carbamates, as used for rootworm control, may be depressing the symphylan populations enough for practical purposes.

FIELD-DEMONSTRATION RESULTS

Wireworms were not controlled satisfactorily in sixteen fields where all materials were applied as strip treatments. Even aldrin and heptachlor did not control the large, nearly mature wireworms.

Most materials used provided some control of white grubs. The number of seed-corn beetles and maggots in these fields was too small to provide a basis for conclusions. Direct these materials at the base of the plant in early to mid-June.

Cutworms: For 1971, we are recommending the use of control measures when the first cutworms begin to appear. This will require careful observation.

We recommend the use of (1) carbaryl as a bait on an apple-pomance carrier; (2) with blackstrap molasses; (3) premixed with molasses (Sevimol); or (4) with Tractum, a commercially available attractant. The last three will be sprayed on the base of the plant and soil at the rate of 2 pounds of carbaryl per acre. The bait will be applied so that 1 to 1.5 pounds of carbaryl are used per acre.

Avoid the use of molasses baits adjacent to bee hives or near an area that is often frequented by honey bees.

POSSIBLE PROBLEMS

Certain unwanted effects may occur. Some of these can be prevented with care. The following suggestions may help avoid problems:

1. *Surface erosion or run-off.* Do not apply any of these insecticides to fields with severe slopes that drain directly into ponds or streams.

2. *Seed germination.* Some of these insecticides will not affect the germination of seeds. Nevertheless, for the time being, we suggest that all of these insecticides be applied as a 7-inch band on the surface of the soil ahead of the press wheel at planting. They should not be directed in a stream into the shoe of the planter, as done in the past with aldrin and heptachlor.

3. *Calibration.* Calibrate the granular applicator carefully. Check the number of acres planted against the pounds of granules used. Do this quite often until the exact amount of insecticide is being applied. Excessively high rates are not only costly but may be damaging to the crop.

4. *BUX and carbofuran.* We are still unsure about the effects of BUX and carbofuran on the earthworm populations, but we are not as worried about this as we were last year.

Although these materials are used only as granules, the potential toxicity to the handler and applicator must be considered. Always handle with respect. Do not expose yourself unduly. Follow precautions.

5. *Soil insects.* We no longer have one insecticide that will control all soil insects. Therefore, analyze the specific situation and use the practice that will best fit the needs involved.

6. *Liquid concentrates.* The place of liquid concentrates in liquid starter fertilize is still uncertain. Liquid phorate has been removed from the market. Others may be used, but any one using this method must practice extreme caution in handling. Wear rubber gloves, wash frequently with soap and water (carried on the supply truck), and do not contaminate the skin or clothing with these liquid materials. If you accidentally spill some on yourself, wash immediately with soap and water and then shower and change clothes before proceeding with your work.

EFFICACY OF INSECTICIDES

The preceding suggestions for using insecticides have been made after a review of the available data. These suggestions have proven to be effective from a practical standpoint. However, peculiar situations such as soil texture, the pH of the soil, rainfal the slope of a field, wind velocity at planting, the method and accuracy of applicatio as well as other unpredictable factors may decrease the efficiency of the insecticide. We would appreciate reports of failures in controlling insects and the circumstances associated with such failures.

ALWAYS READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This special report was prepared by: H.B. Petty, Steve Moore III, Roscoe Randell, Do Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

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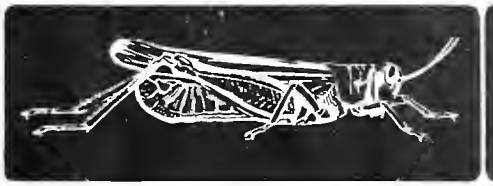


INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 1, April 2, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

GENERAL INFORMATION

Farmers: Be careful when filling sprayers near wells. Many accidents have occurred in the past. Keep the hose from the well out of the spray tank--back-siphoning can occur. Be careful not to spill concentrates alongside the well. Do not drain sprayers by the well. Follow these and other precautions to prevent problems. Handle insecticides with respect. Always wear gloves. Never pour by holding a container above your head. Always pour granules into hoppers so that the wind will blow any dust away from you.

Homeowners: Store pesticides out of the reach of small children. Read and heed the instructions and precautions on the label.

INSECTS

FORAGE INSECTS

Alfalfa weevils. Development is slow and corresponds to slow crop growth. This could mean that alfalfa weevil larvae will be more damaging than last year. Since the larvae will already be feeding when the plants begin to grow, the tiny new shoots may disappear rapidly.

Adults are present and have been laying eggs. Tiny larvae can be found. Their presence will be noticeable in southern Illinois within the next 10 days if air temperatures are moderate. In severely infested southern-Illinois fields, we expect chemical control will be needed in about 10 days to two weeks, so watch fields south of Highway 50.

We are now making egg- and larval-population surveys. There is already a particularly high number of eggs per square foot of alfalfa in some fields in Indiana and Missouri. The counts in Illinois are slightly higher than normal.

Insecticide recommendations are the same as last year. Do not apply insecticides unless 25 percent or more of the tips show feeding.

CORN INSECTS

European corn borer. Survival in the western, southwestern, and southern areas is lower than normal. Winter-kill is apparently 10 to 50 percent greater than last year. While this does not eliminate the corn borer as a potential problem, that potential has been somewhat reduced.

SOIL INSECTS

There has been some confusion about the cancellation of the aldrin label by the Federal Environmental Protection Agency. It is still legal to use and sell aldrin.

A challenge has been issued to the manufacturing company to show evidence that the sale and use of aldrin is still justified, and that continued use will be of greater benefit to the consuming public than the hazard to the environment. For this year, using and selling aldrin is legal. This will continue to be the case until a further ruling is made after the conclusion of adequate hearings. That will not occur until after the 1971 season, perhaps even after the 1972 season.

We do not recommend the use of aldrin or heptachlor in Illinois. In most instances, we feel that this will not be profitable, particularly on fields with a history of use. If you do use aldrin or heptachlor, use them only on corn planted on sod fields. Do not use aldrin or heptachlor on dairy farms or where soybeans are to be grown during the year of treatment. Do not grow soybeans in fields where aldrin or heptachlor have been applied for five or more consecutive years. If you use aldrin or heptachlor on corn and lose the stand too late for replanting to corn, do not plant soybeans in that field.

Our 1969 and 1970 yield records for corn from nineteen demonstration plots (ten with moderate corn rootworm infestations and nine with other insects) show:

Treatment	Corn, bu./A. 1969	1970	Average
Recommended organophosphates	132	109	122
Recommended carbamates	133	110	123
Chlorinated hydrocarbons	124	104	116
Diazinon seed treatment alone[a/]	129	107	120
Nothing	127	103	117

a/ Only in sixteen fields.

HOMEOWNER INSECTS

Odorous house ants. These are now causing concern. While most ant species only live outdoors in colonies, this species lives both indoors and outdoors. Outdoor nests are generally located beneath stones and boards; indoor nests, underneath floors and in walls.

To prevent ants, water bugs, spiders, crickets, and other crawling insects from entering your home, spray the outside foundation wall with a 1-percent emulsion of chlordane and water. Purchase chlordane as a liquid concentrate and mix one-half pint of 45-percent chlordane or 10 tablespoons of 72-percent chlordane in 3 gallons of water. Spray the foundation wall from the ground to the sill, or about a foot, to the point of runoff. In addition, spray 3 to 6 inches of soil adjacent to the wall, as well as the expansion joints along porches and steps. Do not spray shrubbery or flowers. The oil in the spray may burn the tender foliage.

For controlling ants already inside the home, use 0.5-percent diazinon or 0.5-percent Baygon in pressurized spray cans. Spray into all cracks, around baseboards, and other areas where the ants are observed.

Clover mites. They are now leaving their winter hibernation sites. When their hiding places beneath siding and in cracks and crevices are warmed by the sun, these mites move to window sills and walls on the east and south sides of the house. Clover mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, curtains, window sills, and walls. Although harmless, clover mites leave an unsightly stain when mashed.

Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for a quick knockdown. Before fall, remove the grass, clover, and weeds next to the foundation so there is a strip of soil at least 18 inches wide. This bare soil will serve as a barrier to the mites.

WEEDS

NEW HERBICIDE CLEARANCES FOR 1971

Preforan. It has recently received clearance for preemergence use on soybeans. It is available as a 3-pounds-per-gallon emulsifiable concentrate and 15-percent granules. The broadcast rate is 5 to 6 quarts of the emulsifiable concentrate or 25 to 30 pounds of the granules. Preforan should control grasses, pigweed, and smartweed. Control will be somewhat erratic on ragweed and jimsonweed. Little control is expected of cocklebur, morningglory, or velvetleaf.

AAtrex-Princep (atrazine-simazine). This is cleared as a 1-to-1 tank mix. It will control fall panicum and crabgrass better than AAtrex alone. Rates for the mix are one-half the rate of each component when used alone.

Lasso + Chloro-IPC (alachlor + chlorpropham). It has received clearance as a tank mix. The rate is 2 to 3 quarts each per acre. The purpose of this mix is to improve the control of smartweed and a few other broadleaf weeds over the control obtained with Lasso alone.

Treflan. The label now allows the use of a field cultivator for incorporation. The rules of thumb to follow when incorporating with a field cultivator are: (1) sweeps, not points; (2) penetration, 3 to 4 inches; (3) speed, 4 to 5 m.p.h.; (4) repeat at right angles; and (5) use a drag harrow to pull treated soil in behind the back shanks. Other tools such as the double disk or mulch treader may be preferable.

Sutan. Note this supplemental statement: "If it is too late to plant corn again, soybeans may be planted providing no atrazine was used with the Sutan. Do not plant soybeans sooner than 21 days after application of the Sutan."

OTHER INFORMATION

Musk thistle. This is a biennial weed, now on the increase in some areas of Illinois. April is the ideal time for control, while the weed is still in the rosette stage and before the seed stalk forms. Control is usually best when the plant is actively growing and temperatures are above 75° F.

For spot treatment, add 1 quart of 2,4-D ester (4 pounds per gallon) and 1 cup of surfactant or household detergent per 25 gallons of water. Spray until moist. For larger infestations, use 1 to 1.5 quarts of 2,4-D ester in 20 or more gallons of water per acre.

Forage crops. We are receiving several questions about the use of herbicides on alfalfa. Eptam and Balan are cleared for preplant use when alfalfa is to be established without the aid of a companion crop. These herbicides will give primary control only on annual grasses. 2,4-DB, sold under the name of Butyrac or Butoxone, can be used to control small annual broadleaf weeds.

Small grains. Check wheat now to determine the need for chemical weed control. Used early, 2,4-D will control many broadleaf weeds such as wild mustard. If there is a legume underseeding, apply 0.5 quart per acre of 2,4-D amine. Do not use 2,4-D ester with a legume underseeding unless you want to control wild garlic or wild onion. Then, expect to kill some of the legume.

To control wild garlic and wild onion, use 0.5 quart per acre of 2,4-D ester. This will not completely control the wild garlic, but will reduce aerial bulblet formation and lessen the possibility of harvest-time dockage for "garlicky" wheat.

Treat small grains with 2,4-D after they have finished tillering in the spring, but before they reach the boot stage--when the crop is 4 to 12 inches high.

SAFETY REMINDERS

As a pesticide dealer, you are in a unique position to help improve the safety record of pesticides in Illinois. You represent the last contact with the pesticide user. Read the label and its precautions. Pesticides bearing the skull and cross bones are very highly toxic and should be handled with special care.

Pesticide concentrates (materials with a high percentage of active ingredients) are more hazardous than diluted materials. Check for leakers among pesticide containers. Do not toss or drop containers.

Store and display pesticides in areas away from articles for human or animal consumption or use.

Urge your customers to read the label, to observe precautions and use directions, and to store pesticides properly away from food and plants in a cabinet or closet that can be locked. Also, remind your customers of the need for proper use and disposal. Tell them never to use an empty pesticide container for other purposes.

Many of the pesticide ingestions in Illinois each year involve small children who find pesticides improperly stored, often in unlabeled containers.

PLANT DISEASES

SOUTHERN CORN LEAF BLIGHT

Ed Burns has been collecting corn samples in three widely scattered areas in Illinois--Elwood (near Joliet), Champaign-Urbana, and Dixon Springs. This is to check on the overwintering of the southern corn leaf blight fungus. Ed has collected debris from five different tillage methods and from both resistant (N) and susceptible (T) hybrids at monthly intervals. So far, the fungus has been killed in the soil, and is in a weak state in the corn debris above ground. Alternate freezing and thawing plus wetting and drying have practically killed the fungus in all three locations.

Corn samples collected from cribs in ten widely scattered counties in Illinois show that the SCLB fungus is alive and highly virulent in dry corn. This should be our main source of local infection during 1971. So we suggest that farmers shell-out blighted corn in their crib before they plant this year's crop.

Planter-box treatment. The emergence and stand of infected T and B seed corn can be increased by about 10 percent with a planter-box treatment of captan, thiram, or maneb seed protectant. Use 1 to 2 ounces of actual fungicide--2 to 4 ounces of formulated material--per bushel of seed. We suggest mixing the fungicide with the seed in the planter box. Some of the dust will fall around the seed when it drops and will help prevent preemergence damping-off.

DuPont has a thiram seed protectant (arasan 50-Red), formulated for use in the planter box. The Hopkins Agricultural Chemical Company of Madison, Wisconsin, has formulated a thiram-maneb treatment. Both the Arasan and the thiram-maneb treatments contain graphite to help prevent plugging or planter "drag."

TREATING OAT SEED

Since the "hard" mercuries were banned a year ago, many farmers have asked what they should use for treating oats and wheat in 1971. There are several possibilities.

1. You can still apply any leftover ceresan, panogen, ortho L M, or chipcote. The ban means that these products cannot be shipped across state lines anymore and that their manufacture has been largely discontinued.

2. The next best bet would probably be products that contain phenyl mercuric acetate (PMA). This is a liquid (0.078 ounce per bushel), formulated for use in Mist-O-Matic and similar treaters. It is "soft" mercury that does not accumulate in body tissue and has label clearance. Mercuries are the only fungicides that are volatile and will kill-out fungus spores under the seed coat.

3. Other possible seed treatments include captan--2 ounces per 100 pounds, applied dry, or 2.8 ounces per 100 pounds as a slurry--and Chloranil (Spergon), applied dry, using 6 ounces per 100 pounds.

4. There are additional products that have label clearance, but they are either hard to get or difficult to handle. These include formaldehyde--1 pint per 40 gallons of water or 1 pound of dust per 15 gallons of water; hexachlorobenzene (HCB)--0.2 ounce of actual chemical per bushel, applied dry or as a slurry mix; maneb--1 ounce of actual chemical per bushel; raformaldehyde--3 ounces per bushel; and zineb--0.5 ounce per bushel.

Note: We have not had the opportunity to test these products on oats.

READ THE INSECTICIDE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

OR IMMEDIATE RELEASE No. 2, April 9, 1971

his series of weekly bulletins provides a general look at the insect, weed, and plant isease situation (fruit and commercial vegetables excepted), along with suggested, abreviated control measures. Each individual should check his own fields to determine ocal conditions.

INSECTS

ORAGE INSECTS

lfalfa weevil. Their development and that of the crops has been slowed down by the cold eather this past week. Insects usually develop at a slightly faster rate than plants uring these cool periods.

he likelihood of serious damage by alfalfa weevil larvae is greater if temperatures reain on the cool side.

dult weevils are continuing to lay eggs and young larvae are hatching. These tiny, ream-colored larvae (not green yet) can be found tunnelling into leaf buds and working nto folded leaves. Presently, this feeding is minor and hardly noticeable.

opulations of this insect will vary greatly from area to area and even from field to ield. Treatment with an insecticide is justified when 25 percent of the tips show eeding and the larvae are still present. Do not apply insecticides unless they are eeded. We would expect insecticide applications to be warranted within 10 days to two eeks in the extreme southern section of the state, two to three weeks in the southentral section, and three to five weeks in the central section.

he insecticide recommendations are:

. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

Clover leaf weevils. The larvae resemble those of the alfalfa weevil, but feed at night and hide in ground debris during the day. Check red clover fields that have had a heavy straw or mat covering. The green worms with a white stripe down the back will be found under the debris, and the clover will show irregular holes in the leaves from their feeding. Clover can usually recover from the damage. However, severe damage could occur in some fields should the cool weather continue.

If plant growth is slow and leaf feeding becomes severe, a spray of 1 pound of malathion per acre (or mixtures of malathion or diazinon and methoxychlor) will control this insect. For best results, apply malathion only when air temperatures are 60° F. or above.

CORN SOIL INSECTS

There has been some confusion about the cancellation of the aldrin label by the Federal Environmental Protection Agency. Although we do not recommend the use of aldrin or heptachlor in Illinois, it is still legal to use and sell aldrin for corn-soil application.

In most instances, we feel that this will not be profitable, particularly on fields with a history of use. In many of these cases, diazinon seed treatment may be sufficient. If you do use aldrin or heptachlor, use them only on corn planted on sod fields. Do not use aldrin or heptachlor on dairy farms or where soybeans are to be grown during the year of treatment. Do not grow soybeans in fields where aldrin or heptachlor have been applied for five or more consecutive years. If you use aldrin or heptachlor on corn and lose the stand too late for replanting to corn, do not plant soybeans in that field. Dasanit, diazinon, Dyfonate, and phorate (Thimet) have been steadily replacing aldrin and heptachlor in general-use situations for corn-soil application. Along with carbofuran (Furadan) and BUX, they have almost completely replaced aldrin and heptachlor for rootworm control.

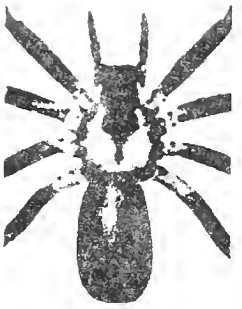
HOMEOWNER INSECTS

Brown recluse spider. This species continues to attract much attention in Illinois. Dr. J.D. Unzicker, Taxonomist at the Illinois Natural History Survey, has identified brown recluse spiders from 47 of the 102 counties in Illinois (see map).

The body of this spider is about half an inch long. The leg span is an inch to an inch and a half. The color may vary from light fawn to almost dark brown. There is a distinct, fiddle-shaped, dark marking behind the head (see picture).

Although reports of persons bitten by this spider are not numerous, its bites are poisonous and the brown recluse is considered to be of public health importance. Unfortunately the origin of bites is usually unknown. Most are attributed to the brown recluse spider because of the resulting wound. This spider bites only when disturbed. The brown recluse has a habit of living in dark, sheltered areas (such as attics), in storage areas, basements, crawl spaces, and barns. Unlike other web-spinning species, it spins very small or irregular webs.

According to Dr. Unzicker, the brown recluse is a southern species that cannot survive the winter outdoors in central and northern Illinois. Consequently, it prefers to live in or near houses or buildings and inside stored items. Dr. Unzicker suggests consulting a physician about any spider bite. Little or nothing is known about the bites of many common household spiders. It is possible that other species may be responsible for bites similar to those of the brown recluse.



We are cataloging the distribution of this spider and others in Illinois. For identification, send all spiders to Dr. John Unzicker, Room 93, Natural Resources Building, Illinois Natural History Survey, Urbana, Illinois 61801. Include your name, address, and where the spider was found. Dr. Unzicker will identify the one you found and send you this information. When spider bites occur, capture the spider if possible and send it to Dr. Unzicker for identification.

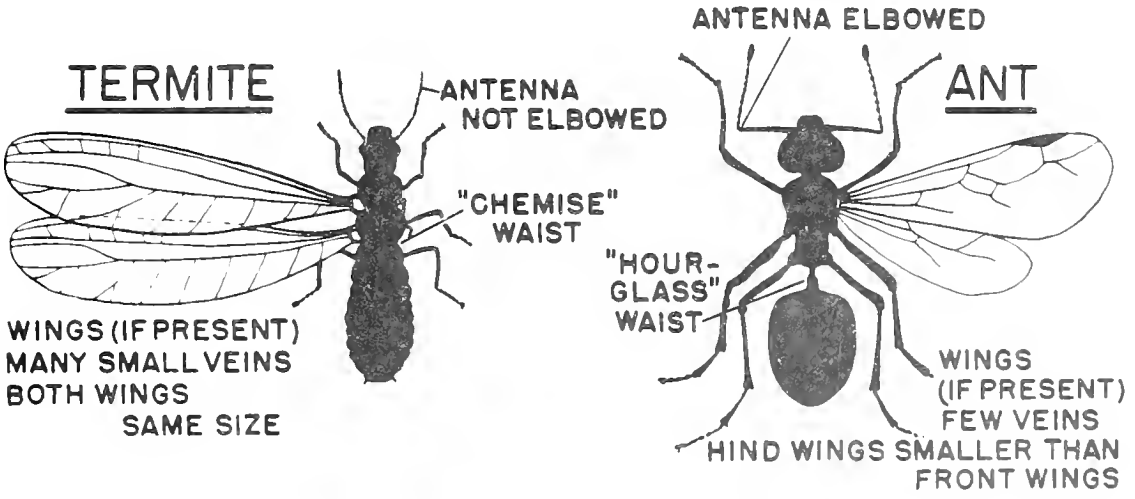
If no brown recluse spiders have been identified in your county, be sure to send us suspect spiders so we may confirm distribution. (See map.)

Winged termites and ants. They are making their spring appearance and are causing concern to homeowners. They can be distinguished from each other rather easily. A flying termite is always black. A flying ant may be black, yellow, tan, or almost red. The back wings of an ant are shorter than the front wings. The two pairs of wings on a termite are of equal size. An ant has a constricted, or narrow, waist just behind the wing-bearing section of the body. The termite has no such constriction. The antennae of termites are straight, those of ants are elbowed. The diagram shows the major differences.

Date indicates the year the spider was first found in the county.

April 1, 1971. Places where the brown recluse spider has been found in Illinois.

TERMITE or ANT? the differences are:



If swarms of flying termites appear, check for mud tubes on the inside and outside of the foundation walls. Many termite problems are extremely complicated and require an experienced exterminator.

WEEDS

NEW HERBICIDE CLEARANCE

Lorox-Lasso for corn. A tank mix of this combination is now cleared for use on corn as well as soybeans. The rates are about the same as those given with the recent clearance for soybeans. They vary with soil type and organic-matter content. The ratio is about 1 pound of 50W Lorox (commercial product) to 1 quart of Lasso. The rates would vary from 1 + 1 to 2-1/2 + 2-1/2 per acre.

TIMING PREPLANT HERBICIDE APPLICATIONS

Treflan. It can be applied up to ten weeks prior to planting. Incorporation can be delayed up to 8 hours--but the sooner the better, especially if the ground is moist and the sun is hot.

Planavin. Application can be made up to six weeks prior to planting soybeans. Incorporation can be delayed up to 48 hours.

AAtrex. This can be applied up to two weeks prior to planting. There is no hurry about incorporation to avoid surface loss.

Sutan. It can be applied up to two weeks prior to planting. Immediate incorporation is necessary.

Vernam liquid. This can be applied up to 10 days prior to planting soybeans. Immediate incorporation is necessary.

Lasso. This can be applied preplant on soybeans or corn within 7 days of planting. Incorporation is recommended only for control of nutsedge. A higher rate is desirable if Lasso is incorporated. In general, there is no hurry to incorporate Lasso as there is little--if any--surface loss.

PLANT DISEASES

WINTER-WHEAT AND OAT-SEEDLING PROBLEMS

Most of the specimens received in our plant disease clinic recently have been winter whe and oats. The same symptoms appear on all the plants. The older leaves are dying or de Occasionally, there is leaf discoloration--purple or yellow. These symptoms usually appear uniformly throughout the field. When a primary pathogenic organism is not isolated the problem can be attributed to winter injury.

In Illinois, heaving probably causes most of the winter killing. Plants are lifted from the soil by alternate freezing and thawing, leaving root tissue unprotected and often broken. The plants should survive if the roots of the young plants appear healthy--whit and sturdy--and the new leaves are a normal green color.

These are other disease problems that may affect plant seedlings:

1. Scab. The plants will be stunted and yellow, some dying. The roots will be rotted and reddish-brown.

2. Spot blotch. This is a dark-brown rot, at or beneath the soil line. The leaves will be erect and dark green, with dark brown spots.

3. Speckled leaf blotch. The leaves will have circular to oval, light-green spots with black specks (Septoria fruiting bodies). Later in the spring, the tillers die and are covered with black fruiting bodies.

SAFETY REMINDERS

Preventing chemicals from getting into wells is much cheaper and easier than taking care of the problem afterward. The most-frequent causes are flushing or overflowing sprayers near wells or hose-siphoning while sprayers are being filled. If a loss of pressure occurs, it would be possible for chemicals to get from a spray tank into a municipal water supply by siphoning.

Here are some tips on prevention:

1. Do not leave the sprayer unattended while filling the tanks.

2. Do not flush tanks where the chemical(s) will drain into wells.

3. Do not place the hose in the tank. A bracket to hold the hose and the tank will prevent siphoning.

If the material gets into a well, this problem must be dealt with immediately. First, determine the use of the well water. Is it used for human or animal consumption or only to irrigate a garden? Second, determine the chemical(s) involved and their toxicity. Third, start to pump the well as soon as possible, disposing of the water in a suitable manner. Some materials, such as Treflan, Lasso, or 2,4-D ester, will be visible in the water--even in dilute amounts.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

NOTE TO COUNTY EXTENSION ADVISERS

You have received a copy of Home and Garden Bulletin No. 67, *Insects and Related Pests of House Plants*. If you need more copies, let us know. We will fill orders as long as our shelf supply lasts. This bulletin can also be purchased for 10 cents per copy from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20250.

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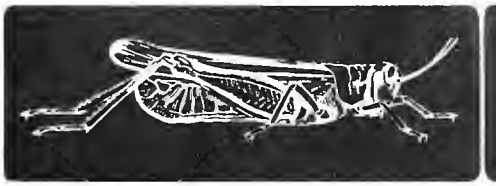

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 3, April 16, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevils. The cool weather is slowing larval development, egg hatch, and alfalfa growth. However, adult weevils are present and continue to deposit eggs. An extended period of warm weather in southern and south-central Illinois could bring about a sudden hatch and a rapid build-up of larvae, with accompanying damage. Treatments may be justified in an occasional field this coming week south of Highway 13. Last week, larval populations south of this line ranged from 1 to 6 per sweep (about 20 per sweep is considered an economic infestation), with 20- to 80-percent of the plants showing slight tip feeding. One field had 55 larvae per square foot, but the number was considerably less in most fields. Feeding damage and larval populations are hardly noticeable north of Route 13. Depending on weather conditions, we would expect treatments in the south-central area to be warranted within ten days to two weeks and two to four weeks in the central section.

As you examine alfalfa, the yellowish, newly hatched larvae (about 1/20-inch long), with shiny black heads, can be found feeding within the folded leaves and buds of the plant terminals. Occasionally, an almost-mature larva may also be found. These are green with a white stripe down their back.

Watch all fields closely from now on. Our egg surveys show that some fields have a fairly high concentration per square foot. Populations of this insect vary greatly in fields only a short distance apart, so every field must be evaluated individually. Treatment with an insecticide is justified when 25 percent of the tips show feeding and larvae are present. Do not apply insecticides unless they are needed.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of

methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

5. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

Clover leaf weevils. These can be found in an occasional red clover field, but populations thus far are not very high. The larvae are green with a white stripe down the back. They feed at night and hide under the ground debris during the day. Damaged clover will have irregular holes in the leaves from their feeding, but will usually recover. Severe damage could occur in some fields if the cool weather continues.

Check red clover fields that have a heavy straw or mat covering. If plant growth is slow and leaf feeding becomes severe, a spray of 1 pound of malathion per acre (or mixtures of malathion or diazinon with methoxychlor) will control this insect. For best results, apply malathion when air temperatures are 60° F. or above.

SOIL INSECTS

We continue to receive questions about the cancellation of the aldrin label by the Federal Environmental Protection Agency. Although we do not recommend the use of aldrin or heptachlor in Illinois, it is still legal to use and sell aldrin for corn-soil application.

A challenge has been issued to the manufacturing company to show evidence that the sale and use of aldrin is still justified, and that continued use will be of greater benefit to the consuming public than the hazard to the environment. For this year, using and selling aldrin is legal. This will continue to be the case until a further ruling is made after the conclusion of adequate hearings. That will not occur until after the 1971 season, perhaps even after the 1972 season.

In most instances, we feel that aldrin and heptachlor will not be profitable, particularly on fields with a history of use. In many of these cases, diazinon seed treatment may be sufficient. If you do use aldrin or heptachlor, use them only on corn planted on sod fields. Do not use aldrin or heptachlor on dairy farms or where soybeans are to be grown during the year of treatment. Do not grow soybeans in fields where aldrin or heptachlor have been applied for five or more consecutive years. If you use aldrin or heptachlor on corn and lose the stand too late for replanting to corn, do not plant soybeans in that field. Dasanit, diazinon, Dyfonate, and phorate (Thimet) have been steadily replacing aldrin and heptachlor in general-use situations for corn-soil application. Along with carbofuran (Furadan) and BUX, they nave almost completely replaced aldrin and heptachlor for rootworm control.

CORN INSECTS

European corn borers. The survival of overwintering borers is low in the southern and western areas of Illinois where there was little or no snow cover during the winter. Survival is higher in northern Illinois wherever the snow cover was more extensive. Although the overall survival is apparently lower than last year, this does not eliminate the corn borer as a potential problem. Reports on corn borer survival from Extension advisers were received from Eldon Starkweather in Greene County and Bob Schmerbauch in Wayne County.

HOMEOWNER INSECTS

Garden soil insects (including wireworms, seed and root maggots, and white grubs). These can be controlled by mixing 1 ounce actual diazinon or 4 ounces of diazinon 25-percent liquid concentrate per 1,000 square feet of garden area. Apply as a broadcast treatment to the soil surface prior to planting, and thoroughly mix the chemical into the top 4 to 8 inches of soil. Do not use aldrin, heptachlor, or other insecticides that are labeled for corn-soil insect control.

Ornamental and lawn pests. Now that spring yard work has begun, questions are coming in about insect pests on ornamental plants. Euonymous scales, common on shrubs like winter creeper and euonymous evergreen ground cover, may be confused with insect eggs. Although nothing can be done to control these pests now, spraying with malathion after the eggs of these scales hatch will be helpful--in late May for pine needle and sweet gum scale; in early June for scurfy, oystershell, and euonymous scale; and in early July for cottony maple, Juniper, and dogwood scales.

Sawdust from borers in the trunks of trees and shrubs can be found on the bark or accumulating at the base of the trunk. The tunnels of the borers can be probed with a wire to kill the borers, or dimethoate sprays (25-percent De-Fend W.P.) or Cygon 2E can be used in late May or early June. Wrapping the trunks of newly set trees with heavy paper for two years, or until the trees are growing vigorously, will help prevent attacks by borers.

Now is a good time to pick off last year's bagworms from the evergreen or other trees and destroy them. About half of these bags are full of eggs that will hatch within four to eight weeks. The more eggs that are destroyed now, the easier it will be to control the bagworms later.

Last fall's damage to lawns by the sod webworm is ancient history. It is too early to take action against the damaging second-generation, which hits in early August. However, a vigorous, well-fertilized lawn is the best plan of attack to ward off damage by the first generation.

Fruit and shade trees. For those with a few fruit trees, Circular 1001 "Home Orchard Pest Control" shows the spray schedules for apple, peach, cherry, pear, apricot, and other fruit trees. This circular is available at the office of the county Extension adviser, or from the Office of Agricultural Publications, 123 Mumford Hall, Urbana 61801.

Maple bladder galls are small, wartlike growths on the upper surface of leaves of young silver or soft maple trees. These galls are caused by mites that overwinter in the buds of the trees. When leaves begin to emerge in the spring, these mites infest the new leaves. Control is rarely necessary, since these galls will seldom damage the tree or its branches. If chemical control is attempted, timing the spray with the emergence of the new leaves will increase the chances for success. Use malathion, 57-percent liquid concentrate, at the rate of 1 cup per 25 gallons of water.

WEEDS

NUTSEDGE--A TOUGH NUT TO CRACK

Yellow nutsedge (Cyperus esculentus), often called nutgrass, is becoming a serious weed problem in many areas of Illinois. It is a sedge (triangular stem and three-ranked leaves) rather than a true grass (round stem and two-ranked leaves).

Nutsedge overwinters primarily as tubers (nutlets) that sprout in the spring and form rhizomes. A coronal node forms on the rhizome about 1 to 1-1/2 inches below the soil surface. From this crown area roots, shoots, and new rhizomes form. The rhizomes produce plants at first, but later in the season they turn down and develop new tubers for overwintering.

The crown area that develops below the surface of the soil is a critical area for yellow nutsedge control. The most-effective control program involves a combination of preplant tillage, an incorporated herbicide, and postplant tillage. Nutsedge is usually found in low-lying, wet areas. It usually emerges about the corn-planting time or when the sprouts come up.

Controlling nutsedge in soybeans is generally easier than in corn, because soybeans are planted later. This gives the farmer time to locate isolated areas of nutsedge infestation, use preplant tillage, and broadcast a herbicide just on those areas. The two herbicides that have proven useful for nutsedge control in soybeans are alachlor (Lasso) and vernolate (Vernam). Both should be used at the highest recommended rate, and should be incorporated. This can be combined with preplant tillage.

The herbicides used for nutsedge control in corn are alachlor (Lasso), butylate (Sutan), and atrazine (AAtrex). EPTC (Eptam) has provided adequate control, but the corn tolerance has not been sufficient. The best treatments in research trials on corn have been either butylate (4 pounds per acre) or alachlor (3 to 4 pounds per acre)--applied preplant, incorporated, and followed by an early postemergence treatment of atrazine (2 pounds per acre) plus nonphytotoxic oil (1 gallon per acre).

CHECK WEEDY SPOTS

It pays to check fields for weedy spots during the spring. Giant ragweed is now germinating, and smartweed will soon start. These are two of the first field problems with weeds. Giant foxtail and pigweed will start germinating in about one to two weeks, depending on the temperature.

If you find areas of high infestation, it might be worthwhile to consider broadcasting a herbicide on these potential trouble sports. Such areas are often found along drainageways, turn-rows, headlands, and fence lines--places where it is most difficult to cultivate. Use a band application of herbicide on these areas. Cultivate the rest of the field.

TANK-MIXING HINTS

Many herbicides are being applied with liquid fertilizers. Problems of compatability sometimes arise when emulsifiable concentrates are mixed with liquid fertilizers because the emulsifier is not salt-stable. Some manufacturers have special pesticide formulations for liquid-fertilizer application. Others specify that the emulsion stability must be checked and if needed, that a compatability agent such as Compex or Sponto/68 be added.

Check compatability in quart jars before mixing an entire tankful. First, determine the volume of spray per acre. With liquid fertilizers, this will depend on the analysis used and the rate desired. Next, determine the volume or weight of the pesticide to be applied per acre. Then, convert the number of quarts or pounds of additives and gallons of spray carrier to the amount per pint of spray.

NOTE TO RADIO AND TV STATIONS

Our automatic telephone answering service will provide the following insect situation recordings, starting on Monday, April 26:

Homeowner Insect Problems--each week.
Calling time--9 a.m. Monday to 8 a.m. Tuesday.
Dial (217) 333-2614.

Southern Illinois Field Insect Situation--each week.
Calling time--1:00 p.m. Thursday to 9:00 a.m. Friday.
Dial (217) 333-2614.

Northern Illinois Field Insect Situation--each week.
Calling time--10:00 a.m. Friday to 8:00 a.m. Monday.
Dial (217) 333-2614.

Each recording will be two minutes long. In case of questions or difficulty, call Ron Scherer (217) 333-4783.

HOW TO SEND IN SPECIMENS FOR IDENTIFICATION

To facilitate rapid and positive identification of insect specimens that we receive, please note the following suggestions:

1. Send soft-bodied specimens in a crush-proof container, such as a plastic pill vial containing rubbing alcohol. Do not use formaldehyde. Wrap the vial in cotton or paper for sending through the mails.
2. Place adult specimens in a plastic vial and wrap with cotton or paper. Alcohol need not be used.
3. Give the date, county and town, and information about where the insect was found. For examples: beneath the kitchen sink, in a box of cereal, on a maple tree, on soybeans.
4. Do not attach specimens to the letter with scotch tape. Stamp-cancelling machines in the post office usually reduce specimens to a small pile of pulverized pieces, making identification difficult if not impossible.

THANKS.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 4, April 23, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

GENERAL INFORMATION

Insect development has been at a practical standstill until recently. When a cool spring suddenly "breaks" into summer, insect development, retarded early, accelerates, and everything seems to happen at once. If warm weather continues generally over the state, expect appearance of insects in northern Illinois about as soon as in southern Illinois. Also expect many species to appear all at once--some earlier than usual and some later.

INSECTS

FORAGE INSECTS

Alfalfa weevils. Feeding became evident in most alfalfa fields in extreme southern Illinois this past week, and severe damage has occurred to some fields. Populations of the green worms are high, and there are still many eggs to hatch. Spray applications should be made immediately in severely infested fields. Consider cutting instead of spraying in severe cases.

In the area north of Highway 13 and south of Highway 50, larvae are evident and damage is increasing rapidly. Adults are still numerous and continue to deposit eggs in alfalfa stems. The situation will be critical for the next ten days.

In the area north of Highway 50 to Highway 36, the development is a bit slower. Larvae are numerous but adults are present in large numbers. The next ten days to two weeks are critical in the south part of this area, but it will be two weeks or more before decisions regarding treatment will be required in the north part of this area.

North of Highway 36 it will still be two to four weeks before infestations are serious.

The above estimates are based on normal temperature and rainfall expectations. Should spring "bust out all over" at the same time and to the same degree, the time lapse in development will be greatly narrowed.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

Clover leaf weevil. Larvae of this pest resemble alfalfa weevil larvae. Both are green with a light-colored stripe down the back. One thing is noticeably different--the head capsule of the clover leaf weevil is brown not black as that of the alfalfa weevil. Also clover leaf weevils are usually larger. In hot, muggy weather they die in large numbers from a fungus which penetrates their body. Alfalfa weevils are not affected by this fungus.

Fields of red clover examined in the southern one-third to one-half of the state this week indicate that clover leaf weevil larvae are present in considerable numbers, but the clover is growing away from their feeding damage and no spraying is recommended.

SMALL GRAIN INSECTS

Armyworm moths can now be seen at lights at night. These light brown, heavy-bodied moths have a white dot on each forewing. They will deposit eggs on grasses, including small grains, in the most vigorous areas in these fields. Abundance of moths is not known, and it will be three to five weeks before the potential can be determined.

CORN INSECTS

Black cutworms. Moths of this pest can also be seen at lights at night. These purplish-brown, heavy-bodied moths are often present at this time of year. As with armyworms, it is difficult to determine potential infestations by moth flight.

Usually these moths deposit their eggs in low spots in fields, particularly if these spots are wet. Time alone will tell where these moths may deposit eggs this year if present weather conditions continue.

HOMEOWNER INSECTS

Many species of aphids are beginning to appear on trees and shrubs, especially hawthorne and crab apple. The green, soft-bodied plant lice suck the sap from the new leaves, causing the leaves to curl, but rarely do severe damage to the tree. If aphids are very numerous, a spray of either diazinon or malathion will control them. Follow mixing directions on the label. Do not use malathion on canaert red cedar or diazinon on ferns or hibiscus plants.

Fungus gnats are beginning to appear inside homes now. These small flies develop in wet, decaying organic matter. If they are a nuisance inside the home, a spray of 0.1-percent pyrethrins applied from a pressurized can will give temporary relief.

Now is the time to control European pine shoot moth on white, red, Scotch, or muhgo pine. The brown larvae with black heads have begun to tunnel into shoots. Spraying with dimethoate (Cygon, De-Fend) will control the first generation in April; the second generation can be controlled in mid-June. Removing the infested shoot tips before June will aid in the control of this insect.

Eastern tent caterpillars are feeding on trees, especially wild cherry, in southern Illinois. Young caterpillars have hatched, are feeding on the new leaves, and are spinning webs on the trunk and in limb crotches. Spraying with carbaryl (Sevin) or malathion will control this insect. The webbing does provide some protection to the caterpillar and can prevent spray penetration to give effective control.

WEEDS

HERBICIDE INCORPORATION

Most annual weed seeds germinate in the top 2 inches of soil. And most moderately soluble herbicides move into the weed-seed zone with normal rainfall. The primary purpose of herbicide incorporation is to prevent surface loss of volatile herbicides and to move less soluble herbicides into the soil.

A disk is the most common tool for herbicide incorporation. Run a tandem disk about 4 inches deep for best results. Greater depths may cause excessive dilution of the herbicide. Field cultivators, in general, do not give satisfactory herbicide incorporation. The Treflan label allows the use of a mulch treader for incorporation this year.

Most volatile herbicides, such as Sutan and Vernam, should be incorporated immediately after application. The Treflan label allows an 8-hour delay, but the sooner the herbicide is incorporated the better. Lasso and AAtrex can be incorporated, but incorporation is not necessary unless yellow nutsedge is a major problem.

ORGANIC MATTER AND HERBICIDE RATE

Herbicide rates vary with the texture and organic matter content of the soil. Herbicides most affected by organic matter content include: atrazine (AAtrex), simazine (Princep), linuron (Lorox), trifluralin (Treflan), and nitralin (Planavin), as well as combination products such as linuron/propachlor (Londax) and propachlor/atrazine (Ramrod/atrazine).

You can estimate organic matter content with the "Color Chart for Estimating Organic Matter in Mineral Soils in Illinois" (AG-1941), and Fact Sheet SP-36 "Average Organic Matter Content in Illinois Soil Types." Both guides are available from your county Extension adviser or from the U. of I. Department of Agronomy. Organic matter content is also available from some soil test reports.

The "1971 Weed Control Guide"--also available from county Extension offices--has suggested rates for herbicides and can be used as a guideline.

Herbicides such as linuron (Lorox) and nitralin (Planavin) are not recommended for soils that contain more than 3- to 4-percent organic matter. Other herbicides such as propachlor (Ramrod) do not perform as satisfactorily on soils with low organic matter content.

PLANT DISEASES

WINTER INJURY TO ALFALFA AND CLOVER

Several alfalfa and red clover samples received by the Extension Plant Pathologists in the Department of Plant Pathology show crowns that are soft (easily broken) and usually dark to reddish-brown when split apart. The center of the primary root may also appear discolored and hollow, and the walls of the hollowed root may appear "honeycombed." These symptoms indicate winter injury followed by attack by one or more crown and root-rotting fungi.

Four types of winter injury are commonly recognized:

1. Heaving--Alternate freezing and thawing, especially where fields were wet during the winter, can lift the plant from the soil and separate it from the side roots.

2. Low-temperature injury--This kind of injury usually occurs when unadapted varieties are planted. Application of fertilizers, especially nitrogen, and cutting or grazing in late fall may aggravate the problem.

3. Frost injury--Frosts that occur after plants have started vigorous spring growth can leave fields brown. However, unless complications develop, plants should recover rapidly in warm weather.

4. Ice sheets--Ice sheets cause the most serious type of winter injury. Entire stands can be lost to ice-sheet formations caused by sleet storms or water from rain or melting snow that has frozen. Varieties that are resistant to cold injury are generally most resistant to ice-sheet injury.

Winter injury often leaves plant tissue with deep cracks or other wounds that act as entry points for plant-pathogenic fungi and bacteria.

Controls include:

1. Sow seed of adapted varieties that are certified disease-free and high yielding.

2. Practice balanced soil fertility. Avoid overfertilization as well as late-summer or fall application of fertilizer.

3. Avoid overgrazing and "short clipping." These practices cut down food reserves and lessen the chances for winter survival.

Further information can be obtained from your county Extension adviser or by writing to the University of Illinois Department of Plant Pathology, Urbana, Illinois 61801. Ask for Report on Plant Diseases, No. 302, "Root and Crown Diseases of Alfalfa," or RPD No. 304, "Root and Crown Diseases of Clover."

LEAF-SPOTTING DISEASES OF ALFALFA

Leaf spotting of alfalfa can cause loss of vigor and reduction in hay quality and yield. Wet spring weather increases the chances of leaf spotting.

1. Common leaf spot--Symptoms of this disease are small, circular, dark-brown spots about 1/16 inch in diameter on alfalfa leaflets. First-year plants may

be weakened or stunted, but little damage occurs. Severe infections may cause premature leaf drop. This disease is not seed-borne.

2. Yellow leaf blotch--This disease shows up as yellowing of the leaf margins or along the veins. As the disease progresses, the yellow areas turn orange and small dark dots (fungus fruiting bodies) may be seen.

3. Pseudoplea spot--Small, sunken, irregular black spots form on the leaflets. These areas become black-dotted and sunken with gray centers and reddish-brown margins as the disease advances.

4. Stemphylium leaf spot--The fungus that causes this disease can overwinter on seed as well as in plant debris. Early infections appear as small, irregular, dark-brown, sunken spots. Later the spots enlarge, become target-like and are often surrounded by a yellow "halo." Infected leaves often turn yellow and may fall prematurely.

Control: Losses from common leaf spot, yellow leaf blotch, Pseudoplea spot, and Stemphylium leaf spot can be limited by good cultural practices. Sow certified disease-free seed, cut infected stands in early bloom before leaves fall, and grow high-yielding, resistant varieties.

More information can be obtained from your county Extension adviser. Or write to the University of Illinois Department of Plant Pathology, Urbana, Illinois 61801. Ask for RPD No. 301, "Leaf and Stem Diseases of Alfalfa."

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

Read and follow the precautions but also be sure to put pesticides, and all poisonous materials for that matter, out of the reach of small children and people who are not responsible for their actions.

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

PLANT PATHOLOGY: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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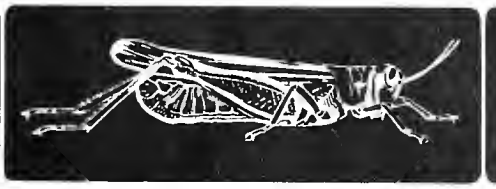
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 5, April 30, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevils developed very fast this past week, and feeding damage is noticeable in fields within the southern third to half of the state. Infestations appear to be heavier than last year. However, wasp parasites of weevil larvae are increasing, and they will help curb the weevil populations.

Fields needing treatment were observed as far north as Highway 16. Between Highway 16 and Highway 136, some fields may need treatment this week. It will be another one to three weeks before infestations are serious north of Highway 136.

In the extreme southern section (south of Highway 13), damage is already severe and the best time for insecticide treatment is past. Consider cutting and removing the hay and spraying the new growth, if needed. Larvae are already beginning to pupate and wasp parasites are taking their toll in this area. Larval populations have probably already reached their peak, and will now decline slowly during the next three to four weeks.

There is considerable variation in weevil populations between different areas and fields. So check each field separately to make judgments. Do not apply insecticides unless they are needed. Treatment with an insecticide is justified when 25 percent of the tips show feeding and the field is more than two weeks from harvest.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

SPECIAL NOTE: Some spray burn was noticed this week from methyl parathion and malathion. The burn is associated with rapid growth, and occurs mostly in the more-luxuriant stands. This may be due to the elimination of the weevil larvae by the insecticide and the resulting spurt of growth or may be caused by other factors, such as cold weather after the treatment. Other phosphate insecticides may also cause spray burn. Generally speaking, the burn is not serious; but occasionally, yields are adversely affected. The burn appears two to three days after spraying as white spots on the leaves. Some cold injury that resembles spray burn was also observed.

Meadow spittlebugs are just beginning to hatch in the northern half of Illinois. The hatch is well underway in the southern half of the state, where occasional froth masses are apparent. The heaviest overwintering concentration of spittlebug eggs is in the northern tier of counties and in the McLean County area of central Illinois. These tiny, yellow-to-orange nymphs are down low behind the leaf sheaths. Soon, they will move higher up on the plants and form froth masses. Control with insecticides has not usually been profitable for several years. However, if there is more than one spittlebug nymph per stem (not per plant), treatment is justified. Use 1/2 pound of methoxychlor per acre, and wait seven days before harvesting or pasturing.

CORN INSECTS

Slender seed-corn beetles and striped seed-corn beetles are now present in fields of corn stubble. These beetles eat holes in the germinating corn seed and cut small sprouts. The severity of the problem will depend on weather conditions during the planting period. Cool weather and slow germination will enhance the likelihood of damage. Warm weather with adequate moisture, which will produce faster germination, will lower the chances for injury.

Diazinon as a dust applied to the seed corn will protect against the slender and striped seed-corn beetles. Also, the phosphate insecticides [diazinon, Dasanit, Dyfonate, and phorate (Thimet)] applied as granules in a 7-inch band just ahead of the press wheel will provide control.

Flea beetles can cause rapid and serious injury to small, newly emerging corn plants. These tiny, shiny black beetles jump readily when disturbed. They eat the green from the plant leaf, leaving white scratch marks. Damaged plants will turn white, and are sometimes killed. Carbaryl (Sevin) at 3/4 pound or toxaphene at 1-1/2 pounds of actual chemical per acre as a band spray over the row gives effective control.

Carbaryl is preferred for use on dairy farms. To prevent additional flea beetles from moving into the corn, treat grassy areas bordering the field. Do not use carbaryl near beehives or toxaphene near fish-bearing waters.

CORN INSECTS

A few scattered reports have been received of wireworms damaging corn. These worms will attack both the germinating seed and underground portion of the stem. If

replanting is necessary, use one of the phosphate insecticides (diazinon at 2 pounds per acre, Dasanit, Dyfonate, or Thimet at 1 pound per acre) as granules in a 7-inch band just ahead of the press wheel. These insecticides will control the small wireworms, but may not control the larger ones.

LIVESTOCK INSECTS

Horn flies appeared for the first time on cattle in pasture this past week in southern sections. Populations are still light but they could build up to economic levels (50-100 or more per animal) within the next few weeks.

Face flies have been observed in light numbers on pastured cattle near wooded areas in the central section. These adult flies spent the winter in homes, barns, sheds and probably in protected areas in woods, and they are now laying eggs for the first generation of flies. Before the new spring adults emerge in late May and early June, the flies now present will die. Therefore, during mid-May few, if any, face flies will be present.

HOMEOWNER INSECTS

Spider mites are building up on junipers, and some damage has been reported. The mites cause a russetting and browning of the foliage. To detect mites, strike a branch sharply with one hand while holding a white dish or piece of paper under the branch with the other. The spider mites appear as small, moving black specks on a white surface. For control, apply dicofol (Kelthane 18.5-percent liquid concentrate) at 2 teaspoonsful per gallon of water or 1-1/2 teaspoonsful of 25-percent wettable powder chlorobenzilate per gallon of water. Repeat treatments may be needed.

Eastern tent caterpillars are feeding on a variety of trees--especially on wild cherry, willow, and fruit trees. These insects spin webs in the tree crotches and feed on the foliage outside their web nests. Some small, wild cherry trees were already completely stripped of their leaves this week. If control is needed, apply a spray containing cabaryl (Sevin) or malathion. For carbaryl, mix 2 tablespoons of the 50-percent wettable powder per gallon of water. For malathion, mix 2 teaspoons of the 50- to 75-percent liquid concentrate per gallon of water.

The tick season is getting into full swing. The peak period of activity is in May and June. Campers, picnickers, hikers, fishermen, and berry pickers are the ones most often attacked. Ticks cling to vegetation along paths in brushy places and the woods. They lie in wait, ready to attach themselves to a passing animal or man. A favorite place for feeding on a person is at the base of the head around the hairline. Certain ticks can transmit Rocky Mountain spotted fever to man. Occasional cases of this disease have been reported in Illinois.

When entering areas that may be infested with ticks, use a repellent on socks, pant cuffs, and exposed parts of the body. DEET (diethyltoluamide) is a reasonably effective tick-repellent. It also works well against mosquitoes. To control ticks in such places as home yards, parks, lay grounds, or around the summer cabins, spray the grass, shrubs, and flowers with malathion or carbaryl (Sevin). Do not apply malathion to canaert red cedar, or carbaryl to Boston Ivy.

You can prevent ants, spiders, waterbugs, centipedes, crickets, and other insects from entering your home by spraying the outside foundation wall with a 1-percent

emulsion of chlordane in water. Purchase chlordane as a liquid concentrate. Mix it with water to the proper strength. A half pint (8 ounces or 1 cup) of 45-percent chlordane in three gallons of water gives a 1-percent emulsion. Spray the foundation wall from the soil to the sill area, or along the outer wall, for a distance of about a foot above the soil to the point of runoff. In addition, spray the expansion joints along porches and steps, and along the edges of sidewalks and driveways. In homes with a crawl space, spray the inside wall and any supporting pillars. Do not spray directly onto shrubbery or flowers. The oil solvent in the spray may burn the tender foliage of some plants. Plan on repeating the treatment two or three times this summer.

Three gallons of finished spray should do for the average house. The need for using insecticides inside the home will be greatly reduced by the kind of spraying recommended above, under the house and around its perimeter.

WEEDS

DRY WEATHER AND HERBICIDE FAILURE

The dry weather this spring has caused concern about the possibility of herbicide failure. If you applied a herbicide but weeds appear because the herbicide is not working, use a rotary hoe to control small weeds.

Do not wait for rain to see whether the herbicide will work. Small weeds are easier to control with a rotary hoe than larger ones. The minimal incorporation of the herbicide with a rotary hoe will not retard herbicidal action. It may improve it.

CONTROLLING JOHNSONGRASS

Johnsongrass is a perennial plant that is difficult to control. Seedlings cause the main problem in most fields, but there is also some "old grass" that sprouts from rhizomes. If you did not control that last summer or fall, there is still time this spring.

Follow these tips:

1. Let the Johnsongrass grow about a foot high before tilling.

2. Spray 5 to 7 pounds of Dowpon in 30 to 40 gallons of water per acre.

3. Wait 3 to 5 days after spraying, then plow or disk.

4. Wait 1 to 3 weeks after tillage to plant corn or soybeans. Wait at least 2-1/2 weeks before planting sorghum.

To get the best control of seedling Johnsongrass, use a preemergence or preplant herbicide--Treflan, Planavin or Vernam in soybeans, Eptam or Sutan in corn. There is no herbicide for control of Johnsongrass seedlings in grain sorghum. The same treatments will also control wild cane in corn and soybeans.

NEW TANK-MIX CLEARANCES

Federal registration has been given for a tank-mix of Preemerge (dinitro) plus Lasso or Preemerge plus Amiben. Both are for preemergence or early postemergence

weed control in soybeans. The rate of Preemerge is 4 to 6 quarts per acre when used in preemergence applications, or 2 to 3 quarts per acre in early postemergence treatments. Use the lower rate if temperature is above 75° F. In the combination, use the normal rate of Amiben or Lasso.

FALL PANICUM CONTROL

Fall panicum is a grass weed that continues to germinate late in the season. Present practices--including earlier planting and "lay-by" plus a greater dependence on chemicals and a reduction in the amount of mechanical tillage--help create favorable conditions for late-emerging weeds, especially in wide-row corn where the shade is late in coming between the rows.

Fall panicum is a problem throughout Illinois, but the worst problem is in southern Illinois because of wider rows, a longer growing season and greater dependence on atrazine (AAtrex) as a herbicide. Fall panicum is especially a problem in zero-tillage corn.

Simazine (Princep) gives better control than atrazine (AAtrex) of late-emerging grasses, such as fall panicum and crabgrass. Alachlor (Lasso) and butylate (Sutan) are two other herbicides that have enough persistence to maintain control of late-emerging grasses. Many people combine atrazine or simazine with Lasso or Sutan for controlling broadleaved weeds. But remember that it is necessary to incorporate Sutan soon after application.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 6, May 7, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevils. Development in the central section of the state has probably been slowed down by the cool weather, but many alfalfa fields between Highway 13 and 16 are being damaged. The number of fields needing treatment is greater in this area and to the south of it than last year. Wasp parasites are also present in this area, with the percentage of parasitism of larvae ranging from 20 in Pulaski County to 60 in a field in Lawrence County.

The weevil population should have reached its peak this week in the area south of Highway 460, with parasites reducing the population. In that area, it would be best to cut the alfalfa, remove it, and treat the new growth--if needed.

Watch the fields between Highways 16 and 136 for weevil damage next week.

There is a considerable variation in weevil population between different areas and fields. Check each field separately to make judgments. Do not apply insecticides unless they are needed. Treatment with an insecticide is justified when 25 percent of the tips show feeding and the field is more than two weeks from harvest.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

CORN INSECTS

White grubs. They were reported feeding on the roots of early corn in Sangamon County this week. Populations ranged from 2 to 25 per yard of row, with an average of 12. There are many species of white grubs. They usually have a three-year life cycle.

The grubs in the Sangamon County field were a different species than the ones that caused a problem in soybeans in 1965 and again in 1968. After the corn is up, controlling this grub is difficult. An application of aldrin or heptachlor using a rotary hoe and followed by an inch of rain will help. There is no control available for soybeans. We have no information on the newer insecticides as a control for this pest.

Leafhoppers. They are now prevalent on corn, particularly along grass-sod areas such as waterways in southern Illinois. Ordinarily, this pest does not seriously damage the corn, which means that chemical control would not be profitable.

Corn flea beetles. These are very numerous in corn fields in the central and southern sections of the state. There is an average of 6 to 10 beetles per plant in some stands of corn. The tiny, shiny black, corn flea beetles--which jump when disturbed--feed on the surface of the corn leaf, leaving scratch marks and often causing the leaves to turn white or silvery. The plants are sometimes killed.

If these beetles are numerous and damage is severe, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. The grassy areas in and around the field, such as waterways and fence rows, should also be treated to prevent additional beetles from moving into the field. Do not use carbaryl near bee hives or toxaphene near fish-bearing waters.

Insect reports this week were received from Denver Corn, Sangamon County Extension Adviser; Robert Frank, Jackson County Extension Adviser; and Robert Schmerbauch, Wayne County Extension Adviser.

HOMEOWNER INSECTS

Eastern tent caterpillars. They have severely defoliated trees in some areas of southern Illinois. These dark-colored worms with a white stripe down the back spin their webs in the crotches and on the limbs and trunks of trees, especially wild cherry. Many caterpillars are now full grown (2 inches long), and are spinning cocoons--on the tree or some nearby structure.

If most of the Eastern tent caterpillars are less than 1-1/2 inches long, they can be controlled with carbaryl (Sevin) or malathion, applied as a spray. Do not treat if larvae are full-grown or are pupating.

Oystershell scale. These eggs are beginning to hatch in southern and central sections of Illinois. Another two weeks will be required to complete the hatch. These brownish-gray scales, about 1/8 inch long, are often found on lilacs, dogwoods, birches, and soft maples, as well as other shrubs and trees. The newly hatched crawlers move to new areas on the bark and set up housekeeping by constructing a scale over their body.

These crawlers can be controlled by a thorough application of a spray containing malathion or diazinon. If malathion is used, mix two teaspoons of 50- to 57-percent liquid concentrate in each gallon of spray. Diazinon should be mixed, using 2 teaspoons of the 25-percent liquid concentrate per gallon of spray.

Pine sawflies. They are hatching and beginning to feed on the needles of pine trees in the southern section of the state. These black-headed, grayish-green caterpillars strip the needles from the red, white, jack, and other pine species. Christmas tree plantings, as well as other pine plantings, should be observed at regular intervals during the next three weeks for this insect. Spraying with carbaryl (Sevin) will provide control.

WEEDS

TOXICITY AND THE LABEL

Most pesticide labels do not directly state the oral or dermal toxicity of the material, but certain key words on the label indicate the relative toxicity. Toxicity is the inherent capacity of a substance to cause injury or death.

The words "DANGER" or "POISON" and the skull-and-crossbones symbol are required on the label if the material is highly toxic (see table below). The word "WARNING" is required for moderately toxic materials. "CAUTION" is required for slightly toxic materials. All labels must bear the statement "Keep out of the reach of children."

Toxicity Classes

Term	Route		Probable lethal oral dose for man
	Oral LD50	Dermal LD50	
Highly toxic	0-50	0-200	1 tablespoon to 1 teaspoon
Moderately toxic	50-500	200-1,000	1 teaspoon to 2 tablespoons
Slightly toxic	500-5,000	1,000-2,000	2 teaspoons to 1 pint
Practically non-toxic. .	5,000-15,000	2,000-20,000	1 pint to 1 quart
Relatively harmless. . . .	more than 15,000	more than 20,000	more than 1 quart

Remember toxicity is only one factor to consider when using pesticides. Always read and heed the label.

PLANT DISEASES

SOUTHERN CORN LEAF BLIGHT

None of the corn-seedling samples received so far at the Plant Disease Clinic have been infected with the southern corn leaf blight (SCLB). Most problems were caused by (1) cold damage--frost and low temperatures; (2) mechanical injury--wind and soil particle abrasion; (3) common seedling blights, such as *Diplodia* and *Gibberella*; or (4) some flea beetle activity.

SCLB infection symptoms on susceptible corn seedlings will appear first as scattered, tiny, circular spots. These will usually have tan centers and a

reddish-brown border. Under favorable conditions (warm, humid weather), these tiny spots will enlarge within 7 to 10 days after they become visible on the leaf. It takes much longer during dry, cool weather.

One way to check for the organism that causes southern corn leaf blight is to place infected leaf sections between soaking-wet paper towels. If masses of dark fungus spores are produced within 1 to 3 days, this indicates the possible presence of *Helminthosporium maydis*. However, further examination is necessary for positive identification.

Chlorotic (yellow) spots, wrinkled leaves, streaks, or large bleached areas do not necessarily indicate the presence of southern corn leaf blight. Remember, that moisture must be on the leaf surface for at least 6 hours, along with viable spores, before an infection can occur.

QUARANTINE ON SOYBEAN CYST NEMATODE REVOKED

The USDA will revoke the Federal soybean cyst nematode quarantine, effective June 30, 1971. That action will remove Federal regulations from all states now under quarantine--Arkansas, Florida, Illinois, Indiana, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, and Virginia. The nematode can be controlled with a crop rotation system that does not include snap and adzuki beans, lespedeza, common vetch, or lupines. Resistant varieties may also be used in some areas, such as in southern Illinois.

For more information about the soybean cyst nematode, read *Report on Plant Diseases* No. 501 (revised) "The Soybean Cyst Nematode Problem." For a copy, contact the Department of Plant Pathology (218 Mumford Hall, Urbana, Illinois 61801) or from your county Extension Adviser in Agriculture.

LOOSE SOD

Sod root isolations from several specimens received by the Plant Disease Clinic do not show the presence of any pathogen. The root systems look stunted and discolored, and the upper parts of the plants are dead or dying. Sod showing these symptoms can usually be easily lifted from the soil because of the lack of root penetration into the soil below. The symptoms will be accentuated by moisture deficiency.

There are eight basic steps for putting in a lawn, seed or sod, that may help avoid the problem.

Before planting:

1. Remove debris--such as tin, construction lumber, large rocks, plaster, or pieces of cement.

2. Make sure the lawn is properly graded.

3. Find out if sub surface tile drainage is needed.

4. Remove any large deposits of poor-quality soil that may be covering the topsoil.

5. Improve soil conditions, if necessary, by adding topsoil, sand, peat, or other organic matter. These materials change the soil conditions, but are expensive.

6. Test the soil to determine its acidity or alkalinity, as well as the relative amounts of nutrients present.

7. Work the soil to break-up clods and insure a uniform soil texture.

8. Incorporate a fertilizer with a high content of potassium and phosphorus into the top 6 to 7 inches of soil.

If the sod is loose and dying and there is no apparent cause (covered debris, flooding, drought, and so on), the problem may be corrected. A good watering schedule should be combined with the application of an adequate fertilization program. Use 1-1/2 to 2 pounds of nitrogen per 1,000 square feet of lawn in the early spring or late fall.

Starting a Lawn and *Keeping a Lawn*, Circulars 963 and 982, respectively, are available at the county Extension office or from the Office of Agricultural Publications, 123 Mumford Hall, Urbana, Illinois 61801. These publications cover choosing seed or sod; grass varieties; fertilization; mowing; watering; plus insects, diseases, weeds, and other lawn pests.

SOYBEAN SEED QUALITY

Soybeans (especially from northern and central Illinois) received by the Illinois Crop Improvement Association are testing below the normal germination level this year. Low germination and quality may be caused by beans that are shriveled, severely cracked, moldy, split, badly weathered, immature, purple-mottled, or stained gray or brown. Much of the reduction is caused by fungi such as those causing pod and stem blight and stem canker. Such fungi attack the weakened seed during germination.

Each year in Illinois, there is an effort by some chemical companies to promote fungicide seed treatment, with or without one of the necessary minor elements. It is not unusual to show a 10- to 20-percent increase in germination and stand by proper seed treatment. However, it is rare for fields planted with treated soybeans to outyield untreated beans, because essentially the same yield is obtained whether the beans are spaced 1, 2, 3, 4, 5, or even 6 inches apart in the row.

If you suspect you have low-germinating beans, have them tested. If germination is below 80 percent, do not use those beans for seed. It is best to buy certified seed of proven high quality. It usually does not pay to treat soybean seed if the quality if high--above 80-percent germination.

For more information, read *Report on Plant Diseases* No. 506, "Should Soybean Seed Be Treated?" Copies are available from the Department of Plant Pathology (215 Mumford Hall, Urbana, Illinois 61801) or from the county Extension office.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 7, May 14, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevils. These pests continue to damage alfalfa in the southern half of Illinois. Fields needing treatment were observed as far north as Route 136 this week. Heavier populations were observed further north along the west side of the state than along the east. Feeding is evident north of Route 136. Treatments could be needed in some fields this week or next.

In the southern third of Illinois, it would be best to cut the alfalfa, remove the hay, and spray the new growth if needed. Treat immediately if the new growth does not green-up in two or three days.

In the central third of the state, many fields were treated this past week. Alfalfa is rapidly approaching the point of harvest. It might be best to consider cutting the crop, removing the hay, and spraying the new growth of the second crop.

For the most part in the southern half of the state, alfalfa weevil larvae are pupating rapidly. Wasp parasites are prevalent and are helping reduce the number of larvae. New spring adults are beginning to emerge now. However, eggs are still hatching and damage can be expected for another two to three weeks.

There is a considerable variation in weevil population between different areas and fields. Check each field separately to make judgments. Do not apply insecticides unless they are needed. Treatment with an insecticide is justified when 25 percent of the tips show feeding and the field is more than two weeks from harvest.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting. Do not harvest for 15 days after treatment with methyl parathion, or 16 days for azinphosmethyl. Wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or

mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

CORN INSECTS

Flea bettles. They continue to damage small, newly emerging corn plants. Once the corn is eight to ten inches tall, it can usually grow away from the beetle attack. The populations of flea beetles are higher than normal this year. These beetles can transmit Stewart's disease (bacterial wilt) to corn. The incidence of this disease is also expected to be higher than normal this year. Sweet corn varieties are much more susceptible to this wilt than the dent corn varieties. Drought conditions accentuate the disease condition.

If flea beetles are numerous and damage is severe, apply 3/4 pound of carbaryl (Sevin)--preferred on dairy farms--or 1-1/2 pounds of toxaphene per acre as a band spray over the row. Grassy areas bordering fields should also be treated. Do not use carbaryl near bee hives or toxaphene near fish-bearing waters.

Black cutworms. These moths have been flying for several weeks. Watch low, wet, or poorly drained spots in corn fields for damage. Cut or missing plants are a sign of cutworms. It will be to your advantage to detect cutworm damage early, while the worms are still small and easily killed. Be on the lookout during the next two to four weeks.

You can control cutworms with a carbaryl (Sevin) bait application. A bait of 5-percent carbaryl on apple pomace applied broadcast at 20 pounds of the granules per acre is effective. A liquid bait (molasses or tractum) of carbaryl applied as a spray directed at the base of plants (1 pound per acre) or broadcast (2 pounds per acre) is also effective. No cultivation is needed when a carbaryl spray or granular bait is applied. Trichlorfon (Dylox) applied at 1 pound per acre in at least 20 gallons of water as a spray directed at the base of the plant will also provide control. Cover the trichlorfon spray band by throwing the soil at the base of the plants with a cultivator.

Wireworms. Scattered reports of damaged corn have been received. Generally, the infestations have not been too severe. If replanting is necessary, use one of the phosphate insecticides (diazinon at 2 pounds per acre, Dasanit, Dyfonate, or Thimet at 1 pound per acre) as granules in a 7-inch band just ahead of the press wheel. These insecticides will control the small wireworms, but may not control the longer ones.

Corn borers. Pupation is well along in the southern section. It is just beginning in the central section. No pupation of borers has occurred in the northern section. It is too soon to make predictions.

HOMEOWNER INSECTS

Mites. Evergreens are being damaged, particularly junipers and cedars. Russeting and browning of foliage are a sign of mites. To check on the presence of the mites, hold a white piece of paper under a branch and strike the branch sharply. The mites will appear as small orange, grey, or black moving specks on the paper. A spray containing 2 teaspoons of dicofol (Kelthane), an 18.5-percent liquid concentrate, or 1-1/2 teaspoons of 25-percent wettable powder chlorobenzilate per gallon of water is effective. Repeated treatments may be needed. Malathion is only partially effective.

Bronze birch borers. This is a pest of birch trees. The borers emerge as adults from under the bark of the upper limbs. Damage first appears in the tops of affected trees. The upper limbs may die as the borers tunnel under the bark, leaving raised rings around the limbs. These raised areas may show up on limbs that appear to be healthy, but are actually infested with borers. If borer symptoms are present, apply a treatment in late May in southern sections of Illinois and early June in northern ones. Spray the trunk and limbs thoroughly with dimethoate (Cygon or De-Fend). Follow the directions on the container for mixing the spray. Repeat the treatment two weeks later. Keep the trees in a vigorous state of growth with adequate moisture and fertilization.

Holly leaf miners. These can be found tunneling between the leaf tissues of many types of holly. They leave a yellowish mine, and will continue to damage the leaves if not controlled. Control is still possible. Use a spray of dimethoate (Cygon or De-Fend). Follow the directions on the label for mixing the spray. Thorough coverage is important for effective results. Another spraying may be needed about the middle of June.

Bagworms. Last year's bagworms should be picked from evergreens and trees and burned. This is about as late as you can do this before the worms emerge. About half of these bags will have eggs inside. These eggs will hatch during the next two weeks in the southern section; about two to four weeks in the central part; and about four to six weeks in the northern area of Illinois. The more eggs you destroy now, the easier it will be to control the bagworms later.

Clothes moths and carpet beetles. They are getting ready for a summer feast on improperly stored woolens. A small hole chewed in a piece of clothing can destroy its entire value. To keep woolens safe from damage by these insects, follow these suggestions.

1. Dry-clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.

2. Woolens that are not dry-cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.

3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes), vacuum the container thoroughly and spray all inside surfaces with a 0.5-percent diazinon mixture, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill the larger ones. As added insurance in cedar chests, you can spray the inside surfaces as suggested above or use a fumigant material. Napthalene or PDB (para-dichlorobenzene) are commonly used--in moth crystals, flakes, or balls. Use at least 1 pound of crystals, flakes, or balls for every 100 cubic feet of space.

5. Woolens not placed in insect-free containers can be protected by treating in light amounts with a 0.5-percent diazinon mixture from a pressurized spray can, or by liberally moistening them with a fluoride-base fabric solution. This protection will last a year or more, unless the woolens are washed or dry-cleaned. Caution: Infants' clothing should be washed or dry-cleaned before use.

6. Good housekeeping practices will help reduce the number of these insects. Clean the house frequently to prevent lint and hair from accumulating, especially around radiators, baseboards, heating vents, and closets, as well as beneath large furniture and other hard-to-get-at places. If such places become infested, a light application of a 0.5-percent diazinon spray will insure protection.

WEEDS

STALE-SEEDBED WEED CONTROL--A MODIFIED PIGGYBACK TREATMENT

A stale seedbed is one that has been prepared before planting and then left undisturbed during planting. Treflan or Planavin is usually applied as a preplant treatment, which is incorporated sometime before planting. The weeds that were not controlled by the preplant chemical will emerge. At planting or shortly afterward, a contact herbicide, such as Lorox (linuron), is applied to control the growing weeds, but the seedbed is not disturbed.

Lorox (linuron) is the contact herbicide usually chosen, because it gives some residual control in addition to the contact control. Adding a surfactant greatly enhances its contact action. Paraquat has also been tried, but some weeds still emerge after planting; also, paraquat has no residual action.

For drilled soybeans, the stale-seedbed concept is one of the most-promising practices for weed control. This concept is really a modified piggyback idea. Two herbicides are applied at different times. Lorox and Chloro-IPC have been cleared for use in a piggyback treatment with Treflan. Dynap--a combination of dinitro plus Alanap (naptalam)--is also being sold for use as an overlay treatment with a grass-control herbicide, such as Treflan.

SOYBEAN HERBICIDE COMBINATIONS

There are several new names in soybean herbicides. Many of these are herbicide combinations that may provide control of more weeds or may permit use on a greater diversity of soil types. Some of these combinations are:

SHAMROX--Dacthal (DCPA) plus Lorox (linuron)

SOLO--Alanap (naptalam) plus Chloro-IPC (chlorpropham)

NORABEN--Herban (norea) plus Amiben (chloramben)

DYNAP--dinitro (dinoseb) plus Alanap (naptalam)

DYNARAM--dinitro (dinoseb) plus Amiben (chloramben)

AMILON--Amiben (chloramben) plus Lorox (linuron)

Tank mixes of Lasso (alachlor) with Lorox (linuron) or Chloro-IPC (chlorpropham) have also been cleared. Chloro-IPC is added primarily for smartweed control, while Lorox will control smartweed and many other broadleaf weeds for which Lasso does not provide adequate control.

PLANT DISEASES

STEWART'S DISEASE OR BACTERIAL WILT IN SWEET CORN

The sum of the mean temperatures for December, 1970; January, 1971; and February, 1971, was 108.7 in the Carbondale area (85.8 at Urbana). This temperature index means that early season wilt may be destructive; also, that late-season leaf blight may be severe on susceptible sweet corn and seedling field corn. (See Report on Plant Diseases No. 907, Stewart's Disease or Bacterial Wilt of Sweet Corn, available from the UI Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

The bacterium that causes this disease (*Xanthomonas stewartii*) survives the winter in the bodies of corn flea beetles. Use an insecticide, as recommended by entomologists, to control the spread of the beetle. Dry weather favors feeding and reproduction. Beetles feed on and scratch the leaf surface, permitting bacteria to enter through the wounds.

Possible bacterial wilt infection would be indicated by premature tasseling; stunting; narrow yellow-green streaks that turn tan; wilting during the daytime; wet, chocolate-brown cavities in the lower stalk region; or yellow oozing from the cut ends of the vascular tissue.

Dent corn containing resistance to northern corn leaf blight is usually resistant to Stewart's disease after the four- or five-leaf stage. (See Report on Plant Diseases 201--Stewart's Leaf Blight of Corn, available from the same source.) All sweet corn varieties are susceptible in the first leaf stage. Corn that was planted early may attract a large number of beetles, and susceptible seedlings may wilt rapidly as the bacteria becomes systemic in the seedling and blocks water-conducting vessels.

UPDATE ON THE SOUTHERN CORN LEAF BLIGHT

To date, the southern corn leaf blight has been found only in Dade and Palm Beach Counties in southern Florida. Cold weather and lack of rainfall have prevented a build-up of the disease. In northern Florida, only normal (N) cytoplasm is planted. All sweet corn is sprayed with fungicides.

The weekly Dixie Early Warning Service report, received May 10, shows no blight in South Carolina, North Carolina, Texas, or Alabama. In Mississippi and Kentucky, there were only traces in volunteer fields and on indicator plantings.

Helminthosporium maydis, race T, appears to have overwintered in Illinois and surrounding states in the Corn Belt primarily on corn debris left above ground after last year's harvest. Where erosion control is not a problem, making a clean plowdown is a reasonable precaution.

No *H. maydis* spores (conidia) have been caught in spore traps at Dixon Springs or Urbana-Champaign during the past two weeks (as of May 12).

AERIAL REMOTE-SENSING FOR SOUTHERN CORN LEAF BLIGHT IN ILLINOIS

Several commercial companies plan to offer farmers infrared and color photographs of their fields (at a considerable cost), in an attempt to detect the presence of southern corn leaf blight (SCLB). However, in terms of disease control, the science of aerial remote-sensing is still in the observation phase, not the applied phase. Ground observers are still needed to correlate the aerial photographs. Only corn

with SCLB on the middle and upper leaves was detected with infrared photography in 1970 in an experiment conducted by the Laboratory for Applications of Remote Sensing (LARS) at Purdue University, in cooperation with Michigan State University.

Currently, there is no experimental evidence that SCLB can be detected on infrared or other film before it can be seen on the ground by examining the plants. Color infrared film shows changes in the visible and near-infrared portion of the light wave spectrum--not in the thermal (heat) portion where differences in plant temperature would be detectable.

The Corn Blight Watch is being conducted by LARS, USDA, and NASA through the cooperation of Purdue University, the University of Illinois, Michigan State University, and others. It is an experiment. The object is to find out the extent to which diseases, such as southern corn leaf blight, and other stress conditions can be detected by using color infrared film; also, to differentiate such factors as drought stress or nitrogen deficiency, which may look similar to SCLB.

Thirty-six counties are involved in the project in Illinois. The flight lines run from north to south in three strips--(1) down the center of the state, (2) along the eastern edge, and (3) along the western edge. A training session for Extension advisers from the 36 counties will be held June 3 and 4 in Mumford Hall. Laying-out plot lines and other phases of obtaining "ground truth" will be explained. Ed Burns and Mal Shurtleff, University of Illinois Extension Plant Pathologists, will complete the program with a refresher on the disease problem.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE — No. 8, May 21, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SMALL GRAINS

Armyworms. Six to nine armyworms per linear foot of drill row were found in a barley field in south-central Illinois this week. They were about 3/4 of an inch long, or approximately half grown. One or two worms per linear foot of drill row in wheat fields was common in the same area. Although these armyworms are still small, they will grow rapidly this week and will be noticeable in some fields. As yet, the situation is not alarming.

To count armyworms in a grain field, look first in the thick, lodged spots. Armyworms will hide in the dead leaves and other trash at the base of the plants. If you find lots of worms, make a count in several places in the field and figure the average number of worms per foot of drill row. If you find no worms or only an occasional one in the thick or lodged spots, there is no need to look further. Chemical control is justified if there are 6 or more armyworms per foot of drill row, as an average over the field.

An armyworm will eat 39 linear inches of wheat leaf in its life as a worm. However, the leaf loss is usually not too important. So, do not become too alarmed if you find a few armyworms in a wheat field. They often feed only on the leaves, and damage is usually minor. When they begin to cut off the wheat heads, however, damage can be severe.

Eighty percent of the total food consumed by an armyworm during its lifetime is eaten during the last 20 percent of its life as a worm. Normally, you can wait until many of the armyworms are 3/4 of an inch long before starting treatment. This will give weather, armyworm diseases, and wasp and fly parasites a chance to kill many of them. Chemical control may not be necessary. However, once the worms are two-thirds to three-fourths grown and the population is high, chemical control may be needed.

Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), or 1-1/2 pounds toxaphene per acre will control armyworms. Do not feed forage or straw treated with toxaphene to dairy cattle, livestock being fattened for slaughter, or poultry. After using trichlorfon, do not forage or feed the wheat within

three days. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

Sawflies. Do not confuse the striped armyworms with the transparent yellow-to-green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were found in many wheat fields this week. They do not damage wheat plants enough to require control.

CORN INSECTS

Armyworms. This pest is also present in thick stands of grasses along roadsides, in pastures, and in some hay fields. They are larger than those found in small grain fields. These worms may soon migrate to adjacent fields with crops such as corn. When this happens, damage can be severe. In some cases the armyworms merely eat the leaves and the plant continues to grow; in others, they eat the plant down into the ground.

Occasionally, armyworms are a serious problem in corn planted on grass sods or when rye has been plowed under in the spring. Before plowing, the moths deposit eggs in the grass. Afterward, eggs hatch and the tiny worms feed on the grass. They soon move to the surface, where they will devour the small corn seedlings.

Also watch fields in which no-till corn has been planted on grass sods. Armyworm moths deposit eggs in the grasses. The worms move up readily into the small corn.

The insecticides for wheat can also be used on corn to control armyworms.

Black cutworms. A few reports were received from western Illinois this week. Corn that is is cut off above the growing point will usually recuperate, but plants that are cut off below the growing point or heart are killed. In evaluating damage, take this possible regrowth factor into consideration before disking-up a field for replanting.

However, as soon as you see cutworm damage, apply control measures. Control is much easier when the worms are small.

You can control cutworms with an application of a carbaryl (Sevin) bait. A bait of 5-percent carbaryl on apple pomace applied broadcast at 20 pounds per acre is effective. A liquid bait, using molasses or Tractum with carbaryl, applied as a spray directed at the base of plants (1 pound per acre) or broadcast (2 pounds per acre) is also effective. Do not cultivate when a carbaryl spray or a granular bait is applied. Trichlorfon (Dylox) applied at 1 pound per acre in at least 20 gallons of water as a spray directed at the base of the plant will also provide control. Cover the trichlorfon spray band by throwing the soil at the base of t the plants with a cultivator. Do not use sugar baits near bee hives.

Yellow-striped armyworms. These dark-colored worms with yellow or white stripes on each side of the back are feeding on corn leaves. This feeding is usually of no consequence, so no not apply chemical control unless you feel that the population of worms is extremely high.

Wireworms. Several fields of corn were damaged by this pest this week. If replanting is necessary, use one of the phosphate insecticides (diazinon at 2 pounds per acre or Dasanit, Dyfonate, or Thimet at 1 pound per acre) as granules in a 7-inch band just ahead of the press wheel. These insecticides will control the small wireworms, but may not control the larger ones.

If damage has just begun and replanting is not yet indicated and the corn is big enough to cultivate, a cultivator application of phorate (Thimet) might be worth trying. This is only a gamble, however, in an attempt to save a stand in an emergency situation. The chemical needs to be concentrated at the base of the plant and covered with dirt by cultivation. A gentle rain immediately after application is helpful.

European corn borers. Pupation is starting in central Illinois. From the standpoint of corn development, the borer is late; but by the calendar, it is almost on time. This may be a year to keep an eye on both first- and second-generation borers.

FORAGE INSECTS

Alfalfa weevils. The development of this pest has slowed down this week. Also, much of the alfalfa is being cut.

Since the first cutting has either been taken off or soon will be, chemical control is no longer recommended. Watch the new growth. If it does not green-up, check for alfalfa weevil larvae. If they are severely damaging the new shoots, use chemical control. See Report No. 7 for insecticide suggestions.

Potato leafhoppers. These tiny, wedge-shaped, green pests can now be found as adults in alfalfa fields. They are abundant in some areas. These are the "green gnats" that are flying as the alfalfa is cut. They go to the new growth and deposit eggs. The young, which look like the adults but are wingless, suck sap and also inject a toxin into the plant. This causes second-growth alfalfa to turn yellow or purple and to be severely stunted.

It is too late to control this pest after the symptoms are apparent. If the adults are numerous, examine the new growth for tiny leafhoppers. If they are abundant, a malathion or methoxychlor spray will control them.

HOMEOWNER INSECTS

Chiggers. They annoy campers, hikers, picnickers, fishermen, berry pickers, and even homeowners in their own yard on occasion. These tiny mites cling to grasses and weeds, transferring to persons who happen to brush against them. When entering areas that may be infested, use a repellent such as DEET (diethyltoluamide). Apply the repellent on socks, pants, pant cuffs, as well as on exposed ankles and calves. Take a warm, soapy shower or bath as soon as possible after returning from a chigger-infested area. It takes the mites several hours to penetrate the skin; they can often be washed off before becoming imbedded.

To reduce the number of chiggers in a home yard, spray malathion or diazinon lightly over the grass, low flowers, and shrubs. Do not apply diazinon to ferns or hibiscus, or malathion to cannaert red cedar.

Fleas. Ordinarily they only annoy dogs and cats. But left uncontrolled, they can become a serious problem in a home or yard by late summer. In the worm (larva) stage, these fleas live in the bedding of dogs and cats, in rugs or upholstered furniture, and even in the dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals. Your dog or cat is a walking bait station for fleas. During the warm weather (May to October), use a dust on them of either 4-percent

malathion or 5-percent carbaryl (Sevin). Treatments should also be made once or twice during the colder months (November to April) for added protection.

Aphids. Many species are infesting trees and shrubs, such as apple and hawthorn trees and rose bushes. Damage caused by an aphid called a greenbug has also been found in bluegrass lawns in western Illinois. Greenbug damage appears as circular brown patches in the lawn, usually under or near a tree. Examine the grass blades on the outer edge of these patches for pale green plant lice or aphids.

For control, apply a spray of either malathion or diazinon to the infested area. If malathion is used, mix 2 teaspoons of 50- to 57-percent liquid concentrate per gallon of water. For a diazinon spray, mix 2 teaspoons of the 25-percent liquid concentrate per gallon of spray. Be sure to treat the healthy grass around the edge of the damaged area.

Euonymous scales and pine needle scales. The hatch has begun, and these crawlers are moving onto new leaves and stems. Another name for euonymous is wintercreeper. Where these insects are a problem, apply malathion as a spray--thoroughly covering the bark and leaves. Make two to three applications on the infested shrubs. Space the applications about 10 days apart. The first application should be in mid-May in the southern part of the state, during the latter part of May in the central section, and in early June in the northern area.

WEEDS

WEED CONTROL IN SPRING OATS

Weeds that germinate early, such as mustard, ragweed, smartweed, and lambsquarters, often cause problems in spring oats. These broadleaf weeds are easily controlled with 2,4-D or MCPA. MCPA is probably safer for use on legume underseedings, but it costs considerably more than 2,4-D.

Use 2,4-D amine where oats are undersown with a legume. Never use 2,4-D ester on a legume seeding. Apply 1/2 pint per acre of the 4-pounds-per-gallon form of 2,4-D amine when the oats are 8 to 14 inches tall.

The amine or ester forms of 2,4-DB (Butoxone or Butyrac) could also be used, but are more expensive than 2,4-D or MCPA. The rate is 1 to 2 quarts of 2,4-DB amine, or 3/4 to 1-1/2 quarts per acre of 2,4-DB ester--applied when the small grain is 4 to 8 inches tall.

Where the small grain is not undersown with a legume, you can use higher rates of 2,4-D amine or the 2,4-D ester. Use 1 pint per acre of 2,4-D amine or 2/3 pint per acre of 2,4-D ester (4 pounds per gallon). The application should be made when the oats are 4 to 12 inches tall.

Banvel can also be used. It is particularly effective on smartweed and wild buckwheat, but provides only weak control on mustards. Do not use Banvel when you have a legume underseeding. Apply 1/4 pint per acre of Banvel when the oats are in the two- to five-leaf stage.

Some farmers seem to believe that 2,4-DB is the higher volatile butyl ester of 2,4-D. This is not true. One farmer who bought 2,4-D ester and used it on alfalfa found out that there is quite a difference. 2,4-DB is the butyric acid form

(2,4-dichlorophenoxy-butyric acid). 2,4-D is the acetic acid form (2,4-dichlorophenoxy-acetic acid). You can use 2,4-DB on legumes, but not 2,4-D butyl ester.

PLANT DISEASES

FIRST SOUTHERN CORN LEAF BLIGHT FOUND

The first positive case of southern corn leaf blight in Illinois was identified in the Plant Disease Clinic at the University of Illinois on May 19. The corn sample came from a St. Clair County field, planted to a blend. The infected corn grows next to a grain bin where corn was shelled-out just before a rainy period.

The disease has not spread in the field, and new leaves that have emerged since May 14 appear to be healthy. Because the known diseased area is small, pathologists suggested plowing-down the infected corn and replanting the area to resistant corn or soybeans.

Southern corn leaf blight appears as small, oval or round spots on the leaves with a reddish-brown border. A yellowish halo may surround the border of some spots.

The Plant Disease Clinic is receiving many corn specimens that show weather damage--mostly cold, hail, and wind-whipping. Yellowish spots, blotches, or streaks appear in the leaves and later develop whitish or translucent centers. The tissue may also be torn on some spots. Scorched leaf tips are also common, sometimes associated with grayish areas in the leaf caused by the separation of the upper cuticle.

SCLB spots can be distinguished from "weather spots" by the appearance of the definite, reddish-brown border.

POWDERY MILDEW AND SEPTORIA LEAF BLOTCH OF WHEAT

Powdery mildew and septoria leaf blotch are now showing up in small amounts where wheat stands are thick and the nitrogen fertilization rate is high. Mildew appears as a whitish mold on the leaves, which may later turn "mealy" and brownish and in which black specks are formed (overwintering or oversummering fruiting bodies of the mildew fungus). Septoria shows up as tan-to-brownish, oval-to-irregular blotches on the leaves. Later, the centers are sprinkled with black specks (fruiting bodies of the septoria fungus). These diseases cause little damage and yield loss. In most years, powdery mildew and septoria can be found six to eight weeks earlier. Dry weather has held these diseases in check up to now.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

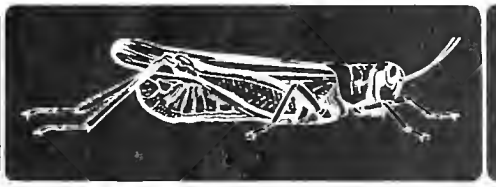
WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 9, May 28, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworms. More reports of damage were received this week from several sections, mostly in western Illinois. So far, the damage is confined to a relatively few cornfields, but is severe. The size of worms ranges from a half inch or less to almost two inches in length. Worms that are one-half to one inch long will continue to feed for another week to ten days. When the worms reach two inches in size, feeding is virtually completed and pupation will occur shortly.

Cornfields should be carefully examined now for cut or missing plants--signs that cutworms are at work. Damage has been observed on hillsides as well as low, wet areas in fields.

If damage is apparent, corn that is cut off above the growing point will usually recuperate, but plants cut off below the growing point are killed. If the corn is small, (2 to 4 inches high), cutting generally occurs above the growing point. About half of these plants could be expected to recover. Take this possible regrowth factor into consideration before disking-up a field and replanting. Immediate treatment is needed if many of the worms are less than an inch long and plants are being cut off below the growing point.

For emergency control of cutworms, consider using one of the following treatments:

1. A pellet-like bait of 5-percent carbaryl (Sevin) on apple pomace, applied broadcast at 20 pounds per acre with ground equipment or from the air. Do not cover by cultivation.

2. A liquid bait using molasses or Tractum with carbaryl, applied as a spray directed as a band over the plants or at their base at the rate of 2 pounds per acre. The best coverage will be obtained with 20 gallons of water and 1 or 2 quarts of molasses per acre. Do not cultivate immediately; but if the soil is dry, covering the carbaryl-molasses spray by cultivation may improve control. Do not use the sugar baits near bee hives.

3. Trichlorfon (Dylox), applied at 1 pound per acre in at least 20 gallons of water as a spray directed at the base of the plant, will also provide control. Cover the trichlorfon spray band by throwing the soil at the base of the plants with a cultivator.

This past week, varying control of cutworms was obtained by using the carbaryl-molasses spray. Some results have been good--others fair to poor. In some instances, several days passed before control was evident. Emergency cutworm control has always been erratic and tough to achieve. This year is no exception. Several factors appear to be responsible for the poor results. Where the soil was dry, the worms fed beneath the soil surface and did not come in contact with the toxicant. Where the soil surface was moist, the cutworms fed on or near the surface and were killed by the chemical.

The need for applying emergency treatments will vary from field to field. If the field is too wet thus preventing ground application of an insecticide, an aerial application of the 5-percent apple pomace bait can be used at the rate of 20 pounds per acre.

If replanting is necessary, the cutworms may still be present when the corn comes up. Dyfonate granules at the rate of 2 pounds of actual ingredient per acre, banded ahead of the planter press wheel, will give control. When replanting without disking-out the plants remaining in the old stand, follow the replanting immediately with a carbaryl-molasses spray over the row at 2 pounds per acre.

Of the cutworm complaints received, about half of the damaged cornfields have been treated with a row or broadcast application of aldrin or heptachlor at planting time.

Wireworms. More reports of damage to corn by this pest were received this week. If replanting is necessary, use one of the organic phosphate insecticides--Thimet, Dyfonate, and Dasanit at 1 pound or diazinon at 2 pounds per acre. These will control small wireworms, but may not control the large ones. A rain after application is helpful. We have had several reports of wireworm-control failure with row treatments of aldrin, heptachlor, and chlordane.

European corn borers. Pupation of overwintering corn borers is 100 percent complete in southern Illinois, where moth-emergence has started and egg-laying is underway. Pupation is 65-percent complete in the central sections of the state, and moth-emergence is just starting. Pupation is just beginning in northern Illinois.

True armyworms. More reports have been received of armyworm damage to corn planted after rye and other grasses where a no-tillage system of planting was used. The armyworm moths laid their eggs in the grass. The newly hatched worms are now feeding on the corn. For control, use 1-1/2 pounds of toxaphene, or 1-1/2 pounds of carbaryl (Sevin), or 1 pound of trichlorfon (Dylox)--applied as a spray over the row when damage is present.

HOMEOWNER INSECTS

Bean leaf beetles. These are beginning to chew holes in the leaves of green beans. This is a dull-red or brown beetle with black spots. It can be controlled with carbaryl (Sevin), applied as a 5-percent dust or a spray prepared by mixing 2 tablespoons of 50-percent wettable powder in each gallon of water.

Striped cucumber beetles. Adults are present where young plants of vine crops such as cucumber and squash have emerged. These black and yellow beetles migrate to newly emerging plants and chew on the leaves. They often carry a disease called bacterial wilt in their mouths. This wilt kills the plants on which

the beetles feed. Again, carbaryl (Sevin) applied as a dust or spray will provide control.

SMALL GRAINS

Armyworms. Don't push the panic button yet on armyworms. Although an occasional, small grain field was observed in the south-central section this week with sufficient armyworms to cause problems, most fields didn't have enough to warrant concern. Many worms are still small and will continue to feed for several days. The cool weather has slowed down their feeding and development.

Continue to check small grain fields carefully for another two weeks. Cool, wet weather is favorable for armyworm development. High temperatures help produce a disease that may kill many of the worms.

To determine the need for treatment in a grain field, look first in the thick, lodged spots. Then strike the plants vigorously to dislodge the worms and count those on the ground or in the debris between the rows, or in the cracks and crevices in the soil. If you find many worms, make counts in several places in the field and figure the average number per linear foot of row. If the average is six or more worms per linear foot of row throughout the field, chemical control is justified. If you do not find worms or only a few in the thick or lodged spots, treatment is not necessary.

Leaf-feeding is not serious when worm populations are low, but an average population of less than 6 worms per linear foot of drill row can still cause damage if the worms are cutting off the heads of wheat. Also, if most worms are about 1-1/4 to 1-1/2 inches long and are fat, they are through feeding. Do not use insecticides then. It is too late.

Applications of 1 to 1-1/4 pounds of malathion, 1 pound of trichlorfon (Dylox), or 1-1/2 pounds toxaphene per acre will control armyworms. Do not feed forage or straw treated with toxaphene to dairy cattle, livestock being fattened for slaughter, or poultry. After using trichlorfon, do not forage or feed the wheat within three days. There is no waiting period between the application of toxaphene and grain harvest; a week is required when applying malathion, 21 days for trichlorfon.

Where the worms are migrating into corn, spray the infested rows as well as a 25- to 30-foot strip of wheat or grass adjacent to the corn.

FORAGE INSECTS

Alfalfa weevils. The larvae are pupating in the southern section, and populations are leveling off or declining. If damage is present, the best approach now is to cut and remove the hay and watch the new growth of the second crop for damage. If it does not green-up within 2 to 4 days after cutting and if worms are noticeable, spray the alfalfa promptly. Alfalfa weevil larvae will be present for several weeks in southern sections, but the peak period for damage is over in this area.

In the central and northern sections, larval populations are still low and non-economic. See Report No. 7 for insecticide suggestions.

WEEDS

WEED CONTROL IN GRAIN SORGHUM

The southern corn leaf blight caused farmers to take a closer look at grain sorghum this year as an alternate crop. Several herbicides are cleared for grain sorghum, but few for forage sorghum.

The corn herbicides suited for sorghum are Ramrod, Ramrod/atrazine, AAtrex, and 2,4-D. Milogard, Herban, Herban 21A, and Herban 21P are specific sorghum herbicides.

Ramrod (propachlor) is cleared for preemergence use on grain sorghum (milo) but not on forage sorghum. The rate is the same as for corn. Ramrod can also be mixed with AAtrex or Milogard or followed with a postemergence spray of 2,4-D or AAtrex to control broadleaf weeds.

AAtrex (atrazine) is cleared for use in Illinois only as a postemergence application. AAtrex is cleared for preemergence application, using combinations of Ramrod and Herban.

Milogard (propazine) is a preplant or preemergence herbicide used on grain or wheat sorghum. It is chemically related to atrazine, but is less effective on some grassy weeds. The rate of Milogard 80W is 2-1/2 to 4 pounds per acre (broadcast basis), depending on the soil. Milogard cannot be used on sandy soil. Corn and sorghum are the only crops that can be grown on fields treated with Milogard for eighteen months after application.

Herban (norea) is a substitute urea herbicide, sold as a 80-percent wettable powder. It is usually combined with atrazine or propazine. Herban 21A and Herban 21P are mixes of 2:1 Herban (norea) with atrazine and propazine, respectively.

2,4-D can be used to control many broadleaf weeds as a postemergence treatment. Sorghum is most tolerant to 2,4-D when it is 4 to 12 inches tall. Use extension nozzles (drops) if the sorghum is over 8 inches tall.

2,4-D and AAtrex (atrazine) are the only herbicides presently cleared for use on forage sorghums and sorghum-sudan hybrids. Narrowing the row widths and using high plant populations are also good practices for weed control in forage sorghums.

CORN INJURY PROBLEMS

We have received several reports of corn injury, particularly "leafing-out" under the ground. This problem can be caused by several things, including some chemicals. However, other causes would include crusting of the ground, planting too deep, or damage to the seed germ. In several cases, small round seed was planted. Such seed is much more susceptible to germ damage than flat seed because of the germ's convex surface. Some inbred corns are more susceptible to "leafing-out" under the surface than others because of a short first internode. So you would expect some single-cross corns to be more susceptible than others.

In some cases, the herbicide Lasso was used. Lasso injury can cause "leafing-out" under the ground because of a constriction of the coleoptile. Lasso injury usually causes onion-leafing on a few of the emerged plants.

WEED PROBLEMS

We have also received several calls about wirestem muhly control in corn--especially from the northwestern part of the state. There is no good herbicide-control program

for this weed. A delayed-tillage practice involving late planting has provided the best control. But such a practice fits soybeans better than it does corn. AAtrex (atrazine), applied either preemergence or postemergence, has given some temporary control.

We have also received several samples of Jerusalem artichoke. This is a perennial sunflower from the northwestern part of the state. This weed is fairly susceptible to 2,4-D or Banvel.

PLANT DISEASES

PROGRESS REPORT ON SOUTHERN CORN LEAF BLIGHT

Southern corn leaf blight (SCLB) was identified this past week on volunteer corn growing in Champaign, Coles, and Marion Counties. All infections are probably race T, but this is being checked by inoculating greenhouse plants. The recent rains may have spread *Helminthosporium maydis* spores from clumps of volunteer corn to nearby seedling corn. Small, round- to-oval leaf lesions, with reddish-purple or reddish-brown borders, will appear about mid-week if infection has occurred.

These infections are not expected to spread to any great extent. Certainly, no epidemic can or will occur until tassel time, or later. At that time, night temperatures are in the 70's, dews are heavy, and the canopy of corn leaves slows down air movement. All of these conditions favor rapid infection, multiplication of the fungus, and the spread of the disease. Infected volunteer corn--if you search for it--can probably be found now in fifty or more Illinois counties.

We do not expect SCLB to be as serious this year as in 1970 because a much higher percentage of the fields are planted with resistant N corn, highly tolerant blends, and T-cytoplasm corn that yielded well in 1970 where the blight was severe. In addition, relatively few *H. maydis* spores will be blown up from the Gulf States, because most of their production is in N or F_2 corn. We continue to pick up a few of the *H. maydis* spores each week at both Dixon Springs and Urbana.

The states now reporting SCLB in fields or in volunteer corn include Florida, Mississippi, and Texas. The infected areas are small, and the blight is not spreading anywhere in the South as rapidly as it did in 1970. Because of the recent widespread rains, all states where SCLB was severe in 1970 will probably report infections within the next week or two.

BACTERIAL BLIGHT OF OATS

The Plant Disease Clinic has recently received several oat specimens with bacterial blights. The symptoms appear as either gray-brown centered lesions with a broad, light-green area fading to a straw-colored halo (Halo Blight) or water-soaked streaks and blotches that turn brown and extend for the length of the leaf without a halo (Bacterial Stripe Blight). The infected leaves die-back from the tips, giving the infected areas and even complete fields a brownish cast. No loss in yield or grain quality is expected. The affected oat fields should appear normal in another week or so.

Both of these bacterial blights are favored by cool, rainy weather and are checked by warm, dry periods. The causal bacteria overwinter in infected seed, plant refuse, or soil, and are transmitted by rain and wind and insects. Because of recent legal action, seed treatments containing mercury cannot be recommended. Consequently,

you must rely on resistant varieties for control. More details are given in *Report on Plant Diseases* No. 106, "Bacterial Blights of Oats," available from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

SOYBEAN SEEDLING DISEASES

Recent rains and the cool, cloudy weather have kept many fields on the wet side. As a result, we have received many soybean specimens at the Plant Disease Clinic that show signs of Rhizoctonia, Pythium, and Phytophthora root rots.

Rhizoctonia infection produces sunken, reddish-brown lesions on the main root and stem below the soil line. Circular patches of dead plants, 4 to 10 feet in diameter, may appear anytime from now until mid-July.

Pythium-infected plants have soft, dark rotted areas that may extend up the stem. These areas become translucent and water-soaked. They often tear away when the plant is pulled from the soil. Infected plants usually appear singly or in small groups, and will probably cause little yield reduction.

Phytophthora root rot is characterized by dark-brown lesions on the root and stem. These lesions extend as much as 6 inches above the soil line, as opposed to the reddish-brown decay caused by Rhizoctonia. Yellow plants killed by Phytophthora occur in sections or rows in the low areas of a field.

Planting healthy, high-quality seed in warm, well-drained soil is the only control measure available for Rhizoctonia and Pythium. All varieties are uniformly susceptible. There are many varieties highly resistant or immune to Phytophthora rot. These should be planted in poorly drained soils where there is a history of Phytophthora. *Report on Plant Diseases* No. 504, "Root and Stem Diseases of Soybeans," contains more details. It is also available from the Department of Plant Pathology.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 10, June 4, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Wireworms. This week the number of complaints increased. They involved a variety of rotations, but were most common about corn in fields that were in wheat in 1969.

This pest lives as a larva in the soil for two to six years. A wireworm problem this year usually means there will also be one in the same spot next year, so plan accordingly.

Wireworm damage usually declines by mid-June because the worms go deeper into the ground when the soil becomes warmer and drier.

In cases where replanting in necessary, use one of the organic phosphate insecticides--Thimet, Dyfonate, and Dasanit at 1 pound or diazinon at 2 pounds per acre. These will control small wireworms, but may not control the large ones. A rain after application is helpful. We have had several reports of wireworm-control failure with row treatments of aldrin, heptachlor, and chlordane.

It may also be possible to straddle the rows and replant leaving the old stand. Later, you can cultivate-out the poorer stand. Do not use an insecticide if replanting to beans. The only insecticide with label approval for soybean soil treatment is diazinon.

Cutworms. A few new infestations were reported this week. Later ones are still possible, but this depends on the weather. Cool, wet weather would encourage the development of the second generation, particularly in northern Illinois.

European corn borers. It is still impossible to determine the exact situation. The most advanced fields in western Illinois should be observed carefully in about two to three weeks. The survival of borers in these fields will be high, and the moths will tend to concentrate their egg-laying in such fields. The large amount of early planted corn will provide the moths with lots of places to deposit eggs. The first generation population, therefore, should be scattered over a large area while the second generation may be concentrated in the smaller acreages of late-planted fields.

Common stalk borers. These striped worms with a dark-purple band around the middle attack corn alongside fence rows, grass waterways, and ditch banks where they have overwintered as eggs. When the worms outgrow the grass or weed stems or the grass is mowed, the borers migrate into the adjacent corn. Sometimes, an attack on young plants by the borers will kill the plant; other times, the plant may live but will fail to produce an ear. Since these borers chew in the center of the plant, the leaves that emerge are extremely ragged.

Ordinarily, this pest is serious only along marginal areas such as fence rows, waterways, and the like. But common stalk borers assume a new proportion as a corn pest in no-till corn being grown in grass sod. These borers are very numerous throughout such fields. As the grass dies after being sprayed with a weed killer, they concentrate on the corn. We have seen severe damage by this pest for three years now. This year will probably be no exception.

Control is on a catch-as-catch-can basis. A spray of carbaryl (Sevin) at 1 to 2 pounds per acre directed at the base of the plant may be helpful. As the borer leaves one plant and crawls to another, it will contact the chemical.

These pests are now appearing, so watch for wilting plants and check for this insect.

SMALL GRAINS

Armyworms. This pest is still present in wheat, and a few severe infestations have been reported this week. Examine fields showing luxuriant growth.

To determine the need for treatment, look first in the thick, lodged spots. Then strike the plants vigorously to dislodge the worms. Count those on the ground or in the debris between the rows, or in the cracks and crevices in the soil. If you find many worms, make counts in several places in the field and figure the average number per linear foot of row. If the average is six or more worms per linear foot of row throughout the field, chemical control is justified. If you do not find worms or only a few in the thick or lodged spots, treatment is not necessary.

After wheat is in the dough stage, loss of leaves is relatively unimportant. The real damage from armyworms will occur if they begin to cut the wheat heads or migrate to other, nearby crops.

When using toxaphene, do not expect good control for about four days. Not only is toxaphene a slow-acting toxicant, but 50 percent of the worms will not come in contact with the spray for at least 48 hours.

Of encouragement is the fact that wasp parasites of armyworms are beginning to appear in numbers and may control many infestations. The clusters of small white cocoons found in the ground in wheat fields are the pupal stage of this parasite. The wasps will emerge from them and lay eggs in more armyworms. In one field, about 25 percent of the armyworms had been parasitized this week.

SOYBEANS

Clover root curculios. This grey snout beetle often migrates from alfalfa and clover fields when they are plowed. These beetles concentrate on soybeans, eating notches in the new leaves and gouging holes in the stems. Often, the leaves are almost entirely consumed. A spray of malathion or carbaryl will control this pest, if control is needed.

LIVESTOCK INSECTS

Pasture flies are increasing, particularly in the central and southern sections of Illinois. Horn flies, stable flies, and face flies rob you of milk or beef production. Don't let flies pick your pocket. Follow these suggestions.

For control on dairy cattle, apply crotoxyphos (Ciodrin) as a 2-percent, water-base spray at the rate of 1 to 2 ounces per animal two to four times per week. A 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrum spray, applied at 1 to 2 ounces per animal each day, can also be used. Pay particular attention to the animal's legs and undersides when spraying. Also, for dry stock and young stock on pasture, as well as for lactating animals, use a 1-percent Ciodrin, water-diluted spray. Apple 1 to 2 pints per animal, as often as once per week if needed. Ciodrin is the most effective insecticide for face-fly control. All of the above insecticides provide good control of horn flies and fair control of stable flies.

To control pasture flies on beef cattle, apply a water-base spray of 0.5 percent toxaphene, using 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies.

If face flies become a serious problem, use crotoxyphos (Ciodrin) as suggested for young dairy cattle. A canvas or burlap head-oiler or back-oiler, saturated with a solution 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER PROBLEMS

Mosquitoes. To help reduce the number of mosquitoes in home yards, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2 by 10 inches) containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies afor 4 to 6 weeks. Do not use these strips in kitchens or other areas where food is handled. Do not use them in any room where infants, the ill, or aged persons are confined. A 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most-effective mosquito repellents is DEET (diethyltoluamide). (6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) solution as an oil- or water-base, space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

WEEDS

2,4,5-T USAGE

We've had several questions about using 2,4,5-T. Last year use of 2,4,5-T was suspended or canceled around homes, on food crops, and on lakes, ponds, and

ditch banks. After recent hearings, the Environmental Protection Agency (EPA) announced that it "found no imminent hazard requiring suspension of the registered uses of 2,4,5-T." They also issued this statement:

"2,4,5-T is a very effective herbicide which is widely used for controlling brush on rangelands and undesirable broadleaf trees in forestry programs. This chemical should be used in such fashion that no residues will result in food or feed. Milk cows should not be grazed on treated areas for a few weeks after treatment, and meat animals should not be permitted to graze freshly treated areas for a few days prior to slaughter."

So, 2,4,5-T can now be used for brush control, as long as the above restrictions are followed. "Brushkiller" (a mixture of 2,4-D and 2,4,5-T) is also subject to the same restrictions. Silvex or dichlorprop are two brush herbicides that can still be used around ditches and waterways where it is necessary to use something besides 2,4-D. Silvex is sometimes sold under the tradenames of Kuron and Silvi-Rhap. Dichlorprop is soil as Propi-Rhap.

POSTEMERGENCE AATREX

Some advisers are concerned about potential injury after they apply atrazine (AAtrex) and oil for grass control in corn. Corn injury can occur with the atrazine-oil combination. This is most likely to happen on corn exposed to stress, such as cold temperatures or frost.

For maximum weed control on grasses, the grass weeds should be less than 1-1/2 inches tall. The rate for atrazine (AAtrex) is 2-1/2 pounds per acre of the 80W material. The oil is usually added at the rate of 1 to 2 gallons per acre.

Agricultural surfactants are sometimes used rather than oil. Surfactants are usually used at the rate of 1 to 2 quarts per 100 gallons of spray, so you have a smaller volume of material to handle. The performance of oils and surfactants is about equal. Any difference is usually in favor of the oils.

Surfactant and oil combinations are presently available. They combine the effectiveness of the oil with the lower volume of the surfactant. These are usually used at the rate of 1 to 2 quarts per acre.

Remember, when mixing atrazine (AAtrex) and oil, be sure to mix the atrazine with the water first and then add the oil. This prevents "gunking" and dispersion problems.

PLANT DISEASES

PROGRESS REPORT ON SOUTHERN CORN LEAF BLIGHT

As of June 3, southern corn leaf blight has been found in the following counties: Jackson, Clay, Effingham, Edgar, Coles, Gallatin, Douglas, Jasper, Monroe, and Union. In Jackson County, it was found on the agronomy farm at Carbondale; in Clay County, on corn planted this spring in a farmer's field. In all other cases, blight has been identified only on volunteer corn. So far, there is no indication of any spread to nearby planted corn. There is no cause for alarm. Our predictions for 1971 are the same as last week (see Bulletin No. 9).

The new states reporting SCLB since May 28 include: Nebraska (1 county), Iowa (5), Alabama (2), Florida (5), Kentucky (1), and Tennessee (1). In all cases, the reports involve volunteer corn. Only Florida reports a spread of the disease into planted fields of corn as well as "spore showers." The number of *H. maydis* spores caught in our spore traps remains extremely low--about 1 spore every three days.

OATS

In general, the Illinois oat crop looks fine. As before, small pockets of yellow dwarf or red leaf can be found, usually near field borders. The diseased plants are stunted and are heading poorly. Some blasting is apparent. Affected plants have a dull yellowish-red appearance. Details are given in *Report on Plant Diseases No. 101*, available from the UI Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

Oat smuts--both loose and covered--can also be found in small amounts. The plants are stunted. The kernels are replaced by black masses of smut spores that quickly blow away leaving denuded panicles. We expect more smut to develop in future years because there is no good, inexpensive substitute for mercury seed treatments.

WHEAT

The Illinois wheat crop looks excellent. At present about the only disease of any consequence is Septoria leaf blotch. Look for light- to reddish-brown irregular lesions on the leaves. They are surrounded by a yellowish band. Black specks appear in the light-brown to ash-white centers as the lesions age. Little reduction in yield is expected. Control measures are listed in *Report on Plant Diseases No. 105*, also available from the Department of Plant Pathology, Urbana.

SPECIAL NOTE TO COUNTY EXTENSION ADVISERS

Personnel from the USDA and the Illinois Department of Agriculture are checking near infested areas for cereal leaf beetles. Additional counties have recently been added to the list of those with infestations. When this happens it does not mean that economic damage has occurred, only that at least one beetle has been found. Economic damage in newly infested areas is not expected for a few more years.

DATES FOR DIGGING IN WIREWORM PLOTS

Tuesday, June 8, Livingston County--9:00 a.m. Contact Paul Wilson, Extension Adviser, for the location near Long Point. Phone: 815/844-3622.

Wednesday, June 9, Ogle County--1:00 p.m. Contact Stan Eden, Extension Adviser, for the location. Phone: 815/732-2191.

Thursday, June 10, Perry County--1:00 p.m. Contact Charles Howell for directions. Phone: 618/357-5671.

Friday, June 11, Kane County--9:00 a.m. First set of buildings north of the junction of Route 31 and the Red Gate Road, west side of Rt. 31. Contact Phil Farris, Extension Adviser. Phone: 312/584-6166.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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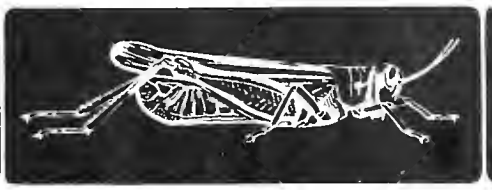

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 11, June 11, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Wireworms. This pest continued to damage corn this week, but the problem seems to be lessening. Wireworm damage usually declines by mid-June because the worms go deeper into the ground when the soil becomes warmer and drier.

In cases where replanting is necessary, use one of the organic phosphate insecticides--Thimet, Dyfonate, or Dasanit at 1 pound or diazinon at 2 pounds per acre of actual chemical. These will control small wireworms, but may not control the large ones. A rain after application is helpful.

Black cutworms. A few scattered reports of damaged corn were received this week. Continue to be on the lookout for damage. Control suggestions were given in Report No. 9.

European corn borers. This situation will need to be watched for the next three weeks. In general, the development of these borers appears to be slower than normal this year, which would allow for greater survival.

In the southern section of Illinois, egg-laying reached its peak this week. The tiny borers now present in the whorls of corn under 40 to 45 inches in height (from the ground to the tip of tallest leaf) will die. In fields where the corn is 50 inches or taller, check for borer infestations. If treatment is justified, make the application this week.

In the central section, moth-emergence is well along and egg-laying has started. The earliest time for treatments, if needed, would be in about ten days (June 21 or after). In the northern section, the moths are just beginning to emerge.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should

be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be as granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Garden symphylans or garden centipedes. Damage has been found in two fields of corn in the central section. These insect relatives are small (1/16 to 5/16 of an inch), white, and have many legs. They move rapidly in the soil, attacking the roots. They prefer the root hairs and tender new roots, but they will reduce the root system to a stub if the infestation is severe. Infested plants are stunted and may be killed. These pests feed throughout the season, moving closer to the surface when conditions are moist and going deeper when they are dry.

To check for centipedes, look in areas where the stand is irregular. Locate plants that appear stunted. Dig up the plant with a spade full of soil, and place this on a sheet of plastic or cloth. Examine the root system for feeding injury. Carefully sort through the soil, breaking up the clods and watching for the white, moving centipedes. It usually takes a hundred or more garden centipedes per hill to cause noticeable injury. Do not become alarmed if you find 5 to 10 in each hill. This number is common in many cornfields.

If the plants are being seriously affected, we suggest an application of granular Dyfonate on a trial basis. Band 1 pound of actual Dyfonate per acre at the base of the plants, and cover the granules by cultivation. Rain following the treatment will enhance the possibility for success. If corn is to be replanted this year or planted in this same field next year, apply 1 pound of actual Dyfonate per acre as granules in a 7-inch wide band just ahead of the press wheel.

Corn rootworms. Egg-hatch has started, and will continue for several weeks. It is too soon to predict the severity of the problem. Damage is likely to be the worst north of a line from Carthage to Bloomington to Joliet.

If you suspect a rootworm problem in your fields and did not use an organic phosphate or carbamate insecticide at planting time, apply one within the next two weeks. Use granules applied at the base of the plants. Cover with cultivation. The insecticides suggested for basal treatments are BUX, Dasanit, Dyfonate, or phorate (Thimet). Use the rate of 1 pound of actual chemical per acre.

Corn leaf aphids. These were found in corn whorls in the south-central and southern sections of Illinois this week. The aphids are just getting started, and it is too soon to make predictions.

White grubs. A few reports of damage to corn and soybeans have been received from the central section. These grubs vary in size, but are mostly small. They will continue to feed throughout the growing season. Attempts to control white grubs with basal applications off the cultivator have failed. If soybeans are to be

replanted, try 2 pounds of actual diazinon per acre in a 7-inch band just ahead of the press wheel.

SPECIAL NOTE TO SWEET CORN PRODUCERS IN SOUTHERN ILLINOIS ESPECIALLY THE SOUTHWESTERN AREA

Corn earworm moths are flying and egg-laying is underway. The eggs are being deposited on silks if present or in whorls. An average of one egg per silk was found in fields this week. Hatch occurs in about two to three days; therefore, treatments should be made on silking corn at least every 48 hours where whorl feeding is present. One of the sprayer nozzles should be directed down in the whorl.

For control, use either 2 pounds of actual carbaryl (Sevin) or 1-1/2 pounds of actual Gardona per acre.

SOYBEANS

Bean leaf beetles. These are eating holes in the leaves of soybeans. No seriously damaged fields have been observed or reported. Sprays of carbaryl (Sevin) or toxaphene are effective.

FORAGE INSECTS

Alfalfa weevils. They continue to present some problems. In the southern and south-central sections, the new growth of the second crop is being damaged in some fields. This is being caused by a combination of feeding by the larvae and the new spring adults. Malathion is effective against the larvae, but is not highly effective against the adults. Therefore, use one of the other insecticides suggested in Report No. 7. In the central and northern sections a few fields are being damaged. It would be best to cut and remove the crop, then watch the new growth for signs of damage. If the new growth does not green-up in two to four days and worms are present, apply an insecticide promptly.

GENERAL

Grasshoppers. They are hatching-out in fence rows, ditch banks, roadsides, and hay fields. Grasshoppers were more numerous last fall than for several years, especially in the central and southern sections. Hot, dry weather during the next two to three weeks (their peak hatching period) will favor the survival of the "hoppers." If lots of tiny "hoppers" appear in grassy areas, apply a spray of 3/4 pound of carbaryl or 1-1/2 pounds of toxaphene per acre. Use carbaryl on hay fields. This will prevent migrations of these same grasshoppers into more valuable crops like corn and soybeans later on.

INSECTS IN STORED GRAIN

Wheat harvest is just around the corner and such insects could present a greater-than-normal problem this year, especially the Indian meal moth. Dr. Ralph Sechriest of the Illinois Natural History Survey has confirmed resistance of the Indian meal moth to malathion here in Illinois. Reports of malathion failures in attempts to control this insect have been on the increase since 1969. More are expected this year.

Those of you selling or making suggestions for the use of malathion on stored wheat can expect complaints from farmers, beginning in late July through September. At present, we have no substitute for malathion as a protective material for stored grains. Also, there does not appear to be a total failure of malathion as yet to control the Indian meal moth. Malathion is still effective against the remainder of the insect complex that attacks stored wheat (about twelve important ones). We feel the continued use of malathion in a complete control program involving (1) bin cleanup, (2) bin spraying, (3) treatment of grain during storage, and (4) two surface treatments--one at the conclusion of storage and one in early to mid-August--will still provide satisfactory protection on the vast majority of farms.

Fumigation with Phostoxin, the 73 mixture (ethylene dibromide plus methyl bromide), the 75-25 mixture (ethylene dichloride plus carbon tetrachloride), or the 80-20 mixture (carbon bisulfide plus carbon tetrachloride) can be used for emergency purposes when insects are present, but such treatments will not provide lasting protection.

HOMEOWNER INSECTS

Bagworms. The hatch is complete in the southern section. Sprays should be applied immediately. The target date for spraying in the central section is after June 15, in the northern section, after June 30.

Control bagworms while they are small and easy to kill. Once the bagworms become half grown or more, sprays often fail.

For control, use carbaryl (Sevin), diazinon, or malathion. Follow the directions on the label. Check carefully for plants that could be injured by the insecticide used. One application applied at the correct time is usually all that is needed.

Sod webworm moths. They are flying now. These light, buff-colored moths fly in a zig-zag pattern over lawns just about dusk. They are laying eggs that will produce the first generation of worms. This generation is seldom numerous enough to cause damage. The second-generation buildup of worms, coming in late July through early September is the one that often presents problems. Brown spots in the lawn and the sudden appearance of numerous birds like robins are signs that webworms may be at work.

If the webworms strike, you can control them with carbaryl (Sevin), diazinon, or trichlorfon (Dylox). These can be used as sprays or granules.

Aphids. These are common on many trees and shrubs--tulips, willows, sycamores, honeysuckles, roses, and others. These small, soft-bodied insects (green, yellow, black, or red) suck the sap from plants and secrete a sticky material called "honeydew." This sugary material coats the leaves, making them glisten. A black mold may develop when the honeydew deposits are heavy. Cars parked beneath infested trees become covered with sticky spots.

Ants feed on the sugary secretions of aphids. Thus, the presence of a large number of ants on a plant may be a sign that aphids are also numerous. Another sign of infestation is the presence of white specks on leaves. These are the cast skins of the aphids. In most cases aphids or plant lice do little damage. However, if

leaves begin to curl and dry, apply a spray using 2 teaspoons of a 50- to 57-percent malathion or a 25-percent diazinon liquid concentrate per gallon of water. Do not use malathion on African violets or canaert red cedar. Do not use diazinon on ferns or hibiscus plants.

PLANT DISEASES

SOUTHERN CORN LEAF BLIGHT

Confirmed cases of the blight have now been recorded in twenty-nine Illinois counties. This development was quite unexpected. If the weather remains warm and dew and rainfall proide adequate moisture, changes in the near future could be even more dramatic.

During the past week, probably because of the warm weather and the presence of adequate moisture, there were major changes in southern Illinois corn fields. After checking fields in Macon, Effingham, and Shelby Counties, plant pathologists reported two significant changes:

1. The blight is spreading from volunteer corn to fields planted with T cytoplasm or blended seed.

2. The blight is moving from the lower to the upper leaves of the corn plants.

These changes are most obvious in the southern half of the state, particularly in the southern quarter.

Farmers should check fields of T cytoplasm and blended corn closely. If there are blight lesions on the upper leaves, a close and continuing check should be made of the conditions in all such fields. Where lesions are evident on the upper leaves, the farmer will have to decide whether or not to plow under the corn and replant with soybeans or sorghum.

WHEAT

Scab or head blight. This can now be found in thousands of Illinois wheat fields, as a result of the widespread rains and the warm, humid weather last week. The scab is appearing as a bleached, light-straw color on the wheat heads. They should still be the normal green in most fields. A salmon-pink color may also be evident at the base of the glumes. If the weather stays warm and moist, the spikelets on early infected heads will become speckled with the black, spore-producing bodies of the scab fungus by harvest time. Scab-infested kernels appear to be somewhat shrunken and lightweight, with a flaky-to-scabby appearance. The color ranges from light brown to pink or grayish-white, depending on the time of infection and the weather conditions.

The same fungus infects other small grains, corn, and forage grasses. It may produce a seedling blight, stalk or ear rot, root rot, crown or foot rot, and stem blight. For details, check *Report on Plant Diseases No. 103*, "Scab of Cereals," which is available from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

Blackening. This is now common on the culms and glumes of certain wheat varieties such as Ben Hur. There is no organism or infection involved. Neither the grain

yield nor the quality will be affected. The reason some wheat varieties tend to blacken during certain seasons is unknown.

WEEDS

BROADLEAF WEED CONTROL IN CORN

When is corn most susceptible to 2,4-D injury? The answer is that corn in almost any stage of growth can be injured by 2,4-D. However, a few precautions will keep damage to a minimum. Most 2,4-D labels carry the warning not to treat corn when it is silking and tasseling. Using "drop" nozzles is recommended if the corn is more than 8 to 12 inches tall.

Spraying 2,4-D during cool, wet weather or hot, humid weather--when the corn is under stress--may increase the possibility of injury. Applying 2,4-D can cause brittleness, bending and lodging--especially in fast-growing corn. As an added precaution, it is best to avoid cultivating corn for about a week after applying 2,4-D.

The rate of 2,4-D to use varies with the concentration and formulation. The concentration of 4 pounds per gallon of 2,4-D is the most common one; however, other concentrations are available. Amine formulations of 2,4-D require higher application rates than ester formulations, but the amine formulations have less of a drift hazard.

Banvel can also be used to control broadleaf weeds in corn. This chemical provides effective smartweed control, with fewer corn-injury problems than 2,4-D. However, special care must be taken to prevent damage from drift to soybeans, which are especially susceptible to such injury.

AAtrex (atrazine) used as a postemergence spray also provides effective control of broadleaf annual weeds in corn. However, grasses must be treated before they are 1-1/2 to 2 inches tall.

Remember that the timely use of a rotary hoe and cultivator is still an effective means of weed control. Used correctly and at the right time, these tools can greatly improve a poor or fair weed-control situation caused by herbicide failure.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 12, June 18, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

PRECAUTIONS

We have an unconfirmed report of the death of a child from a pesticide. A highly poisonous pesticide, not available for homeowners, somehow was in a soft-drink bottle in a refrigerator. A small youngster drank it. This proved to be fatal almost immediately. Safe storage of pesticides is a must. Do not store pesticide in the refrigerator, the medicine cabinet, under the kitchen sink, or any other place where small children can get to it.

Our Illinois agricultural pesticide accident record is a good one, so now is not the time to ease back and become careless. Continue to use proper precautions in the mixing and handling of pesticides and always remember to store them where small children, persons not accountable for their actions, and animals cannot get into them. Never store a pesticide in anything but the original, properly marked container. Remember, unmarked insecticide granules have been fed to livestock. This proved to be fatal. Look around, is everything properly marked?

INSECTS

CORN INSECTS

Wireworms. Because of hot weather, wireworms are going down into the soil and there is little new feeding damage. These wireworms live in the soil from two to six years. Be prepared next year to control wireworms in those spots which were badly infested this year.

Armyworms. Adult armyworms are heavy-bodied brown moths that deposit eggs on grasses in weedy cornfields. After consuming the grassy weeds, they turn to the corn. If they only eat the leaves below the ears, little damage is done, but when they attack the silks and leaves above the ear, yields may be reduced. If your cornfield is weedy, watch for armyworms during July.

European corn borer. Egg mass counts made from Carbondale to Oregon on the west half of the state this week revealed remarkably low infestations. Approximately 100 of the most advanced fields were checked, and counts rarely exceeded 10 egg masses per 100 plants. With so much tall corn, female moths readily find a place to lay eggs. Rarely is egg-laying concentrated in any one field, and it appears that few fields will warrant spraying for first-generation corn borer. But check exceptionally advanced fields for another week in southern Illinois, for two weeks in central Illinois, and for about two to three weeks in northern Illinois.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be as granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

It is possible that many fields will have light first-generation infestations, but these fields will supply a great number of moths. Second-generation borer numbers could be intense in late fields.

Corn rootworm. Most rootworms found this week were very small, but a few half-grown worms were found as far north as Oregon. If you suspect a rootworm problem and you used no insecticide as a band at planting, examine roots and soil now. Hatch has not yet reached its peak, and even a few worms per plant at this time means greater numbers later.

Apply cultivation treatments now. Apply granules to the base of the plants. Cover by cultivation. The insecticides suggested for basal treatments are BUX, Dasanit, Dyfonate, or phorate (Thimet). Use the rate of 1 pound of actual chemical per acre.

Corn blotch leaf miner. This maggot tunnels in the leaves of corn, making irregular white longitudinal galleries on the leaves. Damage is not important and no control is necessary.

ALFALFA INSECTS

Spotted alfalfa aphid. These yellow aphids with black spots feed on the lower leaves and stems of the alfalfa plant. They inject a toxin into the plant. Small dead spots which enlarge rapidly appear in heavily infested fields. Dry weather usually accentuates the damage.

The apids migrate into Illinois from the southwest and were found in Champaign County this week. Every year, some are found in Illinois.

Demeton (Systox) is preferred and can be used once per cutting and no closer than 21 days before harvest or pasture. Apply at 1/4 pound per acre. It is every effective as a systemic.

Use 1 pound of malathion, 1/2 pound of diazinon, or 1/4 pound of parathion per acre as an emergency treatment. Read precautions on labels. Malathion can be

used on the day of harvest, diazinon requires a 7-day interval, and parathion 15 days. Parathion should be applied only by professional applicators.

GENERAL

Grasshoppers. Tiny, newly hatched grasshoppers are present from one end of the state to the other. In some areas, timely rains have killed many of them, but in many areas, the small grasshoppers have escaped. Two species are present. One is in fence rows, ditchbanks, grass waterways, and similar sod areas. These can be sprayed with toxaphene, but do not feed the forage. A second species is present in clover fields. When you mow, leave uncut swaths. The grasshoppers concentrate in the fence rows and the uncut swaths. They can be sprayed and the hay can be cut a day later and used for hay. In this case use malathion or carbaryl (Sevin). Do not apply toxaphene near fish-bearing waters. If clover or alfalfa is blossoming, apply malathion late in the day. Do not use carbaryl if the fields are in blossom.

HOMEOWNER INSECTS

Galls. Some of the more common galls include maple bladder on maple, various galls on oak, and pod gall on honey locust. These are warty-appearing growths that develop on the leaves. They rarely cause any damage to branches of the tree. Chemical control is difficult, since the tiny insect forming the gall is inside it. If treatment is desired, it will be most effective just before the gall is formed; in most instances, this is in the spring as the new leaves are emerging from buds. Hence, this should be planned for next spring.

Cottony maple scale. This scale appears as a sticky, cottony mass on tree branches--especially those of maple and honey locust. At present, these are the adult scales with eggs inside the cottony area. These adults are sucking plant sap from the twig. The eggs will be hatching in early July, and the young will crawl out onto the underside of leaves. These crawlers appear as tiny yellow specks on the leaves remaining on the leaves, sucking plant juices until September. For control, spray in early to mid-July with malathion. Be sure to thoroughly spray the leaves near twigs covered with the cottony masses.

PLANT DISEASES

WHEAT

We are now getting samples of wheat with blasted heads covered with various dark molds growing on the glumes, in addition to some Septoria leaf blotch, scab, and physiological blackening (see last week's report).

The blasting of florets may be due to one of many reasons. But the presence of the dark molds is normal on this type of head following periods of rainy weather.

Illinois still has a remarkably disease-free wheat crop.

SOUTHERN CORN LEAF BLIGHT

Weather conditions favorable to the spread of southern corn leaf blight caused considerable spread of the disease in southern Illinois during the week of June 14. But nobody knows yet how bad blight may be.

Any disease requires three conditions before a widespread outbreak can occur. These conditions are a virulent pathogen, a susceptible host, and the proper environment--or weather conditions.

The same is true of southern corn leaf blight.

The pathogen--race T--overwintered in Illinois. The two spore traps in Illinois have picked up relatively few spores, indicating that 1971 infections to date have primarily come from 1970 crop debris.

Because of this it seems likely the disease will be most apparent in fields and areas badly infected in 1970.

The susceptible host is also present, but to a lesser degree than last year. In 1970, about 85 percent of the Illinois corn crop contained the susceptible T cytoplasm--a much larger percentage than in 1971.

That's two of the three conditions accounted for. But one condition still remains unknown: weather. Nobody knows what the weather will be. For example, in Florida this year, dry cool weather at planting time seemed the reason southern corn leaf blight failed to develop as it did in 1970. Widespread planting of normal (resistant) seed also retarded development of blight in Florida this year.

But if Illinois farmers find themselves faced with optimum conditions--humid weather, too-frequent rains, heavy dews, and optimum temperatures of 60 to 80 degrees--even local sources of infections could develop into a serious problem.

On the brighter side, however, unless conditions favor blight development, the presence of a virulent pathogen and a susceptible host will have little effect on the 1971 corn crop.

At this point, everything hinges on weather conditions.

WEEDS

CONSIDER HERBICIDES BEFORE REPLANTING

If you are thinking about replanting corn fields because of blight or any other reason, be sure to consider the herbicides you have already used.

Two important considerations are: (1) will the herbicide remaining in the soil injure soybeans, and (2) is there a legal tolerance set for any herbicide that may be in the soybeans at harvest?

If you used atrazine alone or in combination with another herbicide for corn, do not replant to soybeans. The risk of atrazine injury to soybeans is high, and there is no tolerance set for atrazine in soybeans.

Sutan--if used for corn weed control--could also cause injury if soybeans are planted too soon. The manufacturer says, "If it is too late to plant to corn again, soybeans may be planted providing no atrazine was used with the Sutan. Do not plant soybeans sooner than 21 days after application of Sutan."

Lasso is approved for both corn and soybeans, so there is no problem if you replant soybeans in fields where Lasso was used earlier for corn.

If you used Ramrod on corn, any Ramrod remaining in the soil should not injure soybeans. But there is no tolerance set for Ramrod in soybeans harvested for food, feed, or oil. Londax contains Ramrod and the same limitations hold true.

Lorox is cleared for both corn and soybeans, but few people use Lorox alone on corn. In fact, some use Lasso in combination with Lorox for weed control on corn, partly because this combination will cause no problem if replanting to soybeans is necessary.

Do not plant sorghum where Sutan or Lasso was used on corn. Sutan or Lasso remaining in the soil could injure sorghum and no legal tolerances have been set for Sutan aor Lasso in sorghum at harvest.

Atrazine alone is not recommended preplant or preemergence for sorghum because of some risk of sorghum injury. However, atrazine can be used postemergence for weed control in sorghum and a tolerance for atrazine in both grain and forage sorghum has been established. Atrazine in combination with Ramrod or Herban is also cleared for preemergence application on grain sorghum.

HERBICIDES FOR DOUBLE CROPPING

Double cropping looks like a good bet for soybeans--or possibly sorghum--*immediately* following early wheat harvest. If you have a no-till planter or access to one, an extra crop can mean added income with little extra investment. Double cropping may not pay every year--especially if the season is dry, but planting directly in wheat stubble has some advantages.

Lorox is the backbone for weed control in a double-crop system. But for best control of weeds in soybeans following wheat, plant and spray immediately after wheat harvest while weeds are still small.

If the weeds are not more than 4 to 5 inches tall, Lorox plus surfactant WK and favorable conditions may be all you will need. The trick is to apply enough Lorox to kill weeds that have emerged but to avoid rates too high that can injure soybeans before they emerge. Check rates that have been tried in your area--but 1-1/2 or 2 pounds of Lorox 50W broadcast may be adequate.

If it looks like grasses will be a serious problem, consider Lasso plus Lorox. One to 2 pounds of Lorox 50W plus 1 to 2 quarts of Lasso may be adequate.

If weeds are too large for adequate postemergence control with Lorox, consider using 1 to 2 pints of Paraquat in addition to the Lorox or Lorox plus Lasso. Amiben and Preforan are other possibilities for preemergence.

For postemergence weed control, use plenty of water for good coverage with at least 30 gallons--and preferably 40 to 50 gallons--of spray per acre.

IT'S TOO LATE FOR ATRAZINE AND OIL

It's too late to apply atrazine and oil this year unless the field will be planted to corn or sorghum next year. Late applications, especially if the summer is dry, increase the chances of residue that can injure other crops next year.

GENERAL OBSERVATIONS

Some areas were a little too dry for optimum herbicide performance this year. But in many areas there was plenty of time for good seedbed preparation, a lot of rotary hoeing, and good cultivation.

We have had scattered reports of crop injury from herbicides--often due to overlap, excessive applications last year, or inadequately cleaned tanks. Most cases have not been serious.

Some soybeans show mottling and necrotic spots and dying back of leaves caused by atrazine residue on field ends or where the sprayer stopped.

Lorox alone or in combination with Lasso has also caused some injury. That's part of the Lorox "ball game"--soybean tolerance is narrow and rates must be carefully selected and applications must be uniform to avoid injury.

Some samples also suggest a slight amount of Treflan carryover injury to corn. Tops appear drouthy, stunted, and reddish. Roots may be pruned or somewhat clubby. In most cases, a chisel plow rather than a moldboard plow had been used resulting in less dilution of the herbicide. Dry weather may also have slowed Treflan breakdown. Affected spots are usually limited to fields ends or places where the sprayer stopped.

We have also had a few cases of injury that suggest that atrazine was not resuspended and the spray tank thoroughly cleaned before the sprayer was used for a soybean herbicide.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 13, June 25, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

LIVESTOCK INSECTS

Face flies. This insect increased rapidly in number during the last two weeks. This pest is now bothering pastured cattle. The state average this past week was 25 face flies per animal, with individual herds averaging as high as 60 per animal. Face fly populations have been on the increase again since the summer of 1969, and this summer could well be the worst yet.

Infested cattle often develop eye problems, besides the constant irritation caused by the flies. Face flies may also transmit pinkeye disease among cattle.

For control on dairy cattle, apply a 2-percent crotoxyphos (Ciodrin) oil-base spray (if available) or a water-base spray at 1 to 2 ounces per animal, as often as once a day if needed. In order to prevent another buildup, continue to apply the crotoxyphos two to three times each week, even though the number of flies may be low. A 1-percent crotoxyphos, water-base spray--applied at 1 pint per animal per week--is also effective. This treatment is most practical for young stock and for dry stock.

Preliminary results from three dairy farms using forced treatment with dust bags containing 3-percent crotoxyphos indicate that this method does not control face flies. For pastured beef cattle, the 1-percent crotoxyphos, water-base spray--applied at 1 pint per animal per week--should be considered. An automatic chute-type sprayer using 2-percent crotoxyphos in oil is another good choice. Otherwise, use a head or back oiler, wrapped with canvas or burlap and saturated with a 5-percent solution of toxaphene in oil. This will afford partial relief from face flies. Keep the oiler in good repair and well saturated. Do not apply toxaphene to beef cattle within 28 days of slaughter.

Feed additive insecticides like ronnel or phenothiazine used in mineral supplements or salt blocks will not reduce the number of adult face flies bothering the cattle.

SOYBEAN INSECTS

Mites. Two-spotted mites and related species do attack soybeans on occasion. They scar the leaf, giving it a speckled appearance. These mites spin tiny webs; when they are extremely abundant, the soybean leaves are noticeably webbed. If dry weather persists, this can be a serious problem.

Control is difficult. The spray must hit the underside of the leaf, where the mites are, and must penetrate the webbing.

The two insecticides that will do the best job are carbophenothion (Trithion) or azinphosmethyl (Guthion). They should be applied only by experienced operators.

CORN INSECTS

European corn borers. The threat from the first-generation corn borers is about over. Only a few unhatched eggs were found this week, and these were mostly in the northern section. A check of over a hundred of the more advanced fields in the state showed that about 15 percent of the plants were infested. Individual fields ranged from zero to a high of 55 percent for infested plants. In most areas, as much as 50 to 80 percent of the corn acreage is attractive to moths laying eggs and is suitable for good survival of the hatching borer. This has lowered the level of infestation. The percentage of infested plants will still increase slightly in the advanced fields in the north-central and northern sections during the coming week, but there is little likelihood of any widespread, heavy infestations. An occasional field may justify treatment.

If control is still needed in the central or northern sections for first-generation corn borers, use either diazinon (1 pound per acre) or carbaryl (Sevin) (1-1/2 pounds per acre) as sprays or granules. Allow ten days between treatment and harvest when using diazinon. Commercial applicators may prefer to use parathion at a half pound per acre. Parathion has a twelve-day waiting period between treatment and harvest.

The greatest danger from corn borers is now to the late-maturing fields, when the second-generation moths begin to lay eggs. We estimate that about 2 percent of all corn plants are now infested and will produce a second-generation moth. This amounts to a yield of 360 moths per acre of corn. These moths will usually move from the fields in which they emerge into the few fields of late-maturing corn, concentrating their egg-laying there. Many of these late-maturing fields could be heavily damaged.

Lady beetles. These beetles eat other insects. They are more numerous in corn fields than they have been for years, and they are laying eggs. These predators eat aphids or plant lice, corn-borer egg masses, and newlyhatched corn-borer larvae. The beetles have a ravenous appetite--reportedly eating as much as a teaspoonful of aphids a day, one at a time. The less spraying the better, for now.

Corn earworms. On the western side of the state, this pest has been feeding in whorls of corn that is about ready to tassel. Although no control measures are needed at present, these earworms do chew up the whorl leaves and the tassels, making individual plants look bad.

GENERAL INSECTS

Grasshoppers. Now is the time to control these pests, while they are still concentrated in the areas where they hatched. Also, it is easier to kill them while they are small.

A spray of 1-1/2 pounds of toxaphene per acre can be applied to fencerows, ditch banks, grass waterways, and roadsides when the grasshoppers are concentrated in any of these places. Toxaphene is preferred if weeds are blossoming and attractive to bees, but do not apply toxaphene to or near fish-bearing waters. Toxaphene can also be applied to corn or soybeans, but not if they are to be used as forage.

On forage crops, apply carbaryl (Sevin), diazinon, malathion, or naled (Dibrom). No interval is required between the application of malathion or carbaryl and harvest. However, allow 4 days between application and harvest when using naled, and 7 days for diazinon.

Blister beetles. These long, narrow, soft-bodied beetles are the ones that cause a blister to form, when smashed on tender skin. During the larval stage, they live in grasshopper egg pods. For this reason, we expect to have more blister beetles this summer than in past years. Control measures are not usually needed.

HOMEOWNER INSECTS

Picnic beetles. These tiny black beetles with the orange to yellow spots on their backs are beginning to make their presence known, especially in raspberry patches and in garden areas where vegetables are overripe or rotting. These beetles are attracted to food odors, and are often uninvited guests at backyard cookouts or picnics.

For control around the home, harvest fruits and vegetables before they become overripe. Dispose of spoiled produce. To kill the adult beetles, spray with malathion, diazinon, or carbaryl (Sevin) in and around garbage cans. Spraying shrubbery and tall grass with any of these insecticides before a cookout will greatly reduce the number of picnic beetles.

Follow the directions on the label. Check plants that may be injured if sprayed with the insecticide you are using. Either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) spray in pressurized cans will give a quick knockdown of beetles that suddenly move into an area.

Elm leaf beetles. This pest has begun to hatch and feed, especially on the Chinese species. These dirty-yellow and black larvae feed on the undersides of the elm leaves, causing them to appear silvery at first then skeletonized with only the leaf veins remaining. A spray now using 2 tablespoons of carbaryl (Sevin) as a 50-percent wettable powder per gallon of water will control this insect.

Drain flies. These small, hairy-winged, moth-like flies are appearing around basement floor drains, sewer openings, and similar areas. Their eggs are laid in decaying organic matter. The young maggots feed on the material in such damp places, especially drain traps. Drain flies are harmless, but can easily be controlled.

Sanitation is the basic step. Clean-out overflow drains, drain traps, and cellar drains with any commercial drain cleaner that will clean and disinfect the main and the overflow drains. Pouring boiling water or rubbing alcohol into the overflow drain will also eliminate these maggots quickly.

Grasshoppers. Home gardeners are now finding a large number of grasshoppers in and around their gardens. Hard rains have killed many of them, but areas that missed the rains could be heavily infested.

The home gardener can use malathion or carbaryl (Sevin) to control this pest. It will also pay to spray the borders around the garden as well as the vegetables being attacked. Allow three to five days to elapse between treatment and harvest.

WEEDS

POSTEMERGENCE SPRAYS FOR SOYBEANS

Consider 2,4-DB for emergency situations where cocklebur is a serious problem--as it is in some bottomland areas. This chemical is sold under several trade names, including Butoxone SB and Butyrac 175. The herbicide may be broadcast from ten days before soybeans begin to bloom until midbloom, or may be used as a postemergence, directed spray when soybeans are 8 to 12 inches tall and cockleburs are 3 inches tall.

Applying 2,4-DB may also provide fairly good control of annual morningglory and giant ragweed. But don't expect 2,4-DB to control most of the other common weeds found in Illinois soybean fields.

Follow the application rates specified on the label carefully. This will keep soybean injury to a minimum.

After 2,4-DB is applied, soybeans may show early wilting and a curving of the stems later on. Some stem cracking and proliferated growth may occur at the base of the plants, and lodging may increase. If excessive rates are applied or unfavorable conditions exist near the time of treatment, soybean yields may be reduced.

FENCEROW CONTROL

If vegetation in fencerows consists primarily of broadleaf weeds and desirable grasses, use 2,4-D at the rate of 1/2 to 1 pound in at least 10 gallons of water per acre. (Two miles of fencerow that is 4 feet wide equals about an acre.) Take care to avoid injury to nearby, desirable plants. If grass weeds such as Johnsongrass or foxtail are growing in the fencerow, mix dalapon (Dowpon) with 2,4-D to control both broadleaf weeds and grasses. Be sure to spray before the seed heads form on the grasses.

The common rate for controlling broadleaf and grass weeds in fencerows is 50 gallons of water, 1 quart (1 pound) of 2,4-D, and 5 pounds of Dowpon for each acre of fencerow.

WEEDS IN SMALL-GRAIN STUBBLE

Weeds like ragweed that grow in small-grain stubble add to the pollen count in the atmosphere and the discomfort of those who suffer from hay fever. A small amount of 2,4-D or dalapon (Dowpon) applied to grain stubble can prevent the production of weed seeds and reduce the pollen count quickly, effectively, and inexpensively. These herbicides are much more effective than mowing as a means of preventing seed production.

HAIL INJURY

If hail has injured a crop and you're trying to decide whether to replant, don't do anything for a while. Sit tight for about three days after the damage occurs, then inspect the plants for new growth. If the growing point of corn shows little or no injury and new growth is developing well, it will probably be best to leave the crop rather than replant now.

Check soybeans for defoliation and stem breakage. If you have at least one node on a good stem and new buds are developing well, it's probably best to leave it

rather than to replant. Early defoliation of soybeans is not as serious as hail damage that occurs closer to the reproductive stage when the pods are developing and filling.

PLANT DISEASES

CONFUSING YELLOW LEAF BLIGHT WITH SCLB

Yellow leaf blight can now be found in many Illinois corn fields. Be careful not to confuse it with the southern corn leaf blight. The two diseases have many similarities.

Plants with Texas, male-sterile cytoplasm are more susceptible to both yellow and southern corn leaf blight than those with normal cytoplasm. The leaf spots caused by the yellow leaf blight are nearly the same size, shape, and color as those produced by the southern corn leaf blight.

The only sure way to distinguish between these two blights is to check samples under a laboratory microscope for characteristic spores or fruiting bodies.

Yellow leaf blight spreads more slowly than southern corn leaf blight, and does so primarily by splashing raindrops that propel the sticky, yellow leaf blight spores onto other plants. The southern corn leaf blight spores are carried in the air.

Yellow leaf blight is more likely to occur in fields where corn was grown last year. Individual, infected fields may be scattered throughout an area.

The fungicides cleared for use against eyespot and southern corn leaf blight may be applied to check yellow leaf blight. See *Report on Plant Diseases No. 204* for details. This publication is available from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

SCLB INFECTION AFTER SHELLING

At least ten of the reported cases of southern corn leaf blight in Illinois have come from areas where shelling or crib cleaning had been done, and often just before rainy periods. Under such conditions, even normal (N) cytoplasm corn will develop lesions. Fortunately, normal corn is resistant to the southern corn leaf blight fungus. Therefore, the infection does not spread readily and the lesions remain small. Infected leaves that stayed dry in silage may also be a source of disease-causing spores.

UNUSUAL PROBLEMS WITH IMPORTED SEED

Unusual diseases or physiological disorders on leaves of corn imported for planting in Illinois may appear under conditions of stress. Farmers should check their fields and record special problems. We know relatively little about disease reactions and the other agronomic properties of many imported varieties.

SPRAYING FOR BLIGHT

Whether or not to spray for southern corn leaf blight is an individual decision that each producer must make about each of his fields. There is no great amount of evidence to suggest that fungicide will be any more effective this year than in 1970. Last year, most fungicide applications were made too late, when the corn was already heavily infected.

Here are some points to keep in mind before spraying to protect against southern corn leaf blight:

1. Maturity of corn when the blight hits. Corn that has reached the early dough stage before the blight hits is likely to produce satisfactorily if fungicides are not applied. Corn that is in the early tassel stage when 10 or more lesions appear on the upper leaves will benefit most from fungicide sprays.

Fungicides will only protect corn plants against new infections. The chemicals will not kill fungus growth already in the plants.

2. Weather pattern. Warm (60 to 80° F.) and humid weather with frequent showers favors the rapid development and spread of race T of the southern corn leaf blight fungus. Warmer temperatures enhance the development and spread of race O. If conditions are favorable and lesions increase rapidly in both size and number, spraying may start earlier. Read and listen to reports from county Extension advisers and plant pathologists to keep up-to-date on blight in your area. Fields should be checked at least once a week.

3. Type of cytoplasm planted. As a general rule, do not spray normal-cytoplasm corn. The only exception would be if the hybrid is susceptible to northern corn leaf blight and this disease should build up. Closely examine susceptible, T-cytoplasm fields. Give them priority if southern corn leaf blight builds up and spraying seems to be necessary. Fields planted with less-susceptible T hybrids and blended seed would come next in the order of priority.

4. Availability of spray-application equipment and fungicides. Check with custom applicators using ground or aerial equipment, chemical salesmen, and county Extension advisers in your area on the availability and cost of the materials and equipment that would be needed for spraying.

The U. of I. plant pathologists say that Dithane M-45 and Manzate 200--two fungicides suggested for blight protection--cost about 90 cents a pound. A pound and a half of material is needed for each acre to be sprayed. After adding about 5 cents an acre for the appropriate spreader-sticker applied with the fungicide, the cost of materials for one treatment comes to about $1.40 per acre.

The specialists say that spray should be applied every 7 to 10 days. Three or four sprays may be needed between the early tassel and early dough stages under Illinois growing conditions.

The total cost for three sprays--applied at the proper intervals, and including the cost of application--should be from $10 to $15 per acre. It may be possible to stretch the spray interval during periods of hot, dry weather.

Remember that corn plants sprayed with zineb cannot be used for silage, and that the grain from these plants cannot be fed. Maneb and Polyram--two other blight fungicides--are cleared for use on sweet corn only. Cit-cop, a liquid copper fungicide, provided good control in Iowa last year.

SPECIAL MEETING ANNOUNCEMENTS

Corn Rootworm Insecticide Demonstration Plots

We will examine the roots and count the number of worms per plant, for different insecticides applied at planting time. This will give you a chance to see the results of the various insecticide applications side by side in the same field.

We invite you to a "rootworm party" to make counts and evaluate the different insecticides. If you cannot be there at 9:00 a.m. when they start, come later. The counts will be completed by mid-afternoon.

July 6, Woodford County...at the Eugene Hangartner farm, approximately 2 miles west of Roanoke on the north side of Route 116. W. Mike Sager, Senior Extension Adviser, Eureka (309) 467-3413.

July 7, Henderson County...at the George "Jack" Brokaw farm, 1/2 mile north of Biggsville on Route 94, then 1 mile east, 1/4 mile north, and 1/2 mile east. J. Curt Eisenmayer, Extension Adviser, Stronghurst. (309) 924-4071.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 14, July 2, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables expected), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Mites. Spider mites are attacking the lower leaves of corn in several areas in central and western Illinois. The damaged leaves have turned yellow or brown. Generally, the mites are confined to the lower two or three leaves on the plants. In the edges of some fields (particularly along roadsides) as the number of mites has increased, they have moved upward. In such cases, damage is apparent on leaves on the lower third of the plants. The mites are on the undersides of corn leaves. Although tiny, they can be detected by the presence of webs.

The extended period of hot, dry weather has been ideal for a mite buildup. We have not encountered enough mite problems on corn in past years to establish any guidelines for treatment. If the dry weather persists, the mites could become a serious problem as they move to the upper leaves. Control is difficult. The spray must hit the undersides of the lower leaves to be effective.

Two insecticides that have label clearance for controlling mites on corn are carbophenothion (Trithion) and dicofol (Kelthane). Severely affected fields should be treated with 1 pound of either one per acre, mixed with enough water to provide thorough coverage. Do not apply carbophenothion more than once per season, and do not graze or cut forage within 21 days after application. Do not apply dicofol after the ears begin to form, and do not use treated corn for forage or silage. Carbophenothion should be applied only by experienced commercial applicators. **(NOTE: Dicofol label withdrawn. Substitute Meta-Syxtox R and follow label.)**

Corn leaf aphids. These insects have been observed in the whorls of corn plants. So far, only a low percentage of plants examined have been infested and the number is low. It is too soon to make any predictions. The presence of numerous lady beetles and other predators will be very helpful in holding the aphids in check. Fields of early tasseling corn usually escape injury.

To determine whether aphids are present, check several areas in fields in the late-whorl or early tassel stage by pulling the corn whorls. Look for the presence of small, bluish-green, soft-bodied insects as you unwrap the leaves. Corn leaf aphids suck the juices from the plants, causing the ears to be stunted and shriveled. Injury usually occurs just before and during tasseling. If 50 percent or more of the whorls are infested, treatment may be justified.

Corn rootworms. The growth and development of rootworm larvae is progressing rapidly in the problem areas. Pupation of the larvae that hatched early has started, and some adults will begin to emerge soon. For fields planted extremely late, a basal application during cultivation may still be applied if rootworms are present. The insecticides suggested for basal treatments are BUX, Dasanit, Dyfonate, or phorate (Thimet). A series of rootworm "digging and counting" meetings in demonstration plots to evaluate various insecticide treatments for rootworm control are scheduled in six counties between July 6 and 9 and July 12 and 13. The locations are given near the end of this newsletter. Bring a pocketknife for examining roots.

European corn borers. This coming week will be the last one for profitable treatment of first-generation corn borers in most areas of Illinois. There may be a few exceptions in the northernmost counties. After the borers leave the whorl and tunnel into the side of the stalk, control measures are of little value. (See last week's bulletin for control recommendations.)

SOYBEAN INSECTS

Mites. A few more reports have been received of spider mite damage to soybeans. The affected plants show stunting, yellowing, and browning of leaves. The infestations are usually spotty, appearing first in rows along grassy roadsides or grass waterways, then gradually expanding in size. The mites appear as small specks on the undersides of the leaves. A fine web is usually apparent. Shaking the leaves over a piece of white paper will dislodge the mites onto that surface. The small specks that move are probably mites. The recent hot, dry weather in many sections has been ideal for the development of mites. If the dry weather continues, the problem will probably become worse.

Severely affected fields may be sprayed with 1/2 pound of azinphosmethyl (Guthion) or 3/4 pound of carbophenothion (Trithion) per acre. Only experienced applicators should do this work. Azinphosmethyl has a 21-day waiting period between application and harvest; carbophenothion, a 7-day waiting period. Do not feed soybeans sprayed with either of these insecticides as forage to dairy animals or livestock being fattened for slaughter.

SORGHUM INSECTS

Corn leaf aphids. Several reports of this insect being present in the whorls of sorghum have been received. Research conducted in other states indicates that these aphids seldom affect sorghum production. If the infestation is heavy, malathion will control them.

Greenbugs. They can damage sorghum from the seedling up to the early pre-boot stage, and will often cause plant death. As greenbugs suck the plant sap, they inject a toxin into the leaves that causes a reddish discoloration to develop around the point of feeding. We have not had any reports of greenbug damage to sorghum in Illinois so far. Greenbugs are yellowish or bright green, with a reddish tinge on the back of the body. Only the tips of their cornicles and antennae are black. They usually feed on the undersides of the lower leaves. Corn leaf aphids, by contrast, are usually found in the whorls. Whenever greenbugs are causing the death of more than two normal-sized leaves, they should be controlled.

The sprays that can be applied by commercial applicators are demeton (Systox), disulfoton (Di-syston), or ethyl parathion. Do not use methyl parathion because of possible injury to some sorghum varieties. The sprays that producers can apply with ground equipment are diazinon, dimethoate (Cygon), or malathion.

Sorghum midge. This small fly is a serious pest on late-planted grain sorghum, particularly in the Southern States. We do not know of any problem in Illinois. Effective control requires precise timing of insecticides to kill the adults before the eggs are deposited. The tiny, orange-bodied female flies lay their eggs in the spikelets of developing grain heads shortly before and during bloom. The tiny maggots feed on the developing seed. Infested heads will appear blighted and will produce little or no grain. Johnsongrass serves as a natural reservoir for infection. Because of the critical timing required, chemical control for midge may not be effective.

GENERAL INSECTS

Grasshoppers. Small grasshoppers are numerous in many areas. Now is the time to control them while they are still small and are concentrated in fencerows, roadsides, grass waterways, and the like. Grasshoppers may be scattered throughout some hay fields. Three to six per square yard are considered enough to cause economic damage. When there are 17 per square yard, they eat a ton of hay a day in a 40-acre field.

For control in fencerows, ditchbanks, roadsides, grass waterways, and other grass sod areas, where no crops are involved, a spray of 1-1/2 pounds of toxaphene per acre can be applied whenever the grasshoppers are concentrated. Do not apply toxaphene to or near fish-bearing waters. These grasshoppers will stay in such areas as long as there is green foliage to eat, but once this is gone they will migrate into the crops.

In corn and soybeans, if grasshoppers migrate into them later, apply carbaryl (Sevin) at 3/4 pound or toxaphene at 1-1/2 pounds per acre. If the grasshoppers should migrate from adjacent fields into beans, you can get control for the longest period by using toxaphene, applied as a border spray.

Do not feed toxaphene-treated corn or soybeans as a forage to dairy cattle or to livestock being fattened for slaughter. For ensilage corn, use carbaryl, malathion, or diazinon.

Forage crops. On clover, alfalfa, and other forage crops, use 3/4 pound carbaryl (Sevin), 1/2 pound of diazinon, 1 pound malathion, or 3/4 pound naled (Dibrom). No interval is required between the application of malathion or carbaryl and harvest. Allow 4 days between application and harvest when using naled, 7 days for diazinon. Do not apply carbaryl near bee hives.

LIVESTOCK INSECTS

Barn flies are already overpopulating many livestock farms. The number of these flies will probably be high until mid or late September.

The house fly and the blood-taking stable fly (needle-like beak) make up the barn-fly complex. Both flies spend 90 percent of their time sitting on barn walls, support posts, fences, and the like, and only about 10 percent on the animals. Therefore, there is no need to spray cattle kept on dry lot. Begin control efforts now before the flies become any more numerous. The following program will provide good results:

1. Practice good sanitation. Eliminate fly-breeding materials--such as manure, rotting straw, wet hay and feed--as often as possible. Spreading this refuse where it can dry makes it unsatisfactory for fly development.

2. Apply a barn spray to the point of run-off on the ceilings and walls of all livestock buildings. Also spot-spray outside around windows and doors and along fences in the lot. The following insecticides are suggested for this purpose:

Insecticide	Amount per 100 gallons of water	Length of control
diazinon, 50-percent wettable powder. . .	16 pounds	2 to 4 weeks
dimethoate (Cygon), 23-percent liquid concentrate	4 pounds	2 to 4 weeks
fenthion (Baytex), 45-percent liquid. . .	3 pounds	4 weeks
revap (Rabon plus dichlorvos), liquid concentrate	4 gallons	4 to 6 weeks
ronnel (Korlan), 24-percent liquid concentrate	4 gallons	1 to 2 weeks

Use only ronnel or fenthion in poultry houses. All materials are cleared for use in dairy, beef, swine, sheep, and horse barns. Cover feed and water troughs before spraying. Do not spray animals with these materials at the dosages suggested Remove animals before spraying the barns. Do not spray the milk storage room.

3. Supplement good sanitation and barn sprays with a spray bait material. Use 2 to 4 ounces of dichlorvos (DDVP) or naled (Dibrom) in a mixture of 1 gallon of clear corn syrup and 1/2 gallon of warm water. Apply this from a small tank sprayer to the favorite fly-roosting areas.

Barn foggers using insecticides like dichlorvos (DDVP), pyrethrum, or naled (Dibrom) give a quick kill of flies during the fogging operation (5 to 10 minutes), but the effect is not lasting. When fly populations become intense, even twice a day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, fogging does not leave enough insecticide deposit on the animals to protect the cattle from flies when on pasture. Coarse sprays applied to the animals are best for this purpose.

4. For large drylot and enclosed confinement operations, using space sprays applied from a mist blower has been successful. During peak fly periods, treatments will be needed every three or four days. The application can be made with cattle present, but avoid direct application to exposed feed and water. Do not apply in conjunction with animal or shelter treatments of organophosphate or carbamate insecticides. This should be the only chemical method of fly control being employed

The following insecticides and rates are suggested for mist blowers:

Insecticide	Amount per 100 gallons of water	Method
dichlorvos (Vapona), 22-percent liquid concentrate.	2 gallons	Apply at 5 gallons of finished spray per acre
naled (Dibrom), 37-percent liquid concentrate.	1 gallon	Same as above

WEEDS

PERENNIAL WEED CONTROL

The proper timing of 2,4-D applications can make perennial weed control easier and more effective. Spraying when weeds are in the bud stage--that is, when the buds have formed but the flowers have not opened--can improve control of some broadleaf perennial weeds. At that stage, the weeds are ready to make the transition from the vegetative to the reproductive stage. Food manufacture in the leaves is in high gear, and food materials are being transported to the roots for storage. Spraying at this time will aid movement of 2,4-D to the roots and will improve control.

Wild sweet potato has a large storage tuber, and an application of 2,4-D at the bud stage can improve control considerably. To get the job done at this stage may involve spot treatment or the use of high-clearance equipment in corn fields.

The same principle applies to the control of Canada thistle. There are several strains of this perennial weed. Although they look similar and are all called Canada thistle, the strains differ in susceptibility to herbicides. Some strains are fairly sensitive to 2,4-D. Others are not.

If 2,4-D does not provide good control of the type of Canada thistle in your fields, amitrole or amitrole-T may be more effective. But be sure to use amitrole or amitrole-T only at approved times and places. Do not use them as a postemergence treatment in corn or soybeans. Do not graze treated areas for eight months.

Canada thistle strains also show differences in susceptibility to amitrole and amitrole-T. Banvel usually controls Canada thistle more effectively than 2,4-D, but timing is more critical and care must be taken to avoid injury to nearby, desirable plants.

Repeated cultivation, mowing, or hoeing to cut-off the tops of perennial broadleaf weeds also helps control by depleting root reserves when the plant sends up new growth.

GRASS WEEDS IN CORN

Good cultivation where corn and weeds are still small enough is about all that can be done to control grass weeds in corn now. The *1971 Weed Control Guide* contains suggestions for using dalapon (Dowpon) or linuron (Lorox) as directed postemergence sprays, but these materials have stirred little interest in Illinois in the past. Copies of the *Guide* are available from the Office of Agricultural Publications, 123 Mumford Hall, Urbana, Illinois 61801. There is no charge for single copies.

BROADLEAF WEEDS IN CORN

A postemergence application of 2,4-D can provide a lot of control at a low cost, but there is some risk of corn injury. Avoid spraying during very hot and humid weather. Check the labels and the *1971 Weed Control Guide* for details, suggestions, and precautions about using 2,4-D.

SPRAYING SMALL GRAINS BEFORE HARVEST

Small grain fields in some areas are surprisingly free of weeds, others are not. Farmers with fields in the latter condition often ask about spraying before harvest.

You can apply 2,4-D on wheat, oats, barley, or rye between milk stage and harvest. But 2,4-D does not kill weeds rapidly, and they may still be green at harvest time. Some weeds may curl enough so that the combine can be set to miss them. Spraying small grains much earlier to prevent yield reduction because of weed competition and harvesting losses is usually the best practice. Very few acres of small grains are sprayed for weeds in Illinois at present. If weeds are a problem now, this practice may be worth considering next year.

PLANT DISEASES

SPRAYING FOR SOUTHERN CORN LEAF BLIGHT

Consider economics first. Race T of the southern corn leaf blight fungus (*Helminthosporium maydis*) is infecting many susceptible corn fields in Illinois. Other leaf blights--the yellow, northern, and eyespot--are also present.

Illinois corn growers have an average cash investment of $40 to $50 an acre in their crops. With favorable growing conditions and prices, they have a potential return of as much as $100 an acre.

The thorough and timely application of fungicide sprays may help insure a major part of this potential return from field corn infected with the southern corn leaf blight or with other leaf blights. The key question is: "Will fungicide sprays reduce the loss in grain yield enough to cover the cost of spray materials and of application?" To be economic--that is, to maximize expected net returns--fungicide sprays should be used when increased yields resulting from the use of fungicides are worth more than the cost of the chemical plus the cost of application.

Not all farmers will want to use this basis to make the decision. Instead, to avoid uncertainties, they may wish to follow the insurance principle and take a known loss now--the cost of spraying if blight hits their crop--in order to avoid a larger, catastrophic loss. The profit prospects from spraying can be estimated by calculating the break-even yield increase necessary to offset the cost of fungicide and application and comparing this figure with the expected yield response.

A reasonable spraying cost estimate is $3 to $4 per acre per application--including the cost of materials and of application with either ground or aerial equipment. Three sprays would cost $9 to $12 an acre. With a net corn price of $1.30 per bushel, only 7 to 9 bushels per acre are required to cover the cost of spraying.

In estimating yield response to spraying, farmers must consider many factors--including the expected weather pattern, present disease situation in the field, and susceptibility of the crop. Dry weather will help reduce spread of the disease as well as the number of sprays needed. Warm, rainy conditions favor rapid blight development, and more sprays would be required. The greatest yield response would probably be from an intermittent wet and dry weather pattern that allows enough time for the protective spray to dry on the leaf surfaces. After drying, the fungicide is more resistant to the diluting effect of rainfall.

Weighing the economic factors is important in making the decision of whether or not spraying for corn leaf blight will pay. If the decision is to spray, consider timing, materials, rates, and methods of application to get the greatest protection.

Give highly susceptible T hybrids priority when spraying. Less-susceptible T hybrids and fields planted with blended seed would come next in order of priority. As a general rule, it will not pay to spray normal (N) corn, except for seed production

fields and those planted with hybrids that are highly susceptible to northern corn leaf blight.

Corn in the early tassel stage with ten or more southern or northern leaf blight lesions on the upper leaves will benefit the most from fungicide sprays. Corn that is already in the early dough stage is likely to produce satisfactorily, even if sprays are not applied.

Fungicide and application suggestions. The fungicides suggested for control of southern corn leaf blight will also give protection against northern leaf blight, yellow leaf blight, eyespot, and rust. For at least ten years, Dithane M-45 and Manzate 200 have been used successfully to protect vegetables, fruits, turfgrasses, ornamental plants, and fields crops against many disease-causing fungi. These maneb and zinc-ion products have also provided good control of both the northern and southern corn leaf blight (race O) on sweet corn in Florida since 1965.

Both materials are registered by federal agencies for use without feeding restrictions on all types of corn grown for grain, fodder, or silage. They may be applied up to seven days before harvest.

Cit-cop 4E--a new, finely divided, liquid copper fungicide that is also cleared for use on corn--showed promising results in several 1970-71 field trials. However, it has not been tested as extensively as the maneb and zinc-ion products.

Follow label directions and precautions closely when using any fungicide.

"Normal" Illinois weather conditions during the corn growing season favor development and spread of southern corn leaf blight. Fortunately, such conditions--warm, humid, cloudy weather with one or two rains a week--do not usually appear until about the time corn reaches the tasseling stage. So the general recommendation is to start spraying against blight at the early tassel stage. However, if lesions appear on the upper leaves and increase rapidly in size and number and if weather conditions seem to favor further blight development, spraying can be started earlier.

Two to four applications should be enough to protect the crop from early tassel to the early dent stage. Seed-production fields may need one to two extra spray applications for added protection. Blight damage is usually slight if the infection appears after the crop has reached the dent stage. Sprays applied at this time tend to be of little value, but they may improve the grain quality and may prevent further development of ear rot caused by the southern corn leaf blight.

Apply sprays every seven to ten days. If the rains are frequent or the threat of blight is severe, do not wait more than seven days between applications. If hot, dry weather is expected, the spray interval can be lengthened to ten days.

Thorough coverage of leaves and leaf sheaths on the top half of the corn plant is essential. The food produced in the upper five or six leaves produces the bulk of the grain. Properly equipped aircraft or ground sprayers can be adjusted to apply spray deposits on the leaves, leaf sheaths, and ear husks. These are the areas where most infections occur.

The ideal time to spray is just before a rain. But try to allow enough time for the spray film to dry. The fungicide diffuses into the water film left by rain or dew and spreads to other plant parts. So, fine spray droplets--less than 200 microns in diameter--are not necessary.

Corn leaves that are fully open are usually covered more thoroughly with spray than rolled leaves because of lack of moisture. In any case, fungicides only provide protection against new infections, and must kill the blight fungus before infections occur. The fungicides will not kill the fungus growth that is already in the plants.

Spray equipment and dosage. Both aerial and ground equipment should give equally effective results when used properly, but aerial spraying has some advantages. There is no mechanical damage to plants, no waiting to get into fields following heavy rains, and greater speed.

For aerial application, use 3 to 5 gallons of spray per acre. At the lower rate, it is essential for the spray nozzles to be located properly on the boom and for aircraft to fly at the optimum height and swath width. (See the table for spraying details.)

If you use Dithane M-45, add Triton CS-7 spray adjuvant to the spray mix. If you spray with Manzate 200, use DuPont Spreader-Sticker, Bio-Film, or some other surfactant suggested by the manufacturer. The addition of a compatible spray adjuvant to the mix at the recommended rate will improve the distribution, spread, and retention of the fungicide deposit.

When using ground sprayers, three drop nozzles on each side of the row, spaced 12 to 18 inches apart, should be sufficient to protect the top five or six leaves and the ears. Aim the bottom nozzle slightly upward. Cover the critical whorl area with one or two nozzles over the row. Use the same spreader-stickers suggested for aerial application.

Spray Equipment and Dosage Suggestions for Application by Air or Ground Equipment

	Aerial application (Fixed wing or helicopter)	Ground application (High clearance sprayers)
Rate. . . .	1-1/2 lbs. of maneb and zinc ion per acre for each spray	1-1/2 lbs. of maneb and zinc ion per acre for each spray
Spray and surfactant.	Dithane M-45--Triton CS-7 Manzata 200--DuPont Spreader-Sticker Bio-Film, or other--as recommended by the manufacturer	Dithane M-45--Triton CS-7 Manzata 200--DuPont Spreader-Sticke Bio-Film, or other--as recommended by the manufacturer
Volume. . .	3 to 5 gallons of water per acre	20 to 40 gallons of water per acre
Pressure. .	30 to 50 p.s.i.	40 to 100 p.s.i.
Nozzles . .	(a) Boom with hollow-cone nozzles comparable to spraying systems D-4 or D-6 discs with No. 45 cores. Use 18 to 24 nozzles for 3 gallons per acre. Use 30 to 44 nozzles for 5 gallons per acre. (b) Micronair rotary atomizers	3 drop nozzles on each side of the row and 1 or 2 nozzles over the whorl area. Use hollow-cone nozzle comparable to Spraying Systems D-3 or D-4 discs with No. 25 cores. Use slotted strainers equivalent to 25 mesh.
Droplet size. . . .	Medium (200 to 400 microns). Angle nozzles back 15 degrees on aircraft. Slow down micronairs.	Medium (200 to 400 microns). Avoid fogging sprays.

Swath
width . . . .Fixed wing--just beyond the wing span, about 40 feet.
Helicopter--50 to 55 feet.

Altitude . . 5 to 10 feet above the crop (from the spray boom to the top leaves).

SPECIAL MEETING ANNOUNCEMENTS

Corn Rootworm Insecticide Demonstration Plots

We will examine the roots and count the number of worms per plant, for different insecticides applied at planting time. This will give you a chance to see the results of the various insecticide applications side by side in the same field.

We invite you to a "rootworm party" to make counts and evaluate the different insecticides. (Bring a pocketknife.) If you cannot be there at 9:00 a.m. when they start, come later. The counts will be completed by mid-afternoon.

July 6. . . . .Woodford County. . . . . .Eugene Hangartner farm (Roanoke address), located approximately 1 mile west of Roanoke on the north side of Route 116. Mike Sager, Extension Adviser, Eureka. Phone: (309) 467-3413.

July 7. . . . .Henderson County . . . . . .George Brokaw farm (Biggsville address), located 1/2 mile north of Biggsville on Route 94, then 1 mile east, 1/4 mile north, and 1/2 mile east. Curt Eisenmayer, Extension Adviser, Stronghurst. Phone: (309) 924-4071.

July 8. . . . .Carroll County . . . . . .Evan Queckboerner farm (Chadwick address), 1 mile west of Lanark on Route 64, 3 miles south, and 1/4 mile east. Harold Brinkmeier, Extension Adviser, Mt. Carroll. Phone: (815) 244-9444.

July 9. . . . .Ogle County. . . . . .Craig Brattrud farm, located about 2 miles north of the junction of Routes 72 and 26 on the east side of Route 26 (look for flags). Stan Eden, Extension Adviser, Oregon. Phone: (815) 732-2191.

July 12 . . . .Boone County . . . . . .Clyde Curtis farm, 1 mile north of the junction of Routes 173 and 76, and 1 mile west of Route 76 on the north side of the road. Wally Reynolds, Extension Adviser, Belvidere. Phone: (815) 544-3710.

July 13 . . . .McHenry County . . . . . .Robert Stoxen farm (9106 Lawrence Road, Harvard, Illinois)
Phone: (815) 943-5934
Go 1-1/4 miles north of Lawrence, Illinois. (Lawrence is 2 miles northwest of Harvard). Louis M. Engelbrecht, Extension Adviser, Woodstock. Phone: (815) 338-3737.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 15, July 9, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Spider mites continue to damage soybeans in areas that are dry. Where showers have occurred, the mite problem has practically disappeared. Soybean fields adjacent to clover fields are the most likely ones to be attacked, but the mites may also move from grassy areas.

Infested soybeans turn yellow and are stunted. Damage usually is most severe along the edge of the field. The mites appear as small black specks on the undersides of the leaves, and produce webbing.

Mite control is often erratic. If possible, direct the spray to the undersides of the leaves. Place drops between the rows and aim the nozzles toward the rows, pointing upward at a 45-degree angle. Note: The operator should wear protective clothing and avoid spray drift when using this nozzle arrangement. Use 1/2 pound of azinphosmethyl (Guthion) or 3/4 pound of carbophenothion (Trithion) per acre to control the mites. These should be applied by experienced commercial applicators only. Wait 21 days with azinphosmethyl and 7 days for carbophenothion between treatment and harvest. Do not feed treated soybeans as forage to livestock.

Green cloverworms are present in some soybean fields. These light-green worms with white stripes running the length of their body feed on the leaves, not the pods or blossoms. The cloverworm population is still light, but the situation will bear watching. Feeding is critical on beans from the blossom to early pod fill periods. Parasites and a fungus disease attack the larvae and help control them. No insecticide treatments are needed at this time.

CORN INSECTS

Corn leaf aphids are beginning to appear in corn, but the number is generally low. The critical stage on corn is between pretassel and pollination. It now appears that by the time corn leaf aphids can build up to damaging proportions, about 60 to 80 percent of the corn will be beyond the critical stage. The fields that will bear watching are the medium-late and late-maturing fields. Check these in about two weeks. Pull 10 whorls in five places in the field and unroll them to find the aphids. If 50 percent or more of the plants have a light to moderate number of aphids, treatment is warranted.

Use 1 pound of malathion or diazinon or 1/4 pound of methyl parathion per acre as a spray. For best results, apply the spray just after the tassels begin to show. Allow 5 days for malathion, 10 days for diazinon, and 12 days for methyl parathion between treatment and harvest for grain, ensilage, or stover. Methyl parathion should be applied only by experienced applicators.

Spider mites are present on the undersides of corn leaves in dry areas of the central section. In general, infestations are not serious but should be watched. The lower leaves are the area most likely to be attacked. Damaged leaves turn yellow or brown.

If control is necessary, apply either 1 pound of carbophenothion (Trithion) or 1/2 pound of oxydemetonmethyl (Meta-Systox R) per acre. Allow 21 days for carbophenothion and 30 days for oxydemetonmethyl between treatment and harvest of the corn as forage. Do not apply either insecticide more than once per season. Both insecticides should be applied only by experienced commercial applicators. For effective mite control with insecticides, thorough coverage of infested leaves is important.

Corn rootworm adults are beginning to emerge. Occasional northern and western corn rootworm adults have been seen, but more will show up soon. Watch fields coming into silk stage. These beetles attack the silks, causing a reduced kernel set. If there is an average of five beetles or more per silk and pollination is just beginning, an application of 1 pound of carbaryl (Sevin) malathion or diazinon per acre is profitable. Allow 5 days for malathion and 10 days for diazinon between treatment and harvest as forage. There is no waiting period for carbaryl.

A check this week in demonstrative plots for rootworm larval control indicated poorer results than expected in some instances. The newer insecticides like BUX, Furadan, Dasanit, Dyfonate, and Thimet sometimes do not last long enough when they are applied as planter treatments to early planted corn. These insecticides have a relatively short life in the soil, which is an advantage from the standpoint of avoiding residue problems. However, this same lack of persistency is a disadvantage in terms of obtaining full-season control of corn soil insects.

Fall armyworms are appearing in whorl stage of corn, particularly in the southern section. Plants appear ragged from the leaf-feeding. A series of plants in a row will show damage, and these patches of infested plants will occur over the entire field.

Early control while the worms are still small and exposed on the leaves is best. As the worms become full-grown, they go deeper in the whorl inside the tightly rolled leaves. Control of larger worms is generally poor. If 20 percent or more of the plants are damaged and the worms are still present, control is justified. However, if most worms are 1-1/4 to 1-1/2 inches long, an insecticide treatment would not be justified since the worms are about through feeding.

For control, apply 1-1/2 pounds of carbaryl (Sevin), Gardona, or toxaphene per acre. Diazinon at 1 pound per acre is also effective. Direct the spray or granules into the whorl. Granules are preferred for air applications. Do not feed corn sprayed with toxaphene as forage to livestock. Corn treated with toxaphene granules may be fed as stover to beef cattle within 28 days of slaughter. Allow 5 days for Gardona and 10 days for diazinon between treatment and harvest as grain, ensilage, or stover. Carbaryl has no waiting period.

GENERAL INSECTS

Grasshoppers are still thick in fence rows and ditchbanks, and along roadsides in many areas. They will stay in these areas as long as there is ample food. Control them before they move to more valuable crops such as corn and soybeans.

Use 1-1/2 pounds of toxaphene or 3/4 pound of carbaryl (Sevin) per acre. Do not apply toxaphene near fish-bearing waters or carbaryl near bee hives.

HOUSEHOLD INSECTS

You can prevent ants, spiders, centipedes, crickets, waterbugs, and other insects from entering your home by spraying the outside foundation wall with a 1-percent emulsion of chlordane and water. It is still not too late to make this application. If you applied this treatment in May, it is time for a second application now. A third treatment should be made about the end of August.

Purchase chlordane as a liquid concentrate. Mix it with water to the proper strength. A half pint (8 ounces or 1 cup) of 45-percent chlordane in three gallons of water gives a 1-percent emulsion. Spray the foundation wall from the soil to the sill area, or along the outer wall, for a distance of about a foot above the soil to the point of run-off. In addition, spray the expansion joints along porches and steps, and along the edges of sidewalks and driveways. In homes with a crawl space, spray the inside wall and any supporting pillars. Do not spray directly onto shrubbery or flowers. The oil solvent in the spray may burn the tender foliage of some plants.

Three gallons of finished spray should do for the average house. The need for using insecticides inside the home will be greatly reduced by the kind of spraying recommended above, under the house and around its perimeter.

Millipedes are moving into homes from shrubbery beds, compost piles, storm sewers, ditches, and nearby land with a heavy trash cover. They feed on decaying plant material. Migrations have been occurring in some areas for over a month, and can be expected to continue until frost in some areas.

For control, it is helpful to remove accumulations of leaves, grass clippings, and other dead plant material from around the foundation of the home. In cases of heavy migrations, spray lawns and shrubbery beds with carbaryl (Sevin), diazinon, or trichlorfon (Dylox). Repeated treatments may be needed in a week or two. For minor problems, spray shrubbery beds and a 3- to 4-foot wide area around the foundation of the house. The general lawn treatment will also control leafhoppers and sod webworms.

Picnic beetles are still numerous in many home gardens. Pick fruits and vegetables before they become overripe. Sprays of diazinon, malathion, or carbaryl (Sevin) will control the adults. Several treatments may be necessary. Check the label for plants that may be injured if sprayed with the insecticide you are using.

Either a 0.1-percent (or greater) pyrethrin spray or a 0.5-percent dichlorvos (DDVP, Vapona) spray, applied as a mist from a pressurized spray can, will give a quick knockdown of beetles that suddenly move into an area.

A suggestion has come to us from Farmer City, Illinois, for controlling picnic beetles. Place vinegar in small paper cups along the edge of the garden or in the vicinity of the picnic or cookout area. The vinegar is supposed to attract the picnic beetles, which then fall-in and drown. We have not tried this method as yet, but perhaps you would like to give it a test. Send us your comments.

Tomato fruitworms (same as corn earworm) are attacking ripening tomatoes. They tunnel into the tomato, usually next to the stem. Spraying with carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of water, will provide control.

Repeated treatments will be needed. There is no waiting period between treatment with carbaryl and the harvest of tomatoes. Tomato hornworms can also be controlled by using the same spray. But if hornworms are the only problem, hand-picking is usually satisfactory.

FLY CONTROL AT COUNTY FAIRS

Fair officials will need to be sure that manure, garbage, refuse, and soft-drink bottles are removed from the grounds every day. This is a must.

A few days before the fair starts, spray livestock sheds, outdoor privies, empty food tents, and other buildings that may harbor flies with dimethoate (Cygon), fenthion (Baytex) or Ravap. A farm crop sprayer, equipped with a lead of hose and a spray gun, can be used for this purpose. Apply the spray to the ceilings and walls to the point of runoff. Most rotary pumps on these sprayers can be adjusted to operate at 250 to 300 pounds of pressure. If the water pressure is good (30 p.s.i. or more), a spray gun that fits on the end of a garden hose will do a good job of applying the insecticide.

Sprays should also be applied to refuse containers, garbage cans, and the like before and during the fair. A couple of men with compressed-air tank sprayers can do this job.

Flies are attracted from great distances to animal waste and food odors. These flies are not killed until they land on a treated surface. For quick knockdown of these incoming flies in animal shelters and other places, use a small electric fogger with oil- or water-base pyrethrum, dichlorvos (DDVP), or naled (Dibrom). These fogs are best applied in the early morning when no people are around. Animals need not be removed, although horses may be frightened by the fog.

Urge that food stands keep some pyrethrum or dichlorvos in a pressurized spray can for quick kill of adult flies. These sprays should be used at night after the stands close. The local health department should insure that all stands maintain the required standards of cleanliness.

WEEDS

PROPERLY HANDLED SPECIMENS AID IDENTIFICATION

To help us provide prompt and correct answers to questions concerning weed identification and control, please send your specimens and questions directly to the appropriate subject-matter specialist:

Field crops:	Ellery L. Knake, N-305 Turner Hall. (217) 333-4424 (Marshal McGlamery is on a year's leave in Minnesota)
Vegetable crops:	Herb Hopen, 206 Vegetable Crops. (217) 333-1967
Turf:	Tom D. Hughes, 104 Floriculture. (217) 333-8707
Forestry:	Ted W. Curtin, 211 Mumford Hall. (217) 333-2777
Aquatics:	Robert C. Hiltibran, 273 Natural Resources. (217) 333-6889

Specimens that arrive in good condition are easier to identify. Clean the soil from the roots and wrap the roots in a moist, paper towel. Leave the top of the plant exposed. You can put the roots in a plastic bag, but do not put the whole plant in

plastic bags. The plants mold and deteriorate inside the plastic, making identification and diagnosis more difficult. Put the specimen in a suitable container for shipping. Most county Extension Advisers have special containers for this purpose. Contact your adviser if you need help.

Most people can readily identify common weeds. We usually get the tougher ones. To help us identify these, please send as much of the plant as possible--including the roots, leaves, stem, and flowers or seed heads. Most taxonomic keys are based on floral characteristics. Hence, including the flowers or seed heads is helpful, especially for the less-common weeds.

Here are some useful references that you may want to add to your library to help with weed identification:

* *Weeds of the North-Central States*, Illinois Circular 718, available from the Office of Agricultural Publications, 123 Mumford Hall, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.
* *Weeds of the Northeast--Aids to Their Identification by Basal-Leaf Characteristics*, by C.E. Phillips, Field Manual No. 1, January, 1956, University of Delaware Agricultural Experiment Station, Newark, Delaware.
* *The Identification of Certain Native and Naturalized Grasses by Their Vegetative Characters*, Publication No. 762, May, 1950, Canada Department of Agriculture, Ottawa, Canada.
* *The Identification of 76 Species of Mississippi Grasses by Vegetative Morphology*, Technical Bulletin 31, May, 1952, Mississippi State College Agricultural Experiment Station, State College, Mississippi.
* *Colorado Turfgrasses*, Circular 201A, Colorado State University, Extension Service, Fort Collins, Colorado.
* *Legume Culture and Picture Identification* and *Picture Aids to Grass Identification*, Marion S. Hartwig, 109 Worth Street, Ithaca, New York.

Here are a few tips to help you identify weeds: If the plant stem has a triangular cross-section, it is probably a sedge, probably nutsedge (nutgrass). If the stem is square and the flowers are irregular in shape, chances are that it is one of the mints. Bedstraw is one of the few other weeds that has a square stem. Milky juice is characteristic of the milkweed and spurge families.

PLANTS POISONOUS TO LIVESTOCK

Whorled milkweed, water hemlock, poison hemlock, white snakeroot, pokeberry, black nightshade, bouncing bet, dogbane, and wild cherry are just a few of the weeds commonly found in Illinois that are poisonous to livestock. If you find these weeds on areas where livestock graze, start control measures right away. Prevention is better than cure. The University of Illinois Circular *Illinois Plants Poisonous to Livestock* is being revised, and should be available within the next year.

ANOTHER USEFUL REFERENCE

Using Phenoxy Herbicides Effectively, USDA Farmers' Bulletin 2183, is an extremely helpful guide on the susceptibility of weeds to 2,4-D and other phenoxy herbicides. This bulletin lists hundreds of weed species. You can request a single copy from the Weeds Extension Office, N-305 Turner Hall, Urbana, Illinois 61801.

PLANT DISEASES

SOUTHERN CORN LEAF BLIGHT

Dry weather during the past week appears to have slowed the development and spread of southern corn leaf blight in Illinois. However, varying amounts of rainfall during the Fourth of July weekend plus generally hot and humid conditions in many areas will increase the favorable conditions for this disease.

If favorable weather conditions prevail, a new wave of blight infections could show up during the next three to seven days. Cloudy conditions could speed-up development, which is slower under bright and sunny conditions. Keep a close watch for blight development in susceptible corn fields, especially in areas that received rain.

In most cases, the blight has not spread from the lower leaves to upper leaves so far. Blight symptoms that appear on the upper leaves only indicate that the infection is spreading from one field to another.

Reports from Florida, Alabama, and Georgia indicate that blight incidence in those states is still of "no economic importance." About 90 percent of the corn planted there is normal cytoplasm, and the weather has been dry.

Some corn producers in at least eight Illinois counties are spraying to protect their crops against the southern corn leaf blight. It will be three weeks before we will be able to measure the effectiveness of this effort.

SPECIAL MEETING ANNOUNCEMENTS

CORN ROOTWORM-INSECTICIDE DEMONSTRATION PLOTS

We will examine the roots and count the number of worms per plant, for different insecticides applied at planting time. This will give you a chance to see the results of the various insecticide applications side by side in the same field.

We invite you to a "rootworm party" to make counts and evaluate the different insecticides. (Bring a pocketknife.) If you cannot be there at 9:00 a.m. when they start, come later. The counts will be completed by mid-afternoon.

July 12. . . .	Boone County.	Clyde Curtis farm, 1 mile north of the junction of Routes 173 and 76, and 1 mile west of Route 76 on the north side of the road. Wally Reynolds, Extension Adviser, Belvidere. Phone: (815) 544-3710.
July 13. . . .	McHenry County.	Robert Stoxen farm (9106 Lawrence Road, Harvard, Illinois) Phone: (815) 943-5934 Go 1-1/4 miles north of Lawrence, Illino (Lawrence is 2 miles northwest of Harvar Louis M. Engelbrecht, Extension Adviser, Woodstock. Phone: (815) 338-3737.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

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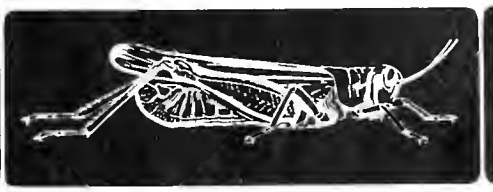
COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 16, July 16, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

SAFETY

Always be careful when mixing, applying, and storing pesticides. Know what you are doing. Read the label, particularly the precautions, and follow the instructions carefully.

Fatal pesticide accidents on farms have remained very low, only one death in ten years. This excellent safety record can be maintained if we treat all pesticides with proper respect. These extremely valuable production tools can become dangerous through carelessness or misuse.

Accidents fatal to livestock have occurred, usually as a result of accidentally mixing pesticide granules with feeds. Do not repackage pesticides. Keep them in their original containers, which are properly marked.

Fatal pesticide accidents in the home, although rare, are more common than those occurring in agricultural production. Almost every year, in Illinois, one or two persons--usually young children--die because of accidental ingestion of pesticides. Store pesticides where children cannot find them--not under the kitchen sink, in the refrigerator, in the medicine cabinet, under the table on the back porch, or in the rubbish pile in the back yard. We have been studying pesticide accidents for ten years. The places listed are the ones where children seem to find pesticides most often.

INSECTS

GENERAL

The rains this past week have been very beneficial. Most plants can recuperate from insect damage if growing conditions are good. For example, corn roots severely eaten by rootworms will now recuperate rapidly. Additional roots will be produced, and the plants will begin to straighten up. Yields may be affected only moderately.

Rain may actually wash insects off the plants and even kill them. These recent rains probably killed lots of mites, aphids, and newly hatched grasshoppers.

Grasshoppers are still abundant in some areas. If the population is very high, apply control measures now before the grasshoppers migrate to soybeans and corn. Refer to previous bulletins for suggested methods of control.

The rains will promote the growth of weeds and grass in the fence rows and along ditch banks. This will feed the grasshoppers for a while, but sooner or later they will eat up all the green growth and migrate in search of something else to eat.

CORN INSECTS

The second generation of European corn borers may be more numerous this year than for several recent ones. Although the first-generation borers required chemical control in only a few fields, a large number of fields did have some borers. This adds up to a big supply of moths which will be laying eggs in the fields planted later. Our first generation survey, just begun, shows higher populations in southern, southwestern, and western Illinois than in eastern and parts of central Illinois.

In the southern and southwestern sections, over 60 epercent of the first-generation borers have already pupated. About 10 percent have emerged as moths. Egg-laying has started and will continue for three weeks or more. Examine fields in the late-whorl to early silk stages for egg-laying.

In west-southwestern and western Illinois, about 25 percent of the first-generation borers have pupated, and 3 percent have emerged. Expect egg-laying to be well underway within ten days.

In northern Illinois, 10 to 20 percent of the first-generation borers have pupated. No moths have emerged yet. Egg-laying will start in about ten days.

If fields average one egg mass per plant, apply chemical control when eggs have begun to hatch. Carbaryl (Sevin) and diazinon are recommended. Do not apply within ten days of harvest.

In years past, corn borers have been infected by a microscopic protozoan animal that is transmitted from generation to generation. The borers that lived through this past winter were moderately infected. Thus, we may get some help from this form of natural control. We will be checking borers for this disease during the coming week.

Corn rootworm beetles will be very numerous in some fields in about 10 days to two weeks. Rootworm beetles feed on the silks. If this takes place after pollination, little harm is done. If it occurs during or before pollination, yields can be greatly reduced. Check late-maturing fields frequently during pollination. Keep them under observation until pollination is about complete.

As a guide, we suggest chemical control if the corn is less than 50 percent pollinated and you find five or more beetles per plant. Apply 1 pound of carbaryl (Sevin), malathion, or diazinon per acre. Do not harvest for 10 days when using diazinon, or 7 days for malathion. Since these beetles are killed easily, other insecticides may be effective.

Woolly bears and cattail caterpillars (brown, orange-striped, and bristly) are present in corn fields. The woolly bears like to feed on the silks, the cattail caterpillar on the leaves. Insecticide control is seldom needed.

SORGHUM INSECTS

Corn leaf aphids are extremely abundant. Most sorghum insect authorities to the south and west of Illinois say that corn leaf aphid feeding, although severe, rarely interferes with yields. These aphids will suddenly begin to disappear just before the sorghum heads. However, it is difficult to sit idly by when aphids are matted on the leaves and the upper leaves are turning brown.

For control, apply 1 pound of malathion or 1/2 pound of diazinon per acre. Do not apply within seven days of harvest.

Lady beetles and their young eat aphids. It takes two to five per plant to make inroads into the aphid population. As the lady beetles consume the aphids, the beetles will migrate to other crops. This will help control the aphids.

Greenbugs, a stubby-looking aphid, may be found on sorghum. This one has a prominent dark stripe down its back. It can damage sorghum. Malathion or diazinon will provide control.

LIVESTOCK INSECTS

Face fly populations remain high, but the number of horn flies has decreased. (See Bulletin No. 13, June 25, 1971, for detailed control recommendations.)

HOMEOWNER INSECTS

Mimosa webworms are now numerous. The leaves on some locust and mimosa trees are turning brown. These worms can be found rolled up in the damaged leaves. Sprays of carbaryl (Sevin) or malathion will control them.

Flea beetles are common on egg plants and tomatoes nin home gardens. These tiny, black beetles jump quickly when disturbed. Sprays of carbaryl or malathion will provide control.

SPECIAL NOTE TO CANNERS

Corn borer moths will soon be flying and depositing eggs. This is earlier than usual. Corn earworm moths are now appearing in light traps in the East St. Louis area. This is also earlier than usual.

WEEDS

AVOID 2,4-D DURING CRITICAL GROWTH STAGES

Most 2,4-D labels state: "Do not apply from tasseling to dough stage." This warning is apparently based on early research which showed that spraying at certain, critical stages might interfere with grain development.

In one Iowa study, 2,4-D was sprayed on corn plants at various stages. Applying 2,4-D when the tassels were beginning to emerge inhibited the development of ear shoots. Applying 2,4-D one to four days before silk emergence caused severe inhibition of seed set on the developing ear.

Each year, 2,4-D causes some brittleness and breakage of corn, onion-leafing, and malformation of brace roots. But we have received few reports of 2,4-D affecting ear and grain development. This may be partly because most farmers take precautions to avoid spraying during the critical period, use more-resistant hybrids, and apply only minimal amounts of 2,4-D directly to the corn leaves.

Still, the safe thing to do is to avoid spraying 2,4-D during critical growth stages--especially during the early development of ear shoots. There is apparently less risk of injury from 2,4-D when the silks are drying after fertilization. However, fertilization is followed by a period of rapid nutrient uptake and a movement of food materials to the grain. Stress conditions or any kind of injury during this stage could interfere with normal kernel development.

Resume spraying after the grain is well on its way and is in the dough stage--about 3-1/2 weeks after the silks begin to emerge. Remember, however, that the weeds will usually be large, tough, and harder to kill with 2,4-D at that time.

When the corn reaches the dough stage, many weeds have already done most of their damage by competing for nutrients and moisture. They will also have developed sufficiently to be capable of producing new plants. However, the late spraying may make harvesting a little easier.

FENCE-ROW WEEDS

When the corn and beans are laid-by, many farmers have time to tackle weeds in the fence rows. Use dalapon (Dowpon) to control grassy weeds. You can add 2,4-D to control broadleaf weeds. If desirable grasses are present, omit the dalapon and use only the 2,4-D.

WEEDS IN SMALL GRAIN STUBBLE

When you harvest small grain, you give weeds such as foxtail and ragweed a chance to grow more vigorously. If you do not plan to work your fields for a while, you may want to consider clipping or spraying in order to limit the production of weed seeds.

If you do not have a grass or legume seeding, consider spraying. A low-cost application of 2,4-D can check most broadleaf weeds. A few pounds of dalapon (Dowpon) per acre--alone or added to 2,4-D--can reduce the production of grassy weed seeds considerably. The smaller the grass, the less dalapon you will need. If the weeds are well developed, it may pay to clip or chop the stubble before spraying.

Spray materials will cost from 50 cents to 4 dollars an acre, depending on the materials and rates used. Spraying now to reduce the supply of weed seeds in the soil will mean easier and cheaper control when you plant corn or soybeans next year.

JOHNSONGRASS CONTROL

If you have johnsongrass in wheat stubble and plan to plant corn or soybeans in that field next spring, consider applying dalapon (Dowpon) now for control. Clipping or chopping the johnsongrass once or twice before spraying will help deplete food reserves in the roots and rhizomes and will usually improve control.

Spray when the johnsongrass is about a foot high and is actively growing during warm, moist weather. Use 8 pounds of dalapon in 30 to 40 gallons of water per acre. Wait at least a week or two before working the soil to give the dalapon plenty of time to translocate and act on roots and rhizomes. Unless johnsongrass is growing actively when sprayed, results may be disappointing.

By spraying johnsongrass this summer, you can control most old johnsongrass and avoid delays in planting next spring. But plan to follow up next spring with a preemergence application--such as Treflan for soybeans--to control any johnsongrass that may grow from seed. See Illinois Circular 827 for more details.

PLANT DISEASES

WEATHER CONDITIONS FAVOR BLIGHT DEVELOPMENT

Conditions are nearly ideal for the spread and development of the southern corn leaf blight. The susceptible host--T cytoplasm corn, either alone or in blends--is growing

in many Illinois corn fields. The virulent pathogen--the fungus that causes southern corn leaf blight--is already present. Now the weather conditions--frequent rains, high humidity, and warm temperatures--are right for fungus growth.

Check susceptible fields frequently for new lesions that may appear on leaves, leaf sheaths, stalks, ears, and husks to determine whether spraying is warranted. So far, few ear infections have been found. Leaf, sheath, and stalk infections are more common in most areas.

Infections, including some ear infections, appear to be increasing in the parts of southeastern Illinois that received rain earlier--Gallatin, Richland, White, Wabash, and the surrounding counties. Physoderma brown spot, another corn disease, also appears to be spreading on certain hybrids in that area. This disease has not caused serious economic loss in the past.

Plant pathologists in Indiana and Iowa report an increase in the number of spores trapped during the past two weeks--indicating that spores are beginning to move through the air and may spread infections from field to field. The Indiana pathologists also report an increase in the number of lesions appearing on corn plants. There has been only a slight increase in the number of spores caught in spore traps at the Dixon Springs Agricultural Center near Simpson and on the Urbana-Champaign Campus.

So far, most severe blight infections are limited to localized areas where heavy concentrations of susceptible T cytoplasm seed were planted, where volunteer corn or diseased debris remained in fields, or where farmers shelled or loaded diseased 1970 corn from cribs.

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AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 17, July 23, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Grasshoppers have begun to migrate from fence rows and other grassy areas into bean fields, where they are eating the leaves and may consume pods later.

Green cloverworms can be found in soybean fields. This green worm with white stripes springs when disturbed. Shake plants over the center of the rows and count the worms on the ground. Six or more worms per linear foot of row are enough to decrease yields if feeding occurs at the critical time. These pests rarely, if ever, feed on pods. A fungus which infects and kills them should help reduce their numbers. Worms killed by this fungus are fuzzy white and cottony in appearance.

Bean leaf beetles are the yellow, green, or red beetles which usually, but not always, have four black spots on their back and a black line as a border on the wings. When disturbed, they drop to the ground and play dead. Grasshoppers and green cloverworms usually consume the leaves from the edge of the leaf inward, while the bean leaf beetle eats holes in leaves.

Grasshoppers may be the most severe of the three, but there may be more bean leaf beetles than normal in bean fields in August this year.

As long as pods are not being fed upon, use leaf damage to estimate the need for chem-control of leaf-feeding insects on soybeans.

When insects eat 50 percent or more of the leaf surface of soybean plants between blossom stage and early pod fill, yield losses can be quite noticeable. If this feeding occurs before blossom and the pests are controlled, no harm is done. If leaf destruction occurs after pod fill, there is no damage if no pods are eaten. The following guidelines to determine need of treatment can be used: (1) If defoliation *occurs early* and the pests are expected to be present all season long, as with grasshoppers, control the pests early. If the leaf feeding is early and occurs only for a short time, no control is needed. (2) If leaf damage occurs towards mid-season *after blossom but before pod fill*, apply insecticides to control the pest if 25 percent of the foliage has been eaten. (3) If leaf feeding begins *only after pods are well formed*, do not apply insecticides unless pods are being eaten.

Carbaryl (Sevin) can be used to control all three of these pests, but do not use it if two-spotted mites are damaging soybeans in your area because it will kill some of their natural enemies. There are no time limitations between application and harvest.

Malathion will also control all three and can be used even if mites are present. There are no time limitations on its use when diluted with water.

Toxaphene gives good control of grasshoppers and bean leaf beetles, but poor control of green cloverworms. Do not apply within 21 days of harvest and do not use treated foliage for silage.

Spider mites are still a problem in those areas that have had little rain. Even in areas that received the rains, relief from mites was only temporary. Rains, particularly hard beating rains, cleanse the plants of mites and give the plants a chance to grow. But rains or chemical control only give the plants a breather to "get going" again and grow away from mite feeding. If a dry spell occurs, damage can be severe as these mites may be present until frost.

No matter what chemicals have been used, control of mites on soybeans has always been erratic. If possible, direct the spray to the undersides of the leaves. Place drops between the rows and aim the nozzles toward the rows, pointing upward at a 45-degree angle and backward away from the spray operator. Note: The operator should wear protective clothing and avoid spray dritt when using this nozzle arrangement. Use 1/2 pound of azinphosmethyl (Guthion) or 3/4 pound of carbophenothion (Trithion) per acre to control the mites. These should be applied by experienced commercial applicators only. Wait 21 days with azinphosmethyl and 7 days for carbophenothion between treatment and harvest. Do not feed treated soybeans as forage to livestock.

CORN INSECTS

European corn borer development has been retarded because of the cool weather. However, pupation and emergence will accelerate with warmer weather. Watch the latest developing fields; corn borer moths will concentrate their egg-laying here. Examine fields in the late-whorl to early-silk stages. If you find 100 or more egg masses per 100 plants, apply diazinon or carbaryl (Sevin) for control.

First-generation populations in northwestern Illinois averaged 7 borers per 100 stalks of corn; in northeastern Illinois the population averaged 2 borers per 100 plants; in western Illinois, 16; in central Illinois, 4; in west-southwestern Illinois, 6; and in southwestern Illinois the average was 19 borers per 100 stalks of corn. When a first generation population in an area averages 5 or more borers per 100 stalks, the second generation can be moderately severe; when the first-generation population averages over 10, the second generation is very likely to be severe unless weather or corn borer diseases are unfavorable for borer survival.

In southern and southwestern Illinois, pupation should be complete and emergence of moths quite advanced. Egg-laying is progressing rapidly but little hatch has occurred. Egg-laying should reach its peak during the next 10 days.

Egg-laying should be progressing rapidly in west-southwestern and western Illinois. Little egg-laying will take place in northern Illinois for about 10 days yet.

Unfortunately, infection by the microscopic protozoan which kills borers and also causes sterility of the females is at a low ebb in the first generation of corn borers this year.

Corn leaf aphids are present in small numbers, but chemical control will probably not be necessary as we have not seen many on late corn. Maximum aphid reproduction and survival occurs between late-whorl and dry-silk stage. After this stage, aphid numbers decline rapidly.

Therefore most of our corn is beyond the stage when it would be damaged severely. If control becomes necessary, malathion sprays are effective.

Corn rootworm beetles are more numerous this week than last. Control is recommended if a field is less than 50 percent pollinated and there are 5 or more beetles per plant. To control, apply 1 pound of carbaryl (Sevin), malathion, or diazinon per acre. Do not harvest for 10 days when using diazinon, or 7 days for malathion. Since these beetles are killed easily, other insecticides may be effective.

Armyworms sometimes appear in cornfields in northern Illinois at this time of year. Check weedy or grassy spots for signs of armyworm infestations. If needed, toxaphene, carbaryl, or malathion provide control.

SORGHUM INSECTS

Corn leaf aphids are decreasing in number in most fields although an occasional late field still is heavily infested. Fungus diseases are killing many of these aphids now. Lady beetle adults and larvae are now becoming abundant and are eating aphids.

Corn earworms, fall armyworms, and European corn borers were observed in sorghum this week but were not of economic importance.

HOMEOWNER INSECTS

Crickets are now migrating into homes. This is the large black cricket, not the small brown field cricket that will soon appear in swarms. Foundation sprays of chlordane will control both. Mix 1/2 pint of 45-percent chlordane concentrate in three gallons of water. Spray the outside of the house foundation to the point of run-off. In addition, spray the expansion joints along porches and steps, and along the edges of sidewalks and driveways. In homes with a crawl space, spray the inside wall and any supporting pillars. Do not spray directly onto shrubbery or flowers. The oil solvent in the spray may burn the tender foliage of some plants.

WEEDS

EPA CANCELS AMITROLE REGISTRATION

On June 16, 1971, the Environmental Protection Agency (EPA) issued an order canceling registration of amitrole (amino triazole) for use on food-crop lands. This cancellation would also apply for amitrole-T.

Specific amitrole registrations that have been canceled are:

-Application before planting corn to control Canada thistle and quackgrass.

-Spot treatment in pastures to control Canada thistle.

-Spot treatment after cutting or post-harvest in alfalfa, clover, grains, legumes, peas, and soybeans to control Canada thistle.

--Application to the floor of dormant grape vineyards and apple and pear orchards to control a variety of weeds.

--Use in the practice of chemical fallow on soils to be planted to grain.

The registered uses of amitrole in noncropland areas to control poison ivy and marihuana remain valid, and amitrole will still be available for these uses.

A Scientific Advisory Committee pointed out that its recommendation was based on policy re-evaluation by regulatory agencies rather than on new evidence of residues or harmful effects.

The Committee report stated, "Although it seems highly unlikely that amitrole could contaminate a human diet in sufficient quantities to produce cancer, the carcinogenicity of the chemical must necessarily influence the conclusions and recommendations of the Committee." Amitrole has been found to be carcinogenic when administered to rats in large doses.

Crops from croplands that had been treated with amitrole products prior to cancellation of registered uses may still be sold, if applications were made at rates and times specified on the product label.

BANVEL INJURY TO SOYBEANS

We have had a number of soybean specimens that show dicamba (Banvel) injury and many reports of dicamba injury to soybeans from the field this year.

Typical dicamba injury symptoms are cupping and crinkling of leaves and failure of top leaf buds to open and expand normally, giving a somewhat yellowish cast to the field. Beans may also be shorter than normal.

The major question is how much yields might be reduced. The answer depends on how much dicamba reached the soybeans and when. The more dicamba, the greater the effect. Research suggests that contact during blooming can reduce yields more than earlier prebloom contact.

Yields are not always reduced as much as the appearance of the field might suggest. However, yields can be reduced, sometimes significantly. Comparing pod and bean counts per plant from an affected area with those from an unaffected area might give some early indication of the magnitude of the problem. Usually, actual yield comparisons at harvest are best.

Next year, consider atrazine for your smartweed problems.

PESTICIDE USE SURVEY AVAILABLE

The survey "Pesticide Use by Illinois Farmers, 1970" has been released and copies are available from the Illinois Cooperative Crop Reporting Service, P.O. Box 429, Springfield, Illinois 62705.

PLANT DISEASES

PHYSODERMA ON CORN

Under ideal conditions, Physoderma diseas on corn may reduce yields by 6 to 10 percent in highly susceptible varieties. Physoderma lesions are very small and several hundred

are required to reduce the leaf surface significantly and affect yield. Dry weather retards the spread of this disease.

The symptoms may appear in bands as infection occurs by swimming spores (zoospores) that land in whorls filled with water from heavy dews or rain. Corn may lodge if considerable leaf damage and premature death of the plants occur. Sporangia (fruiting bodies) survive the winter in old infected plants and in the soil.

Primary control measures for Physoderma include plow down, crop rotation, and use of resistant varieties.

Sudden appearance of lesions only on the top leaves of T corn would indicate windborne movement of the spores of *Helminthosporium maydis* race T.

BLIGHT DAMAGE MAY BE LESS THAN IN 1970

Despite heavy rains during the past two weeks, the build-up of southern corn leaf blight infection has not been as great as feared earlier. At present infection levels, even if conditions for blight remain ideal until harvest, the amount of damage likely to occur from the disease will be less than the actual damage in 1970. Here's why:

1. Recent heavy rains washed blight-causing spores out of the air and off the plants. Light, gentle showers or heavy morning dews followed by periods of slow drying--overcast skies--are more favorable for development of blight infections.

2. Hot, dry conditions before the recent rains did not favor the formation of additional spores. Also, spores have not been blown up from southern states--the primary source of the blight-causing fungus last year. The spread north did not occur because a major portion of the corn crop planted in the southern states is in resistant seed.

3. A recent U.S. Department of Agriculture report indicates that about 50 percent of the 1971 Illinois corn crop is normal (N) cytoplasm corn. The estimate includes fields planted to straight N corn and the N corn contained in blends. In 1970 only 15 percent of the Illinois corn crop was in N cytoplasm.

4. Blight development seems slightly ahead of last year. But the Illinois corn crop is also ahead of last year in stage of growth.

In 1970 about 50 percent of the Illinois corn acreage was planted in late May and June. In contrast only about 5 percent of the 1971 crop was planted after June 1.

Infections during the early-tassel to early-dent stage are most likely to cause serious damage. Infections after the dent stage cause less damage.

As a rule of thumb, denting usually begins 36 days after corn has silked. Most of the Illinois corn crop is now in the silk stage, so the next 36 days will tell the story.

Best advice is to "walk" corn fields and tag plants to check blight development. If 10 or more lesions appear on each of the upper leaves of susceptible corn--and the crop has not yet reached the dent stage--use of a protective fungicide may be warranted. Be sure to check stalks and ears as well as leaves for signs of blight infection.

There is some evidence that blight spores are beginning to move through the air from local infected fields. Infections from debris usually begin on the lower leaves and may move to upper leaves. But if lesions are found on upper leaves and not on the lower leaves, the infection-producing spores were blown into the field.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 18, July 30, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer. Second-generation moths are laying eggs and the hatch is progressing rapidly in the southern sections of Illinois. Moth emergence in the central areas is well underway, and egg-laying has begun. In the northern section, pupation reached 52 percent and emergence 24 percent this week. Peak egg-laying will probably not occur for another week in central Illinois and 10 days in northern Illinois. Egg-laying could continue for two weeks or more. Cool weather has slowed development. Higher than normal populations of first-generation borers in southwestern and western Illinois have increased the possibility of corn damage by second-generation borers in these areas.

This is the time to check late-maturing fields for egg masses and feeding in the southern half and western sections of Illinois. Determine whether treatments are needed.

The moths will deposit eggs on corn at any stage of its development, but fields of late-planted corn in the late-whorl to early silk stage are usually preferred. Look for egg masses or small, newly hatched larvae. Treatments should be made now in southern Illinois. It is still too early to apply insecticides in the central and northern sections.

To determine whether treatment is necessary look for egg masses or whorl feeding. If the average is one or more eggs masses per plant, apply an insecticide after a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules not sprays. Use 1-1/2 pounds of carbaryl (Sevin), 1 pound of diazinon, or 1/2 pound of parathion per acre. (Allow 10 days for diazinon and 12 days for parathion between application and silage removal.) Parathion should be applied only be experienced applicators. No waiting period is required for carbaryl.

Corn rootworms. The emergence of northern and western adults is progressing very rapidly. Beetles are feeding on the silks in many corn fields in northwestern Illinois. If the rootworm beetles are numerous, they can reduce pollination. Control is recommended only if a field is less than 50-percent silked and there are 5 or more beetles per plant.

A survey of adult rootworm populations was conducted in thirty Illinois counties this week. The rootworm species surveyed include the tan or pale-green northern ones, the yellow- and black-striped western ones, and the 12-spotted southern rootworms, also

known as the spotted cucumber beetle. Western corn rootworms were found for the first time in Christian and Menard Counties this week. Confirmed findings have been made in forty-nine counties in the northern half of Illinois. If the western corn rootworm ha not been reported in your county, please take suspected beetles to your county Extensi adviser, or send them to Extension Entomology, 280 Natural Resources Building, Urbana, Illinois 61801.

Fall armyworms. This pest is damaging late-maturing corn, particularly in the southern sections of the state. These dark-brown to gray to dull-green, smooth-skinned worms feed in the whorl, giving the plants a ragged appearance as the leaves emerge. A series of plants in a row will show damage, and these patches of infested plants will usually be over the entire field. The worms this week were a third to half grown, with another 7 to 10 days of feeding time left before they mature. Additional generations could still present further problems in late-maturing fields. After the corn has pollinated, fall armyworms will attack the developing ears (like earworms). Some larvae will be present in ears until frost.

Treatment is justified in fields in which 20 percent or more of the plants are infested. Before applying insecticides, be sure the worms are still present and that most of them are not more than 1-1/4 inches long. When they reach about 1-1/2 inches, they are mature; at that size they stop feeding, drop to the ground, enter the soil, and pupate.

For control, apply either carbaryl (Sevin), Gardona, and toxaphene at 1-1/2 pounds of chemical per acre, or diazinon at 1 pound per acre. Granules are preferred, especiall if air applications are made. Ground applications with the spray directed into the whorl will provide fair to good results, depending on the size of the worms. The larger worms that are deep in the whorl are more difficult to reach with an insecticide, and control is poor. Smaller worms, many of which are on exposed leaves, are readily killed.

Do not feed toxaphene-treated corn as forage to dairy cattle. Do not feed toxaphene-treated corn as silage to livestock fattening for slaughter. Corn treated with toxaphene granules may be fed as stover to beef cattle to within 28 days of slaughter. There are no restrictions for carbaryl. For diazinon, there is a 10-day waiting period between application and removal of forage, and 7 days for grain; for Gardona, there is a 5-day waiting period between application and removal of forage and grain.

Caterpillars. An orange and brown, bristly caterpillar *(Simyra henrici)* can be found in some corn fields, eating the edges of the leaves. There is no common name for this worm. Control is not necessary.

Picnic beetles. There are not as many of these in cornfields this year as last year. A cool, wet spring is usually associated with an abundance of this species. They over winter as adults and larvae. Being scavengers, they develop on fallen ears and other organic matter. Occasionally, beetles feed on the silks and the tips of the ears. Thi usually shows up after pollination has occurred. Control is rarely needed.

SORGHUM INSECTS

Sorghum midge. Damage to sorghum by this insect has been reported in southern Illinois. Injury is caused by tiny maggots feeding inside the seed. If the infestation is severe, the heads appear blasted or blighted, and will produce little or no grain.

Damage can only be prevented by controlling the adult midge before the eggs are deposited. Thus, control requires precise timing of insecticide applications. The

adult midge is an orange-colored gnat or fly about 1/12 of an inch long. The flies deposit their eggs in the spikelet or seed husk of the plant, and the orange-colored larvae or maggots live within the developing seeds.

Late-planted sorghum is usually subject to more damage than plantings made earlier. Because of the critical timing required, chemical control for midge may not be very effective, particularly where late-planted sorghum shows uneven plant development, with head emergence spread over a 3- to 6-week period.

Missouri recommendations suggest treating where there is an average of one or more adult midges per head. Two determinations should be made before deciding to apply an insecticide.

First, make sure midges are present. Look for tiny, orange-colored flies during the early morning hours. It is very difficult to identify how many are present. They may be seen flying around and crawling over the heads at first bloom.

Second, it is important to time applications so that the first one is applied at approximately 50-percent head emergence; the second, 3 to 5 days later, or by the time 90 percent of heads have emerged from the boot. Two applications may be needed unless the field is uniform in terms of head emergence.

For control, use 1/2 pound of diazinon, ethyl parathion, or carbophenothion (Trithion), or 1-1/2 pounds of carbaryl (Sevin) per acre.

> Note: Do not use methyl parathion, because of possible injury to some sorghum varieties.
>
> Precautions: Do not apply diazinon within 7 days of grain harvest. Do not apply ethyl parathion within 12 days of grain harvest or for forage. Do not apply carbophenothion more than once per season, and do not graze or cut for forage within 21 days after application. There is a 21-day waiting period for carbaryl between application and removal of the grain, but no time limitations for forage.

SOYBEANS

Spider mites. These continue to plague soybeans in many areas, particularly rows along the margin of fields. If damage continues and the beans are too large to treat with ground equipment, aerial applications may be necessary. (See Bulletin No. 17 for recommendations.)

HOMEOWNER INSECTS

Nuisance insects. Quite a few reports have been received recently of ground beetles and other accidental insect invaders finding their way into homes. Usually they are attracted to porch and house lights and somehow manage to enter the house, making a nuisance of themselves. Insecticides are of little help. Within a few minutes after applying a quick-knockdown space spray (such as 0.1-percent pyrethrin), there are more insects back at the light. Usually, individual insects inside the home can be picked up with a vacuum cleaner. In some instances, a spray of chlordane or diazinon applied on surfaces around the doorway entrances and other points of entry may help.

You can also help lessen the problem by the type of lighting you use. Avoid strong, direct, white lighting. Indirect or more subdued lighting is preferable. Indoor

lights that shine directly out of an opening should also be avoided. Where possible, use yellow bulbs outdoors. Also a bright light set in a tree, on a pole, or the corner of a building some distance from doors and windows will attract most of the insects and help reduce the number that enter the building.

Sod webworm moths. These are very numerous in many lawns. This is a buff-colored moth. They lay their eggs as they fly over lawns in the evening. Lawn webworm larvae are beginning to hatch from these eggs and are beginning to feed on grass blades in lawns.

If these webworms are numerous, irregular brown patches will begin to appear in the lawn. Other symptoms of webworm activity include the presence of robins feeding on the lawn. If examined closely, the lawn area will contain burrows with fresh grass clippings as well as webworm larvae. These larvae are dusky-green, with a dark brown head and brown spots on the body.

For control, apply carbaryl (Sevin), diazinon, or trichlorfon (Dylox) as a spray or granules.

Oystershell scales. The egg hatch is complete in central and southern Illinois. The young crawlers set up housekeeping on lilac, dogwood, birch, and other shrubs and trees. They suck the juices from the plant; if abundant, they can seriously retard growth and even kill the plant. This is the second generation of this scale, and the build-up is often heavy. If you have had a history of problems in your yard, spray the shrubs thoroughly with malathion, using 2 teaspoons of the 50- to 57-percent liquid concentrate per gallon of water. Target dates for spraying are right now in the southern sections, August 10 in the central section, and August 20 in the northern section.

Diazinon and dimethoate may also be used. Follow the directions on the label.

Mimosa webworms. This pest continues to infest mimosa trees in southern Illinois and honey locust trees throughout the state. These webworms web leaves together and feed on the leaves within the webbing. Spraying with carbaryl (Sevin) or malathion will provide control. A repeat application after a few weeks may be necessary.

Cottony maple scales. Egg-hatch is completed, and the young can be found on the undersides of maple leaves. If the maple tree has had cottony masses on the branches and treatment is necessary, spray now with malathion. They will continue to remain on the leaves through August.

WEEDS

CONTROLLING POISON IVY

Poison ivy is still a problem in many camps and recreation areas, but there is still time to spray this year. One of the most effective treatments is amitrole or amitrole-T (Amino triazole, Weedazol, Cytrol, Amitrol-T).

A combination wall poster and circular concerning the identification and control of poison ivy is available from the Office of Publications, 123 Mumford Hall, Urbana, Illinois 61801. Ask for Circular 850, *Controlling Poison Ivy*.

Check with camp directors and others in charge of recreation areas. They will be glad you did.

PLANT DISEASES

DEVELOPMENT AHEAD OF THE BLIGHT

The growth stage of the crop--not the date on the calendar--makes the difference when comparing the development of southern corn leaf blight this year with last season. Much of the Illinois corn crop was planted early this year. The relatively high temperatures early in the season got the crop off to a good start. As a result, the 1971 crop is closer to maturity than the 1970 crop was at this time a year ago.

As corn plants approach maturity, there is less damage to the plant and less potential yield reduction. The plant pathologists generally agree that blight infections occurring after the corn reaches the dent stage have a relatively minor effect on the crop.

Nearly all of the Illinois corn crop has now reached the silk stage. Agronomists say that plants usually require 12 days to advance from the silk to the blister stage; 24 days, to the dough stage; and 36 days, to the beginning of dent stage. Another 12 days are required to complete denting. At 60 days after silking, corn is generally physiologically mature--at 30 to 35 percent moisture.

Although the overall effects of the blight may be less severe than last year, this does not mean that individual corn producers will not suffer greater losses than in 1970. In some areas of the state--particularly in a belt through south-central Illinois where conditions for blight development have been favorable--the potential for major blight damage still exists.

If infection is already present and if susceptible corn was planted, watch such fields closely. Tag several plants in the field and check every day or two for signs of blight development.

Some situations may warrant spraying to protect the crop from further infection. The decision to spray must be based on conditions in individual fields. First weigh the economic factors to decide whether spraying will pay. If spraying is chosen, consider the timing, materials, rates, and application methods that will provide the most protection. Both aerial and ground application equipment should give equally effective results when correctly adjusted and properly operated. County Extension advisers have guidelines for decision-making and recommendations for rates, timing, and applications. Also, check the June 25 issue of this bulletin.

As a general rule, begin spraying when about 10 lesions appear on the upper leaves of 25 to 50 percent of the plants in a susceptible (T or blend) corn field. Repeat the spray applications every 7 to 10 days, depending on the weather conditions. Corn that has reached the dough stage before this level of infection appears will probably perform satisfactorily even if sprays are not applied. If more than 40 lesions are present on each of the upper leaves of susceptible plants, it is probably too late to spray.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 19, August 6, 1971

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN

European corn borers. The situation is almost anybody's guess. So far very little egg-laying has taken place in south-central and western Illinois, although moth emergence is almost complete. Based on the first-generation populations, these areas are the ones most likely to have a high number of second-generation borers. Moth emergence in northern Illinois reached 40 percent this week. Field observations lead us to believe that egg-laying will be spread out over a period of two to three weeks. At any one time, egg counts may not approach the economic level of 100 egg masses per 100 plants, but cumulative counts over a month may be much greater.

It is difficult to determine when control measures are feasible for the second brood. Overall, we anticipate a noticeable infestation of second-generation corn borers in late corn in many areas of Illinois. Late-maturing fields should be checked for the presence of the borer eggs. Generally, these will be found on the undersides of any of the upper five to seven corn leaves.

To determine whether treatment is necessary, look for egg masses or whorl feeding. If the average is one or more egg masses per plant, apply an insecticide after a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules not sprays. Use 1-1/2 pounds of carbaryl (Sevin), 1 pound of diazinon, or 1/2 pound of parathion per acre. Allow 10 days for diazinon and 12 days for parathion between application and silage removal. Parathion should be applied only by experienced applicators. No waiting period is required for carbaryl.

Corn rootworm adults. They are numerous in many fields in the northern half of Illinois. The western corn rootworm was found for the first time in DeWitt County this week.

In most fields, treatment with insecticides will not be profitable now. But treatment may be justified in late-maturing fields where pollination may still be affected by silk feeding. Control is suggested if there are 5 or more beetles per ear, and if not more than 50 percent of the plants have silked. Sprays of carbaryl (Sevin), diazinon, or malathion at 1 pound of actual insecticide or 1/4 pound of methyl parathion per acre are effective. Methyl parathion should be applied by experienced applicators

only. Allow 5 days between harvest for malathion, 10 days for diazinon, and 12 days for methyl parathion. Carbaryl has no waiting period.

Adult control is no guarantee that the rootworm problem will be eliminated the following year. The movement and migration of rootworm beetles from adjacent fields is constantly taking place, and egg-laying continues up to frost time.

If you want to estimate the prospects of rootworm problems next year, check the number of beetles and the rootworm damage during the next week or two. If you find many beetles (4 or more per plant), then there may be enough rootworms in the field to cause economic losses in 1972 if the field is planted again in corn.

SORGHUM

Fall armyworms. Damage to sorghum by fall armyworms was observed in southern areas of the state last week. The small larvae feed on the outer leaves. The larger worms fee down in the whorls. Control is suggested when 25 percent of the plants, less than thr feet in height, show whorl feeding.

Granules are preferred, but sprays applied with ground equipment using 10 to 20 gallon of water per acre with the spray directed over the whorls will provide fair to good results, depending on the size and location of the worms. For control, use 1-1/2 pound of carbaryl (Sevin) or toxaphene. For carbaryl, there is a 21-day waiting period between application and removal of grain, but none for forage. For toxaphene, wait 28 days before removing grain. Do not apply toxaphene more than once after heads start to form. Do not use treated forage for silage.

SOYBEANS

White grubs. Damage is reported in a few soybean fields. No satisfactory emergency-control measures are available.

Grasshoppers. The count continues to be heavy in some areas. Migrations are occuring into corn and soybeans. For control, use either carbaryl (Sevin) or toxaphene. Do not apply toxaphene to corn or soybeans to be used as forage for livestock. Do not apply toxaphene near fish-bearing waters, or carbaryl near bee hives.

HOMEOWNER PROBLEMS

Sod webworm moths. The second-generation moths have been emerging and are laying eggs in lawns. These moths are buff-colored, and have a tubular shaped body when at rest. Egg-laying will continue for several more weeks. The moths are flushed from their hiding places when tall grass is moved or shrubbery is disturbed. They fly in a jerky fashion, a few feet at a time, then dive down to rest on a grass blade.

Apply ample fertilizer and water the lawn to help reduce the possibility of severe damage from these insects. Once started, this program must be continued to avoid serious damage. If needed, an application of carbaryl (Sevin), diazinon, or trichlorfon (Dylox)--spray or granules--will effectively control the worms for a week or two. An additional treatment may be needed if egg-laying continues into late August.

Crickets. They may soon invade homes. Although there appears to be planty of cricket food in the fields, some of them usually migrate. In so doing, they are attracted to lights. A foundation spray of chlordane will help reduce the number that enter the home. You may also want to mist spray around doorways and windows. Spray the foundation of the house to the point of run-off with a 1-percent chlordane spray, made by

mixing chlordane emulsion concentrate with the proper amount of water. Avoid spraying near wells.

This will control ants, spiders, Oriental cockroaches, and other pests that migrate into the house from outdoors.

Spiders. A foundation spray will provide control. As the spiders migrate into the house in the fall, they usually cross the foundation. The number of spiders entering the home will be greatly reduced if the foundation has been sprayed with chlordane. We are still trying to determine where the brown recluse can be found in Illinois. Send spiders to Dr. J.D. Unzicker, Room 93, Natural Resources Building, Urbana, Illinois 61801, for identification.

WEEDS

PLANTS SENSITIVE TO 2,4-D

Distorted and twisted leaves on tomato plants may be due to herbicide injury. 2,4-D can cause damage to many broadleaf plants. Tomatoes, grapes, and red bud trees are particularly sensitive. 2,4-D is quickly absorbed by the leaves and translocated in the plant. Only a trace of the chemical is needed to harm susceptible plants. It does not have to be sprayed on directly. 2,4-D carried by air currents may cause injury at a distance of a mile or more from the sprayed area. The drift of 2,4-D fumes or spray depends on the wind currents and other environmental factors. The degree of injury is directly proportional to the concentration of the chemical to which the plant is exposed.

A sprayer filled previously with 2,4-D (even though washed-out) may cause serious damage if used later to spray susceptible plants. It is well to have two spray tanks--one for herbicides and another for other pesticides.

The symptoms may not become apparent until 5 or 10 days after spray exposure, or until the new leaves have expanded. The entire plant may die within 7 to 10 days, or the chemical may just delay fruiting. Generally, the upper part of the stem becomes twisted and the leaf petioles bend downward.

Once a plant has been exposed to 2,4-D, nothing can be done to help it. Although dicamba is more effective than 2,4-D on some weeds (smartweed, knotweed, and Canada thistle, for example), the risk of injury to nearby, desirable broadleaf weeds is also usually greater. [Adapted from the North Dakota Pest Report.]

2,4,5-T BAN COULD COST THE U.S. $52 TO $172 MILLION: USDA

A ban on the phenoxy herbicide 2,4,5-T could increase costs to U.S. farmers and other domestic users by $52 to $172 million, according to a recent study by the U.S. Department of Agriculture.

The lower figure would apply if 2,4,5-T should be banned and all other registered herbicides were available as alternatives. The $172 million figure would apply if no phenoxy herbicides could be substituted for 2,4,5-T.

Of the $52 million, $32 million represents added costs for controlling weeds and brush on farms. Other domestic users--homeowners, utility companies, recreation, and timber industries--would spend $20 million more. Note: all costs are based on estimated use, prices, and alternatives as of 1969.

The study notes that of the phenoxy herbicides, 2,4,5-T provides the most effective control of brush, other woody plants, and herbaceous broadleaf weeds.

WEEDS IN SMALL-GRAIN STUBBLE

Have you controlled them yet or are they polluting the air with pollen and adding an abundance of seed to the soil so that more weeds will spring up to haunt you in the future? The heavy July rains and lush weed growth in many areas make this a good time to spray with about 2 or 3 pounds of dalapon and about 1/2 pound of 2,4-D amine in 10 or more gallons of water per acre. If you do not plant to till the soil soon and if there is no underseeding of legumes and grasses you wish to save, spray that stubble. Controlling weed pollen and preventing the production of weed seeds is another solution for pollution.

POLLUTION SOLUTION PLOTS

Those at the Rockome Gardens near Arthur looked great for the Farmer's Field Day and Governor Ogilvie's visit on July 29. All those involved are to be highly commended for an excellent demonstration on the importance of appropriate pesticide use in achieving bountiful yields of high quality crops. If you have not seen the plots, stop by and do so.

PLANT DISEASES

BLIGHT GENERALLY LIGHT, BUT WATCH "HOT SPOTS"

Although the corn crop in most areas of the state generally looks good, there are "hot spots" in most counties where the potential for blight damage remains high. Individual fields and individual farmers will likely suffer losses, even though the total corn yield may be higher.

A recent survey of 79 corn fields in 49 Illinois counties shows that infections are generally light in most areas. But this doesn't mean that the danger of blight has passed.

Individual fields of susceptible T-cytoplasm corn are heavily infected in many areas--especially in southeastern and south-central counties. Farmers in these areas are spraying susceptible corn and report generally satisfactory control from sprays applied at proper rates and intervals.

Farmers who have susceptible T or blend corn should check their fields frequently to determine if spraying is warranted.

Blight lesions are appearing more frequently on the husks, stalks, and leaf sheaths of susceptible corn. In some cases, lesions spread on these plant parts faster than on the leaves. This may be because husks and sheaths retain moisture longer than the leaves, providing more favorable conditions for blight to develop.

Recent cooler temperatures have slowed development of the corn crop, but most people agree that this year's crop is nearer to maturity than the 1970 crop was on this date a year ago.

The Illinois Crop Reporting Service report shows that as of Monday, August 2, virtually all corn in the state had silked and 25 percent had reached the dough stage. A year ago, only two-thirds of the crop had silked by this date.

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NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 20, August 13, 1971

This is the last in this series of weekly bulletins. We have tried to provide a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Fall armyworms. They continue to attack late-maturing corn as well as grain sorghum, particularly in the southern half of the state. These dark-brown to dull-green worms feed in groups of corn plants scattered over the field. After tasseling, these worms often infest the ears, feeding on the kernels similar to earworm.

Treatment is justified in fields in which 20 percent or more of the plants are infested. Before applying insecticides, be sure the worms are still present and that most of them are not more than 1-1/4 inches long. When they reach about 1-1/2 inches, they are mature; at that size they stop feeding, drop to the ground, enter the soil, and pupate.

European corn borers. The emergence of the second-brood moths is essentially complete now, with emergence reaching over 90 percent in the northern section this week. Based on the first-generation populations, south-central and western Illinois are the areas most likely to have a high number of second-generation borers. Field observations indicate that egg-laying will be spread over the next two or three weeks in central and northern Illinois. The number of egg masses and newly hatched borers still remains low in southern Illinois. At any one time, egg counts may not approach the economic level of 100 egg masses per 100 plants, but cumulative counts over a month may be much greater.

It is difficult to determine when control measures are feasible for the second brood. Overall, we anticipate a noticeable infestation of second-generation corn borers in late corn in many areas of Illinois. Late-maturing fields should be checked for the presence of the borer eggs. Generally, these will be found on the undersides of any of the upper five to seven corn leaves.

To determine whether treatment is necessary, look for egg masses or whorl feeding. If the average is one or more egg masses per plant, apply an insecticide after a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules not sprays. Use 1-1/2 pounds of carbaryl (Sevin), 1 pound of diazinon, or 1/2 pound of parathion per acre. Allow 10 days for diazinon and 12 days for parathion between application and silage removal. Parathion should be applied only by experienced applicators. No waiting period is required for carbaryl.

Corn rootworms. If you want to estimate the prospects of rootworm problems next year check the number of adult beetles and the rootworm damage during the next week or two If you find many beetles (four or more per plant), then there may be enough rootworms in the field to cause economic losses in 1972 if the field is planted again in corn. Western corn rootworms were found for the first time in Morgan and Macon Counties thi week.

SPECIAL NOTICE

A new regulation will be in effect after September 7, 1971. This regulation has been added to the Illinois rules governing Grade A pasteurized milk and milk products:

> The application and storage of the chlorinated hydrocarbon insecticides, aldrin, chlordane, dieldrin, endrin, lindane, or heptachlor, are prohibited on dairy farms except for the farm residence.

This information was received from Franklin D. Yoder, M.D., Director of Public Health.

HOMEOWNER INSECTS

Borers. Evidence of infesting shade trees and shrubs is common in many areas at this time of the year. Piles of sawdust or frass at the base of trees or around entry hole in the trunk are common symptoms of the presence of borers.

In general, most borers hatch from eggs in late May or June and tunnel into the wood or under the bark. These borers continue to feed during the summer and fall. During late spring, the borers change to either an adult beetle or moth and emerge from the tree or shrub to lay eggs to complete the annual life cycle.

Chemical control is simply applying a chemical on the bark to kill newly hatching bore Other control methods include digging-out the borers with a knife or wire. One specie that emerges as an adult in the late summer is the locust borer. If this insect is i festing locust, then apply dimethoate (Cygon or De-Fend) to the trunk in late August a again in mid-September.

Sod webworm moths. They continue to be numerous around many homes. Some damaged area are beginning to appear in lawns. These second-generation moths hide in the shrubbery during the day, then fly over the lawn depositing eggs while in flight. If damage is beginning to appear, an application of carbaryl (Sevin), diazinon, or trichlorfon (Dylox)--spray or granules--will effectively control the worms for a week or two. An additional treatment may be needed if egg-laying continues into late August.

Aphids. This pest continues to suck plant juices from roses and chrysanthemums, plus many shrubs and trees. These soft-bodied plant lice can easily be controlled with a spray application containing either malathion or diazinon.

WEEDS

SEED GRASSES IN FENCEROWS

Fencerow weed control in 1972 can be much easier if you seed smooth brome or some othe desirable grass now. The grass competes well with weeds and also provides good soil and wildlife cover.

GET WILD CUCUMBER EARLY NEXT YEAR

There isn't much you can do about wild cucumber in cornfields now. But you can plan to incorporate atrazine preplant next year in fields to be planted in corn.

SPRAYING CORN MAY MAKE HARVEST EASIER

Corn can be sprayed with 2,4-D after the dough stage. Weeds will already have competed with this year's corn crop and taken much of their toll, but harvest may be a little easier. Follow the usual precautions if you spray.

CONSIDER PARAQUAT IF SOYBEAN WEEDS SERIOUS

Harvest aids to dessicate weeds in soybeans have usually not been recommended in Illinois. However, if the weeds are bad and you need help, you could consider paraquat. Check the label for details.

WATCH SEEDS FROM FALL BOUQUETS

Fall bouquets containing such weeds as milkweed pods, teasel, and foxtail may look nice. But ask your wife to be careful where she disposes of any weed seeds.

REVISED WEED CONTROL PUBLICATIONS AVAILABLE

Revised copies of Illinois Circular 828, *Controlling Giant Foxtail in Illinois* and Illinois Circular 827, *Controlling Johnsongrass in Illinois* are now available. Single copies may be requested from the Agricultural Publications Office, 123 Mumford Hall, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

PLANT DISEASES

COMMON CORN SMUT

This disease appears to be widespread in Illinois this year. The fungus, *Ustilago maydis*, is most destructive on sweet corn, but the chances for development on all other corn are increased by detasseling, hail, insects, and various forms of mechanical injury. The extent of common smut damage to corn depends on the location, number and size of the glistening, greenish-to-silver galls. Large galls on or above the ear are more destructive than those below the ear.

Light rainfall followed by dry weather and soils with abundant nitrogen and organic matter may favor gall formation. The smut fungus causes the plant cells to enlarge, creating swollen areas or galls. The galls contain a greasy mass of black spores, but are not poisonous to animals. Smut spores remain viable in manure, soil and corn debris. Earlier this year, galls formed small, knotty growths on the leaves of susceptible corn plants.

The most effective smut controls include: (1) use of resistant varieties, (2) avoiding mechanical injury, (3) maintaining balanced fertility, and (4) protecting the plants against corn insects.

BLIGHT STATUS, ESSENTIALLY UNCHANGED

The southern corn leaf blight picture changed little overall during the past week. But with the coming of hotter, more humid weather, the blight is likely to continue developing in isolated "hot spots"--particularly in eastern, south-central, and southeastern

sections of the state. In areas where conditions favoring blight development prevail, watch susceptible T-cytoplasm fields closely during the next two to three weeks.

Individual fields of susceptible corn may still suffer blight damage. During the next month, we expect to receive reports of corn lodging--mostly caused by the premature death of plants, invasion by secondary stalk-rotting fungi, and some relatively minor stalk rot caused directly by the southern corn leaf blight. Recent observations confirm that normal cytoplasm plants are still resistant to race T of the blight-causing fungus and are not likely to suffer damage, even though they may develop lesions.

Plant pathologists in Indiana, Illinois, Missouri, and Kansas report that fungicide applications applied early at proper rates and intervals have provided satisfactory blight control. The sprays have also protected the ears and husks.

SEED TREATMENTS AS LOW-COST CROP INSURANCE

Treating seed with a fungicide is a low-cost means of providing crop insurance for improved stands, better grain quality, and higher yields. Chemical seed treatment is especially valuable during cold, wet weather following planting.

The primary reason for treating seed with a fungicide is to control smut fungi that infect seedling plants. The common fungicide seed treatments will control: (1) loose and covered smuts of oats, (2) covered and semi-loose (black) smuts of barley, and (3) stinking smut (bunt or covered) and (4) flag smut of wheat.

Fungicide seed treatments also effectively control many soil-borne fungi and bacteria that cause seed decay and seedling blights (damping-off). Control of these pests results in increased stands of vigorous plants that produce higher yields.

In addition, fungicide seed treatments effectively control seed-borne infections caused by the scab fungus; seed-borne root rots; and stripe, net blotch, and spot blotch of barley.

Suggested Seed Treatment Chemicals for Wheat, Oats, Barley, and Rye

Material	Registered	Formulation	Method of application
Captan 80	W,O,B,R[a]	WP[b]	Slurry
Captan-Maneb (10-35)	W,O,B,R	WP	Planter-box
Captan-Maneb (30-30)	W,O,B,R	WP	Slurry, dust, Planter-box
Captan-Maneb (37.5-37.5)	W,O,B,R	WP	Slurry, dust, Planter-box
Maneb 35	W,O,B,R	WP	Planter-box
Captan HCB - 20.20	W.	WP	Planter-box, dust
Captan HCB - 40.40	W.	WP	Slurry, dust
Captan-HCB-Maneb 20-20-15	W,O,B,R,	WP	Planter-box, dust
PCNB-Terrazole (22.7-11.3)	W.	L	Slurry
Thiram	W,B,R.	WP	Slurry, dust
Vitavax[c]	W,B.	WP	Slurry, dust

[a] W =(wheat), O (oats), B (barley), R (rye).

[b] WP (wettable powder or dust). L (liquid).

[c] Cleared for use only on registered and foundation seed. Vitavax has not been approved by Federal agencies for use on seed if the crop will be used for food, feed, or oil.

Fungicide treatments can be applied: (1) as a dust with a rotary, barrel, or oil-drum treater; (2) as a wettable powder mixed with an equal amount of water to form a uniform suspension called a slurry, or (3) as drill- or planter-box treatment by mixing the chemical with seed just before planting.

Check the manufacturer's recommendations on the label for proper rates of application.

Follow these general precautions when treating seed.

1. Read and follow the manufacturer's directions and precautions on the label.
2. Select clean, good-quality seed.
3. Do not use treated seed for feed, food, or oil purposes.
4. Avoid inhaling dusts, fumes, vapors, or spray mist when treating.
5. When applying dusts, wear an approved respirator or dust mask over your nose and mouth, and change mask filters frequently.
6. Store unused chemicals in well-labeled, closed containers in a locked cabinet or room out of the reach of children, irresponsible people, or pets.
7. If you're not willing to follow all of the above precautions, it's best to have your seedbed treated by a commercial operator.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA's Agricultural Research Service, Plant Pest Control Branch.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 22, January 15, 1971

SPECIAL ISSUE NO. 2

This will be the last issue of 1970-series bulletins.

Greenbugs: These are aphids that ordinarily attack cereal grains, and are serious pests. They transmit diseases of small grains; in addition, they secrete a toxin into the plant that kills the tissue. Large, dead areas appear in grain fields.

We have had damage to small grains by this pest in four of the last twenty-five years. These insects probably migrated from Arkansas, Kansas, Oklahoma, or Texas. Such migrations occur when the winds are predominantly from the Southwest, at the particular time when the aphids develop wings because they are overcrowded on the host plants. The winds then drop them across the Midwest. We doubt that the overwintering of greenbugs in Illinois is extensive. Therefore, outbreaks occur only when migrations are unusually large.

Recently, in the Great Plains States, a new strain of this pest attacked sorghum. Several different phosphates, such as malathion, diazinon, and the like, control this pest; but they may have a depressing effect on aphid predators as lady beetles. Some states report that demeton (Systox) has controlled this aphid by systemic action, without the extensive loss of predators. This insecticide should not be used at more than 0.25 pounds per acre, within 35 days of harvest, and not more than once per season. Demeton should be applied by experienced applicators only.

We, in Illinois, are watchful because greenbugs killed-out patches of grass lawns in central and eastern Illinois this fall. We have not seen blue grass damage before 1970, when they killed the blue grass but did not attack the fescue. The strain of greenbugs involved is not known.

Therefore, watch sorghum for this pest this summer. Most of the aphids you find will be corn leaf aphids, which are usually not important in sorghum production.

The corn leaf aphid is a bluish-green aphid with a velvety appearance; all legs, cornicles, and antennae are black. Greenbugs are yellowish or bright green, with a reddish tinge on the back of the body. Only the tips of cornicles and antennae are black. When in doubt, send samples to us for a check.

European corn borer: Several persons have asked if carbofuran (Furadan), as a planting-time soil insecticide for rootworm, would be effective in controlling first-generation European corn borers. Our experience for the past two years leads us to say no. Iowa State Information Letter No. 18 states, "Questions have been raised about the value of Furadan applied at planting time for rootworm control, as a systemic for corn borer control. The Corn Borer Laboratory says it doesn't do the job."

Higher rates or basal applications during the late cultivation period may control corn borers, but higher planting-time rates than the ones used for rootworm do not have label approval, and basal applications at cultivation do not have approval.

Chlordane granules: Several have asked if we will recommend chlordane 33.5-percent granules (tradename, Belt). Not for the time being. Belt is a purified form of chlordane, one from which practically all of the heptachlor has been removed. We do not know how effective this non-heptachlor chlordane will be under corn-growing conditions. We intended to have it in sixteen demonstration plots during 1970, but the truck strike changed our plans. As a result, none was applied. We used 2 to 4 pounds per acre of the old chlordane (with heptachlor) to get the same results as with 1 pound of heptachlor or aldrin per acre. Thus, the heptachlor may have been very important. Since we do not know, we will not suggest its use.

Corn seed beetles: As a minimum, diazinon seed treater should be used. Farmers who prefer not to do this may apply granules of a phosphate insecticide as a 7-inch band ahead of the press wheel. Use diazinon at 1.5 pounds per acre, or Dasanit, Dyfonate, or phorate (Thimet) at 1 pound per acre. We do not suggest carbofuran for this purpose, because we have not had a chance to see how it does under severe-infestation conditions. Do not use these insecticides on steep slopes, particularly if they drain directly into ponds or streams. Always handle all insecticides with caution and respect.

MEETINGS

THE TWENTY-THIRD CUSTOM SPRAY SCHOOL, JANUARY 27 AND 28, 1971

University of Illinois at Urbana-Champaign, Union Building, Illini Rooms A, B, and C

JANUARY 26. Illini Union Building. Illini Room C. 1:30 p.m.
A discussion of the changes in the Custom Spray Operator's Law.

1971 PESTICIDE AND APPLICATOR CLINICS

February 16. . .Jacksonville, Black Hawk Restaurant
February 17. . .Edwardsville, Holiday Inn
February 18. . .Marion, Holiday Inn
February 19. . .Effingham, Ramada Inn
February 23. . .Joliet, Rossi Autumn Acres Restaurant
February 24. . .Sterling, Emerald Hills Country Club
February 25. . .Galesburg, Holiday Inn
February 26. . .Bloomington, Sinorak Restaurant

The Illinois Department of Agriculture cooperates in the presentation of these clinics, and will give license examinations for new Custom Sprayers at each of these meetings.

HOME AND GARDEN PESTICIDE DEALER CLINICS

January 27	9:30 a.m.	East Moline . .	.Deere & Co. Administrative Center, Coaltown Road
February 1	7:00 p.m.	Tinley Park . .	.Farm Bureau Bldg., 6657 South St.
February 2	9:30 a.m.	Mt. Prospect.	.Scanda House Restaurant, 1018 Mt. Prospect Plaza Central & Rand Road
February 3	9:30 a.m.	Princeton . . .	.Bureau County Extension Office, a half mile south of I-80--west side of Rt. 26, at the north edge Princeton
February 4	9:30 a.m.	Springfield . .	.Heritage House Restaurant, west side of Rt. 66 South
February 4	7:00 p.m.	Belleville. . .	.Farm Bureau Bldg., 407 S. Lincoln

ALWAYS READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This special report was prepared by: H.B. Petty, Steve Moore III, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 1, April 7, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

GENERAL INFORMATION

Farmers: Each year we urge people not to fill sprayers near wells. Keep the hose from the well out of the spray tank--back-siphoning can occur. Keep concentrates away from wells. Do not drain sprayers near the well.

Always wear gloves when handling pesticides. Never pour by holding a container above your head. Always pour granules into hoppers so that the wind will blow any dust away from you. Handle insecticides with care and respect.

Follow these and other precautions to prevent problems.

Homeowners: Store pesticides out of the reach of small children. Read and heed the instructions and precautions on the label.

INSECTS

FORAGE INSECTS

Alfalfa weevil development is slow and corresponds to slow crop growth. Earlier it appeared that these worms would be abundant and that damage to alfalfa would start early, but the cool weather has slowed development. If weather conditions permit alfalfa growth to continue but stop weevil development, damage may be less than last year since the crop would be in effect, out ahead of the weevil.

The situation this week closely parallels that of a year ago.

South of highway 13, adults are present and have been laying eggs. Tiny larvae are easily found. Their presence will be noticeable within the next 10 days if air temperatures are moderate. In severely infested fields, we expect chemical control to be needed in 7 to 10 days. At present, some fields show over 50 percent tip-feeding, but most fields show less than this. The current average for all fields is about 35 percent tip-feeding.

Between highways 13 and 50, small larvae can be found in alfalfa fields on the west side of the state. No insecticide applications should be needed in this area for 10 days to two weeks, even with moderately seasonal weather.

The insecticide recommendations for this pest are the same as last year. Do not apply insecticides until at least 25 percent or more of the tips show feeding. Imidan,

diazinon-methoxychlor mixtures, and malathion-methoxychlor mixtures may be used for control. Malathion can be used alone when the air temperature approaches 60° F. and is predicted to remain there for several hours. Experienced applicators may want to apply azinphosmethyl (Guthion) or methyl parathion. Observe all label precautions.

Clover leaf weevils are present in red clover fields. Although a few fields with high populations have been observed, damage remains slight. No need for chemical control is anticipated.

CORN INSECTS

European corn borer survival appears to be a bit lower than normal in the southwestern area of Illinois, but at least as high as usual in western and northwestern sections of the state.

DAIRY FARMERS: Remember that it is now illegal to use aldrin or heptachlor as soil insecticides on your farm.

SOYBEAN GROWERS: Do not plant soybeans in a field in 1972 where either aldrin or heptachlor was used for corn soil insects in 1971, plus any other year back to 1966. The beans will contain slight residues. Even though these are so small that no public hea problem could ever exist, the amounts may be illegal.

LIVESTOCK INSECTS

Cattle lice populations in southern Illinois are much lower than in previous years. Th reason is unknown.

HOMEOWNER INSECTS

Ants, water bugs, spiders, crickets, and other crawling insects can be prevented from e tering your home by spraying the outside foundation wall with a 1-percent emulsion of chlordane and water. Purchase chlordane as a liquid concentrate and mix a half pint o 45-percent chlordane or 10 tablespoons of 72-percent chlordane in 3 gallons of water. Spray the foundation wall from the ground to the sill, or about a foot, to the point o runoff. In addition, spray 3 to 6 inches of soil adjacent to the wall, as well as the expansion joints along porches and steps. Do not spray shrubbery or flowers. The oil in the spray may burn the tender foliage.

For controlling ants already inside the home, use 0.5-percent diazinon or 0.5-percent Baygon in pressurized spray cans. Spray into all cracks, around baseboards, and other areas where the ants are observed.

Eastern tent caterpillars are defoliating trees, especially wild cherry in Southern Illinois. These dark-colored worms with a white stripe down the back spin webs on the branches and trunk as they move along and feed on the foliage.

Spraying with carbaryl (Sevin) or malathion will control these worms. Do not treat if the caterpillars are almost full-grown (2 inches long) or are pupating.

Boxelder bugs have been a pest in many homes this spring. Although these bugs are a nuisance, they do not feed on household furnishings. Last fall these red-and-black bugs migrated from boxelder trees into buildings to hibernate for the winter. To pick

up boxelder bugs as they emerge and become active on warm spring days, use a vacuum sweeper or broom and a dustpan indoors. A 0.1-percent pyrethrin household spray will give temporary control, but repeated treatments will be needed. To control infestations along the outside foundation of the house, spray with diazinon, carbaryl, or malathion.

Clover mites will soon leave their winter hibernation sites. When their hiding places beneath siding and in cracks and crevices are warmed by the sun, these mites move to window sills and walls on the east and south sides of the house. Clover mites are tiny, orange-to-black moving specks about the size of the period at the end of this sentence. They cover furniture, curtains, window sills, and walls. Although harmless, clover mites leave an unsightly stain when mashed.

Pick them up with a vacuum cleaner or use an 0.1-percent pyrethrin spray from a pressurized spray can for a quick knockdown. Before fall, remove the grass, clover, and weeds next to the foundation so there is a strip of soil at least 18 inches wide. This bare soil will serve as a barrier to the mites.

SPECIAL NOTE TO PESTICIDE DEALERS

Pesticides bearing the skull and cross bones are very highly toxic and should be handled with care. Caution all your customers to do this. Tell them never to reuse an empty pesticide container.

During the past ten years, there have been only 25 accidental deaths from pesticides in Illinois. Although this is a remarkable safety record, some of these deaths could have been prevented. In several instances, highly poisonous pesticides were placed in soft drink bottles. Small children later drank from them. Never put a pesticide in anything but its original, well-marked container. Warn your customers about this.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

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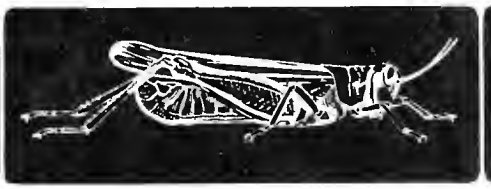
COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 2, April 14, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil infestations are developing rapidly. Damage to some fields may be severe this year. Eggs, larvae, and adults can be found in all alfalfa fields south of highway 50.

Populations south of route 13 are at least as high as last year, and many fields of alfalfa have far more than 25-percent tip feeding. If the weather remains warm, damage is expected to be quite severe within two weeks. Now is the time to treat if you plan to do so. The need for a second insecticide application remains to be seen. Egg-laying is continuing, and the adults are still numerous. However, the early weevil feeding is usually more serious than that occurring later, when early cutting can be used as a control method.

From route 13 to route 50, damage will become apparent this week, particularly in the western part. Populations are reported to be very high in some fields. Insecticide applications will be timely this week (week of April 16) or early next week, as indicated by counts in several fields. Depending on the degree of infestation, another application may be needed later, if to control the larvae then present is not possible.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion. As a general precaution, wear protective clothing.

   Supracide, a new insecticide, can now be used to control alfalfa weevil. Do not use within 10 days of harvest, and make only one foliar application per cutting. Do not enter fields afterward on the day of application. For the present, we list it for commercial applicators only.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60° F. for several hours

after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

3. Using ground equipment. Apply a minimum of 20 gallons of finished spray per acre, or 4 gallons by air.

Alfalfa and clover hay crops may serve as a breeding area for beneficial insects, such as lady beetles, aphid lions, and wasp parasites that attack many species of aphids. When hay is cut, they move to other fields. Therefore, do not use insecticides in alfalfa or clover fields unless it is necessary to save the crop and unless you use all the hay you can produce. If there is a choice, harvest early.

CORN INSECTS

Soil insecticides. We have had several questions about the use of aldrin, heptachlor, and chlordane as soil insecticides applied before or at corn-planting time.

We have not recommended these materials for two years. Our main reason has been the lack of favorable results in our field trials; also, their use, in general, has not been profitable. A ruling by the U.S. Environmental Protection Agency about a week ago still recognizes their use. A study panel stated that: "When aldrin or dieldrin can be safely and economically replaced by persistent pesticides they should be so replaced." "In the meantime use of these pesticides in applications directly to soil should be permitted."

Again, the use of aldrin, chlordane, and heptachlor in Illinois corn soil is legal, although no longer recommended by the University of Illinois College of Agriculture since several insect species are no longer controlled by them.

Our suggestion is to use a diazinon planter-box seed treatment in most instances. In many cases, particularly on corn-soybean rotations, this has proved sufficient. Check frequently to see that the addition of the extra dust does not decrease the seeding rate. Where corn rootworms are involved, use one of the carbamates, such as BUX or carbofuran, or an organic phosphate, such as Dyfonate, phorate, Dasanit, or prophos (Mocap or Jolt). Dyfonate and phorate provide some control of small wireworms.

Observe fields carefully in late May and early June for cutworms. At the first sign of cutting, check the soil around plants carefully. If you find very many worms, immediately apply a commercially prepared bait with carbaryl, a spray of carbaryl with an attractant, or a spray of trichlorfon.

SOYBEAN GROWERS: Residues of dieldrin (converted from aldrin) or heptachlor epoxide (converted from heptachlor) can be found in soybeans grown in corn soil that has been treated in past years. The amount is so small that only a legal problem of whether or not it should be there is involved. Several years ago, it appeared that the ones involved were soybeans grown on soil treated for the five consecutive years previously. Our 1971 studies showed that when soybeans were grown in soil treated the previous year plus one other year of the previous five, a slight residue could be found. In terms of this year's crop, if you used aldrin or heptachlor in a cornfield in 1971 plus one other year back to 1966, beans grown in this soil in 1972 may have slight traces of dieldrin of no consequence other than the legal implication. Federal registrations or label specifications do not restrict the use of aldrin or heptachlor in relation to soybeans being grown in subsequent years.

DAIRY FARMERS: They can no longer legally store or use the chlorinated hydrocarbons (aldrin, chlordane, dieldrin, endrin, lindane, or heptachlor) on their farms. This ruling is from the Illinois Department of Public Health.

DDT can no longer be legally sold or used in Illinois, except by special permit obtained from the Illinois Departments of Agriculture or of Public Health.

HOMEOWNER INSECTS

Dark-winged fungus gnats have been present by the thousands for the past week. Commonly attracted to lights, they can be a nuisance around doorways since they enter the home when the door is opened.

The larval stage, a maggot, has lived over the winter in dead grass. The overwintering population was greater than usual because of the long, mild fall in 1971. The sudden warm weather of a week ago caused huge numbers of them to emerge as adult flies all at the same time. The total number has been far greater than in other years. No control measures are suggested other than to spray clusters of these flies with a household aerosol spray. Almost any one of those designed to control household insects will kill these flies.

WEEDS

TIME TO APPLY PREPLANT HERBICIDES

As a general rule, the closer it is to planting time when herbicides are applied, the better the chances are for weed control. The time of application is more critical for some herbicides than for others. But if you expect 4 to 6 weeks of good weed control from a "4- to 6-week herbicide," it is best to "start the clock" close to planting time. Consider adjusting rates as a possible means of lengthening control, but be sure to stay within the rates recommended on the label.

Here are some specific timings for preplant herbicides:

Soybeans:

Treflan, anytime after January 1.
Planavin, within the six-week period before planting.
Vernam, within the 10-day interval before planting.
Lasso, within the 7-day period before planting.

Corn:

Sutan, within the two-week period before the planting date.
AAtrex, within the two-week period before the planting date.
Sutan Plus, within the two-week period before the planting date.
Lasso, within 7 days of the planting date.

REGISTRATION CHANGES FOR CHLORO IPC AND SOLO

The Federal Environmental Protection Agency (EPA) has indicated that they intend to cancel the registration for Chloro IPC and Solo. Manufacturers intend to invoke the appeal process, which may mean that these materials could still be available for use this year. We will make every effort to keep you informed.

REGISTRATION REQUESTED FOR VERNAM PLUS TREFLAN

Registration for Vernam Plus Treflan at rates of 2 pounds per acre plus 1/2 pound per acre, respectively, has been requested.

Why combine two good grass killers? It may be a chance to reduce the possibility of Treflan residue, if this is a concern. Including Vernam might also improve velvet leaf control, but a full rate of Vernam rather than in combination would probably do better.

When considering combinations, carefully consider your objectives and do not try concoctions just because combinations are popular. The key consideration is: Will a full rate of one herbicide give better control of specific weeds than a combination?

HERBICIDE FOR SUNFLOWERS

Amiben and Treflan are registered for weed control in sunflowers, and can be used in much the same way as they are used for controlling weeds in soybeans. Eptam is not cleared for sunflowers in Illinois. There appears to be some possibility that sunflowers may volunteer and grow the following year. It may be best to plan to follow sunflowers with corn rather than soybeans, so that Sutan Plus Atrazine or 2,4-D can be used to control volunteer sunflowers.

SUTAN PLUS ATRAZINE, OR SUTAN FOLLOWED BY 2,4-D POSTEMERGENCE?

In most cases, Sutan Plus Atrazine will give better control of smartweed than Sutan alone followed by postemergence application of 2,4-D. Using the combination will also save a trip. If you use Sutan alone, 2/3 of a gallon per acre is suggested, but 1/2 gallon per acre is more commonly used in the combination.

SILVEX FOR BRUSH CONTROL

2,4,5-T should not be used around homes, on lakes or ponds, or along ditchbanks. Silvex may be used to control brush or along ditchbanks and for some of the other purposes for which 2,4,5-T was previously used. Silvex should give similar results. Check the silvex label for specifics.

PERENNIAL GRASSES DISCOURAGE ANNUAL WEEDS

Smooth bromegrass or similar perennial grasses provide excellent, competitive vegetation which will discourage annual weeds such as ragweed, foxtail, and marihuana. This vegetation will also provide excellent protection for the soil and for wildlife. Now is a good time to seed bromegrass in fencerows, along ditchbanks, and in other noncrop areas. Use about 15 pounds of seed per acre. Two miles of fencerow or ditchbank four feet wide is about an acre.

AATRAM AND BLADEX GRANULES AVAILABLE THIS YEAR

AAtram is the name of the new Atrazine Plus Ramrod combination now available as 20-percent granules for use in controlling both broadleaf and grass weeds in corn. Weed control in research trials during the past few years has been relatively good, but has varied some with rainfall. Corn tolerance is good. Bladex will also be available as granules this year, again to control both broadleaf and grass weeds.

AGRONOMY FACT SHEETS COVER WEED-CONTROL PROBLEMS

Weed control in forages, small grains, and sorghum are covered in Agronomy Fact Sheets W-25, W-26, and W-27, respectively. If you need copies, ask your county Extension Adviser or write the Agronomy Department, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

PLANT DISEASES

POSITIVE AND CORRECT IDENTIFICATION NEEDED

Positive and correct diagnosis is necessary before any attempt is made to develop and initiate control methods and procedures for plant diseases. These may be caused by several kinds of parasitic organisms (pathogens), or by abiotic (non-living) elements in the environment that adversely affect plant growth. Thus, it is important to know what the problem is before any control practices are initiated.

A disease in plants can be recognized by comparing the symptoms that appear on diseased plants with the appearance of healthy plants. In many cases, however, a special laboratory examination is required to isolate and identify the pathogen or causal agent.

If you have a specimen from a diseased plant that you want diagnosed, start with the county Extension Adviser in your area. If necessary, he will forward the sample to a specialist at the University of Illinois, Urbana-Champaign.

Whether you send in a sample yourself or have an Extension Adviser do it for you, include enough information to help the specialist make a rapid and accurate diagnosis. This is an important part of making the process work properly.

Extension Advisers have copies of "Instructions and a Check List for Plant Disease Diagnosis" to use when submitting a sample. That sheet includes the following tips:

1. Be sure the sample is representative of the injury or disease.

2. If more than one type of problem exists, send separate samples for each.

3. Press dry leaves--healthy and diseased, for comparison--and stems and branches between sheets of either dry paper toweling, wax paper, aluminum foil, or cardboard.

4. When sending a whole plant, wrap the roots only with the adhering soil in a plastic bag.

5. Do not send fruit in an advanced state of decay. Wrap the fruit individually, and mail as quickly as possible.

6. Do not add water or crush specimens unnecessarily.

7. Place the specimen in a sturdy envelope or mailing box and send:

   - shade tree and shrub problems to: Dr. J.C. Carter
     385 Natural Resources Building
     Urbana, Illinois 61801

- ornamental (flower) problems to: Dr. J.L. Forsberg
  383 Natural Resources Building
  Urbana, Illinois 61801
- all others to: Dr. M.C. Shurtleff or Dr. E.E. Burns
  244S Davenport Hall
  Urbana, Illinois 61801

8. Do not send material so that it remains in the Post Office over the weekend. In other words, mail no later than Thursday afternoon.

Here is a checklist of information to include with your sample:

1. Name, variety, and stage of growth of crop or plant.
2. Date collected and date sent.
3. Symptoms. For example, chlorosis, wilt, leaf spot or blight, fruit abnormality, and the like.
4. Estimate of the percentage of plants affected.
5. Length of time typical symptoms have been observed, in days or weeks.
6. Location of plants in field or greenhouse, rows, patches, and so on.
7. Soil type, high or low ground, and similar information.
8. Sterilization of disinfestation technique use (greenhouse plants).
9. Fertility background.
10. Was a soil test made? What results were obtained?
11. Pesticide, herbicide, or growth regulator applied, if any. What? How much? When?
12. Watering, methods, frequency, and drainage pattern.
13. Recent air temperature, day and night.
14. Has this problem been diagnosed by anyone else? If so, by whom?
15. Previous cropping history.

Remember, the more complete the information is that you send, the better the chances are for a rapid and accurate diagnosis.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 3, April 21, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevils. The populations remain high in many areas. Severe rains this past week may have killed some larvae just as they were hatching; but in general, the rains did not reduce the problem. Since alfalfa in some fields may grow away from feeding damage, each field should be judged on its own merits; also, populations vary from field to field.

South of highway 13, damage is serious in unsprayed fields but many fields have been sprayed. Parasitic wasps have been observed in this area. Watch treated fields for reinfestations.

In the area between highways 13 and 50, damage is very severe in some unsprayed fields; and for many fields, treatment is in order. Some are beginning to take on a silvery appearance. Damage to unsprayed, infested fields on the west side of this area will continue to increase because the number of weevils is quite high.

Between highways 50 and 16, damage is apparent but the larvae are still small. More eggs will be hatching. It may be possible to delay spraying for several more days to see if the alfalfa can grow away from the weevil feeding. If so, further damage can be reduced by early cutting.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion. As a general precaution, wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60°F. for several hours

after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

Alfalfa and clover hay crops may serve as a breeding area for beneficial insects, such as lady beetles, aphid lions, and wasp parasites, that attack many species of aphids. When hay is cut, they move to other fields. Therefore, do not use insecticides in alfalfa or clover fields unless it is necessary to save the crop and unless you use all the hay you can produce. If there is a choice, harvest early.

We have recommended a form of integrated control, or insect pest management, for alfalfa-weevil control for the past three years. We encouraged fall applications of insecticides, or spring applications that would interfere the least with the natural enemies of this pest.

Two new insecticides, carbofuran (Furadan) and Supracide, control alfalfa weevils. We have tested these materials extensively and recommend their use for November application to control adult weevils. However, if these insecticides are used to control alfalfa weevil larvae in the spring, apply them only at half the minimum, labelled rate.

To some, our reasoning may seem odd. But these conclusions were reached after making extensive observations.

First, tiny parasitic wasps deposit their eggs on alfalfa weevil larvae. The small grubs that hatch live inside the weevil larvae. Parasitized alfalfa weevils live for some time, but feed very little. We have seen as high as 80 percent of the larvae parasitized in some fields of alfalfa; in past years, 50- to 70-percent levels were common. These wasps have been helping to control the alfalfa weevil populations.

Second, in order to maintain this parasitic wasp population some alfalfa weevils must remain as a reservoir for the wasps. If we kill 95 percent or more of the alfalfa weevils in a large area with insecticides over a period of time, the parasites will be eliminated by the chemicals and by the lack of any alfalfa weevil larvae to feed on. Without the help of these parasites, it might be necessary to spray several times.

To maintain the wasp parasites so they will help control alfalfa weevils, a reasonable but noneconomic number of the alfalfa weevils must remain for the wasps to feed on. This is one step in integrated insect control or insect pest management. This principle is effective for controlling field crop insects, since 75- to 85-percent control will reduce the number of insects to noneconomic levels and will allow natural enemies to maintain their relative balance in the environment.

Six years ago, we would probably have encouraged the use of these two chemicals at high rates. With the knowledge we have now, however, it is clear that this would have been unwise. At high rates, Carbofuran and Supracide are so effective on alfalfa weevils that no parasites remain. Thus, they should be used only at low rates in order to reduce weevil larvae to a noneconomic level while retaining the weevils' natural enemies. This practice will also reduce insecticide costs without yield loss. The insecticides we have recommended in the past do just this.

Apply an insecticide next November to kill adults. This will decrease egg laying during the fall, winter, and spring. Sprays applied in the spring usually are not needed; and again, this practice will maintain a suitable number of parasites. Large alfalfa producers use this method in order to avoid hurry-scurry in the spring during planting season for corn and beans.

In many cases, there is no information on naturally occuring biological factors that help suppress the populations of insect pests. Yet, ignoring known biological controls, as with the alfalfa weevil, is unsound and can only lead to a greater use of pesticides and to additional legal restrictions on their use.

Clover leaf weevils. These are green worms with brown heads and white stripes down their backs. They resemble the alfalfa weevil larvae, which have black heads and are smaller. The insects clover leaf weevils are damaging a few fields of red clover in southern, central, and western Illinois. Twenty to thirty larvae per square foot can be found in these fields. A fungus disease attacks and kills these insects during warm, muggy weather; but during cool weather the fungus has no effect, so damage from this pest could result. If this is the case, a spray of malathion at one pound per acre will help provide control.

Spittlebugs. Although they are not expected to be a problem, hatching has started in the southwest part of the state.

CORN INSECTS

Flea beetles. They can cause rapid and serious injury to small, newly emerging corn plants. These tiny, shiny-black, jumping beetles strip out narrow lines on the corn leaves parallel to the leaf veins, leaving only the white tissue.

Corn flea beetles may transmit a bacterial wilt of corn known as Stewart's disease. These bacteria overwinter in the body of the adult corn flea beetles.

Warm temperatures during December, January, and February favor the survival of these beetles. Since temperatures in some areas were above average this past winter, flea beetles are expected to be more numerous this spring.

Sweet corn is usually more susceptible to wilt than the dent corn varieties.

Fields of newly emerging corn should be observed closely and often. If flea beetles are numerous and damage is apparent, apply 3/4 of a pound of carbaryl or 1-1/2 pounds of toxaphene per acre over the row as a spray. Do not use carbaryl near beehives, or toxaphene near fish-bearing waters.

Soil insecticides. A typographical error appeared in last week's bulletin. A release by the U.S. Environmental Protection Agency quote should have been: "When aldrin and dieldrin can be safely and economically replaced by non-persistent pesticides, they should be so replaced."

WHEAT INSECTS

Hessian flies. Populations were higher last fall than in past years, and several people have asked about the likelihood of damage to wheat this spring. At this time, it is difficult to predict the damage potential. Most of the fields damaged by the Hessian fly in the southern half of Illinois last fall were planted with

susceptible varieties (primarily Arthur), prior to the suggested "fly-free" date. These factors, plus weather conditions favorable to high survival of the fly and a partial second generation were responsible for a sudden buildup in numbers and subsequent injury to wheat.

Many fields damaged last fall by the fly have recovered to a considerable extent. However, a large number of "flaxseeds," the puparium or overwintering stage of the Hessian fly, have been found in these fields. During the next few weeks, the spring generation of the fly will emerge and deposit tiny eggs in the grooves on the upper sides of the wheat leaves. These eggs have the appearance of a string of wieners.

Newly hatched larvae, which are reddish and later turn white, can be found just above the point where the leaf sheath joins the stem. The maggots feed by rasping on the straw; but they never enter the stem, as do some other insects. Yields of susceptible varieties may be reduced by the feeding activity of the maggot. Plants may break over before harvest at the point where the stem was weakened by the larval feeding.

There are no chemical control methods available to prevent damage by Hessian flies this spring.

LIVESTOCK INSECTS

Face flies. Low in numbers were observed for the first time this week on pastured cattle. Those near wooded areas had the worst problem, but still only averaged two flies per animal. Since face flies are just coming out of hibernation, the number per animal will probably increase by 10 to 30 within the next week to ten days if the weather is warm.

Although the face fly populations during the last three years have been on the increase, it is still too early to make predictions for this summer.

Apply Ciodrin for control at this time, in order to prevent these overwintering adults from laying eggs and producing the first generation this year.

WEED CONTROL

INCORPORATION EQUIPMENT

The adequacy of herbicide incorporation depends on the type of equipment used, plus such factors as speed, setting, physical condition of the soil, soil moisture, and atmospheric conditions. Under similar conditions, a disk may do a little better job of incorporation than a field cultivator. But the cultivator may be adequate, especially if it is of the shovel type and if a harrow is pulled behind, the units are moved fast enough to create a good mixing action, and the operator does not skimp on the herbicide rate.

The main purpose of the first incorporation is to cover the herbicide and to protect it from surface loss. Check to see that this job is being done. Let someone else drive the tractor so you can walk behind and watch the soil action, to be sure you are getting good mixing action and coverage. There is no big rush for the second incorporation. It is mainly to give a more-uniform distribution, avoiding "hot spots" and skipped-over areas. Some research at the University of Illinois suggests that two trips in the same direction may produce about the same results as cross-disking.

TIME OF INCORPORATION

Sutan or Vernam should be incorporated immediately. With Treflan, this can be done within eight hours. With Lasso or AAtrex, there is no rush.

For Sutan or Vernam, it is best to have a spray boom in front of the incorporation equipment. The rate and degree of loss of some herbicides will depend on soil and atmospheric conditions. If the soil is fairly wet with moisture moving upward and vaporizing at the surface, the herbicide loss may increase. The loss will also be more rapid on a hot, sunny, windy day than on a cool, cloudy, calm day.

INCORPORATION AND RATES

The deeper you mix the herbicide, the more it is diluted. Delaying incorporation also may cause some herbicide loss. So, consider using the upper rate range for your soil, if you are incorporating a herbicide like Lasso or if incorporation is delayed.

Check the individual herbicide labels for specifics on incorporation equipment, timing, and rates.

MORE ON SUNFLOWERS

There is a question about planting sunflowers where atrazine was used last year. Sunflowers appear to be a little more sensitive to atrazine than soybeans, but less sensitive than oats. If you used atrazine, preplant or preemergence last year, we would not expect any serious problem of atrazine residue affecting this year's sunflower crop, especially if a reduced rate of atrazine was used in a combination. If atrazine was applied postemergence after June 10, 1971, do not plant sunflowers there in 1972. Dry weather following late postemergence applications can decrease atrazine degradation and increase the chances of injury to subsequent, sensitive crops.

ENCLOSURE

We thought you might be interested in the enclosed brochure describing a new College of Agriculture publication, *Poisonous Plants of the Midwest and Their Effects on Livestock*, as well as several other books.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

TATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 4, April 28, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil larvae can now be found as far north as Route 9. Adult weevils, eggs, and larvae can be found in most fields; pupae are abundant in extreme southern Illinois. In general, the larval populations are no greater than they were last week; in many places, even lower. Wasp parasites are appearing in most areas.

South of Route 13, damage has been severe in unsprayed fields. Generally, the egg hatch is nearing completion and the larvae are maturing. Larval populations will now decrease gradually. With cutting near, second applications of insecticides will usually not be necessary. Observe these fields closely, however; if necessary, apply an insecticide so as not to lose the benefits gained by the first application.

Between Routes 13 and 50, damage to alfalfa fields is quite apparent. Treatments have been made, and a lot of spraying was done this past week. Heavily infested fields have that silvery appearance. A second application will probably not be necessary for fields that are harvested early; but if the harvest is to be a late one, a second application may be needed.

Between Routes 50 and 36, feeding damage has become apparent. Treatments on some fields will be profitable. This is particularly true in the southern half of this area. In the other half, early harvest may take care of the problem. If the harvest will be late, apply insecticides to questionable fields soon.

Between Routes 36 and 9, damage is not very noticeable unless careful observations are made. A few fields, particularly in the western section, now have tip-feeding of as much as 50 percent. In such fields, treatments are indicated for this week or next.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion. As a general precaution, wear protective clothing.
2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per

acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60°F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

The above materials can be used on dairy farms.

Applications of methyl parathion and carbofuran (Furadan) made last November reduced adult populations so that egg-laying has been low, and no spring applications are needed. Untreated areas in these fields are being badly damaged. In the southern half of Illinois, plan now to make an application this coming November to alfalfa in order to control the adult weevils before they lay their eggs.

CORN INSECTS

Seed corn maggots and seed corn beetles are more damaging during periods of slow germination. Occasionally, slow germination can be caused by weak seed. Usually, however, slow germination will occur when seeds are planted in cold wet soil, particularly if they are planted too deep.

To avoid damage, use a diazinon seed treater. It is best to treat the seed in a separate container before putting it into the planter box. If you prefer, the seed can be treated in the planter box. In either case, empty the boxes occasionally to see that excess dust is not replacing seed and reducing seeding rates.

Do not use the seed treatment if you use Dasanit, diazinon, Dyfonate, phorate, or prophos as a band at planting. The effectiveness of BUX and carbofuran (Furadan) for corn seed beetle control is questionable, so use the diazinon seed treater when applying them. If you use aldrin or heptachlor, you should also use the seed treatment.

SMALL GRAINS

Armyworm moths are brown, heavy-bodied ones that are attracted to lights at night. They can now be found anywhere in Illinois, although more commonly in the southern half of the state.

HOMEOWNERS INSECT PROBLEMS

Eastern tent caterpillar nests are common in the crotches of trees along the roadsides. The caterpillars travel out from these nests to feed on the newly emerging leaves. Small trees can be stripped of their foliage in a short time. Sprays of carbaryl are effective. Recently, a bacterial culture *Bacillus thuringiensis* has been labelled as a biological control agent for this pest. The bacteria infect the worm, which dies from the disease. These bacteria can be purchased under three trade names, Biotrol, Dipel, and Thuricide.

White grub damage is appearing in lawns and other turf areas. The infested areas have either remained dormant, or else a partial stand of grass is appearing. The most common symptom of grub damage is that the sod can be rolled up like a carpet, because the grubs have eaten off the grass roots. Sod webworm damage done last fall may appear to be similar, but the sod cannot be lifted easily. For control, apply 5 pounds of chlordane per acre or 1/2 cup of the 45-percent liquid concentrate per 1,000

square feet of lawn area. Water the lawn heavily following treatment. This will help move the chlordane down to the root zone. Treatment should be made before re-seeding or sodding. It will provide grub protection for five years.

Tree borers are becoming active again, as the average daily temperature increases. Feeding activity by borers under tree bark can be noted by the appearance of frass or sawdust-like material as it is pushed out of holes in the bark. At present, while the foliage is sparse, trees can be examined easily for possible borer damage.

In birch trees, the bronze birch borer infests limbs in the upper part of the tree, causing ridges around the limbs and the branches to die. Flatheaded apple borers attack many shade tree species, especially newly set trees. The damage usually appears on the trunk and the large limbs.

Spraying with dimethoate (Cygon, De-Fend) will control both of these borers. In central Illinois, make the first application in late May and again three weeks later. Apply the treatments one week later in northern Illinois and one week earlier in southern Illinois.

Wrapping the trunk with paper will help control flatheaded borers. Fertilizing and watering young trees will help the tree resist borer damage. Moth balls placed on or in the soil around trees are of little or no value in preventing the borers from getting into the trees, or killing them once they are there. Careless scattering of moth balls around trees and shrubs can present a safety hazard, since these are often mistaken for candy, picked up by children, and eaten.

Flies will soon be found clinging to the leaves and stems of plants in gardens. They are usually dead. But if they are alive, they will be sluggish. A fungus has attacked and killed them.

Oriental cockroaches, or black water bugs, are now appearing commonly in home basements. These bugs are migrating from one area to another. An outside foundation spray of 1-percent chlordane will help control them.

WEED CONTROL

INCORPORATE TREFLAN PREPLANT, AND FOLLOW WITH AMIBEN BANDED ON SURFACE

The Amiben label carries a new statement: "Band applications of Amiben may be made for broadleaf weed control over the top of preplant incorporated grass killers." Either herbicide alone can give good grass control, but Treflan gives results that are a little more consistent. Amiben can provide greater control of broadleaf weeds. The question to ask is this: Will the 10 or 15 percent greater consistency in terms of grass control and the added broadleaf control be worth the added cost?

2,4-D NOT CLEARED FOR USE BEFORE SOYBEANS

Using 2,4-D before soybeans is not specifically cleared, and there is no tolerance established for 2,4-D in soybeans. With modern tillage equipment, it would seem that most weeds could be controlled during seedbed preparation.

START TILLAGE AS SOON AS NUTSEDGE APPEARS

One of the best programs for controlling nutsedge is to start tilling the soil as soon as the nutsedge starts to grow--once a week for about three weeks. This helps to deplete the food reserves in the tubers. Just before the last disking, apply Vernam or Lasso. Treflan does not give good control of nutsedge.

WILD CANE

Wild cane can usually be controlled best by using Treflan before planting soybeans. Vernam or Lasso are other possibilities. If you must plant corn, consider Sutan at the rate of two-thirds of a gallon per acre--alone or in combination with atrazine. Princep is sometimes helpful for controlling wild cane in corn.

VISUALS FOR MEETINGS

Three new or revised slide sets are available from the Vocational Agriculture Service, 434 Mumford Hall, Urbana, Illinois 61801.

Title	No. of slides	Cost
The Wicked World of Weeds	75	$7.50
Identification and Control of Poison Ivy.	42	4.20
Controlling Wild Hemp (Marihuana)	45	4.50

WEED CONTROL "THOUGHT FOR THE WEEK"

Be not the first by whom the new is tried, nor yet the last to set the old aside.

PROTECT, A SEED TREATMENT FOR CORN

Protect is a seed treatment containing 1,8-naphthalic anhydride. Two ounces of the powder is mixed with each half bushel of seed corn. The Protect seed treatment is designed for use where corn is planted in Eptam-treated fields. This might allow an increased use of Eptam, especially for controlling wild cane and johnsongrass.

Research indicates that this product may decrease the twisting and malformation that sometimes results from the use of Eptam. Some early stunting and lighter color on corn has sometimes been noted where this material was used.

SAFETY

Children find pesticides and pesticide containers when they are improperly stored or discarded. For the past ten years, the Illinois Cooperative Extension Service and the Illinois Department of Public Health have studied the incidence of pesticide ingestion by children under 12 years of age. An average of 742 children per year ingested or were suspected of ingesting pesticides accidentally. About two cases per year have been fatal during the ten-year period. In most instances, no effect was even noticed by the child.

Many of these accidents, however, could have been avoided. Monthly, they increased in number by 50 percent from May through October, compared to the number from January through April. This indicates insect activity and a greater use of insecticides. So be careful to store pesticides correctly.

The big increase in accidental ingestion occurred when ants migrated into the homes. This was because ant baits were used in the home and placed in such a way that children found them. To avoid the use of insecticides in the home, apply a spray of 1-percent chlordane to the foundation of the house to the point of run-off. Also spray the soil for about a four-inch band alongside the foundation. Go all the way around the home. To prepare this spray, add 1/2 pint of 45-percent chlordane E.C. or 10

tablespoons of 72-percent chlordane E.C. in 3 gallons of water. This will be enough to treat the average-size home.

Such a treatment will control ants, crickets, spiders, and other outdoor pests as they try to come into the home over the foundation. It is a good safety practice to avoid using insecticide sprays and baits inside the home, but it will be a safety practice only if the chlordane is handled correctly and is stored where children cannot reach it.

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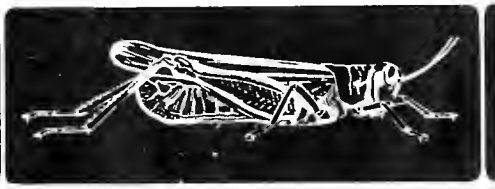
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 5, May 5, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations should have reached a peak this week in the area south of Route 460. Some fields treated in recent weeks now contain small larvae, indicating that some egg-laying and hatching is still going on. Fields in this area that were treated early should be watched closely for damage. Another insecticide treatment may be needed if cutting is delayed. On untreated fields with heavy damage, it would be best to cut the hay, remove it, and treat the new growth--if needed.

For the most part south of Route 460, alfalfa weevils are pupating rapidly. The number of larvae will decline as harvest time approaches.

Between Routes 460 and 36, damage to alfalfa is quite apparent in the western and southern areas. If the harvest is late, treatments will be profitable this week in many of the fields that are still untreated.

Between Routes 36 and 136, an occasional field in the western area has tip-feeding of more than 25 percent. In general, the number of larvae is low. Cool weather has been unfavorable for their development. Fields in this region, particularly in the west, will have to be evaluated individually to determine the need for treatment.

North of Route 136, the number of alfalfa weevils is still low, and tip feeding is negligible.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion or azinphosmethyl (Guthion) for good results. Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion. As a general precaution, wear protective clothing.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be above 60°F. for several hours after application. Do not apply Imidan more than once per cutting.

CORN INSECTS

Flea beetles will pounce on the corn as soon as it emerges, particularly in southern Illinois. The relatively mild winter increased the chances of survival for this pest. These small, black beetles jump when disturbed. Although they are difficult to find on the corn leaves, they can be observed best from a distance of a few feet, since they leave the corn when you get near the plant.

Flea beetles eat or strip the green from the plant leaf--leaving tiny, white, elongated scratch marks on the leaves. Damaged plants will generally turn silvery, then brown. If enough plants are being killed to warrant the cost of insecticides, apply 3/4 of a pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre as a band spray over the row. The grassy areas in and around the field, such as waterways and fence rows, should also be treated to prevent additional beetles from moving into the field. Do not use carbaryl near bee hives or toxaphene near fish-bearing waters.

Seed corn beetles may again be a problem if the seed germinates slowly. When this happens, attacks by these beetles can reduce stands, sometimes seriously. Usually, but not always, this is more of a problem with the corn that is planted early.

The diazinon, planter-box seed treatments will control seed corn beetles. When these treatments were first used, many farmers reported problems in maintaining even seeding rates. However, new formulations have largely eliminated this difficulty. Here are some guidelines for using planter-box seed treatments:

1. Treat the seed in a separate container, so that excess dust will not replace the seed in the planter box.

2. Empty the planter boxes frequently, to prevent powder from accumulating in the bottom. On plateless planters, clean out the trap often. Clean up plastic plates and other planter box mechanisms at the end of the day.

3. Do not overdose.

4. Check frequently for wear or chemical caking on the planter plates, particularly on plastic plates. Some plastic plates also become "gummy," which is a chemical reaction.

5. In some instances, using plates with a size-larger cell may be helpful. Adding some extra graphite may also help maintain the seeding rate.

When to use the diazinon seed treatment:

1. Use it if you are using no soil insecticide at all, or when you are using aldrin, heptachlor, or chlordane. Furadan and BUX may or may not control the beetles.

2. The diazinon treatment is not needed if you are applying Dasanit, diazinon, Dyfonate, phorate (Thimet), or prophos (Jolt, Mocap) as a soil insecticide.

Our Illinois recommendations about soil insecticides are given in Circular 899, *Insect Control for Field Crops*.

CAUTIONS

Do not apply the insecticides BUX, Dasanit, diazinon, Dyfonate, carbofuran (Furadan), phorate (Thimet), or prophos (Jolt, Mocap) in the planter shoe next to the seed, as

is done with aldrin, heptachlor, and chlordane (Belt). The germination of the seed may be affected with some of these compounds. Apply them in a 7-inch band just ahead of the press wheel.

With liquid treatments of BUX or Dyfonate, use a split-boot applicator for best results.

HOMEOWNER INSECTS

Eastern tent caterpillars continue to defoliate many trees in the southern section of Illinois. These worms are almost full grown, and consume more tree foliage than when they were small. Carbaryl (Sevin) applied as a spray will control these caterpillars. Also, *Bacillus thuringiensis* (Dipel, Biotrol, Thuricide) is labelled and is suggested for this use.

Spider mites have hatched on evergreens, especially junipers. Such shrubs should be watched closely for yellowing or browning of the foliage. An easy way of detecting the presence of these mites is to hold a sheet of white paper under a branch and vigorously tap it. Watch for small specks that will crawl slowly on the paper.

For treatment, use dicofol (Kelthane). It is strictly a miticide. Follow the directions on the label for preparing the spray mixture.

Aphids of different species are present on trees and shrubs, and are sucking plant juices from new leaves causing them to curl. Light infestations will probably be controlled by predators and parasites. If severe leaf curling is prevalent, sprays containing either malathion or diazinon will control the aphids.

Each spring there are numerous inquiries concerning the use of a soil insecticide in vegetable gardens. Do not use soil insecticides labelled for corn soil use--such as aldrin, heptachlor, Dyfonate, phorate, Furadan, and so on. One insecticide that is labelled for the commonly grown vegetable crops is diazinon. It should be applied at the rate of one ounce of actual diazinon per 1,000 square feet; also, it must be incorporated into the soil right where the seed is, rather than being scattered on the surface or placed on either side of the seed. This application will control such soil insects as seed beetles and maggots, maggots that attack root crops, plus wireworms and white grubs.

Ticks are annoying campers, picnickers, hikers, fishermen, and other persons. The peak period of activity is in May and June. They cling to the vegetation along paths in and near wooded areas, waiting for man or other warm-blooded animals to come along. They attach themselves by embedding their mouth-parts into the skin. When entering wooded areas or ones suspected of being tick-infested, use a repellent on socks, pants, pants cuffs, and exposed parts of the body to prevent tick bites. DEET (diethyltoluamide) is one of the best tick repellents. To control ticks in the home yard as well as in parks or playground areas, spray the grass, shrubs, and flowers with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to Cannaert red cedar, or carbaryl to Boston ivy.

MACHINERY

GRANULAR INSECTICIDES

If you plan to use insecticides such as BUXten, Dasanit, diazinon, Dyfonate, Furadan, phorate (Thimet), or prophos (Mocap or Jolt), have the 7-inch spreading devices or banders positioned ahead of the press wheel. Your equipment dealer should have these available for your planter.

To calibrate a granular applicator, get the recommended setting for your unit from the dealer. Use the setting as a start, then calibrate the units in the field by collecting and weighing the granules dispensed over a known acreage. Remember, the application rate will vary with the ground speed, moisture content of the granules, and many other factors.

Don't expect the setting to be the same for each applicator unit. Always adjust the setting for each box in the same manner. To check the application rate of each unit, place a strip of masking tape vertically on the inside of the applicator hopper, then fill the hopper a pound at a time. After each pound is added, shake the hopper to settle the material and mark the tape at the level of the chemical. Then, the amount of material used can be easily checked by simply reading the level of the chemical before and after planting a known acreage.

PLANT DISEASES

REGISTRATION CANCELLED FOR SOME MERCURY-CONTAINING FUNGICIDES

Recent public and government interest in the use of many fungicides containing mercury has prompted the federal Environmental Protection Agency to cancel the registrations for these compounds.

The conclusions and the order from the EPA Pesticide Regulation Division (March 22, 1972) stated: "In accordance with Sections 2(z)(2)(c), 2(z)(2)(d), and 2(z)(2)(g) and Section 4(c) of the Federal Insecticide, Fungicide and Rodenticide Act, all present registrations for mercury-containing products create a substantial question of safety as to whether or not their use, even in accordance with label directions, is not injurious to man and living animals. All uses are hereby cancelled. In addition, registration for alkyl compounds and non-alkyl uses on rice seed, in laundry, and marine anti-fouling paint create an imminent hazard and these registrations are hereby suspended."

This means the use of most of the organic mercury-containing fungicides for seed treatment, turf disease treatment, and algicide treatments, for example, cannot be recommended. Disregard all recommendations for fungicides containing mercury! A great deal of research will be needed to establish what the acceptable substitutes might be.

REGISTRATION OF CHLORO-IPC AND SOLO

The EPA recently proposed the cancellation of registration for Chloro-IPC and Solo. According to EPA officials, the proposal served as a policing function, and was not related to a health hazard.

Apparently, the manufacturers of Chloro-IPC and Solo have not submitted adequate information to establish new residue tolerances, as the EPA had requested.

It is illegal to ship, sell, or distribute an economic poison in interstate commerce without a valid registration.

We understand that both manufacturers have forwarded appeals to the EPA. During the appeal process, which could take some time, we believe that both products will remain available for sale and use. However, no official notification from the EPA regarding the status of these appeals has been received.

HELMINTHOSPORIUM LEAF DISEASE OF LAWN GRASSES

The U. of I. Plant Disease Clinic has recently received several specimens from home lawns. The most common disease problem has been a leaf disease caused by a number of species of the fungus *Helminthosporium*. The predominantly cool and wet spring this year has favored the development of this disease in bluegrasses, fescues, ryegrasses, bentgrasses, Bermudagrasses, and zoysia as well as in various wild and pasture grasses.

The disease first appears as small, dark-brown lesions with purple to reddish-purple margins. The centers of these lesions fade to an ash-white to light brown or straw color, giving the spot an "eyespot" appearance. Under favorable conditions, these spots rapidly increase in size. Two or more lesions may run together, girdle the leaf, and kill the leaf blade. The girdling and subsequent death of the leaf may cause a gradual browning and thinning effect in some lawns. Once established, the Helminthosporium fungi present a continuous problem.

The Helminthosporium leaf disease in grass can be controlled in a number of ways:

1. Mow bluegrasses, fescues, and ryegrasses at the recommended height for satisfactory turf use. Mow frequently, so that no more than a fourth to a third of the grass surface is removed at one time.

2. Remove any dense matting or thatch of dead grass (over a half inch deep) using a vertical mower, power rake, or some other machine designed for this purpose.

3. Apply a fertilizer that will supply nitrogen to the diseased turf, which will help it recover more rapidly.

4. Seed or sod resistant varieties.

5. Where the shade is heavy and air movement is restricted, thin or remove dense trees or shrubs.

6. Apply a preventative chemical spray. Make the first application when the grass begins to turn green. The second and third applications should follow the first one by 2 and 4 weeks, respectively. Because these fungicides are protective in their action, the entire leaf surface must be covered. To assure such coverage, apply the spray under at least 25 pounds of pressure per square inch.

The following turn fungicides are recommended for controlling Helminthosporium leaf disease in lawn grasses:

Acti-dione-Thiram	Maneb, 80% WP
Captan, 50% WP	Tersan LSR
Dyrene, 50% WP	Zineb, 75% WP
Folpet (phaltan), 50% WP	Daconil 2787, 75% WP
Fore, 80% WP	

NOTE: Follow the manufacturer's directions carefully regarding dosage, timing of the applications, safety, and other factors. DO NOT graze treated areas. DO NOT feed clippings to livestock.

More information about this disease is available in the Report on Plant Diseases No. 405 "Helminthosporium Leaf, Crown, and Root Diseases of Lawn Grasses." Copies are available from the University of Illinois Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

Again, please note that although the mercury-containing fungicides are listed for disease control, they cannot be recommended for any such purpose now because of recent actions by the EPA.

MAILING WEED SPECIMENS

When you send in weed specimens for identification, please follow this procedure:

1. Remove the soil.
2. Place a moist paper towel and plastic bag around roots.
3. Do not place entire plant in plastic bag.
4. Try to send complete plants with seed heads on grasses and flowers on broadleaves.
5. Indicate type of area where plant was growing.

For the quickest reply, send the specimens, your questions, and any requests for information directly to the appropriate specialist: Weeds in Agronomic Crops: Ellery L. Knake, N-305 Turner Hall; Lawn Weeds: Al Turgeon, 202 Floriculture; Weeds in Vegetable crops: Herb Hopen, 206 Vegetable Crops; Aquatic Weeds: Robert Hiltibran, 273 Natural Resources; Weeds in Trees: Ted Curtin, 211 Mumford Hall. All of the addresse are in Urbana. The zip code is 61801.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

MACHINERY: B.J. Butler, Department of Agricultural Engineering.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
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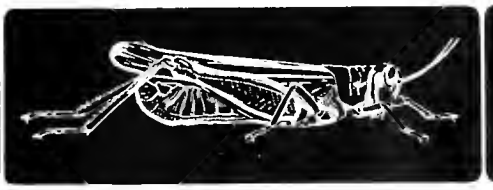

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 6, May 12, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworms may appear in spots within corn fields where there has been water standing or where the soil is mucky. These worms may appear any time during the next month. Watch corn fields carefully for the first signs of cutting, then dig around several plants. If a few worms are found, apply a 5-percent, carbaryl-apple pomace bait at 20 pounds per acre, broadcast. A spray of 2 pounds of carbaryl per acre with molasses (Sevimol) or with an attractant (Tractum), or of 1 pound of trichlorfon (Dylox) per acre directed at the base of the plant will also control this pest. Do not apply molasses or other attractants and carbaryl near bee yards.

Do not wait too long to take control measures. The damage by these cutworms can progress rapidly. Early detection and control are important.

Wireworms may damage some of the corn that is now emerging. Wilting plants indicate damage. Examine the base of the plant. If a hole has been drilled into it, sift the soil for the round wire-like brown wireworms. If replanting becomes necessary, apply one of the organophosphates (2 pounds of diazinon per acre or 1 pound of Dasanit, Dyfonate, phorate (Thimet), or prophos (Jolt or Mocap) per acre) as granules in a 7-inch band ahead of the press wheel. This will kill all but the full-grown worms.

Wind damage to corn is easily mistaken for damage by insects. In loose soil, small plants not yet fully rooted may be whipped by strong winds. This pulls the roots loose. The plants then wilt and may die. No insect feeding is evident on these plants.

European corn borer moths will not be present until late May and early June in southern Illinois, mid to late June in the central section, and late June to early July in the northern part of the state. At that time, borer moths will be attracted to the most advanced fields of corn. Make a note now of which fields were planted early, so you can examine them for corn borers at the proper time.

SMALL GRAINS

Armyworms can be found occasionally in grass areas. None have been observed as yet in wheat fields. Although moth flight has not been extreme, some fields of grasses could be damaged if the moths concentrate their egg-laying there.

Within the next two weeks, begin to examine lodged spots in wheat fields for armyworms. These are the places where they will be the most numerous. Shake the lodged plants vigorously and examine the ground underneath them for these worms. If they are extremely abundant, examine areas throughout the field. If the average count for the entire field is 6 or more armyworms per linear foot of drill row, apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy animals, livestock fattening for slaughter, or to poultry. There is no restriction on the use of the grain. One and one-half pounds of malathion per acre may be used to within 7 days of harvest, or 3/4 pound of trichlorfon per acre to within 21 days of harvest.

Do not panic when you find armyworms. Do not apply an insecticide until many of the worms are 3/4 of an inch long. They do their damage after they reach this size. Leaf damage is not serious, but once they begin to cut off the heads, the problem develops rapidly.

ALFALFA AND CLOVERS

Spittlebugs can now be found in most areas of Illinois, but no populations of damaging proportions are expected.

Alfalfa weevil damage is decreasing south of Highway 16, as the worms mature and pupate. Cutting is preferred to a spray in this area now. A stubble spray may be needed on a few fields. North of Highway 16 and up as far north as Route 136, some spraying continues. Each field must be judged individually, and early harvest may be preferred.

Leafhoppers are now appearing in some alfalfa fields. Migrations from the south have just started.

HOMEOWNER INSECTS

Bagworms have not yet hatched, so there is still time to pick the bags from last year off the trees. About one-half of these contain thousands of eggs each. Pick them off and burn them. Spraying will not be necessary until later.

Holly leaf miners are beginning to tunnel between the leaf tissues of many types of holly. They leave a yellowish mine, and will continue to damage the leaves if not controlled. Control is still possible. Use a spray of dimethoate (Cygon or De-Fend). Follow the directions on the label for mixing the spray. Thorough coverage is important for effective results. Another spraying may be needed about the middle of June.

WEED CONTROL

TREFLAN

A new program that has not thoroughly tested in Illinois calls for using a double rate of Treflan for two consecutive years and planting only a crop for which Treflan is registered the third year. The program provides control of johnsongrass rhizomes. In Illinois, this probably means planting three years of soybeans. Better control of the johnsongrass from rhizomes can be expected during the second year than in first. The double rate increases the chance of soybean injury, so considerable precaution would be needed in order to create the best possible conditions for soybean growth.

COBEX

Cobex is a new soybean herbicide with a temporary permit for experimental use in 1972. Only a limited amount will be made available. Cobex (formerly USB 3584) is an emulsifiable concentrate with two pounds per gallon of active ingredient, used for preplant incorporation. The rate needed per acre may be slightly lower than that for Treflan. Crop tolerance and the spectrum of control appear to be fairly similar for Cobex and for Treflan.

SENCOR

Sencor is a preemergence soybean herbicide formulated as a 50-percent wettable powder to use for surface application. It has a temporary permit from the federal Environmental Protection Agency for experimental purposes in 1972. Sencor controls both broadleaf and grass weeds. Careful rate adjustment is needed. Combinations will be of interest experimentally.

PROTECT, A SEED TREATMENT FOR CORN

Protect is a seed treatment containing 1,8-naphthalic anhydride. Two ounces of the powder is mixed with each half bushel of seed corn. The Protect seed treatment is designed for use where corn is planted in Eptam-treated fields. This might allow an increased use of Eptam, especially for the control of wild cane and johnsongrass.

OUTFOX

Outfox is a triazine herbicide for postemergence use in corn. It and atrazine plus oil would be used in a similar manner, but no additional oil is needed with Outfox. The action may be relatively fast, and the residual potential is less than with atrazine. Some corn injury may occur under certain conditions.

OTHER CROPS AFTER BLADEX

The Bladex label contains this statement: "Do not plant treated areas to any crop except corn, soybeans, small grains, sugar beets, alfalfa or potatoes until the following planting year." The EPA interprets this to mean that ". . .these crops may be planted after the normal harvest of corn." That would not allow replanting Bladex-treated corn fields with soybeans where the corn is injured by flooding or from other causes.

PLANT DISEASES

LAWN PROBLEMS

Stripe smut caused by *Ustilago striiformis* is appearing in many home lawns this spring. It is especially bad on Merion bluegrass, but can also be found where there is bentgrass, Kentucky bluegrass, and ryegrass. The only fungicide that provides eradicative control is the systemic Tersan 1991 (Benlate or benomyl).

Apply the fungicide in the early spring, or in the fall before dormancy. Use 6 to 12 ounces of the 50 WP per 1,000 square feet. Drench-in with 50 gallons of water per 1,000 square feet after application. Follow good fertility and irrigation practices to produce maximum growth of the turf.

For further information, write for *Report on Plant Diseases No. 400* (Revised 5/72), "Recommendations for the Control of Diseases of Turfgrasses." Send your request to the Department of Plant Pathology, 218 Mumford Hall, Urbana 61801.

LEAF RUST ON TRITICALE

Low-level infections of leaf rust on triticale were recently observed on samples from Pulaski-Alexander County. Only trace amounts of this rust developed in Texas and Louisiana because of drier conditions. No control measures are suggested at this time.

WHEAT LEAF RUST

Blueboy wheat comprises approximately 70 percent of the 200 thousand acres of Georgia wheat. For much of this, it will not be economical to harvest the grain this season because of leaf rust damage. Other wheat varieties in southern areas are relatively free of rust, including Wakeland and Blueboy II. Wheat leaf rust is light to moderate in most other areas. It has reached as far north as Manhattan, Kansas.

Leaf rust caused by *Puccinia recondita tritici* produces small, round to oval, raised, orange-yellow, dusty pustules on leaves of susceptible plants. Each pustule contains thousands of summer spores (urediospores). Rust usually begins on the lower leaves, gradually progressing up the plant to the flag leaf.

Arthur is moderately resistant, and Benhur is resistant to known Illinois strains of the leaf rust fungus. In real problem areas, zineb fungicide is cleared for use on wheat to prevent continued development of the disease.

Use 2 pounds (1.5 pounds actual of 75 WP) of zineb per acre, at 7- to 10-day intervals until the milk stage is reached. Do not graze treated areas. Dry weather usually stops the progress of rust, making fungicides uneconomical. See *Report on Plant Diseases No. 108* (Revised), "Leaf Rust of Wheat," for further details. (Copies are available from the UI Department of Plant Pathology.)

SPOT BLOTCH ON BARLEY

Spot blotch, caused by *Helminthosporium sativum* has appeared on a few fields in south-central Illinois. Yellow-leaf areas could be confused with the Barley Yellow Dwarf Virus. Plants infected with spot blotch have chocolate-brown to black spots on leaves and sheaths. Severely infected plants may be stunted and may have rotted crowns. Heads may not emerge completely, and kernels fill poorly. The development of resistant varieties is complicated because many races of the fungus exist in nature. See *Report on Plant Diseases No. 115* (Revised), "Spot Blotch, Net Blotch and Stripe Disease of Barley." (Copies are available from Plant Pathology.)

HELMINTHOSPORIUM LEAF SPOT ON WHEAT

Cool, wet weather has favored development of *Helminthosporium* leaf spot on wheat and forage grasses. Infection may occur almost any time during the growing season when moisture remains on the leaves and leaf sheaths for at least several hours. It starts on the lower leaves and will move upward to the younger leaves until checked by hot, dry weather.

Symptoms of *Helminthosporium* leaf spot vary according to the grass or wheat variety and the *Helminthosporium* species involved. Generally, there are small, dark spots with light yellow halos on susceptible plant leaves. Some lesions may merge to form streaks. Others may extend to the width of the leaf, causing it to turn yellow or brown, wither from the tip, and die. Dithane M 45 (or Manzate 200) is cleared for use on wheat in heavily diseased fields.

Use 2 pounds (1.6 pounds actual of 80 WP) of the fungicide at 7- to 10-day intervals until the milk stage is reached. Do not graze treated areas. No more than three applications are allowed in any one field. See *Report on Plant Diseases No. 309*, "Helminthosporium Leaf Spots and Blotches of Forage Grasses." (Copies are available from the source given previously.)

POWDERY MILDEW OF WHEAT

Erysiphe graminis tritici causes powdery mildew (PM) of wheat. Early season infection appears as a grayish-white, cottony growth on the upper surfaces of infected plant leaves. Mildew is most severe in dense stands of highly fertile fields, especially those with a high nitrogen content. Knox, Knox 62, Monon, and Reed are the resistant varieties. One sample of Benhur wheat that we received had PM on every leaf of all the plants in the sample. See *Report on Plant Diseases No. 104*, "Powdery Mildew of Wheat and Barley," for further details.

PHYTOPHTHORA CROWN ROT OF ALFALFA

Wet, poorly drained soils have favored the occurrence of crown rot in alfalfa by *Phythophthora cryptogea*. Wounds due to freeze-thaw injury also contribute to this and other root rot complexes. Under very favorable conditions (periods that are wet and cool), plants may be yellow and die prematurely without stunting. See *Report on Plant Diseases No. 302*, "Root and Crown Troubles of Alfalfa," for control measures.

COMMON LEAF SPOT OF ALFALFA

Small, circular, dark-brown, raised spots caused by *Pseudopeziza medicaginis* have been found on several alfalfa specimens received recently at the University of Illinois Plant Disease Clinic. Although plants may be severely weakened and stunted during the first year of a stand, apparently little permanent damage occurs. Flemish alfalfa varieties have fairly high resistance, and Vernal is moderately resistant.

Cutting heavily infected fields in the prebloom or bud stage before the leaves fall removes the source of infection and gives later cuttings a better chance to remain healthy. Dry weather also slows the progress of this disease. See *Report on Plant Diseases No. 301*, "Leaf and Stem Diseases of Alfalfa," for more details.

BENLATE APPROVED ON CUCURBITS

E.I. DuPont de Nemours & Company has informed us that Benlate, a relatively new fungicide which they produce, has been approved by the federal Environmental Protection Agency (EPA) for use on cucurbits. Benlate can be applied at one-fourth to one-half pound per acre on a 7- to 14-day schedule for controlling gummy stem blight, powdery mildew, and anthracnose on cucumbers, summer and winter squash, and all melons. Use the higher rate of (one-half pound per acre) under conditions of severe disease pressure at 7-day intervals, or as needed. Before using Benlate or any other fungicide, read and carefully observe the cautionary statements and all other information appearing on the label.

POLYRAM CLEARED FOR APPLES

Polyram, produced by the Niagra Chemical Division of the Food Machinery and Chemical Corporation, has been cleared by the EPA for use on apples to control bitter rot, black rot, Botryosphaeria rot, and brown rot. Polyram is also approved for use on apples to control cedar apple rust, flyspeck, scab, and sooty blotch.

EPA CANCELS REGISTRATIONS

In 1966, a presidential science advisory committee recommended to the Food and Drug Administration that tolerances be established for pesticides, based on the actual residues that could be found on the food by new methods of detection. Holders of registrations for these chemicals were asked to submit petitions setting forth the data necessary to establish tolerances. The registrations that were cancelled were ones held by companies that had failed to submit these data.

The fungicides with cancelled registrations are:

Morocide, produced by the Niagra Chemical Division of the Food Machinery and Chemical Corporation. Morocide cannot be used on plums or on fresh prunes.

Karathane, produced by the Rohm and Haas Company. Karathane cannot be used on gooseberries, raspberries, or strawberries.

These two products are only banned for use on the crops mentioned above.

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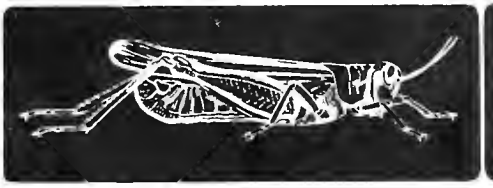


INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 7, May 19, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SMALL GRAINS

True armyworms can be found in thick, rank stands of wheat, barley, rye, and various grasses in the south-central and southern sections of Illinois. All sizes of worms can be seen. They are mostly small ones--around 1/4-inch long. Some fields may be heavily infested. Counts averaging as high as 6 to 12 per linear foot of row were observed in fields this week. Larger, more mature worms are present in the grasses, because the moths deposit their eggs first there. Insecticides should not be applied until most of the worms are about 3/4 of an inch long, since they are only damaging after they reach this size. Small armyworms are susceptible to diseases, parasites, and predators. Many of these 1/4-inch size armyworms will never reach maturity.

Look in thick or lodged spots first when checking for armyworms. They will be hidden in the dead leaves and other trash at the base of the plants. If you find lots of worms, make a count in several places in the field and determine the average number of worms per foot of drill row. If you find no worms or just an occasional one in the thick or lodged spots, there is no need to look further. However, check the field again in about a week, since there could be additional egg hatch by then.

Do not confuse the striped armyworms with the transparent yellow to green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were also present along with the armyworms in the fields this week. Sawflies do not damage wheat plants enough to require control.

Treatment is justified if there are 6 or more armyworms per foot of drill row as an average over the field. Apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy cattle, animals fattening for slaughter, or poultry. There is no restriction on the use of the grain. One and one-half pounds of malathion per acre may be used to within 7 days of harvest, or 3/4 pound per acre of trichlorfon (Dylox) to within 21 days of harvest.

Cereal leaf beetles are coming out of hibernation in the regulated portions of Illinois, according to officials of the State Department of Agriculture. Populations of this insect are still low, and economic damage is not likely to occur this year.

This insect feeds on small grains, preferring oats. Field detection surveys by regulatory agencies are being initiated. New infestations will probably be found. The cereal leaf beetle has been found in a total of 57 counties in Illinois since 1965. These counties are under a quarantine and comprise the current regulated area.

CORN INSECTS

European corn borer pupation progressed rapidly this week, reaching 50 to 80 percent in the southern section where some moths have emerged. In the central section, development is just beginning. No pupation has occurred in the northern section. It is too soon as yet to make predictions.

Flea beetles are present in newly emerging corn, and some feeding is evident. Populations of this insect remain low. As yet, no serious damage has been observed. There is still ample time for serious problems to develop. If fields of corn become seriously affected, apply 3/4 of a pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre as a band spray over the row. Grassy areas bordering the field should also be treated. Avoid using carbaryl near beehives and toxaphene near fish-bearing waters.

FORAGE INSECTS

Alfalfa weevil populations continue to increase in the central and north-central sections, and feeding is noticeable. However, alfalfa is rapidly approaching the point of harvest in these areas. It is best to consider cutting the crop, removing the hay, and spraying the new growth of the second crop if needed. Apply treatments to the stubble if the new growth does not green-up in two or three days.

In the south-central and southern sections, weevil populations are declining and it would be best to cut the alfalfa rather than to use an insecticide. The new growth of the second crop may require an insecticide treatment in some cases. See report No. 5 for insecticide suggestions.

LIVESTOCK INSECTS

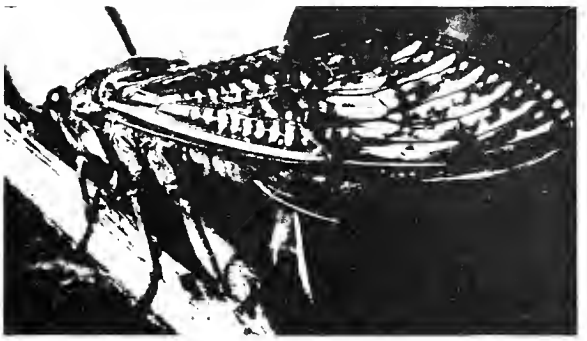
Horn flies are appearing in light numbers on pastured cattle. Populations will build rapidly to economic levels (50 to 100 or more per animal) within the next few weeks. Begin spray programs early, using sprays of crotoxyphos (Ciodrin), dichlorvos (DDVP), or pyrethrum for dairy cattle; toxaphene, for beef cattle. Toxaphene should not be applied to beef cattle within 28 days of slaughter.

Dust bags containing crotoxyphos or coumaphos (Co-Ral) can be used to control horn flies on dairy cattle. Install them in the exit doors of milking parlors or barns.

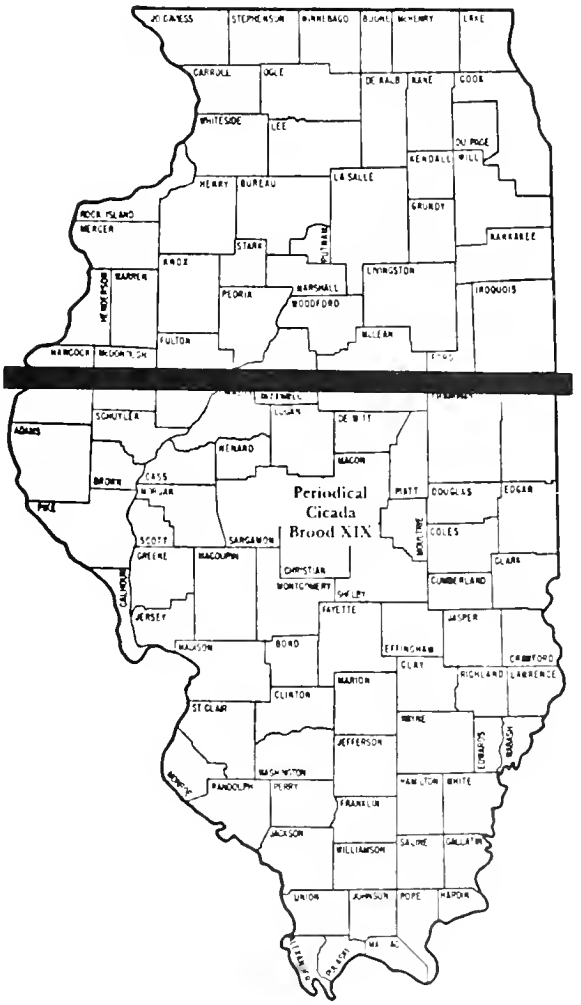
HOMEOWNER INSECT PROBLEMS

The thirteen-year locust or periodical cicada, Brood XIX was very numerous in certain areas of the state in 1959. They were especially numerous in western Illinois in Pike, Calhoun, Jersey, Greene, and Scott counties; and were present in swarms in most counties south of a line from Quincy to Springfield to Bloomington to Danville. This brood is due to emerge again from the soil about May 25 in southern Illinois and June 1 in the central part of the state. A few were observed on May 17 in extreme southern Illinois.

Infestation during 1972 may follow the 1959 pattern. In order to record the location of Brood XIX in Illinois, we need information about where they have emerged. Please mail specimens of cicadas to Dr. Lewis J. Stannard, 285 Natural Resources Building,Urbana, Illinois 61801.



Adult cicada.



Oystershell scale crawlers are beginning to hatch and move onto new growth. This pest is common on lilac, willow, birch, and other trees and shrubs. These young crawlers will soon begin developing a hard-shelled, protective cover over themselves. For control, thoroughly spray the young crawlers during late May in southern Illinois, early June in central and mid-June, in the northern section. Use a spray mixture containing either malathion or diazinon liquid concentrate. Follow label directions for rates in mixing. For good results, three sprays should be applied about 10 days apart.

Bronze birch borer adults are beginning to emerge from the upper limbs of birch trees. The bronze beetles will soon lay eggs on roughened bark on the upper part of trees. Good control of this borer can be achieved if the trunk and limbs are sprayed with dimethoate (Cyton, De-Fend) as the eggs start to hatch. Use one cup of the 2-pound-per-gallon formulation per 25 gallons of water. Begin about May 25 in southern Illinois and June 5 in the northern section. Repeat the dimethoate spray three weeks later. Spray only those trees that are infested.

Eastern tent caterpillars are leaving their tree nests and moving across lawns and shrubbery in search of a place to spin their cocoons. These caterpillars are generally black-colored with a white stripe down the back. They like to spin their white cocoons on tree trunks, under the siding on houses, and on other objects. Moths will emerge and lay eggs for next year's generation. No controls are needed at this time.

Cankerworms, "inch worms" or "measuring worms" as they are called, are feeding on the foliage of fruit trees and shade trees in some areas. These brownish worms with whitish stripes along their sides eat and skeletonize the foliage. They spin silken threads from branch to branch and to the ground. If damage is severe, a spray of carbaryl (Sevin) or malathion will provide control. Recently, a disease organism

Bacillus thuringiensis (Biotrol, Dipel, Thuricide) used in a spray has received legal clearance for use, and it is effective. Follow the directions on the label when using insecticides.

WEEDS

ARE HERBICIDES WORKING?

It's a well-known fact that herbicides aren't 100 percent effective. Excessive rains may leach some of the more soluble herbicides too deeply into the soil. If moisture is lacking, the weed seedlings may not absorb the herbicide as they emerge through a dry surface.

Don't wait and hope too long if good herbicide performance appears doubtful. The rotary hoe will usually do more good than harm, and the row cultivator isn't yet a thing of the past.

POSTEMERGENCE 2,4-D

For greatest effectiveness, spray when the weeds are small and the easiest to kill. Avoid spraying during wet, cool conditions when corn is under stress.

When spraying corn with 2,4-D, do not add surfactants, detergents, atrazine and oil, or other herbicides or additives that are not specifically approved for use with 2,4-D. About the only approved combination with 2,4-D for corn is 2,4-D plus Banvel. Some additives or combinations might improve weed kill, but may also increase the risk of corn injury.

AATREX AND OIL

If you didn't get a herbicide on earlier, AAtrex can help control many weeds in corn, including smartweed. Apply early before the weeds are 1-1/2 inches high, especially to control the grasses. However, there is a possibility of corn injury if conditions are unfavorable.

Follow these suggestions to minimize the chances of injury:

1. Apply AAtrex and oil within three weeks after planting.

2. Avoid applications when corn is under stress from cool, wet weather or when corn is wet as with early morning dews.

3. Do not add 2,4-D to AAtrex and oil; corn injury may result.

4. Do not allow crop oil to become contaminated with water prior to use; this may affect the action of the emulsifier contained in the oil.

5. Do not apply AAtrex after June 10, unless you plan to plant corn or sorghum in that field next year.

BANVEL

Banvel is effective for controlling broadleaf weeds in corn. It is more effective than 2,4-D on smartweed, and can also help control Canada thistle.

The risk of injury from Banvel to nearby, susceptible plants has been a problem. Spraying early before soybeans are planted or at least while they are small is one way to help minimize the risk.

JOHNSONGRASS-SORGHUM CROSSES

Much of the grain sorghum seed grown in the United States is produced in areas where johnsongrass is also found. Although seed companies take precautions, johnsongrass pollen apparently can carry considerable distances to pollinate sorghum plants. The result can be occasional seeds that look like grain sorghum, but ones that will produce off-type plants. The amount of viable seed in the heads of these off-type plants may vary; also, the nature of the roots and rhizomes.

To help prevent the possible introduction of these off-types as potential weed problems, try to obtain some assurance from your seeds man that the sorghum seed you buy will be free of this problem.

SPECIAL NOTE TO COUNTY EXTENSION ADVISERS

The Illinois Department of Agriculture, Division of Plant Industries (in cooperation with the State Department of Conservation, Division of Forestry and the United States Department of Agriculture) is planning an extensive survey for the detection of gypsy moths throughout Illinois this year. A trapping program for adult moths is being initiated. The State Forestry personnel will begin setting these traps this week and through the month of June. The traps are weatherproof, yellow, cardboard cylinders about 1-1/2 inches in diameter and 4 inches long. They will be attached to trees in inconspicuous places.

The traps are identified as gypsy moth traps. Curiosity-seekers are to contact their county Extension Adviser for further information. The inside of the trap is lined with tanglefoot, a sticky substance, to hold the moth captive. A piece of cotton at one end contains Disparlure, a highly effective sex attractant.

Gypsy moths have recently been found in Missouri, coming in on camper trailers that were in the infested area in the eastern United States last summer. There is concern that the same thing could easily happen in Illinois. The gypsy moth is a serious pest of shade trees, both evergreens and deciduous trees, stripping the foliage and sometimes causing the death of these trees. It is a problem now about as far west as central Pennsylvania. Localized infestations found in Michigan a few years ago have been eradicated.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

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STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 8, May 26, 1972

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INSECTS

SMALL GRAIN INSECTS

True armyworm populations are high in some of the thick, rank stands of wheat, barley, rye, and grasses in the southern half of Illinois. However, many of the suspect fields we checked had only a few worms. Each field should be gone over separately to determine the level of infestation. The worms we saw were mostly about half grown, around three-quarters of an inch in size. There have already been some migrations of armyworms from grasses and grains into corn.

High temperatures produce a disease that can kill many of the worms within a few days. Worms killed by this disease will often be seen stuck to the stem near the top of the plant. As yet, only a few diseased or parasitized worms have been observed.

To count armyworms, shake the plants vigorously to dislodge the worms and count those on the ground and in the dead leaves and other trash at the base of the plant. Make counts in several places in the field. If you find an average of 6 or more worms per linear foot of row, an insecticide treatment is justified. Leaf-feeding is not serious when the worm population is low; but when the average is fewer than 6 worms per foot of row, damage can still occur if the worms begin cutting the wheat heads.

For control, apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy cattle, animals fattening for slaughter, or poultry. There are no restrictions on the use of the grain. One and one-half pounds of malathion per acre may be used to within seven days of harvest, or 3/4 pound per acre of trichlorfon (Dylox) to within twenty-one days of harvest.

Where worms are migrating into corn, spray the infested rows as well as a 25- to 30-foot strip of grass or grain adjacent to the corn. Also, watch fields in which no-till corn has been planted on grass sod or after rye. Armyworm moths may have deposited eggs in the grasses or rye and the worms will move readily to the small corn. The insecticides used on wheat can also be used on corn. In addition, carbaryl (Sevin), used as a spray on corn, will effectively control armyworms.

CORN INSECTS

Black cutworms have been reported damaging corn in the south-central and western sections. Just a few scattered reports have been received.

Watch corn fields closely for the first sign of cut or missing plants, a sign that cutworms are at work. If the corn is small (2- to 6-inches high), cutting generally occurs above the growing point; and at least half or more of these plants will recover. Take this possible regrowth factor into consideration before disking-up a field. Dig around several plants; if worms are found, apply the 5-percent carbaryl (Sevin) apple pomace bait at 20 pounds per acre, broadcast. A spray of 2 pounds of carbaryl per acre with molasses (Sevimol) or with an attractant (Tractum), directed at the base of the plant, will also control cutworms. In addition, trichlorfon (Dylox) is effective, applied at 1 pound per acre in at least 20 gallons of water as a spray directed at the base of the plants. Cover the trichlorfon spray band by throwing soil at the base of the plants with a cultivator.

Wireworms have been reported damaging corn in a few fields. Wilting plants indicate damage. Examine the base of the plant. If a hole has been drilled into it, sift the soil for the round, wire-like brown wireworms. If replanting becomes necessary, apply one of the organophosphates as granules in a 7-inch band ahead of the press wheel. [Two pounds of diazinon per acre or 1 pound of Dasanit, Dyfonate, phorate (Thimet), or prophos (Jolt or Mocap) per acre.] This will kill all but the full-grown worms. On a trial basis only (to protect the stand from further wireworm damage), apply 1 pound of actual Dyfonate or phorate per acre as granules, placed at the base of the plants. Cover with cultivation. A rain following treatment would improve the chances of success.

European corn borer pupation is about complete in the southern section, where moth emergence has started and egg-laying is under way. Pupation is 30 to 40 percent complete in the central section, and a few moths have emerged in the northern section.

SOYBEAN INSECTS

Bean leaf beetles are eating holes in the leaves and chewing on newly emerged soybean stems. Occasional fields are being damaged. Do not apply an insecticide unless the stand is being noticeably reduced. Carbaryl (Sevin) at 1 pound or toxaphene at 1-1/2 pounds per acre is effective, applied as a band spray over the row. There are no restrictions on the use of carbaryl. Toxaphene-treated soybeans should not be fed as forage to dairy cattle, livestock fattening for slaughter, or poultry.

Seed corn maggots have been reported damaging germinating soybean seeds. These small white maggots tunnel into the kernel and feed, causing the seed to die. Soybean stands can usually withstand some damage without affecting the yield. Usually, infestations are not severe. No means of control is available. If replanting is necessary, a diazinon seed treatment will prevent further injury to the new stand.

FORAGE INSECTS

Alfalfa weevil development slowed this past week in the central and southern sections. Since the first cutting has either been made or soon will be, chemical control is no longer recommended. However, watch the new growth. If these weevils are severely damaging the new shoots, an insecticide application may still be warranted.

SUNFLOWER INSECTS

Flea beetles and an unidentified caterpillar resembling an armyworm larva were observed feeding on young sunflower plants in the northern section. Feeding damage was moderate. There is a shortage of effective insecticides approved for use on sunflowers. Methyl parathion (to be used by experienced applicators only) and endosulfan (Thiodan) are the only insecticides currently registered for use on sunflowers.

HOMEOWNER INSECT PROBLEMS

Bean leaf beetles are beginning to chew holes in leaves. These brown or dull-red beetles with black spots can be controlled easily with carbaryl (Sevin), applied as a commercially prepared 5-percent dust or as a spray containing 2 tablespoons of 50-percent wettable powder per gallon of water.

Pine sawflies are now defoliating some pine plantings, especially white pines, in southern and central Illinois. These caterpillars cluster on the needles and feed, causing defoliation of branches and even of entire trees. Spraying with carbaryl (Sevin) will provide control. Use 2 pounds of 50-percent wettable powder per 100 gallons of water.

Oyster shell scale young are hatching on shrubs such as lilac. These young crawlers are moving out onto new growth and are beginning to suck the plant sap. For control, make two applications of malathion about 10 to 14 days apart.

Periodical cicadas or thirteen-year locusts have emerged from the soil this past week in many counties in west-central and southern Illinois. These adult cicadas will fly about in wooded areas and shade trees for about a week, but will do no damage. After a week, the females will begin to lay eggs in slits cut into twigs and small branches. This egg-laying damage causes many small branches to die, severely damaging small trees. To prevent such damage, young trees can be covered by netting. Spraying the tree with carbaryl (Sevin) when egg-laying begins will control many of the cicadas. If these insects remain numerous, repeat the spray application 5 to 7 days later.

Chiggers will be appearing soon. They occur along fence rows, brushy places, weedy hillsides, grassy margins of ponds and lakes, and at edges of forests. These tiny mites cling to grasses and weeds, transferring to people or animals who happen to come by. The mite injects saliva into the skin to dissolve tissue cells. This spot usually becomes inflamed and itches. The mites feed for about two days before dropping off.

To prevent attack, use a repellent such as DEET (diethytoluanide). Apply it to socks, pants cuffs, exposed ankles and calves, and arms. Take a warm, soapy shower or bath as soon as possible after returning from a chigger-infested area.

To reduce chigger infestations in a home yard, spray malathion or diazinon lightly over the grass, low flowers, and shrubs. Follow the directions and precautions on the label.

WEEDS

HERBICIDE ADDITIVES

Don't be misled by what you may read or hear about the advantages of using household cleaning agents with pesticides. Some of the advantages claimed or suggested are that the agents help keep the spray pump lubricated, reduce the amount of rain needed or even make rain unnecessary, and reduce the amount of herbicide required.

We would not completely eliminate the possibility that surfactants affect the mobility of herbicides in the soil, this could be an advantage or a disadvantage. Having adequate moisture available so the herbicide can be absorbed by the weed seedlings is likely to be a more important consideration than mobility.

The following is a summary of a recent report on research given at the Weed Science Society of America: "Low per-acre dosages of surfactants which would result from normal spray-additive concentrations applied in the field appeared to have little or no effect on the distributional rate of herbicides in soil profiles following irrigation. Conceivably, however, intentionally higher levels of surfactant might be used to enhance or retard the movement of both herbicides and water in soils, according to design and purpose."

For postemergence applications, some adjuvants or surfactants may increase the effectiveness of some herbicides by providing a more complete coverage of the leaf surface, lengthening the time of contact, or increasing the degree of penetration. An additive that improves weed kill though may also increase crop injury.

Herbicide formulations often contain certain oils and surfactants. Adding additional amounts may be unnecessary, costly, and unwise unless suggested specifically on the herbicide label.

Several field studies with various additives indicate that the nonphytotoxic crop oils, as recommended on certain labels, have been more effective for weed control than products originally intended for use as household detergents. It is usually advisable and often more economical to give preference to agricultural surfactants.

Compounds for which "no economic poison" claims are made do not have to be registered with EPA under the Federal Insecticide, Fungicide, and Rodenticide Act. But the EPA says, "No surfactants, crop oils, or other additives should be mixed with any herbicide unless such a mixture is specified on the herbicide product label or labeling."

In summary, we do not recommend adding "soap" to herbicides.

PLANT DISEASES

SEED EMERGENCE PROBLEMS OF SOYBEANS

Soybean seed that is injured by machinery at harvest or during processing or planting may not emerge well. Seeds that are too dry or too wet may be split or cracked or may have other wounds. Seedling growth is slow--especially in cool, wet soil. Seed rot and damping-off organisms, such as *Pythium*, *Rhizoctonia*, and others, readily infect seeds and seedlings through wound areas. The result is a thin, uneven stand with numerous yellowed shoots. Do not plow-up the stand unless there are large gaps or areas where there are no plants.

LOOSE SMUT OF WHEAT AND BARLEY

Loose smut of wheat and barley caused by *Ustilago tritici* and *U. nuda* has been observed in both barley and wheat this year. Damage levels depend on conditions at flowering time. Cool, humid weather favors the infection of flowers in healthy heads. After the fungus has infected the female parts of the flower and penetrated the seed embryo, it becomes dormant until the seed is planted the next season.

The fungus grows systemically within the barley or wheat plant. The apparent infection level (the number of black, smutted heads) in any one season is the result of infections that occurred during the previous year. Control measures include

the use of (1) resistant varieties, (2) certified seed, (3) a hot-water or anaerobic-soak seed treatment, or (4) a Vitavax seed treatment. (See *Report on Plant Diseases* No. 101, "Barley Smuts" and *Report on Plant Diseases* No. 112, "Loose Smut of Wheat," for further details. These reports are available from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

A NOTE ABOUT THE USE OF VITAVAX

Vitavax is cleared by the Environmental Protection Agency for use as a seed treatment on registered and foundation wheat or barley. Uniroyal also has a label for the experimental use of this product, and up to 1,500 pounds of Vitavax can be applied this year in Illinois. Since Vitavax is only effective against Basidiomycetous fungi (smuts), it will probably be manufactured (formulated) to include some other protectant fungicide, such as maneb, captan, or thiram to make it broad-spectrum in effectiveness.

POWDERY MILDEW OF WHEAT

Powdery mildew is now serious in some Illinois wheat fields, especially where the stand is thick and nitrogen was applied in more than adequate amounts. Wide differences in resistance and susceptibility are evident in variety-trial plots. Here are some notes taken recently that you might find interesting.

Because the powdery mildew fungus (*Erysiphe graminis*) is highly specialized into numerous subspecies, physiologic races, or strains, the same variety of wheat may well react differently to mildew from one location to another. However, the hard and soft wheats listed below gave very much the same reading in all replicate plots at both agronomy test locations.

Reaction of Winter Wheat Varieties to Infection by Powdery Mildew at Brownstown and Urbana, Illinois [Data Recorded by Drs. C.M. Brown and H. Jedlinski, May 22-23, 1972]

Hard Wheats		Soft Wheats	
Variety	Percent of infection[a/]	Variety	Percent of infection[a/]
Centurk	69	Arthur	0
Gage	39	Arthur 71	0
Ottawa	85	Benhur	62
Parker	85	Blueboy	51
Pawnee	91	Blueboy II	61
Scout 66	56	Knox 62	78
Triumph 64	57	Monon	87
		Timwin	32

a/ Average percentage of the area of leaf surface covered by the growth of powdery mildew fungus in three replicates at each location.

CHLORO IPC

Word came from the EPA on May 24 that they have received appeals from PPG Industries and Uniroyal about some of their products containing Chloro IPC. It is our understanding that the filing of these appeals will permit the continued use of those products this season.

OATS AFFECTED BY ATRAZINE RESIDUE

There are a few reports of spring-seeded oats dying where atrazine was used on corn in 1971. Remember that oats should not be seeded the year after atrazine has been used alone or in combination with another herbicide.

WEEDS GROWING WHERE A HERBICIDE WAS USED

In such a place, some weeds may emerge an inch or so and then die back. However, if the weather has been dry and there is a question about how well the herbicide has been absorbed by the weed seedlings, don't hesitate to use the rotary hoe. You'll usually do much more good than harm.

DELAYED APPLICATION OF PREEMERGENCE HERBICIDES

Some farmers were in such a rush to plant this season that they didn't get a herbicide applied. Now, they wonder whether they should put it on several days later. With some herbicides this can be done. Check the label for specifics.

With late planting and dry weather, the need for herbicides is usually smaller. The rotary hoe and cultivator may be enough to help give soybeans a head start on weeds--if the weather doesn't turn wet again.

In the old days, some folks didn't think they had done their "just duty" unless they cultivated corn four times, weeds or not. Today, there seem to be some similar feelings about herbicides.

HERBICIDE INJURY

For help in recognizing the symptoms of herbicide injury, refer to Agronomy Fact Sheet W-31. Copies are available from the Agronomy Extension Office, N-305 Turner Hall, Urbana, Illinois 61801.

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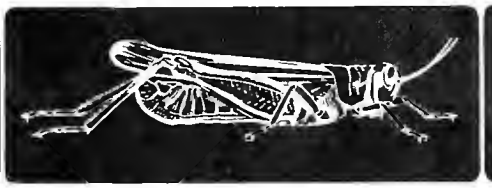

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 9, June 1, 1972

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INSECTS

CORN INSECTS

Many reports of black cutworms damaging corn in the southern half of Illinois were received this week. Continue to watch the corn for cutworm damage in the northern half of Illinois. Infestations there are still possible. The worms are now reaching maturity, will soon stop feeding, and will then pupate in most of these problem fields. A full-grown, black cutworm larva is about 2 inches long.

If stands are severely damaged and corn is to be replanted, check the size of the worms. If most of the worms are 1-1/2 to 1-3/4 inches or larger, the corn can be replanted without the use of an insecticide. By the time the corn germinates and emerges, the cutworms will have pupated. On the other hand, if most of the worms are 3/4 of an inch to 1-1/4 inches, they will feed for another seven to ten days and could seriously injure the new planting. In this case, apply the 5-percent carbaryl (Sevin), apple-pomace bait at 10 pounds per acre as a band over the row when planting. A spray of 2 pounds per acre of carbaryl with molasses (Sevimol) or with an attractant (Tractum) sprayed over the row two or three days after planting could be used in place of the carbaryl, apple-pomace bait.

To protect stands from further damage by cutworms apply the 5-percent carbaryl (Sevin), apple-pomace bait at 20 pounds per acre, broadcast. A spray of 2 pounds of actual carbaryl per acre with molasses (Sevimol) or with an attractant (Tractum), directed at the base of the plant, will also control cutworms. In addition, trichlorfon (Dylox) is effective, applied at 1 pound per acre in at least 20 gallons of water as a spray directed at the base of the plants. Cover the trichlorfon spray band by throwing soil at the base of the plants with a cultivator.

Garden symphlans or garden centipedes have damaged two fields of corn in the center third of Illinois according to a report we received. Damage from this pest is difficult to diagnose. Undoubtedly, many fields sustaining only light damage go undetected each year. These are small critters (about 1/16 to 1/4 of an inch). They are white and have many legs, move rapidly in the soil, and attack the roots. They prefer the root hairs and tender new roots, but they will reduce the root system to a stub if the infestation is severe. Infested plants are stunted, turn purple, and may wilt and die. These pests feed throughout the season, moving closer to the surface when conditions are moist and going deeper at dry times.

To check for centipedes, dig up the suspect plant along with a spade full of soil, and place this on a sheet of plastic or cloth. Examine the root system for injury. Carefully sort through the soil, breaking up the clods and watching for the tiny, white, moving centipedes. It usually takes a hundred or more centipedes per hill to cause noticeable injury. Do not become alarmed if you find five to ten in each hill. This number is common in many cornfields.

If a stand is being severely affected, we suggest an application of granular Dyfonate on a trial basis. Band 1 pound of actual Dyfonate per acre at the base of the plants and cover the granules with cultivation. The chances for success are better if there is rain following the treatment. If corn is to be replanted this year or planted in the same field next year, apply 1 pound of actual Dyfonate per acre as granules in a 7-inch band just ahead of the press wheel.

European corn borer development is slightly ahead of normal in the southern half of Illinois. This should reduce the survival rate. Moth-emergence and egg-laying are well along in the southern section. Moth-emergence reached 30 percent in the center third, but approximately 20 percent of the borers had not yet pupated. Potentially, the last 10 to 15 percent of the emerging moths can cause the greatest damage, because the corn is more mature by the time they lay their eggs and the survival of the hatching larvae is greater. Pupation is just getting started in the northern third of the state.

It is still impossible to determine the exact situation. The most advanced fields in the southern section should be checked in about a week; in west-central Illinois, in about two weeks; and in northern Illinois, in about three weeks. The survival of the borers in these advanced fields will be high, and the moths will tend to concentrate their egg-laying in such fields.

SMALL GRAIN INSECTS

Armyworms are still present in many of the thick stands of wheat, barley, rye, and grasses in the southern part of Illinois. The main problem area lies south of Illinois Route 16. A check in thick stands of wheat in the Illinois river bottoms as far north as Havana showed only light populations of armyworms. These worms are now nearing maturity (a full-grown worm is about 1-1/2 inches). Populations should decline this week. Diseases and parasites are also taking their toll. After wheat is in the dough stage, the loss of leaves is relatively unimportant. The real damage from army worms will occur if they begin to cut the wheat heads or if they migrate to other, nearby crops. A number of reports have been received about head-cutting and migrations from grains and grasses.

If there is still an average of 6 or more worms per foot of row and the worms are generally less than 1-1/4 inches long or if head cutting is occurring, treatment for armyworms would be justified. For control, apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy cattle, animals fattening for slaughter, or poultry. There are no restrictions on the use of the grain. One and one-half pounds of malathion per acre may be used to within seven days of harvest. Where worms are migrating into corn, spray the infested rows as well as a 25- to 30-foot strip of grass or grain adjacent to the corn. Also, watch fields in which no-till corn has been planted on grass sod or after rye. Armyworm moths may have deposited eggs in the grasses or rye, and the worms will move readily to the small corn. The insecticides used on wheat can also be used on corn. In addition, carbaryl (Sevin), used as a spray on corn, will effectively control armyworms.

HOMEOWNER INSECTS

Leafhoppers and plant bugs are damaging locust trees. Both insects have caused leaflets to show a mottled yellow appearance and to curl. Where infestations are severe, the leaflets have turned brown. These leafhoppers are small, green, wedge-shaped insects. Adult leafhoppers fly like a swarm of small gnats when a branch is disturbed. Plant bugs are also green but are larger. Populations of plant bugs are declining; however, there are still many young leafhoppers on honey locust trees. If the damage is severe and insects are still present, treat the tree with malathion or carbaryl (Sevin).

The periodical cicada, or thirteen-year locust, has emerged in the central section and in many areas of southern Illinois. The adults are swarming in and around wooded areas, and leaving their pupal skins on the bases of trees and on fences, flower stems, and in grass and weed areas. These locusts do not chew on leaves. Their only economic damage is the result of egg-laying punctures in the twigs and small branches of trees. When egg-laying begins, treat the infested trees with a spray containing carbaryl (Sevin). Repeat five days later if necessary.

Bagworms are hatching in southern Illinois, and will be hatching in the central section by June 10. These tiny worms can defoliate evergreens such as junipers, as well as some shade trees. As they feed, these worms construct a spindle-shaped bag in which they live. In the southern section, sprays should be applied immediately. The target date for spraying in the central area is after June 15; in the northern section, after June 30. Control bagworms while they are small and easy to kill. Once the bagworms become half-grown or more, insecticide spraying often fails.

For control, apply a spray containing carbaryl (Sevin), diazinon, malathion or Bacillus thuringiensis (Biotrol, Dipel, Thuricide). Follow the directions on the label. Check carefully for plants that could be injured by the insecticides used.

Striped cucumber beetles and occasionally spotted cucumber beetles are attacking the young plants of such vine crops as cucumber, squash, and melons. These yellow and black beetles feed on the leaves of seedling plants. Probably, the most serious damage they do is to spread a bacterial wilt disease that can kill the plants. For control, apply carbaryl (Sevin) as a dust or spray.

SPECIAL NOTE TO EXTENSION ADVISERS AND PESTICIDE DEALERS

The use of diazinon in dairy barns and milking parlors as a residual spray for flies has been cancelled. Therefore, do not use diazinon this way.

Diazinon can still be used to spray barns containing beef cattle, swine, poultry, and sheep, as long as the animals are removed from the structure while it is being sprayed. You may also wish to make a note of this change in UI Circular 898, *Insect Control for Livestock and Livestock Barns* on page 3, where diazinon is suggested for use as a barn spray.

WEEDS

POSTEMERGENCE CONTROL OF WEEDS IN CORN

If corn and weeds are still small enough, using a rotary hoe is an excellent way of controlling postemergence weed problems. Good row cultivation works equally well.

2,4-D can be a good follow-up herbicide, especially where a "grass-killer" has been used for preemergence treatment. However, applying 2,4-D to corn that has been under wet, cool stress conditions may increase the risk of injury.

Atrazine and oil can be used to control grass and broadleaf weeds in some areas. See the UI *1972 Weed Control Guide*, and follow label precautions closely. A limited amount of Outfox, a new material that can be used in a manner similar to that for atrazine and oil, will be available this season.

If grass becomes too large to cultivate or to apply atrazine and oil, dalapon or Lorox are possibilities for directed postemergence treatment. For either of these materials, special spray rigs will be needed in order to direct the spray. Considerable care must be taken to avoid injury to corn. These directed treatments have not been popular in Illinois, but are discussed in the *1972 Weed Control Guide*.

USE A ROTARY HOE BEFORE FOXTAIL DEVELOPS

Giant foxtail forms a crown at about the soil surface. From this, the crown roots develop and grow downward, if they are not impeded by dry soil or a herbicide. Between the seed and the crown, there is a thin, thread-like part called the mesocotyl, or first subcrown internode. If the crown roots are not yet established, a good rotary hoeing can often break the mesocotyl and kill the foxtail.

KEEP HERBICIDES OUT OF WELLS

Do not let pesticides siphon out of spray tanks into wells. Be sure to have positive shut-off valves; also, do not put the hose down into the tank to prevent "back-siphoning

One applicator puts a "hog-waterer" type float at the top of the tank, and attaches the hose to it. When the tank is full, the float shuts off the water. Since the hose is only at the top of the tank, back-siphoning cannot occur. Using a quick coupler is a handy way to fasten and unfasten the hose.

MACHINERY

TAKE CARE WHEN APPLYING 2,4-D POSTEMERGENCE

A considerable amount of corn will probably be sprayed with 2,4-D for weed control during the next few weeks. Spraying with 2,4-D is still an economical and effective method of controlling many broadleaf weeds in corn. However, injury to desirable plants can occur.

Mist or vapor from 2,4-D has damaged susceptible plants growing a half mile or more from the area actually sprayed. Much of the 2,4-D damage can be avoided if users are aware of the dangers and follow precautions when applying it.

A wide variety of broadleaf crops and ornamental plants can be severely injured or killed by 2,4-D. Susceptible plants include tomatoes, snap beans, soybeans, sunflowers, melons, grapes, cotton, roses, chrysanthemums, redbud trees, and birch trees. Some of these plants are more susceptible to injury from 2,4-D than the common broadleaf weeds.

To prevent injury to nearby plants, do not use the high-volatile esters of 2,4-D unless you thoroughly understand the dangers involved and there are no susceptible plants nearby. Do not use any form of 2,4-D within a half a mile of susceptible crops. Even with the low-volatile esters, the smaller droplets of spray can be carried great distances by the wind.

When applying 2,4-D postemergence use a relatively high amount of water per acre and a pressure level that is as low as possible. A pressure of 20 pounds per square inch with regular, flat-fan nozzles will give adequate coverage.

If it is absolutely necessary to spray 2,4-D in the vicinity of susceptible crops, use flooding-type nozzles and low pressures. These nozzles give adequate coverage of broadleaf weeds at pressures as low as 10 pounds per square inch.

Be especially careful when spraying 2,4-D near residential areas. It may be best simply not to spray the rows nearest such areas.

Spray only when the wind velocity is low--under 5 miles per hour if possible. If spraying is to be done near susceptible plants, do it when the wind is blowing away from the plants.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 10, June 9, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworm activity in the southern one-half of Illinois is starting to decline. Occasional fields are infested with medium-sized larvae and are still being damaged. However, cutworms in most fields are reaching maturity (about 2 inches when fully grown) and are almost through feeding.

Black cutworm damage in the northern one-half of Illinois is being reported. Fields in this area should be watched closely during the week for signs of cutting, wilting, or missing plants.

This year, under dry conditions, cutworms have been cutting plants off below the soil surface and growing point. Infestations have not necessarily been confined to the low areas of fields as is usually the situation.

If replanting is necessary, the cutworms will probably still be present when replanting is done. If most worms are 1-1/2 to 1-3/4 inches or larger, the corn can be replanted without the use of an insecticide. The cutworms will have pupated by the time the corn germinates. However, if most of the worms are small (3/4 to 1-1/4 inches) they will feed another 7 to 10 days and could seriously damage the new planting. In this case, apply the 5-percent carbaryl (Sevin), apple-pomace bait at 10 pounds per acre as a band over the row *behind the press-wheel* when planting. Do not incorporate. A spray of 2 pounds per acre of actual carbaryl with molasses (Sevimol) or with an attractant (Tractum) sprayed over the row a few days after planting could be used in place of the carbaryl, apple-pomace bait.

First-generation European corn borer damage is not expected to be a problem this year in the southern one-half of Illinois. Corn borer development is generally ahead of the corn, thus reducing borer survival and the threat of serious damage.

In southern sections of Illinois, most corn is too small for borer survival. Egg mass counts made in south-central sections revealed very low infestations. Further south, egg hatch is virtually complete. Tiny borers present in fields where the corn is less than 40-inches high will die. If egg-laying by moths extends over another week in western areas along the Mississippi River, some of the fields of 50-inch or taller corn may be damaged. The survival of borers in these advanced fields will

be high and the moths tend to concentrate their egg-laying in these fields. Check exceptionally advanced fields for another two weeks in western areas of Illinois. Treatments can be applied about the week of June 18.

In the central section, moth emergence is almost complete and some egg-laying is occurring.

In the northern sections, pupation is almost complete and some emergence has occurred.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. This will give you the tassel ratio. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre and direct the spray to the upper third of the plant. Aerial applications should be as granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Sod webworms are attacking corn planted following sod. The worms feed at or just below the soil surface, somewhat as a cutworm does. Frequently the cutoff corn plants are dragged to a silk-lined tube found near the base of the corn plant. As the plant grows, the leaves which are injured in the whorl grow out and the feeding is apparent. The sod webworm larva is short, rather thick-bodied, usually spotted and coarsely haired, from 1/2 to 3/4 inch long. For control, apply 1 pound of actual carbaryl (Sevin) per acre as a spray at the base of the plants.

Billbug damage to young corn stands has been observed. They are snout beetles that drill holes in stalks below ground level. When the leaves emerge, they have a series of holes in them. The feeding of a single beetle may kill a small plant, while a larger plant may continue to grow normally with only a few rows of holes across the leaves. Suckering and distorted growth are other symptoms of billbug injury.

Wireworms damaged several fields of corn this week. If replanting is necessary, use diazinon at 2 pounds actual per acre, or Dasanit, Dyfonate, prophos (Mocap, Jolt), or phorate (Thimet) at 1 pound actual per acre applied as a 7-inch band ahead of the pres wheel. These insecticides will control the small wireworms, but not the larger ones.

Excessive wind, dry, loose top soil, and too shallow planting may be mistaken for insect damage. Stunted corn plants may result from these factors or combinations thereof.

SMALL GRAIN INSECTS

Armyworm activity and damage are rapidly subsiding in the southern one-half of Illinois as the worms mature and various diseases and parasites take their toll. In some localities, armyworms have migrated into corn fields from wheat fields.

Looking ahead, after the armyworms mature and pupate, second-generation moths will emerge from the southern and central Illinois wheat fields and move northward. Cornfields with grassy weeds will be an ideal target on which the adult moths may deposit eggs. No control is needed now, but check fields in July.

Some reports of poor control of armyworms with toxaphene have been received. This happens because toxaphene is a slow-acting toxicant. However, if good control has not occurred after five days, it probably isn't going to. The extremely warm days last week not only hastened the deterioration of the chemical, but also kept the worms from moving up on the plant and coming in contact with the toxicant.

SOYBEAN INSECTS

Leafhoppers have been reported damaging soybeans in western areas of Illinois. These are wedge-shaped, green or grey flying insects. They have been extremely abundant in soybean fields. These insects will suck sap from smooth-leaved varieties. Most Illinois varieties have pubescent leaves, and these leafhoppers feed very little on such leaves. Even though you find leafhoppers, look for some other source of damage.

FORAGE INSECTS

Small grasshoppers are appearing in fence rows, ditchbanks, grassy waterways, and hayfields in southern sections. In some localized areas, 'hoppers are extremely abundant. Many more grasshoppers will be hatching during the weeks ahead. Hot, dry weather is favorable for survival during the hatching. If you notice, lots of tiny 'hoppers in fence rows, along ditchbanks, in grassy areas, or hayfields, plan to control them before they move into more valuable crops, such as corn and soybeans. Spray grassy areas with 1-1/2 pounds of toxaphene or 3/4 pound of carbaryl (Sevin) per acre. Use carbaryl on hayfields or pastures. There is no waiting period for carbaryl.

HOMEOWNER INSECTS

Forest tent caterpillars are pale blue worms with a white keyhole marking on each segment down the back. Unlike the eastern tent caterpillar, this insect does construct tents or webbing, but can quickly defoliate a tree. Carbaryl (Sevin) will control this insect.

Bagworms have completed hatch in southern Illinois and are feeding and constructing spindle-shaped bags. These bags are small, about 1/2- to 3/4-inch long and feeding is light. As the worms grow, feeding will be more severe. Spraying now in the southern section will control bagworms. Apply carbaryl (Sevin), malathion or *Bacillus thuringiensis* (Biotrol, Dipel, or Thuricide).

In the central section of the state hatch has begun and should be complete by June 15. Hatch should be complete in the northern section by June 30. Apply chemical control if needed very soon after hatch is complete to achieve effective control.

Sod webworm moths are present now in very low numbers. These first generation moths are laying eggs and young webworms will hatch out. In almost all lawn areas the number of webworms in this generation will be at such a low population that no damage will be observed. The next generation of webworms, hatching in late July and early August, can be numerous enough to cause economic damage. This present generation does not need to be treated.

Maple bladder galls are numerous on the leaves of soft maples. These reddish to green growths are caused by tiny mites which burrow into the leaves emerging in the spring. The irritation by the mites causes the swelling to develop around them. These galls rarely cause damage to trees. It is too late to attempt to control these gall makers this year. Spraying with malathion next spring just before new leaves appear will control this pest.

Cicadas, or 13-year locusts, are singing loudly in and around areas in many locations in southern Illinois. They are laying eggs in slits made in small branches and twigs. If treatment is necessary to reduce egg-laying damage, the only suggested insecticide is carbaryl (Sevin) used at 2 pounds of 50-percent wettable powder per 100 gallons of water or 2 tablespoons per gallon. Repeat in 5 days if needed.

Euonymous scale crawlers are hatching and crawling onto new growth of euonymous, wintercreeper, and pachysandra shrubs. Many crawlers appear as white specks on the new foliage. Sprays containing malathion or diazinon will control this scale species. Thorough coverage is important. Repeat the spray 10 to 14 days later.

WEEDS

CORN INJURY

Sutan injury to corn seems to have occurred in a few more cases than usual this year. Injured plants may appear somewhat swollen at the base and the tops, and may be gnarled and twisted.

The injury can sometimes be explained by overlapping, by leaving the sprayer on when turning at the ends of the field, or by other reasons for applying an excessive rate. Certain corn hybrids may be a little more sensitive to Sutan than others. Soil and weather conditions also may play a role.

Usually only a relatively small percentage of corn plants is seriously affected. Some plants may improve, but others may remain stunted throughout the season. Even though they are stunted, some plants may produce ears. It is seldom necessary to replant.

Treflan residue from one season may occasionally be sufficient to affect corn the next season. Typical symptoms are stunted, purplish, or reddish plants with a drouthy appearance and some abnormal roots.

Some factors that contribute to Treflan residue are dry weather, minimal tillage, stopping the sprayer while running, overlapping, or other reasons for excessive rates. Usually we do not have many cases and we have few problems where correct rates were accurately and uniformly applied. Corn may outgrow the injury fairly well, if it is not too great. There appear to be some genetic differences in the ability of corn hybrids to tolerate Treflan.

Corn does not tolerate Bladex quite as well as atrazine. We had one case of injury on a light sandy soil from a preemergence application of Bladex. Symptoms are stunting and browning of leaves, with considerable variation in the degree of injury, depending on such factors as organic matter and rate. Much of the corn showed considerable improvement in a few days.

Do not use Bladex postemergence on corn.

SOYBEAN INJURY

Some soybeans were planted too deep; others, too shallow. Some soybean seedlings may have an enlarged hypocotyl (the part of the stem below the cotyledons). Although this condition may sometimes be associated with herbicide injury, you will sometimes find "swollen" hypocotyls on soybeans that have not been treated with herbicides.

Treflan can cause some stunting of soybean seedlings and some pruning of roots.

Vernam may cause noticeable crinkling of leaves and stunted plants.

Lorox can cause a browning and dying-back of the leaves which is sometimes difficult to distinguish from the effect of atrazine residue. If weather has been dry, Lorox that remains on the surface may later be splashed up by rain onto emerged soybeans causing brown speckling on the leaves and discoloration of the leaf veins. The leaf-vein discoloration is less than when Lorox or atrazine move from the root out to the leaves.

Amiben may cause a little stunting of soybeans, but since there is little change in color or shape of leaves and the effect is usually quite uniform, it may not be noticed. Occasionally Amiben that moved to seed depth very soon after planting and was taken up by the swelling seed may cause more significant injury. Roots may show malformation and proliferation.

Lasso can cause a "drawstring effect." The leaf midrib is shortened at the tip and the leaf margins at the tip are pulled downward toward the shortened midrib. Only some of the first leaves are affected and this is of little or no significance.

With warm, moist weather, good physical soil condition, and appropriate planting depth, soybeans usually have the ability to outgrow a little early injury quite well. But if several factors such as disease, cool wet conditions, or deep planting also put the soybean seedlings under stress, injury can be more severe.

We have noticed considerable varietal differences in vigor and ability to tolerate herbicides in some of our plots this year. In general, some of the more vigorous varieties also tolerate herbicides best.

Atrazine residue injury to soybeans doesn't seem to be a serious problem, but, as usual, such injury does appear in spots that have overdoses of the material. To help avoid problems next year, do not use atrazine postemergence in corn after June 10 on fields where you plan to plant crops other than corn or sorghum next year.

Oats injury from atrazine residue has appeared in northern Illinois this year. Dry weather, excessive applications, and perhaps the period of hot weather during May might have affected availability uptake, and rate of decomposition in soil and plants. Oats and small-seeded legumes and grasses should not be seeded the year following atrazine application.

We do not mean to overemphasize herbicide injury. The actual acreage seriously affected is usually relatively minor. The benefits of weed control usually far outweigh risks and losses even within individual fields.

With many herbicides the margin of selectivity--the ability to kill the bad and leave the good plants--is narrow. Growers and applicators should be fully aware of the risks.

The few cases of injury are often reminders of the necessity for accurate, uniform applications, advance planning, and well-reasoned judgment.

Lasso and Lasso-plus-atrazine received new clearance for postemergence use in corn, but that is for very small weeds and most fields are too far along now.

NUTSEDGE

Nutsedge is prevalent in many areas this season. Atrazine and oil postemergence may help reduce the growth a little, but we really don't have very good answers for postemergence control of nutsedge in corn or soybeans.

Plan next year to plant soybeans in areas badly infested with nutsedge. As soon as the nutsedge starts growing, till the field once a week for two or three weeks to reduce the food reserve of the nutsedge tubers. At the time of the last tillage operation, incorporate Lasso or Vernam. Put this on your calendar for December 31. When you put up your 1973 calendar, transfer the note to the first week of May.

CORN ROOTING

Dry surface soil may sometimes delay the downward growth of the crown roots of corn. Because of the delayed establishment of the roots, plants may start leaning. Some differences in rooting ability of various hybrids has been noted. Usually cultivation to throw moist soil around the crown will help correct the situation.

PLANT DISEASES

REPORT ON PLANT DISEASES (RPD SERIES)

For a current listing of the Report on Plant Diseases (RPD) series, write to the Department of Plant Pathology, 218 Mumford Hall, University of Illinois, Urbana 61801. The RPDs are grouped by crop type, for example, cereals, corn and sorghum, and vegetables and canning crops. We try to revise these with each new development.

A new RPD on Physoderma Brown Spot of Corn and four new RPDs on Turf and Lawn Diseases are now "in the mill." Request the Index for Reports on Plant Diseases.

POWDERY MILDEW ON WHEAT

Erysiphe graminis tritici, the fungus that causes powdery mildew of wheat, is now producing black-colored fruiting bodies (perithecia) that enable it to overwinter on *living* leaves of wheat in the field. The perithecia are imbedded in the mycelial mat found on the surface of infected plant leaves, stems, and heads. The mycelial mat will probably have changed from white to dark grey in color. Hot, dry weather has kept powdery mildew in check. Crop rotation tends to reduce chances for severe infection. See RPD 104, "Powdery Mildew of Wheat and Barley," for further details.

LEAF RUST AND STEM RUST OF WHEAT

Leaf rust, caused by *Puccinia recondita tritici*, causes yield loss by reducing the number of kernels per head as well as the size of the kernels. Grain from severely rusted plants also has lower test weight and protein content. Farmers usually underestimate losses because the disease never destroys an entire Illinois crop and seldom causes severe shriveling of the grain.

Yield losses are greatest when severe infection reaches the flag leaf and stem (culm). Black spore pustules produced during the overwintering stages are now present on susceptible wheat leaves, but they cause little damage.

Rust spreads most rapidly during periods of heavy dews, light rains, and high humidity and when the temperature is 70 degrees F. or above. The disease is spread by wind-blown summer spores (urediospores).

Stem rust, caused by *Puccinia graminis tritici*, can now be found in southern Illinois, south of Brownstown. The infection pustules produced on stem-rust-infected plants have ragged edges where the epidermal layer of cells has torn open to expose and release the urediospores. The varieties Arthur and Benhur are resistant to known races of stem rust fungi in Illinois. The Bluebay variety is susceptible. See RPD 108, "Stem Rust of Small Grains and Grasses," for information on disease cycle and control.

SCAB OF CEREALS

Scab or head blight is just beginning to appear on wheat heads. *Gibberella zeae*, the scab fungus, causes the kernels to blast or become shriveled and distorted. Severe infection occurs during flowering and shortly after, when the weather is warm and moist. *If the weather is dry* following emergence of the head, small grains will be nearly scab-free.

Scab-infected heads or kernels will be bleached or discolored when compared with healthy spikelets that remain green and mature uniformly. During warm, wet weather, masses of light-pink to salmon-colored mold may form on infected glumes or lemmas of the spikelets, especially near the base of the kernels. In addition, the tiny black perithecia of *Gibberella zeae* may often be found scattered on the head.

Infected kernels may be shrunken and wrinkled, and have light test weight, with a rough and flaky appearance. See RPD 103, "Scab of Cereals," for more details.

SEPTORIA LEAF BLOTCH AND GLUME BLOTCH OF WHEAT

Septoria tritici infections can now be observed on wheat heads, especially in fields that have heavy leaf infections. If most of the leaves are killed before the grain reaches the soft-dough stage, the grain will probably be lightweight and shriveled.

Septoria nodorum causes the "glume blotch" phase of the disease. Unlike Septoria leaf blotch, the glume blotch disease is favored by warm, moist weather. Glume blotch losses are greatest when excessive rainfall occurs between flowering and grain harvest.

Small, irregular grayish or brown blotches appear on the chaff, usually near the top one-third of a glume. As the blotches age, their centers turn greyish-white and are sprinkled with tiny, black pycnidia (fruiting bodies of the Septoria fungus). The pycnidia are similar in size and shape to the perithecia of Giberella and can confuse the non-specialist.

All Illinois wheat varieties are susceptible and there are no control measures that can be applied at this time. See RPD 105 (Revised), "Septoria Leaf Blotch and Glume Blotch of Wheat," for control measures.

SEEDLING BLIGHTS AND ROOT ROTS OF SOYBEANS

Poor emergence, damping-off, and seedling blights or rots continue to occur. Dry weather will prevent some of these problems, but puts stress on others. For example, plants that have wilted are unable to recover because of poor or rotted root systems.

Several major causes of seedling blights or rots are listed in the following table.

Major Causes of Seedling Blights or Rots

Pathogen and disease	Favorable conditions at time of infection	Infection period occurs	Symptoms of infection
Pythium ultimum or *P. debaryanum* (Pythium rot)	Cold, wet soil; flooded soil or poorly drained soil.	Seedling to mature plant.	Damping-off; necrotic spots on cotyledon, plumule dead or absent; seedling soft, swollen, and discolored.
Phytophthora sojae var. *megasperma* (Phytophthora root rot)	Cold, wet soil; flooded or poorly drained soil--even on high ground.	Seedling to mature plant.	Damping-off; yellowing and wilting of leaves, dark brown discoloration of stem from roots to above ground stem and branches.
Rhizoctonia solani (Rhizoctonia root rot)	Cold, wet soil followed by warm weather.	Usually inactive after mid-July.	Yellowing and wilting of leaves; decay of lateral roots; localized reddish-brown lesions on hypocotyl and main root--never above soil line.
Fusarium oxysporum (Fusarium root rot)	Cold, wet soil; poor quality seed; heavy rains; soil compaction.	Seedling to mature plant.	Damping-off; dark brown lesions that are confined to roots and lower portions of stems. Roots may be completely destroyed; firm and dry rot.

STEWART'S BACTERIAL WILT AND LEAF BLIGHT

Stewart's wilt is killing young corn seedlings in southern Illinois. The bacterium which causes this disease is carried from plant to plant by corn flea beetles. Flea-beetle populations have been variable, according to grower surveys.

Streaks appear in the leaves and are light-yellow at first, then the streaks become tan-colored as the leaf tissue dies. The streaks are parallel with the veins of the corn leaf.

All corn types are susceptible to Stewart's disease until the seedling has developed three to four leaves. Older field corn plants generally have good resistance and are not severely damaged. Write for RPD's 201 and 907 that describe Stewart's wilt in greater detail.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 11, June 16, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

INSECTICIDES

The recent ban on DDT, except for certain crops or in connection with public health problems, announced by the U.S. Environmental Protection Agency will have little or no effect in Illinois, particularly on Illinois agriculture. In 1949, we began a gradual phase-out of DDT in agriculture, discontinuing its use on dairy cattle and in dairy barns. During the 1950's, we began to use less-persistent compounds on field, fruit, and vegetable crops. The last use of DDT in agricultural production was in 1964, to control corn earworms and European corn borers on sweet corn. The sweet corn producers of Illinois then changed to carbaryl, diazinon, and other less- or non-persistent insecticides.

As of January 1, 1970, the Interagency Committee on Pesticides banned the use of DDT in Illinois, except by permit only. Since then, the Illinois Department of Public Health has issued a limited number of permits for the use of DDT inside structures to control bats and in a few cases to control mice. The Illinois Department of Agriculture has issued one commercial permit for the control of the geranium plume moth, an imported pest, in one greenhouse in Illinois. No other insecticide would control that pest.

Essentially, Illinois put into practice in 1970 the directive issued this past week by the Federal E.P.A. For this reason, that directive will have practically no effect on Illinois citizens.

CORN INSECTS

Black cutworms are decreasing throughout Illinois. With the exception of a few late infestations, little continued damage is expected unless a second generation develops, which is rare. In most instances, the carbaryl-apple pomace pellets were effective in control. Our biggest problem was to find the infestation early enough to gain maximum benefit from the use of the bait.

Corn rootworm larvae have now been found as far north as Belvidere. Basal applications can be made if needed. Examine corn plant roots and adjacent soil carefully. Finding only one or two rootworms per plant this early may justify an application if you did not use an insecticide at planting time. Use BUX, carbofuran, Dasanit, Dyfonate, or phorate at one pound of the actual chemical per acre.

European corn borer populations appear to be quite low, with the exception of a few, very advanced fields. Although the hard rains this week killed many of the moths, continue to examine suspect fields during the next few weeks. In west-southwestern Illinois, egg hatch is about complete; in western Illinois, it will be within a week; and in the west-central section, in about two weeks. Moths are still emerging in northern Illinois, and egg-laying will continue for about three weeks. The situation is still uncertain. For control procedures, review last week's Bulletin.

Corn leaf aphids are just now appearing. There are only a few of them, and no comment can be made about their future. It is comforting to observe that lady beetles, which feed on aphids, are more abundant than usual in corn fields this year.

Common stalk borers can be found in corn along fence rows and ditch banks. These striped worms have a brown to purple area in the middle part of the body. The worm feeds on the whorl of the plant. The leaves that emerge are very ragged when they unroll. The moths deposited eggs in grassy or weedy areas last August. The worms, which hatched this spring, fed in the hollow-stemmed grasses and weeds. They move into corn as they grow or when the weeds are mowed. Chemical control is not recommended. These pests can be found in many cultivated crops, such as tomatoes and oats.

Ground beetles are black, green, or brown beetles of various sizes that are found in the soil in corn fields. They run rapidly when disturbed. These beetles feed on other insects. Do not try to control them, for they are beneficial insects.

FORAGE CROP INSECTS

Grasshoppers are now hatching in some areas of the state. Hard, beating rains during the hatching period could kill the young grasshoppers. Unfortunately, all areas are not likely to receive these rains, so we expect some outbreaks to occur. These grasshoppers are hatching in fence rows, ditch banks, roadsides, grass waterways, and sod fields. Some are also hatching in clover fields. Control grasshoppers while they are small and before they have a chance to move to more valuable crops such as corn and soybeans.

If lots of young hoppers are present, spray non-crop areas such as ditch banks and fence rows with toxaphene. Do not use toxaphene sprays on grasses that will be used as forage for livestock. And do not apply toxaphene near fish-bearing waters.

Spray hayfields with either carbaryl (Sevin) or malathion. To avoid bee kill do not use carbaryl on fields that are in bloom; apply malathion late in the day, instead. No waiting period is required between application and harvest.

STORED GRAIN

Indian meal moths are abundant this year, and may present a greater-than-normal problem. On many farms, this insect has developed resistance to the commonly used protectant insecticide, malathion. At present in the Midwest, no substitute protectant is readily available.

Malathion is still effective against the remainder of the insect complex (about twelve important ones) that attacks stored wheat. Satisfactory protection on most farms should still be realized through a continued use of malathion in a complete control program that involves (1) bin cleanup, (2) bin spraying, (3) spraying the grain as

it is placed in storage [liquid spray treatment preferred to dust treatment], and (4) two surface treatments--one at the conclusion of storage and one in early- to mid-August.

HOMEOWNER INSECTS

First-generation elm leaf beetles are skeletonizing the leaves of Chinese and other elms in the central and northern sections. The damage by first-generation worms is about over in the southern part of the state. These small, dirty-yellow to black worms feed on the undersides of leaves and congregate in large numbers next to the trunk at ground level when they are ready to pupate. A spray of carbaryl (Sevin) or malathion is effective. Spray treatment may be needed again in late July in the southern section to control second-generation worms.

Picnic beetles (or scavenger beetles) could be abundant this summer. The generally wet conditions of most areas in May could result in moderate-to-heavy populations of these annoying insects.

Prior to their emergence as an adult, the larvae feed on decaying vegetation, debris, and fruit buried in the soil. The adult beetles are about a quarter of an inch long, and are shiny black with four yellow spots on their back. They are attracted to the odor of food, and get into food at picnics and cookouts. They congregate around garbage containers and on the screens in kitchen doors and windows.

For cookouts, spray the shrubbery and any nearby tall grass or weeds with malathion or diazinon several hours before eating. A space spray of pyrethrins of dichlorvos (DDVP) applied from a pressurized spray can just before eating will provide a quick knockdown of the beetles.

WEEDS

POSTEMERGENCE HERBICIDES FOR CORN

2,4-D provides one of the most economical and effective treatments for many broadleaf weeds in corn. For maximum effectiveness, apply 2,4-D when the weeds are small and easiest to kill. You can broadcast the spray over the top of the corn and weeds until the corn is about eight inches high. After that, use drop extensions from the boom down to the nozzles.

These "drop nozzles" help keep the 2,4-D out of the whorl of the corn and decrease the possibility of injury. Direct the nozzles toward the row, where most of the weeds will be. However, if you do this, be sure to adjust the concentration of the spray so that excessive amounts are not applied to the corn.

Each year some corn is damaged by 2,4-D. It is virtually impossible to eliminate all cases of 2,4-D damage. The chemical usually makes corn brittle for a week or ten days. If struck by a strong wind or by the cultivator, some corn may be broken off. Some stalks may "elbow" or bend near the base. Other symptoms of 2,4-D injury are abnormal brace roots and "onion-leafing," a condition in which the upper leaves remain tightly rolled, which may delay tassel emergence.

Spraying 2,4-D during very cool, wet weather when corn plants are under stress, or during very hot, humid weather may increase the possibility of corn injury from 2,4-D.

Some inbreds and some hybrids are more easily injured by 2,4-D than others. It is usually best not to use 2,4-D on inbreds unless you are certain they have a high tolerance. Single crosses may or may not be more sensitive than double crosses, depending on the sensitivity of the inbred parents. Doublecross hybrids and three-way crosses also vary in their sensitivity, depending on their genetic makeup.

To help avoid damage to corn, be sure to apply 2,4-D at no more than the recommended rate. The suggested rates per acre for broadcasting are: one-sixth pound of the low-volatile ester, one-fourth pound of the high-volatile ester, or one-half pound of the amine.

The ester forms of 2,4-D can volatilize. If this happens, the vapors can move to nearby susceptible plants, causing injury. Since the amines are not as volatile as the ester forms, the amines are less likely to injure nearby plants. However, when either the ester or the amine forms are used, spray particles can drift to nearby susceptible plants.

It is important to spray weeds when they are small. This is when they are easiest to kill, and before they compete seriously with the crop. However, you can use high-clearance equipment relatively late in the season if you wish, especially for the control of late-germinating weeds. Many such weeds are not very competitive with corn, but control would decrease the production of weed seeds. Do not apply 2,4-D to corn from the tasseling to the dough stage.

Amines are salts that are dissolved to prepare liquid formulations. When mixed with water, they form clear solutions. Esters of 2,4-D are formulated in oil. When they are mixed with water, they form milk emulsions.

Dacamine and Emulsamine are amine forms of 2,4-D that are formulated in oil. Hence the name oil-soluble amines. Since they are formulated in oil like the esters, they are said to have the same effectiveness while retaining the low-volatile safety features of the amines.

The active ingredients in all formulations is still 2,4-D. When you adjust rates appropriately to provide both weed control and crop safety, the various formulations are usually similar in their effectiveness.

Banvel is more effective than 2,4-D for controlling smartweed. But serious problems have developed in previous years because the Banvel affected nearby soybeans and other sensitive plants. The closer the soybeans are to blooming when the Banvel hits them, the greater the risk of reduced yields.

For further details on Banvel, refer to the *1972 Weed Control Guide* and product labels

Atrazine and oil should not be used after June 10 if any crop other than corn or sorghum is to be planted in the field next year. Although you may hear an occasional report of grass weeds taller than 1-1/2 inches being controlled with atrazine and oil, don't expect to do it. And don't expect significant increases in controlling larger grass by using higher rates.

Outfox can be used on grass weeds up to four inches high and for corn up to ten inches tall. A limited amount has been available. Some temporary leaf burn or stunting of corn may occur. Do not plant treated areas with any crop except corn until the following year.

Dalapon can be used as a directed spray for corn that is eight to twenty inches tall.

Lorox can be used as a directed spray after corn is at least fifteen inches high. Directed sprays require special equipment and very careful application to avoid corn injury. This practice has not been popular in Illinois. If interested, check the *1972 Weed Control Guide* and product labels for further information.

We do not have a good answer to the problem of postemergence control of grass weeds in corn. Preplant or preemergence treatments and good cultivation are still the major ways of controlling grass weeds in corn.

POSTEMERGENCE HERBICIDES FOR SOYBEANS

Tenoran can be used postemergence in soybeans from the time trifoliate leaves form until broadleaf weeds are two inches tall. For best control, velvetleaf should not be more than an inch high. Do not expect to control grass weeds that are more than half an inch tall. You can expect soybeans to show some effects from the Tenoran treatment.

2,4-D may be applied as a directed spray after soybeans are at least eight inches high and if the weeds to be controlled are only about three inches high. The spray should not contact more than the bottom third of the soybean plants, and should not contact the growing terminals. Special equipment should be used for directing the spray. If cocklebur forms a canopy over soybeans, 2,4-D may be broadcast once from ten days before bloom to midbloom--when the soybeans are about knee-high.

Soybeans treated with 2,4-D may have a wilted appearance soon after treating and may show increased stem cracking and lodging. Where cockleburs are serious, the advantages may outweigh the disadvantages. 2,4-DB can also give some control of giant ragweed and annual morning-glory. Spray only where these weeds are actually present in the field.

Dyanap is used in some of the southern states where soybeans are grown. It is labeled for use after soybeans are planted, but before emergence. Dyanap is a mixture of dinoseb (dinitro) and naptalam (Alanap). We have had several questions about it, but it has not been a popular treatment in Illinois.

Dynoram is a relatively new combination of dinitro and Amiben for use preemergence or from cracking to very early postemergence.

Dinitro can be used as an early postemergence treatment when soybeans have emerged and are still in the cotyledon stage, before the first leaves open to expose the terminal bud. Dinitro may also be used as a directed postemergence treatment to control some broadleaf weeds such as cocklebur and morning-glory when soybeans are five inches high up to the time they begin to bloom. Special, directed spray equipment is needed to minimize contact with the soybeans.

Although dinitro and some combinations containing dinitro have been fairly popular in some southern states, they have not been used extensively in Illinois. Here are some of the reasons: Cocklebur is one of the major weed problems in some southern areas, and control is one of the major reasons for using dinitro. In some of these areas, such as the Mississippi delta, cotton and soybeans are grown, but very little corn. Therefore, Southern growers are not able to use atrazine and 2,4-D as we do in the Midwest. Many Southern growers have also had more experience with directed sprays, have appropriate equipment, and perhaps have more labor available for the extra trips over the fields.

In Illinois, most cocklebur germinates about the same time as the soybeans and grows at about the same rate. In the South, cockleburs seem to germinate at various times during the season when the soil moisture is favorable.

When a preemergence herbicide is mixed with dinitro, the dinitro may provide contact activity to control cockleburs then present. The preemergence herbicide may help control some of the late-appearing ones.

Although you may hear or read about treatments that are popular in other areas, the same treatments would not necessarily work well with our soils, crops, weed problems, and climatic conditions.

Preplant and preemergence herbicides and good cultivation are still the main lines of attack for weed control in soybeans. Present postemergence herbicides may offer some help in emergency situations; 2,4-DB has been the major one, but even it has seen only limited use in Illinois.

Some applicators and growers like to try new treatments. Sometimes they are quite satisfied. If you are one who likes to try new treatments, remember to follow label instructions closely and "go easy" on the amount of acreage treated until you have the "feel" of the herbicide and application methods.

Herbicides for late-planted soybeans are usually not as necessary as for the early plantings. Unless we have considerable rainfall, weeds are not likely to be a serious problem in late-planted soybeans. Rotary hoeing and good cultivation may provide adequate control.

PLANT DISEASES

SUN SCALD OF CORN

The sudden appearance of silvery white areas on corn leaves in the northern two-thirds of Illinois has caused much concern. This is a non-parasitic disease, resulting from rapid changes in weather conditions.

E.K. Wade and P.E. Hoppe, plant pathologists at the University of Wisconsin, described sun scald in 1961. They pointed out that affected plants could be detected when fields were observed from east to west, but rarely from the opposite direction. Affected plants were found scattered at random in the fields that suffered scald.

Light-grey to silvery-white lesions may occur on either leaf surface, but rarely on both sides of the same leaf and never directly opposite each other. Most lesions appear about midway from the whorl to the leaf tip, and are as wide as the leaf blade. The line separating green tissue from damaged tissue is always clean and relatively sharp.

Sun scald can develop at air temperatures in the 40's, so frost is not considered as the direct cause. Heavy morning dews or rainy periods preceding a dropping temperature will help cause the injury. Leaf tissue that is "full of water" and succulent is predisposed to scald in bright morning sunlight. Cells collapse and leave air spaces in the tissue, separating the epidermis from underlying leaf tissue. The damage is usually superficial. The probability of serious yield effects are slight.

HOLCUS LEAF SPOT ON CORN

Holcus leaf spot on corn, caused by the bacterium *Pseudomonas syringae*, has appeared on leaves of susceptible corn in areas that have received moderate to heavy rainfall.

The lesions are usually round to elliptical spots, which may range from small dots to spots half an inch in diameter. When infected areas overlap, the spots can be irregularly shaped. The spots are first dark-green and watersoaked. Later, they become dry and are tan to white in color. Occasionally the spots will have a dark, reddish border. In locations where sun scald occurs simultaneously, the spots may be surrounded by scald halos. Dry weather checks Holcus spot in mid-season, so it is generally thought of as a minor disease. [See pages 19 and 20 in the North-Central Regional Bulletin 21, *Diseases of Corn in the Midwest*, also numbered as Illinois Circular 967.]

"ONION-LEAFING" OR "CRAZY TOP" IN CORN

A non-parasitic disease of corn was observed in the Springfield area where the leaves of corn plants remained tightly wrapped in the whorl. In the past, this condition has been called "buggy-whip" or "onion-leafing." It is thought to develop when the emergence and vertical elongation of the leaves occurs faster than opening or unrolling.

Onion-leafing appears suddenly when very favorable growing conditions arise after an unfavorable growing period. Corn varieties respond differently to the rapidly changing environmental conditions, presumably because of differences in genetic background. Onion-leafing can sometimes be associated with 2,4-D injury, which may affect the tissue around the growing point. The results can be delayed for several weeks making diagnosis difficult. Onion-leafing is often found in fields where no herbicides have been applied.

Corn "crazy top" may appear in late-planted corn that was flooded by heavy rains. The downy mildew fungus, *Sclerospora macrospora*, overwinters in the soil. The infection develops only where the soil has been flooded or waterlogged sometime between seed germination and when the seedlings reach 6 to 10 inches high (four- to five-leaf stage). The early symptoms of corn downy mildew are similar to those of onion-leafing. See *Report on Plant Diseases* No. 207, "Crazy Top of Corn"; also, NCR Bulletin No. 21, *Diseases of Corn in the Midwest* (Ill. Circular 967) for further details.

ALFALFA

Common and Stemphylium leaf spots as well as spring black stem are all causing leaflets to turn yellow and drop off, particularly in areas of the state that have received more than their share of rain during the past couple of weeks. The only control we can suggest now is to cut severely infected stands early, before heavy leaf drop occurs. This will help reduce forage losses in future cuttings.

Downy mildew has also appeared, following the unusually cool and wet weather of a week or so ago. This mildew will disappear with warm, dry weather. Look for pale-green to yellowish-green areas on the upper leaf surfaces. The leaves may roll and twist downward. A delicate, violet-gray mold may be evident on the undersides of such leaflets in cool, wet weather.

Control measures are not necessary. A change in the weather will check the spread of the disease. Additional details are provided in *Report on Plant Diseases* No. 301, "Leaf and Stem Diseases of Alfalfa."

SOYBEANS

Phyllosticta leaf blight, a very sporadic disease that has not been this prevalent in many years, can now be found in almost every Illinois soybean field. Phyllosticta

usually appears as a V-shaped, tan to medium-brown area on the first true leaflets that are formed. The wide part of the "V" is at the leaf margin, and the infection is limited by the veins. Diseased leaves appear to be "scalded." Many farmers are naturally concerned. The dead area soon turns papery in texture and will drop away, leaving a ragged hole. We are sure some hail adjusters will get calls later. The disease only affects the first, or possibly the second, set of leaflets; it will cause no reduction in yield. In another week or two, Phyllosticta will be hard to find.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

CORRECTION...CORRECTION...CORRECTION...CORRECTION

There was an error in the June 16 "Insect, Weed and Plant Disease Survey Bulletin"--The "B" in 2,4-DB somehow got lost.

The second paragraph on page 5 under POSTEMERGENCE HERBICIDE FOR SOYBEANS should read this way:

2,4-DB may be applied as a directed spray after soybeans are at least eight inches high and if the weeds to be controlled are only about three inches high. The spray should not contact more than the bottom third of the soybean plants, and should not contact the growing terminals. Special equipment should be used for directing the spray. If cocklebur forms a canopy over soybeans, 2,4-DB may be broadcast once from ten days before bloom to midbloom--when the soybeans are about knee-high.

Soybeans treated with 2,4-DB may have a wilted appearance soon after treating and may show increased stem cracking and lodging. Where cockleburs are serious, the advantages may outweigh the disadvantages. 2,4-DB can also give some control of giant ragweed and annual morning-glory. Spray only where these weeds are actually present in the field.

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URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 12, June 23, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer moths are still present in northern Illinois. Egg-laying will continue for another week or ten days. Watch particularly advanced fields for signs of economic infestations. Borer survival will be low in most fields, since the corn is later than normal, and moth emergence and egg-laying are slightly earlier. However, there may be a few very early corn fields in which moths could concentrate their egg-laying. To determine whether enough borers are present to use chemicals, see Bulletin No. 10 (June 9, 1972).

Corn blotch leaf miners are becoming more common. They are not of economic importance, but can be confused with other problems. The adult, which is a fly, makes tiny elongated punctures in groups about 1/16 of an inch long--usually in the tip of the leaf. The maggot mines between the upper and lower leaf surfaces. A dirty-yellow maggot can usually be found in these mines.

Leafhopper egg masses are appearing on corn leaves. These masses are often confused with those of corn borers. A leafhopper egg mass is usually fan-shaped. Each egg represents a rib of the fan. The leafhopper masses are inserted into the leaf tissue, and will not scrape off as corn-borer egg masses do. Leafhoppers do not represent a problem.

Garden symphylans, commonly called garden centipedes, are now being found in some corn fields. These insect relatives are small (1/16 to 5/16 of an inch), white, and have many legs. They move rapidly in the soil, attacking the roots. They prefer the root hairs and tender new roots, but they will reduce the root system to a stub if the infestation is severe. Infested plants are stunted and may be killed. These pests feed throughout the season, moving closer to the surface when conditions are moist and going deeper when they are dry.

To check for centipedes, look in areas where the stand is irregular. Locate plants that appear to be stunted. Dig up the plant with a spade full of soil, and place this on a sheet of plastic or cloth. Examine the root system for feeding injury. Carefully sort through the soil, breaking up the clods and watching for the white, moving centipedes. It usually takes a hundred or more garden centipedes per hill to cause noticeable injury. Do not become alarmed if you find five to ten in each hill. This number is common in many corn fields.

If the plants are being seriously affected, we suggest an application of granular Dyfonate on a trial basis. Band 1 pound of actual Dyfonate per acre at the base of the plants, and cover the granules by cultivation. Rain following the treatment will enhance the possibility for success. If corn is to be planted in this same field next year, apply 1 pound of actual Dyfonate per acre as granules in a 7-inch wide band just ahead of the press wheel.

FORAGE CROP INSECTS

Grasshoppers can be found in many fence rows and ditch banks. Although the number varies greatly, some small grasshoppers can be found everywhere. Occasional fence rows and ditch banks average twenty or more per square yard. If the growth in such areas continues to be luxuriant, many of these grasshoppers will remain there until they are mature. But as soon as all the foliage is consumed, they will migrate in search of food. If it is dry in July, weed growth will be retarded and the grasshoppers will migrate earlier than usual.

To avoid problems later, we recommend that areas where there are concentrations of grasshoppers should be treated with toxaphene. However, do not do this next to fish-bearing waters. Malathion or carbaryl would be preferred near such waters.

One no-till corn field has been reported as heavily infested, and the grasshoppers are feeding on the corn. This was in sod last year; undoubtedly, grasshoppers deposited eggs throughout the field. A spray of toxaphene at this time would provide excellent control.

LIVESTOCK INSECTS

House flies and stable flies are increasing in and around livestock barns and sheds. These flies will be nuisances until late September or early October. Both species spend the majority of their time resting on walls, ceilings, support posts, fences, feed bunks, and other places and only a short time on the animals. Stable flies reduce beef or milk production by attacking the legs and bellies of animals where they siphon blood, usually twice each day. House flies have little or no effect on production, but are a general nuisance.

Start control programs now, before house flies become too numerous.

1. Practice good sanitation. Eliminate fly-breeding materials--such as manure, rotting straw, wet hay, and feed--as often as possible. Spreading this refuse where it can dry makes it unsatisfactory for depositing eggs. When manure cannot be spread frequently, cover the pile with black plastic sheets, held down with old tires, sandbags, or other weights.

2. Apply a barn spray to the point of run-off on the ceilings and walls of all livestock buildings. Also spot-spray outside around windows and doors and along fences in the lot. The insecticides on the following page are suggested for this purpose

Insecticide	Amount per 100 gallons of water	Length of control
*diazinon, 50-percent wettable powder . .	16 pounds	2 to 3 weeks
dimethoate (Cygon), 23-percent liquid concentrate.	4 pounds	3 to 4 weeks
fenthion (Baytex), 45-percent liquid . .	3 gallons	4 to 6 weeks
Rabon, 50-percent wettable powder. . . .	16 pounds	2 to 4 weeks
Ravap, (Rabon plus dichlorvos), liquid concentrate.	4 gallons	2 to 4 weeks
ronnel (Korlan), 24-percent liquid concentrate.	4 gallons	1 to 2 weeks

*Do not use in dairy barns or milk rooms.

Use only ronnel or Rabon in poultry houses. All materials other than diazinon are cleared for use in dairy, beef, swine, sheep, and horse barns. Cover feed and water troughs before spraying. Do not spray animals with these materials at the dosages suggested. Remove animals before spraying the barns. Do not spray the milk-storage room.

3. Supplement good sanitation and barn sprays with a spray bait material. Use 4 ounces of dichlorvos (DDVP) or 2 ounces of naled (Dibrom) in a mixture of 1 gallon of clear corn syrup and 1/2 gallon of warm water. Apply this from a small tank sprayer to the favorite fly-roosting areas.

Barn foggers using insecticides like dichlorvos (DDVP), pyrethrum, or naled (Dibrom) give a quick kill of flies during the fogging operation (5 to 10 minutes), but the effect is not lasting. When fly populations become intense, even twice a day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, fogging does not leave enough insecticide deposit on the animals to protect the cattle from flies when on pasture. Coarse sprays applied to the animals are best for this purpose.

4. For large drylot and enclosed confinement operations, the use of space sprays applied from a mist blower has been successful. During peak fly periods, treatments will be needed every three or four days. The application can be made with cattle present, but avoid direct application to exposed feed and water. Do not apply in conjunction with animal or shelter treatments of organophosphate or carbamate insecticides. This should be the only chemical method of fly control being employed. There is no need to spray cattle in dry lots. The following insecticides and rates are suggested for mist blowers:

Insecticide	Amount per 100 gallons of water	Method
dichlorvos (Vapona), 22-percent liquid concentrate.	2 gallons	Apply at 5 gallons of finished spray per acre
naled (Dibrom), 37-percent liquid concentrate.	1 gallon	Same as above

HOMEOWNER INSECTS

Cottony maple scale is very common now on the branches of soft maples and other trees and on some shrubs in many areas of northern Illinois. This scale insect secretes a white wax, covering the branch. The wax resembles patches of cotton or popcorn-like formations. Many predators kill off these scales; but in many instances, the population increases until branches and occasionally entire trees are killed.

Young scale crawlers begin hatching in the early summer and the hatch continues through the first of July. After they hatch, these crawlers move onto the undersides of leaves and feed on plant juices until early September. Great quantities of honeydew are excreted. This sticky substance drips on foliage, sidewalks, and automobiles parked under affected trees.

The young crawlers feeding on the leaves can be controlled by a spray containing malathion, using one quart of 57-percent liquid concentrate per 100 gallons of water. Spray the foliage thoroughly after July 1 when the hatch is complete. Where the infestation is severe, repeat the spray two weeks later.

This insect pest has become more prevalent in certain areas of northern Illinois during the past three years. Spraying for control has been unsatisfactory in many cases where treatments were applied too early in the summer, before the egg-hatch was complete. Also, the pest has been wrongly identified as a disease of maple rather than as an insect in some cases.

Another scale insect, obscure scale, is present on the limbs of some oak trees. Control can be obtained by using a spray containing malathion, applied in July.

A species of spittlebug is feeding on juniper shrubs. These appear as small, frothy masses of spittle on the needles; the insect is inside the frothy mass. These insects can be controlled with methoxychlor, carbaryl (Sevin), or malathion. Do not use malathion on cannaert red cedar.

Mimosa webworms have begun to feed on mimosa and honey locust trees. These worms construct web nests on the branches. Spraying with either malathion or carbaryl (Sevin) when the nests first appear will provide control. A repeat treatment may be needed after two or three weeks. In addition, sprays made from cultures of *Bacillus thuringiensis* may give good control. (The trade names are Biotrol, Dipel, and Thuricide.)

WEEDS

CONTROLLING FENCEROW WEEDS

If the vegetation in fencerows consists primarily of broadleaf weeds, use 2,4-D at the rate of one-half to one pound per acre applied in 10 or more gallons of water per acre. If there are grass weeds such as johnsongrass or foxtail in the fencerow, dalapon can be mixed with 2,4-D to control broadleaf weeds and grasses. For best results, spray the grasses before the seed heads form.

Use 2,4-D only where the fencerow vegetation consists primarily of broadleaf weeds and desirable grasses. Care must be taken in order to avoid injury to nearby, desirable plants. Do not graze dairy animals on areas treated with 2,4-D within seven days after treatment.

Here's a handy reminder: two miles of fencerow that is four feet wide equals about an acre.

DOUBLE-CROPPING STRATEGY

Plan your strategy for planting soybeans in wheat stubble now, so you'll be ready to spray and plant immediately after harvesting the wheat. Spraying and planting immediately allows more time for the soybeans to grow and also produces better weed control.

Lorox, used with an appropriate surfactant to improve postemergence control, is the major compound used for weed control in double cropping. The trick is to keep the Lorox rate high enough for the postemergence effect, but low enough to avoid soybean injury. If the weeds are small and conditions are favorable, two pounds of Lorox 50W plus a surfactant should be adequate for postemergence control.

The stubble and weeds will intercept some Lorox, so you can't be certain how much of the herbicide will actually reach the soil. You may need to use one to two pints of Paraquat plus a surfactant to improve the control of existing weeds, especially if they are more than five or six inches tall.

If you anticipate a problem with annual grass weeds, consider adding about two quarts of Lasso per acre. Amiben, Amilon, and other herbicides represent other possibilities.

You can expect a considerable range in yields from soybeans following wheat, depending primarily on the amount of rainfall during the season. In good years, yields may be 20 to 30 bushels or more per acre. Otherwise, the yields may be only 10 to 20 bushels, or the crop may even be a complete failure. One agronomist estimates that the break-even yield for soybeans as a second crop is about eight bushels per acre.

Planting soybeans after wheat is an excellent way to help control weeds in the stubble. Doing this allows you to use the energy from sunlight, nutrients, and moisture for an extra two to three months for increased crop production.

CONTROLLING WEEDS IN SMALL-GRAIN STUBBLE

Results from a long-term field study at Urbana suggest that you can reduce the weed-seed supply in the soil by doing a good job of controlling weeds in corn and soybeans. But if you let foxtail, johnsongrass, ragweed, or others produce seed in small-grain stubble, you're replenishing the supply of weed seeds in the soil.

If there is no underseeding of desirable legumes and grasses in the stubble, consider spraying with a mixture of dalapon and 2,4-D to control the grasses and the broadleaf weeds. The rate to use will depend on the kinds and sizes of the weeds.

Dalapon at two to three pounds per acre may control foxtail that is only a few inches high. However, johnsongrass may require five to seven pounds per acre; also, repeated treatments. For easy-to-kill broadleaf weeds, a fourth to a half a pound per acre of 2,4-D may do the job. For tougher weeds, you might need a half to a pound per acre of 2,4-D.

One of the most effective and practical programs to take care of johnsongrass is to treat with dalapon after small-grain harvest, to control old plants and rhizomes, then follow up in the spring with Treflan and soybeans for seedling control. Refer to the dalapon label and Illinois Circular 827 for details.

Always follow the instructions, precautions, and restrictions on the product label. Do not graze livestock where you use dalapon. If you use only 2,4-D, do not graze dairy animals for seven days after application.

Tillage used by itself or in combination with herbicides also provides effective weed control in small-grain stubble. Mowing will reduce weed growth. But weeds such as foxtail can soon grow up again and can still produce heads with a considerable amount of seed.

Total weed control in all fields, fencerows, and noncrop areas of the farm is an important step in getting ahead of the weeds and making the weed-control job easier in future years.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

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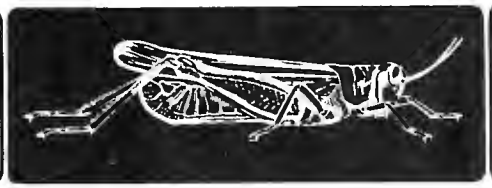

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 13, June 30, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borers are still not abundant in corn fields. Perhaps the moths were killed by winds and rains before they deposited their eggs, or they may have layed their eggs and the larvae may have died before the corn crop was mature enough for them to survive. There is always the fear that a small percentage of the corn-borer-moth population may "hang around" long enough to create a problem in a few of the most mature fields.

Check such fields on the west side of the state, particularly those in the northern third of that area. If severe infestations show up, apply carbaryl or diazinon granules.

Corn flea beetles can now be found in many corn fields in the southern half of Illinois. We have had evidence for some years that there may be two generations of this pest each year. The beetles overwinter, emerge, feed, and deposit their eggs. The larvae that hatch from these eggs mature into adults by late June and early July. Another generation may develop by mid-August. However, prolonged egg-laying by the overwintering beetles may result in an extended emergence of beetles from early July through August, and only one generation a year.

Regardless, we are unable to recommend a control. Since these beetles transmit the bacteria that cause Stewart's disease, we fear that it may be worse as a leaf infection this year than during the past few years.

SUNFLOWER INSECTS

Plant bugs have been observed on sunflowers this week. These are small, green bugs that move rapidly over the plant and suck sap from the leaves and stems. We do not know whether or not they are feeding on the forming heads.

Aphids are also small and green, but move very slowly in a lumbering manner. They also suck sap from the plant, excreting a sticky material called honey dew. This material is quite common. It often serves to identify an aphid infestation. The populations of these two pests have been low, and no control is recommended.

SOYBEAN INSECTS

Two-spotted mites were a problem on soybeans and corn in some areas during 1971, preceded by a period of dry weather locally. These tiny pests can be found on the bottom side of soybean leaves. They rasp the leaf and feed in the exuding plant juices. This gives the leaf a speckled appearance. If two-spotted mites are extremely abundant, there will be a webbing on the leaves. The tiny dots on the webbing are the mites. By the time webbing can be seen, the leaves will have a distinct speckled white appearance and may even be yellow or brown.

Control is difficult because sprays must hit the undersides of the leaves and must penetrate the webbing, if it is present. Place drop nozzles between the rows and aim them toward the rows, pointing upward at a 45-degree angle. Note: The operator should wear protective clothing and avoid spray drift when using this nozzle arrangement. Use 1/2 pound of azinphosmethyl (Guthion) or 3/4 pound of carbophenothion (Trithion) per acre to control the mites. These should be applied by experienced commercial applicators only. Wait 21 days with azinphosmethyl and 7 days for carbophenothion between treatment and harvest. Do not feed treated soybeans as forage to livestock.

FORAGE CROP INSECTS

Grasshoppers have not disappeared, so keep an eye on them. Use one of the grasshopper insecticides, such as carbaryl or malathion. For roadside spraying, you can use toxaphene, except near fish-bearing waters. Do not feed forage treated with toxaphene to livestock being fattened for slaughter, to dairy animals, or to poultry.

SMALL GRAIN INSECTS

Cereal leaf beetles can now be found in practically all counties around the state--despite effective control programs with chemicals and the quarantine of certain agricultural commodities, which greatly delayed the spread of this pest in Illinois. Because of this year's new infestations, Director Gordon Ropp of the Illinois Department of Agriculture announced this week that the county-by-county, cereal leaf beetle quarantine had been lifted. Shipments of regulated agricultural commodities can now move freely from county to county, but the movement of such commodities westward into nonregulated areas will require certification by the USDA.

LIVESTOCK INSECTS

Pasture flies continue to increase on cattle. Face flies, horn flies, and stable flies reduce milk flow and beef production. Control programs should be started immediately.

For dairy cattle, apply crotoxyphos (Ciodrin) as a 2-percent oil or water base spray at the rate of 1 to 2 ounces per animal, two to four times a week. Crotoxyphos as a 1-percent, water-diluted spray applied at 1 to 2 pints per animal, as often as once a week, is also effective. In addition, a 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrum spray, applied at 1 to 2 ounces per animal each day, can be used. Pay particular attention to the animals' legs and undersides when spraying. Ciodrin is the most effective insecticide for face fly control. All of the above insecticides provide good control of barn flies and fair control of stable flies.

For beef cattle, apply a water-base spray of 0.5-percent toxaphene at the rate of 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of barn flies, fair control of stable flies, and poor control of face flies. If the face flies become a serious problem, use crotoxyphos (Ciodrin) as suggested for dairy

cattle. A canvas or burlap head-oiler or back-oiler, saturated with a solution of 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER PROBLEMS

Bagworms can now be found in the southern half of Illinois. They are feeding on several species of deciduous trees, as well as on evergreens. The bags in which the worms live were about 1/4 inch long this past week. The worms will now feed voraciously and grow accordingly. If you are going to spray for them, do so right away. Use carbaryl (Sevin), malathion, or *Bacillus thuringiensis* (Biotrol, Dipel, or Thuricide) as a spray, and apply for thorough coverage. Do not use malathion on canaert juniper.

Armyworm moths are numerous in and around lawn areas, and are flying around outdoor lights. These tan moths have emerged from grain fields in the southern third of the state and are now migrating northward. They can be mistaken for sod webworm moths. The sod webworm moth is much smaller and is buff colored, but appears to be white when flying. Do not treat a lawn area because of the presence of armyworm moths.

AMITROLE AND AMITROLE-T FOR POISON IVY CONTROL

The first step in poison ivy control is proper identification. Sometimes, however, that step may prove to be difficult because the plant can assume many different appearances.

Poison ivy may vine on fences, walls, or trees. It may spread along the ground, or it may even appear as an erect shrub. Each leaf is made up of three leaflets. They may be either glossy or dull green and may have smooth, toothed, or lobed edges. Variations can occur even on the same plant.

Amitrole or amitrole-T provide effective herbicide control of poison ivy. Apply the materials any time after the plant leaves have reached full size. Soak the plants thoroughly with the spray, but do not let the material contact desirable grass or broadleaf plants.

Aerosol cans containing amitrole are convenient for treating small areas. A small, compressed-air sprayer is best for larger areas.

Apparently, there is no absolute immunity to poison ivy infection, although some people are more susceptible than others. Persons who consider themselves immune may become more susceptible after sufficient exposure. Clothing, garden tools, and pets can become contaminated and can serve as sources of the irritant. Smoke from burning poison ivy may also carry the toxin.

PLANT DISEASES

DUTCH ELM DISEASE

Recent publicity has indicated that benomyl (Benlate, a DuPont fungicide) is being recommended for the control of Dutch elm disease by authorities of one state university and a research institute. Benomyl has been tested for Dutch elm disease control by the Illinois Natural History Survey during the past three years. It has been incorporated in the soil, injected into tree trunks, and sprayed on foliage of elms inoculated with the Dutch elm disease fungus.

The results from these experiments are encouraging, but inconclusive. The results obtained to date in Illinois and by other state and federal research agencies do not warrant recommending benomyl for commercial application. Benomyl is not recommended for the control of Dutch elm disease in Illinois.

MEETING ANNOUNCEMENTS

Evaluation of corn rootworm control plots. Come to a "rootworm search party." We will meet at the following locations to evaluate the performance of various soil insecticides in controlling corn rootworms. This will give you a chance to see the results of various treatments side by side. The sessions will start at 9:00 in the morning, and be completed by mid-afternoon. Bring a pocket knife, too.

July 13, Henderson County. The Ken Nimrick farm. Go 1-1/2 miles east of Stronghurst on the south side of road. Call Curt Eisenmayer, Extension Adviser in Stronghurst, for further information. (309)924-4071.

July 14, Henderson County. The Dowell Brothers farm. Go 4 miles west and 1/2 mile north of Stronghurst.

July 17, McHenry County. The Robert Stoxen farm (9106 Lawrence Road, Harvard, Illinois) Go 1-1/4 miles north of Lawrence, Illinois. (Lawrence is 2 miles northwest of Harvard). Call Louis M. Engelbrecht, Extension Adviser in Woodstock. (815)338-3737.

July 18 and 19, Boone County. The Clyde Curtis farm. Go 1 mile north of the junction of Routes 173 and 76, and 1-1/2 miles west of Route 76 on the Quail Trap Road. The farm is on the north side of the road. Call Wally Reynolds, Extension Adviser in Belvidere. (815)544-3710.

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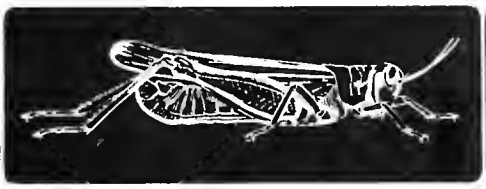

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 14, July 7, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Armyworms were abundant in one no-till cornfield in northern Illinois this past week. This particular field had been a rye field; the moths deposited their eggs a few weeks ago on the leaves of grasses or the rye.

Armyworm moths have been extremely abundant for the past several weeks, and have been flying northward. They may have been depositing eggs in grass fields or in grassy areas in corn fields. Watch for tiny armyworms feeding in the grass. No control is needed until they begin to eat the leaves on the upper part of the corn plant. If this happens, apply a spray of 1-1/2 pounds of toxaphene per acre, if the field is in pollen and is being frequented by bees; if no bees are present, other chemicals may be used as long as the instructions on the label are followed carefully.

If you find dead or dying worms, you probably will not need to apply an insecticide. A disease or fly and wasp parasites will often begin to kill the armyworms before they can damage the corn.

European corn borer moths have begun to emerge in extreme southern Illinois. Egg-laying for another generation will begin any time, but will not reach a peak until July 20 to 30. During that time, the moths will prefer fields in the late-whorl to early silk stage as a place to lay eggs.

SOYBEAN INSECTS

Leafhoppers are small, green wedge-shaped insects that run sidewise. They have appeared in soybeans. The common Illinois varieties of soybeans are not affected by leafhoppers, since all of those commonly grown are pubescent. This hair on the leaves discourages or prevents the leafhoppers from feeding. We have had plots in which smooth-leafed varieties were damaged by leafhoppers.

Our recommendation is not to use insecticides except on the smooth-leafed varieties as yields of the pubescent ones will not be affected enough to justify chemical control. However, if you believe that chemical control is warranted, one pound of malathion per acre should suffice.

FLY CONTROL AT COUNTY FAIRS

Fair officials will need to be sure that manure, garbage, refuse, and soft-drink bottles are removed from the grounds every day. This is a must.

A few days before the fair starts, spray livestock sheds, outdoor privies, empty food tents, and other buildings that may harbor flies with dimethoate (Cygon), fenthion (Baytex) or Ravap. A farm crop sprayer, equipped with a lead of hose and a spray gun, can be used for this purpose. Apply the spray to the ceilings and walls to the point of runoff. Most rotary pumps on these sprayers can be adjusted to operate at 250 to 300 pounds of pressure. If the water pressure is good (30 p.s.i. or more), a spray gun that fits on the end of a garden hose will do a good job of applying the insecticide.

Sprays should also be applied to refuse containers, garbage cans, and the like before and during the fair. A couple of men with compressed-air tank sprayers can do this job.

Flies are attracted from great distances to the odors of animal waste and foods. These flies are not killed until they land on a treated surface. For a quick knockdown of these incoming flies in animal shelters and other places, use a small electric fogger with oil- or water-base pyrethrum, dichlorvos (DDVP), or naled (Dibrom). These fogs can be applied best in the early morning when no people are around. Animals need not be removed, although horses may be frightened by the fog.

Urge that food stands keep some pyrethrum or dichlorvos in a pressurized spray can for the quick kill of adult flies. These sprays should be used at night after the stands close. The local health department should insure that all stands maintain the required standards of cleanliness.

HOMEOWNER PROBLEMS

Fleas ordinarily annoy only dogs and cats. But left uncontrolled, fleas can become a serious problem in a home or a yard by late summer. They attack people on the legs, often leaving a series of two or three punctures in a row. Persons who take their cat or dog with them on vacation or put them in a boarding kennel may find a multitude of hungry fleas waiting when they return home. These adult fleas have developed from the eggs and larvae that were scattered about the house.

In the worm (larva) stage, these fleas live in the bedding of dogs and cats, in rugs and upholstered furniture, and even in the dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals.

Your dog or cat is a walking bait station for fleas. As long as the pet is around, people are seldom attacked. During the warm months (May to October), use a dust on your pet of either 4-percent malathion or 5-percent carbaryl (Sevin). Apply the treatment every month or so, especially if your pet is in contact with neighbors' pets or if the pet animal roams a lot. Treatments should also be made once or twice during the colder months (November to April) for added protection.

For emergency use, the plastic resin flea collars containing dichlorvos (Vapona, DDVP) are generally effective in preventing problems with fleas. Some dogs and cats are allergic to these collars; if so, skin ailments can result. Be alert for allergic reactions if you use flea collars on your pet. Also remember that these collars are effective for several weeks, but not the entire year.

In case of severe problems, treat the pet as suggested above; but also spray a mist lightly over rugs, upholstered furniture, beds, and other areas where fleas are numerous. Use 0.1-percent pyrethrum or 1.0-percent dichlorvos (DDVP), applied from a pressurized spray can. This will give a quick knockdown and kill of the fleas hit with the mist, but it is not lasting. Repeated treatments may be needed.

Aphids are now abundant on the undersides of leaves on tulip trees (also called yellow poplar). These aphids secrete a sugary substance called honeydew that makes the leaves sticky. Shortly after the appearance of the honeydew, a black sooty fungus will develop on it. The leaves will take on a very dark green or black appearance, and many of them will fall.

These aphids are readily controlled with sprays of 1 quart of 57-percent malathion concentrate to 100 gallons of water or 1 tablespoon per 1 gallon of water. Apply right away. There is no evidence that natural enemies are present to any extent.

Mimosa webworms are also abundant now. Examine the leaves of mimosa or locust trees for signs of rolled up leaves or nests in which these green worms may be hiding. If they are common, apply a spray of carbaryl, malathion, or *Bacillus thuringiensis* (Biotrol, Dipel, or Thuricide). Brown foliage, a result of webworm feeding, will soon be evident.

Pressurized sprays sold in cans as aerosols are to be applied as a mist to a plant. If used as a direct wetting spray, leaf tissue along the edge of the leaves will be burned and will turn brown. Properly applied sprays from pressurized cans will provide good control of pests such as aphids on roses, but leaf damage will occur if the spray is applied improperly.

WEEDS

WEED CONTROL IN GRASS PASTURES

Pasture land is probably the most neglected acreage on Illinois farms. Permanent grass pastures are often poorly fertilized and overgrazed. They are frequently allowed to grow tall with weeds that will crowd out the last remnants of the desirable forage species. Some of the weeds that grow may also produce toxic substances or may contain high quantities of nitrates that can injure or kill grazing livestock.

A small investment in herbicide and fertilizer can improve both the yield and the quality of the forage harvested by livestock.

Many pasture weeds can be controlled by repeated applications of 2,4-D, a relatively inexpensive treatment. Apply a half to a full quart per acre (the 4-pound-per-gallon preparation) of 2,4-D amine or ester when weed leaves are grown, but before the weeds blossom. This treatment will be less effective after mid-July or August when the weeds have already matured and have produced their annual seed crop.

Persistent, perennial weeds such as Canada thistle need to be treated again whenever the lush, new regrowth occurs. Two to three treatments this year, followed by another treatment next spring may be required for satisfactory control. A balanced fertilization program will help desirable forage species compete with the weakened weed infestation.

For weeds and brush that are not adequately controlled with the use of 2,4-D, it may be necessary to use 2,4,5-T or mixtures of 2,4,5-T and 2,4-D. The use of 2,4,5-T on grass pastures is still registered, although the registration of 2,4,5-T for some other uses has been cancelled.

Be sure to follow the grazing restrictions when applying any of these herbicides. Keep dairy cattle out of pastures treated with 2,4-D or MCPA for seven days after application, and do not graze pastures treated with 2,4,5-T for six weeks after the treatment has been made. Beef cattle should not be allowed to graze on treated pastures within two weeks of slaughter.

Banvel is also registered now for use on grass pastures. This herbicide is more effective on some persistent perennial weeds than 2,4-D, MCPA, or 2,4,5-T. The recommended rates of application vary from a half a pint per acre upward, depending on the prevalent weed species. The rates and corresponding grazing restrictions are given on the label.

Other herbicides such as Amino triazole and Tordon are particularly effective in controlling many broadleaf weeds, but are not registered for use on pastures.

All of the herbicide treatments listed will injure forage legumes, as well as control broadleaf weeds. Use these treatments only on straight grass pastures or where injury to the legume is permissible.

PLANT DISEASES

SOYBEAN DISEASES

Phyllosticta leaf spot. As expected, Phyllosticta leaf spot (caused by *P. sojicola*) is now hard to find in soybean fields. The disease affects only the first and possibly the second set of leaflets on the soybean plants. Dead areas turn papery and break off easily from infected plants, leaving a ragged hole that may resemble hail injury on the primary and on first or second leaves. There are no resistant varieties to this disease.

Phytophthora root rot. The plant disease clinic recently received samples of Beeson soybeans that appeared to be infected with *Phytophthora megasperma* var *sojae*. Isolations from the samples by USDA Soybean Pathologist Dr. L. Gray proved that Beeson remains resistant to Phytophthora and that no new strain of the fungus is yet present in Illinois. The pathogen isolated from Beeson was *Rhizoctonia solani*, and not Phytophthora.

Phytophthora can infect susceptible soybeans throughout the season. The advancing margin of infection may be found above the soil line, especially in poorly drained soil that is subject to prolonged wet conditions.

Brown spot. Several samples containing Brown spot have been received at the disease clinic. This disease appears on primary leaves as angular, reddish-brown spots that are up to one-fifth of an inch wide. As the plants grow, fungus spores produced on the primary leaves spread to the trifoliate leaves, stems, and pods. Heavily infected leaves gradually turn yellow and fall prematurely. Fruiting bodies (pyenidia) of *Septoria glycines* are required for positive diagnosis. Fortunately, this disease has not reached major proportions in Illinois. At least a one-year rotation program is necessary to prevent the buildup of this fungus. No soybean varieties grown in Illinois are resistant to this disease.

Bacterial blight. Cool, wet weather has favored the occurrence of common bacterial blight caused by *Pseudomonas glycinea*. The bacteria are splashed from soil or diseased plants onto the primary or higher leaves of the plant. Characteristic symptoms are small, water-soaked, angular spots on the leaves. These spots are brown at first, but then turn yellow. Heavily infected leaves generally have a ragged appearance as the diseased tissue drops off. All soybean varieties are susceptible.

For more information about soybean diseases, see Illinois Circular 676, *Diseases of Soybeans in Illinois*. Copies are available from the Department of Plant Pathology, 218 Mumford Hall or the Office of Agricultural Publications, 123 Mumford Hall, Urbana 61801.

CORN DISEASES

Anthracnose. This is seldom found on corn in Illinois. The disease is caused by the fungus *Colletotrichum graminicolum*, but development is restricted in this state because infection usually requires extremely humid conditions. A diseased sample came from U. of I. Area Agronomist George McKibben's plots near Glendale, Illinois. There, the disease appeared on normal corn in both zero-till and conventional plots.

Southern corn leaf blight. SCLB caused by both race O and race T of *Helminthosporium maydis* has been found in research plots in central and southern Illinois. Race O had infected normal corn; race T, the Tms corn. In all cases, only trace-level infections were found. Lesions occurred only on the lower two or three leaves.

The infections, however, confirm for the second year our research showing that race O can survive winter conditions, at least in southern Illinois; also, that race T can overwinter as far north as central Illinois. Other research shows that race T has overwintered in corn debris in Pennsylvania and Minnesota.

Dry weather has generally kept SCLB under control this year, and no major problems are expected at this point. No samples of blight on N-cytoplasm corn from farmers' fields have been received to date.

Physoderma brown spot. During 1971, serious problems on white corn in southeastern Illinois were caused by *Physoderma maydis*. U. of I. research plots on the Scates and Williams farms near Ridgway now show infections--indicating the probable overwintering of Physoderma. These infections appear to be slightly worse in minimum-tillage than in plowed plots. *Helminthosporium maydis* has also survived in this area, and confounds the symptoms; however, dry weather has generally checked the development of brown spot.

The resistance of 135 hybrids and inbreds to Physoderma is being investigated on the Scates farm. Gallatin County Extension Adviser Earl Lutz and U. of I. Plant Pathologist Ed Burns are working on the chemical control of *P. maydis* on the Williams farm.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Marshall McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 15, July 14, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

GENERAL INSECTS

Grasshoppers have hatched and are very numerous in many fence rows, roadsides, and ditch banks, as well as in alfalfa, clover, and other hay fields. Hard, beating rains will kill newly hatched grasshoppers, but will not kill them after they are a few days old. Although some of the overwintering eggs may have hatched during the recent rains and some tiny grasshoppers may have been killed, the hatch continues. The grasshoppers that hatched more recently may survive.

You may find these tiny grasshoppers all over where soybeans or corn was planted on hay-crop ground. Or, you may find them in this year's hay crop since the eggs were layed in it last fall. Of course, the tiny differential grasshoppers can still be found in fence rows and ditch banks. If these tiny grasshoppers are very numerous, as they are now in many areas, it will be easier to control them at this stage while they are small than it will be later.

In fence rows, apply carbaryl (Sevin), diazinon, malathion, naled (Dibrom), or toxaphene. In hay fields, use the same materials except for toxaphene. Cut the hay and drive the grasshoppers into an occasional uncut swath. Then, spray it. Carbaryl and malathion at 1 pound per acre require no waiting period after application; naled requires 4 days; diazinon, 7 days.

Provide protection around the edges. Grasshoppers do migrate into soybeans. If the migration is prolonged, you may have to spray the borders several times. Always read the label for more-detailed restrictions.

CORN INSECTS

Corn leaf aphids began to appear in many corn fields across the state this week. They migrated into these fields as dark-colored, winged adult aphids. Winged aphids usually crawl down into the whorls of the corn plant and begin giving birth to their young. In general, most colonies in the whorls will have very few aphids at present. But the percentage of plants with one or more aphids ranges from 10 to 50 in much of the state with occasional fields in north-central Illinois going as high as 80 to 90 percent.

Fields of corn in early or full tassel will escape the buildup in the aphid population. But in most regions of the state, the wide range in corn-planting dates means

that there are late fields in which aphids could develop to damaging proportions. Fields of corn that are ten days or more away from tasseling should be watched. There are no lady beetles now in corn fields, but there are some insidious flower bugs, a small black-and-white insect that feeds on aphids. To find the aphids, pull ten whorls from these fields and unroll them.

Armyworms have been observed in some corn fields in northern Illinois this week. They are feeding in grassy areas on corn leaves. No control is needed until they begin to eat the leaves or the upper part of the plant. If this happens, apply a spray of 1-1/2 pounds of toxaphene per acre, if the field is in pollen and is being frequented by bees; if no bees are present, other chemicals may be used as long as the instructions on the label are followed carefully.

If you find dead or dying worms, you probably will not need to apply an insecticide. A disease or the fly and wasp parasites often begin to kill the armyworms before they can damage the corn.

Common stalk borers are moving out of the grasses and weeds found in fence rows, roadsides, grass waterways, and ditch banks and into the border rows of corn. These whitish brown, striped worms with a distinct purple band around their middle feed in the corn whorls. The emerging leaves will have irregular holes in them. Plants may be severely damaged, sometimes killed, by these insects. Control in corn is difficult, because the worms are usually too deep in the whorl for insecticides to reach them. In cases of severe infestations, try the following suggestion:

Mow the grasses and weeds from which the borers are migrating. A rotary mower would be best, in order to help kill some of the worms during cutting. This will drive the worms out of these areas and into the corn. Therefore, spray the mowed area and the first few rows of corn immediately with 1-1/2 pounds of actual carbaryl (Sevin) per acre. This should help reduce further infestations and additional damage.

Corn rootworm adults are beginning to emerge. Occasional northern and western corn rootworm adults have been seen, but more will show up soon. Watch fields coming into the silk stage. These beetles attack the silks, causing a reduced kernel set. If there is an average of five beetles or more per silk and pollination is just beginning, an application of 1 pound of carbaryl (Sevin), malathion, or diazinon per acre is profitable. Allow five days for malathion and ten days for diazinon between treatment and harvest as forage. There is no waiting period for carbaryl.

SOYBEAN INSECTS

Green cloverworms can be found in some soybean fields now. These light-green worms with white stripes running the length of their body feed on the leaves, not the pods or blossoms. The cloverworm population is still light, but the situation will bear watching. Feeding is critical on beans from the blossom to early pod fill periods. Parasites and a fungus disease attack the larvae and help control them. No insecticide treatments are needed at this time.

SORGHUM INSECTS

Corn leaf aphids, along with other aphid species, are present in many sorghum fields in southern Illinois. Although these aphids may appear to be numerous in the whorls, treatment is not necessary since this aphid species rarely reduces sorghum yields.

HOMEOWNER PROBLEMS

Aphids are numerous on maple trees in some areas, causing the leaves to curl. Sprays containing either malathion or diazinon will provide control.

Mimosa webworms continue to be more numerous on honey locust and mimosa trees. The caterpillars feed on the tips of the branches, causing the leaves to become ragged and to turn brown. Also, these worms spin webs around the infested foliage. Apply a spray of carbaryl, malathion, or *Bacillus thuringiensis* (Biotrol, Dipel, or Thuricide).

WEEDS

NOT ALL ONION-LEAFING IS CAUSED BY HERBICIDES

Don't be too quick to blame all "onion-leafing" (sometimes called "buggy whipping") that you see in corn on injury from herbicides such as 2,4-D or Banvel (dicamba). Some corn hybrids and types show a genetically controlled onion-leafing that is not associated with herbicide injury.

To determine the cause of onion-leafing, try to find an area in the corn field that has not been sprayed and check for frequency of onion-leafing there. If there is less onion-leafing in the untreated spot than elsewhere, the condition is probably caused by herbicide injury. If there is as much onion-leafing in the untreated spot as in the rest of the field, the condition may be genetically controlled.

There is no treatment for onion-leafing, but tassels will usually break through the rolled leaves. The ears on onion-leafed plants can also be pollinated from nearby corn plants.

BETTER ALTERNATIVES TO SODIUM ARSENITE AS A ROADSIDE SPRAY

We have received several calls concerning the use of sodium arsenite as a roadside herbicide spray. This compound is our most toxic herbicide, with an acute oral LD_{50} of 10 to 50 milligrams per kilogram of body weight. Sodium arsenite has caused seven deaths in Illinois during the past ten years--the only human deaths attributed to herbicides during that period.

Several years ago, sodium arsenite was restricted for homeowner use to compounds with a 2-percent concentration or less. Under the proposed pesticide classification system, sodium arsenite will be restricted for all uses in Illinois.

In an attempt to "clear their shelves" before the new restrictions take effect, some chemical companies have been selling sodium arsenite to county road commissioners. These companies are suggesting the use of sodium arsenite as a roadside spray to replace 2,4,5-T (now restricted for use along waterways). So far this summer, two cases of cattle poisoning from this herbicide have been reported.

We have tried to discourage use of sodium arsenite because of its toxicity and because better methods of control are available. Sodium arsenite is an old herbicide, one used in the past to control water weeds and to keep gravel paths and baseball fields clean.

We suggest using 2,4-D, silvex (fenoprop), dichloroprop (2,4-DP), or Ammate-X (AMS) to control brush in areas where 2,4,5-T cannot be used, such as along drainage ditches and other waterways. We would caution operators, however, about the drift

hazard in relation to soybeans, vegetables and ornamental flowers, shrubs, and trees with the phenoxy herbicides (2,4-D, 2,4,5-T fenoprop or dichloroprop). Using Ammate-X (AMS or ammonium sulfate) presents less of a drift hazard than with the phenoxy herbicides.

PLANT DISEASES

THE CURRENT PICTURE

To provide insight about the plant diseases currently appearing in Illinois fields and gardens, here is a list of ones that were diagnosed in our plant disease clinic this week:

Host plant	Disease	Number of specimens	More information available in RPD*
Soybeans	Rhizoctonia root rot	4	504
	Pythium damping-off	3	500
	Bacterial blight	9	502
	Bacterial pustule	1	502
	Chemical injury	1	
Corn	Pythium root rot	1	
Oats	Covered smut	1	114
	Bird damage	1	
Alfalfa	Common leaf spot	3	301
Grapes	Black rot	2	
	Anthracnose	1	
	Chemical injury	1	
Muskmelons	Bacterial wilt	2	905
Apples	Apple scab	1	803
	Fire blight	1	801
Peppers	Early blight	1	908
	Fusarium root rot	1	929

**Reports on Plant Disease*. Copies are available free on request from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

BACTERIAL LEAF BLIGHT ON SOYBEANS

The plant disease clinic has received many soybean specimens this week. The disease diagnosed most often was common leaf blight. This bacteria-caused disease is enhanced by cool, rainy weather. It diminishes rapidly with hot, dry weather. Bacterial bligh appears as a set of small, angular yellow spots with water-soaked centers. These late turn brown-to-black, and may tear or drop out. Heavy infection may cause premature de foliation.

The causal bacteria are seed-borne and may overwinter in dead leaves. Seedlings grow from infected seed are stunted and blighted, and usually die prematurely. For more in formation, write for *Report on Plant Disease No. 502*.

MAIZE DWARF MOSAIC

A recent survey in southern Illinois revealed a relatively high incidence of maize dwarf mosaic in fields planted with susceptible hybrids. This virus-caused disease first appears as an irregular, light- and dark-green mottling of leaves. The symptoms are especially prominent during periods of cool weather. Plants showing these leaf symptoms usually become stunted and bushy because of a bunching of the upper internodes. Such plants may become totally barren and may die prematurely. Laboratory analysis is required for positive diagnosis.

Control of the two strains (A and B) of this disease is obtained by planting resistant varieties. NOTE: Some inbreds resistant to strain A of the virus may be completely susceptible to strain B, and vice-versa.

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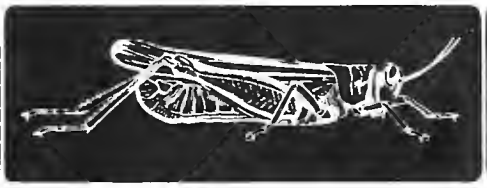

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 16, July 21, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

GENERAL

Grasshoppers continue to present a potential problem for hay crops, soybeans, and corn. Right now the grasshoppers are still in the hay-crop fields, in fence rows, ditch banks, and roadsides. Toxaphene can be used on fence rows, road sides, and ditch banks if these are not adjacent to fish-bearing waters. If they are next to such waters, carbaryl (Sevin) is preferred.

In the hay-crop fields, mow the hay but leave a few uncut strips where the grasshoppers will concentrate. If the crop is in blossom, spray these with malathion or naled (Dibrom) after bee activity is completed for the day. You may also use carbaryl or diazinon if the crop is not blossoming. Since the grasshoppers will migrate into fence rows as the hay is cut, spray these areas when you spray the uncut strips of hay.

No time interval is required between spraying and harvesting when malathion or carbaryl are used. Naled requires 4 days, and diazinon 7 days.

When soybeans are in the blossom to early pod stage, leaf-feeding by grasshoppers is serious and affects the yield if 40 percent or more of the leaf surface is consumed. So begin to apply toxaphene when 25 percent of the leaf surface is gone. Leaf-feeding after the pods have begun to fill is seldom serious; but grasshoppers start to eat the pods, that can be dangerous. If this happens, estimate the number of pods that are damaged. This will determine the need for treatment.

CORN INSECTS

Corn rootworm adults are emerging in numbers throughout central and western Illinois, and some will be emerging in northern Illinois this week. They feed on the silks, and can interfere with pollination if it has just begun. Begin now to examine fields. If the field has fewer than 50 percent of the ears pollinated and about 5 beetles per ear, apply carbaryl or malathion immediately.

We were called to one field in central Illinois this week where the beetles were so numerous that the silks were being cut off and were dropping into piles on the leaf below. Pollination had just begun, and this silk-feeding by the beetles was going to be critical for three to five days. We might add that a rootworm soil insecticide had been used in the field.

The maturity of corn varies greatly from field to field within an area. Some fields are pollinating and some are still in the late-whorl stage. With the time of beetle emergence about normal and with some late fields, it is more likely that rootworm beetles will affect pollination this year than in the past. Examine fields this week that are just starting to silk or are less than 50-percent pollinated. Treat if necessary.

Count beetles per ear for the next four weeks. If you average 1 or more beetles per ear each week, this field may profit from a soil-insecticide treatment next spring, if planted in corn.

Corn leaf aphids are multiplying, but we did not see any fields that were being seriously damaged this past week. These aphids do not multiply until the plants are in the late-whorl stage, decreasing rapidly after the silks have turned brown. Therefore, the late-whorl to pollination stage of growth is critical. This week, observe fields from the whorl stage to early silk in maturity. If over 50 percent of the plants have a moderate infestation, apply malathion or diazinon if moisture is low. With diazinon, allow 7 days between application and harvest for corn used as ensilage; 3 days for malathion.

In seed fields which are being detasselled, do not use phorate (Thimet) granules.

Aphid damage is much more severe in drought years or in dry areas that have missed the rains. It now appears that aphids will not present a general problem in the northern third of Illinois. Rainfall has been spotty in the southern two-thirds of the state. Late fields of corn in these areas should be examined for aphids.

Fall armyworms may soon appear in late-maturing cornfields or in replanted spots in fields. Several plants in one spot are usually affected. These worms are greyish brown, and can usually be found in the whorls. The leaves are very ragged as they emerge.

After the worms are deep in the whorl, control is difficult. But if they are still in the open in the whorl, sprays of carbaryl, diazinon, Gardona, and toxaphene will control them.

SOYBEAN INSECTS

Striped blister beetles are now defoliating plants. It is common to have them in one spot in a field. Hundreds of individuals are usually present. If you squash them on exposed tender skin (such as the forearm or neck), blisters will form. If soybean damage from these beetles is sufficient, apply carbaryl as a spray. Yellow leaves on plants along the edges of fields is not caused by insect feeding, but is more likely to be the result of a plant food deficiency.

LIVESTOCK INSECTS

Face flies have increased rapidly in number during the last two weeks, and are now bothering pastured cattle. The state average this past week was about 25 face flies per animal, with individual herds averaging as high as 38 per animal. Infested cattle often develop eye problems, besides the constant irritation caused by the flies. Face flies may also transmit pinkeye disease among cattle.

For control on dairy cattle, apply a 2-percent crotoxyphos (Ciodrin) oil-base spray (if available) or a water-base spray at 1 to 2 ounces per animal, as often as once a day if needed. In order to prevent another buildup, continue to apply the crotoxyphos two to

three times each week, even though the number of flies may be low. A 1-percent crotoxyphos, water-base spray--applied at 1 pint per animal per week--is also effective. This treatment is more practical for young stock and for dry stock.

For pastured beef cattle, the 1-percent crotoxyphos, water-base spray--applied at 1 pint per animal per week--should be considered. An automatic chute-type sprayer using 1-percent crotoxyphos plus 0.25-percent dichlorvos in oil is another good choice. Otherwise, use a head or back oiler, wrapped with canvas or burlap and saturated with a 5-percent solution of toxaphene in oil. This will afford partial relief from face flies. Keep the oiler in good repair and well saturated. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER INSECTS

Striped blister beetles have invaded many home vegetable gardens infesting tomatoes, potatoes, and other vegetables. These black-and-grey striped beetles cause the leaves to curl up and die, sometimes killing the entire plant. For control, spray or dust the foliage with carbaryl (Sevin). Also treat weedy areas next to the garden if these beetles are present in such areas.

Squash bugs are beginning to lay eggs on the leaves of vine crops such as squash and melons. The eggs are shiny and dark red, and are laid in rows between the veins of the leaves. The newly hatched squash bugs are dark-brown, wingless insects. It is important to attempt to control squash bugs while they are still small, since control is impossible once the adult stage is reached. Spray or dust the leaves of vine crops with carbaryl (Sevin), making sure to treat the underside of the leaves.

Sod webworm moths are beginning to appear in increasing numbers, particularly in southern and central sections. These buff-colored moths rest in shrubbery and tall grass during the day and are seen flying in a zigzag pattern over the lawn near dusk. These are the second-generation moths that are laying their eggs at this time. If you find large numbers of these moths in your yard, plan to treat your lawn with an insecticide about 2 weeks later. Usually target dates for treatment are late July in southern sections, early to mid-August in the central section, and mid- to late August in the northern sections.

The larvae of the webworm are grey worms with brown spots and black heads. They are about an inch long when full grown and live for 3 to 4 weeks in the worm stage. The worms live in silken-lined burrows in the thatch of the lawn, clipping off grass blades at the base. Brown spots appear in the lawn and large numbers of robins will move in to feed on the larvae. By this time, it is usually too late for control.

For control of webworms, apply a spray or granules of 2 pounds of actual carbaryl (Sevin), 1 pound of actual diazinon, or 1-1/4 pounds of actual trichlorfon (Dylox) per 10,000 square feet. Use about 25 gallons of water to distribute the insecticide over the 10,000 square feet when spraying. Do not water the lawn for at least 3 days after treatment. If heavy rains occur within 3 days of application, a repeat treatment may be needed.

Pressurized spray cans provide an easy way to apply insecticides on plants, but leaves can be damaged if such sprays are improperly used. We have been receiving complaints recently about leaf burn on roses when this method was used to control aphids. Hold the can back from the rose plants and allow the mist to flow into and around the plant. Check the label for directions. Do not wet the leaves directly. This will cause the burn.

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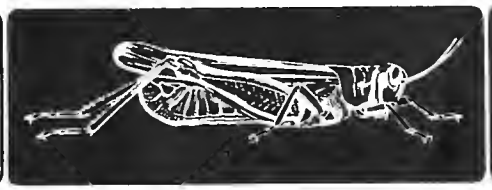

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 17, July 28, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borers. Second-generation moths are laying eggs in the southern section of Illinois. Moth emergence in the central area is underway, but egg-laying is just beginning. In the northern section, moth emergence is just getting started. Peak egg-laying will probably not occur for another ten days in central Illinois and two weeks in northern Illinois. Egg-laying will continue for two or three weeks or more.

This is the time to check late-maturing fields for egg masses and feeding in the southern half of Illinois, to determine whether treatments are needed.

The moths will deposit eggs on corn at any stage of its development, but fields of late-planted corn in the late-whorl to early silk stage are usually preferred. Look for egg masses or small, newly hatched larvae.

To determine whether treatment is necessary, look for egg masses or whorl feeding. If the average is one or more eggs masses per plant, apply an insecticide after a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon granules. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules not sprays. Use 1-1/2 pounds of carbaryl (Sevin), 1 pound of diazinon, or 1/2 pound of parathion per acre. (Allow ten days for diazinon and twelve days for parathion between application and silage removal.) Parathion should be applied only by experienced applicators. No waiting period is required for carbaryl.

Corn rootworms. The adults are becoming more numerous as they continue to emerge from the soil. The yellowish to pale-green northern rootworms, the yellow and black-striped western worms, as well as the twelve-spotted southern corn rootworms, feed on fresh silks. They can interfere with pollination and reduce kernel set.

Continue to check fields coming into fresh silk, particularly in the northern half of the state. If there is an average of 5 or more of these beetles per plant and if the field is not over 50-percent silked, treatment is justified. Apply carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemical per acre. There is no waiting period between application and harvest for carbaryl. Allow five days for malathion and ten days for diazinon.

Count the number of beetles per plant for the next three to four weeks. When the average is one or more beetles per plant each week, the field may profit from a soil insecticide treatment next spring, if the field is planted in corn.

Corn leaf aphids. They are present in small numbers. However, chemical control will not be necessary, even on late corn. Lady beetles and insidious flower bugs are numerous in many fields, helping to hold the aphids in check. Aphid populations reach their peak between the late-whorl and brown-silk stage. After that, the number of aphids declines rapidly. Therefore, most of our corn is or soon will be beyond the stage when it would be damaged. If control should become necessary, malathion or diazinon are effective. Follow the label directions for dosage and restrictions.

Woolly bears and cattail caterpillars. These pests are present in corn fields. They are yellow-to-white, brown, orange-striped, and bristly. The woolly bears like to chew off silks, similar to a scissors cut. The silks are usually cut at the level of the ear husks. These caterpillars seldom eat completely down the silk to the ear tips, as do rootworm adults. The silks will usually regrow and be pollinated. Cattail caterpillars prefer the leaves as food. These insects are not of economic importance, and no control is recommended.

SOYBEAN INSECTS

Spider mites. Damage is being done to soybeans in areas that are dry. The soybeans adjacent to clover fields are the ones most likely to be attacked, but the mites may also move in from grassy areas. Infested soybeans turn yellow and are stunted. Damage is usually most severe along the edge of the field. The mites, which appear as small black specks on the undersides of leaves, produce a webbing.

Mite control is often erratic. If possible, direct the spray to the undersides of the leaves. Place drops between the rows. Aim the nozzles toward the rows, pointing upward at a 45-degree angle and backward away from the spray operator. NOTE: The operator should wear protective clothing and should avoid spray drift when using this nozzle arrangement.

Use 1/2 pound of actual azinphosmethyl (Guthion) or 3/4 pound of actual carbophenothion (Trithion) per acre. These sprays should be applied by experienced, licensed commercial applicators only. Wait twenty-one days with azinphosmethyl and seven days with carbophenothion between treatment and harvest. Do not feed treated soybeans as forage to livestock. Malathion, a safe insecticide for farmers to apply, generally provides poor control of spider mites and is not suggested.

HOMEOWNER PROBLEMS

Mosquitoes. To help reduce the number of mosquitoes in home yards, follow these steps: (1) Eliminate standing water in such places as eave troughs, old tires, tin cans, childrens' toys, storm sewers, etc. (2) Apply a water-base spray containing 1-percent malathion (2 ounces of 50- to 57-percent liquid concentrate per gallon of water) to shrubbery and tall grass. Repeat the treatment every week or two if needed. (3) Keep the screens on doors and windows in good repair. (4) Hang plastic resin strips (2 by 10 inches) containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for several weeks. Do not use these strips in kitchens or other areas where food is handled. Do not use them in any room where infants, the ill, or aged persons are confined. A 0.1-percent pyrethrum space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Frequent treatments will be needed during problem periods. (5) When entering mosquito-infested areas, use a repellent. One of the most-effective mosquito repellents is DEET (diethyltoluamide).

(6) For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) solution as an oil- or water-base, space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

Oystershell scale. The second-generation crawlers have hatched in the southern part of the state. The hatch is just starting in the central section. The first generation began earlier than normal this year. Many shrubs were infested with new scale in late May and June. Treatment for these crawlers was often too late. If oystershell scale is a problem on lilac, birch, willow, or other tree and shrub species, spray the infested areas with malathion. Apply treatments now in the southern section and during the week of August 6 in the central section. Repeat in ten to fourteen days.

Squash vine borer. These moths can be observed flying about vine crops, such as squash, melons, and pumpkin. These red-bodied, clear-winged moths lay dark-red eggs on the stems of the vine crops. The eggs hatch into tiny worms that bore into the stems and feed on the inside of them. This feeding causes one or more runners on the plant to wilt and die, sometimes killing the whole plant. Squash vine borers can be controlled by either dusting or spraying with carbaryl (Sevin) at seven- to ten-day intervals, beginning when the plants start to produce runners.

Mimosa webworms. They continue to spin webs on the branches of honey locust trees and to feed on the enclosed leaves. The infested trees are easily recognized by the masses of brown, dead foliage on the tips of the branches. All stages of this insect are present at this time. Apply a spray of carbaryl, malathion, or *Bacillus thuringiensis* (Biotrol, Dipel, or Thuricide). A second treatment in about two weeks may be needed.

PLANT DISEASES

BROWN SPOT DISEASE OF SOYBEANS

This disease is caused by the fungus *Septoria glycines* Hemmi, has been on the increase in the Midwest during recent years. The disease appears as reddish-brown lesions that vary from the size of pinpoints to a fifth of an inch wide. Heavily infected leaves gradually turn yellow and may fall prematurely. In severe cases, the lower half of the stem may be bare of leaves before maturity.

The fungus overwinters in seed and in diseased stems and leaves that are left in the field. The greatest damage may occur in fields where soybeans are planted every year.

NOTE: Seed treatment does not satisfactorily control brown spot. None of the commercially grown soybean varieties are resistant.

For more information about brown spot of soybeans, write to the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801. Ask for *Report on Plant Disease No. 503*, "Fungus Foliage Diseases of Soybeans."

THE CURRENT PICTURE

To provide insight about the plant diseases currently appearing in Illinois fields and gardens, here is a list of diseases that were diagnosed in our plant disease clinic this week:

Host plant	Disease	Number of specimens	More information available in RPD*
Corn	Stewarts bacterial disease		
	Physiologic leaf streak	2	No. 201
Soybean	Rhizoctonia root rot	4	504
	Phyllosticta	1	
	Pythium	2	504
	Bacterial leaf blight	2	502
	Brown spot	3	503
Alfalfa	Common leaf spot	2	301
	Boron deficiency	1	
	Leafhopper feeding	1	
Strawberry	Red stele	1	701
Grape	Hail damage	1	
Oats	Downy mildew	1	
Muskmelon	Bacterial wilt	1	905
Cherry	Powdery mildew	1	
Apple	Fireblight	1	801
	Apple scab	1	803
	Cedar apple rust	1	802

**Reports on Plant Disease*. Copies are available free on request from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Marshall McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 18, August 4, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer moths are starting to deposit small numbers of eggs for the second generation. This egg-laying will extend into September, and egg counts may be low at any one time. Not only are newly emerged moths present but some first-generation corn borer larvae still in the early fields of corn will not pupate and emerge as moths for three weeks. Although counts will be low, the cumulative counts of this extended low level of egg-laying may result in some fields with moderate second-generation populations.

We are not encouraging control on field corn but fields of sweet corn, particularly late sweet corn, should be checked regularly and insecticides applied where necessary. Make applications when tassel ratio is 30 or more. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. This will give you the tassel ratio. Repeat every 3 to 5 days as long as the field averages 20 or more unhatched egg masses per 100 plants. For fields already tasseled, apply an insecticide to corn if it is 14 or more days from harvest and there are 20 or more unhatched egg masses per 100 plants.

Corn rootworm adults are now present in numbers in some fields. However, most field corn is now pollinated, and the beetles will not affect kernel set as they consume corn silks. In late-maturing fields do not apply any insecticide to control beetles to aid pollination unless there are 5 or more beetles per ear and less than 50 percent of the ears are pollinated.

Corn earworm numbers on early corn were low in late June and early July in southwestern Illinois and remain low over the entire state. At Urbana and adjoining areas, there has been little or no earworm activity. Earworms should begin to increase as a problem in both fresh-market corn and canning corn if they are going to do so.

For sweet corn, chemicals suggested for control of earworms include carbaryl (Sevin), Gardona, and methomyl (Lannate). The addition of 1/2 pound of parathion to carbaryl increases the effectiveness of carbaryl. Parathion should be applied only by experienced applicators.

There are no restrictions for carbaryl in the waiting period between last application and harvest. There is no limitation for Gardona except on the fodder, for which there is a 5-day waiting period. There is no time limitation for methomyl, but there is a 3-day waiting period for the use of the fodder. There is a 12-day waiting period for parathion.

Field corn does not require protection against corn earworm attack.

Picnic beetles, also called scavenger beetles, can be found in the tips of corn ears. They usually are attracted to fields where other damage has occurred. Once there, they may accentuate the other damage. Even when they can be found in ear tips, we have not been able to show any extensive yield benefit from insecticide control on field corn.

Corn leaf aphids continue to appear in colonies in the whorls of corn plants. Most fields of field corn have escaped aphid damage. A few particularly late fields could still develop a problem. If 50 percent or more of the plants are moderately infested and soil moisture is low, apply a spray of malathion or diazinon. This application should be made when the corn is between late-whorl and dry-silk stage. For sweet corn growers, the addition of malathion or parathion to the borer or earworm spray will control these aphids. Time this spray to be applied as the tassels are emerging or slightly later.

SOYBEAN INSECTS

Bean leaf beetles will soon be appearing. These yellow, green, or red beetles with black spots on their backs are easily disturbed and sometimes hard to find. Their feeding is distinct since they eat holes in the leaves.

We had numbers of these beetles in some fields in early June. They laid eggs in the soil, and the larvae fed on the nitrifying bacteria nodules. These larvae have now matured and pupated, and will soon emerge as the beetles to feed on the leaves.

Ordinarily they feed only on the leaves, but occasionally they will eat the bristles on the pods.

Damage from leaf-feeding insects is not important if the leaf feeding occurs after pod set and partial fill. Damage can be severe if the leaf feeding occurs between early blossom and pod set and the insects consume over 40 percent of the total leaf surface. Most beans will be beyond this stage by the time beetles emerge. If you have a particularly late field of beans and 25 percent or more of the leaf surface has been devoured, an application of carbaryl or toxaphene may be warranted. Both of these will also control any grasshoppers that may be present.

LIVESTOCK INSECTS

Stable flies were observed attacking dairy cattle this week, particularly in central and northern Illinois. Cows were standing in the shade and noticeably fighting flies. Populations of these stable flies have increased rapidly this past two weeks, and face flies and horn flies are adding to the animals' annoyance and discomfort. We repeat recommendations from the June 30 issue.

For dairy cattle, apply one of the following materials two to four times per week at the rate of 1 to 2 ounces per animal: crotoxyphos (Ciodrin) as (1) a 2-percent oil spray, (2) a 2-percent water-base spray, or (3) a mixture of 1-percent crotoxyphos

plus 0.25-percent dichlorvos. Crotoxyphos applied as a 1-percent, water-diluted spray at 1 to 2 pints per animal once a week is also effective. In addition, a 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrum spray applied at 1 to 2 ounces per animal each day provides fair control. When spraying pay particular attention to the animals' legs and undersides. All of the above insecticides provide good control of horn flies and fair control of stable flies.

For beef cattle, apply a water-base spray of 0.5-percent toxaphene at the rate of 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies. An automatic sprayer using crotoxyphos in oil will provide the best control.

HOMEOWNER PROBLEMS

Sod webworm moths are now present in numbers in lawns, and egg-laying has started. If you notice many small moths flying over your lawn, you may want to apply diazinon or carbaryl as a control for the larvae which will soon hatch from the eggs. Insecticide applications should start in about a week. Water and cut the lawn before applying the insecticide. A good fertility program may help overcome the webworm damage.

Willow aphids are dark red or dark brown and can be found in clusters on the twigs of weeping willow and other willow species. Malathion provides excellent control.

Cabbage loopers are now present in numbers on all members of the cabbage family, such as broccoli, brussel sprouts, cabbage, and cauliflower. Apply Dipel, Biotrol, or Thuricide. These biological control sprays have provided excellent "cabbage worm" control this summer.

MAILING INSTRUCTIONS FOR INSECT SPECIMENS

When sending insect specimens to us for identification, place them in a small vial, wrap the vial, and put it in another package. Insects on Scotch tape or loose in envelopes become so mutilated that identification is almost impossible.

Do not put live insects in the mailing container; when the top is taken off, the insect escapes. Flies are particularly difficult to catch once they are flying around in our office and our fly swatter may mutilate them. Please confine the insect in another container before putting it in a mailing tube.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Marshall McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 19, August 11, 1972

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Corn rootworm adults. If they are numerous in a field now, this could mean a rootworm problem if the field goes back into corn in 1973. As a guideline, if a field averages 4 or more rootworm beetles per plant now or 1 or more per plant for four consecutive weeks, a rootworm problem could develop if the field is planted with corn in 1973. Late-maturing fields are probably going to have the highest beetle counts in the rootworm problem area; consequently, the most egg-laying.

The western corn rootworm has been found for the first time in Montgomery County. This species continues to move south and east in Illinois.

A survey of 370 fields was completed this week, to determine the adult northern and western corn rootworm populations. In general, populations are higher than in 1971. Interpreting this information to predict potential rootworm problems in 1973 is difficult. There are too many unknowns involved. However, "one should find the most eggs where there are the most chickens."

Following are the results of surveys on the abundance of adult rootworms conducted in 1971 and 1972:

Area of Illinois	No. of fields surveyed	Number of rootworm beetles per 100 plants	
		1972	1971
Northwest	60	98	64
Northeast	30	36	106
West	50	109	64
Central	40	111	55
East	50	73	55
Southwest	80	5	0
Southeast	60	8	0

European corn borers. In the southern third of Illinois, the emergence of second-brood moths, egg-laying, and egg-hatch are well underway. Moth emergence is just beginning in the central section, and will begin within another week in the northern areas. Late-developing, first-brood larvae are still present in all sections. Look for moth-emergence to extend into mid- to late August in these areas.

In a survey just completed, first-generation corn borer populations in northwestern Illinois averaged 3 borers per 100 stalks of corn; in northeastern Illinois, none; in western Illinois, 6 borers per 100 plants; in central Illinois, 1 per 100; in eastern Illinois, none; in west-southwestern Illinois, 1 per 100; in the east-southeast, 1 per 100; in the southeast, 1 per 100; and in the southwest, 2 per 100.

When a first-generation population in an area averages 5 or more borers per 100 stalks, the second generation can be moderately severe. Consequently, we would expect the western sector along the Mississippi River from Dubuque to St. Louis to encounter the highest concentration of second-generation European corn borers.

Following are comparisons of the first-generation corn borer populations for 1971 and 1972:

Area of Illinois	Borers/100 plants 1972	1971
Northwest	3	5
Northeast	0	2
East	0	0
Central	1	2
West	6	13
Southwest	1	3
Southeast	1	-

Corn leaf aphids. A heavy concentration of these pests was reported to be damaging late-maturing corn in southeastern Illinois this week. In situations like this, chemical control is justified when 50 percent or more of the plants are infested and when the corn is between the late-whorl and early tassel stage. For control, use sprays of malathion or diazinon; but wait until tassel emergence is virtually complete to ensure adequate coverage and good control.

In central Illinois, heavy rains were apparently instrumental in reducing some heavy aphid populations. The aphids had continued to remain on the tassels and upper leaves in some fields, even after pollination was complete and the silks had turned brown. Aphid colonies may still remain in these fields, but generally on the lower leaves and lower stalks where they should not present any problems.

SOYBEAN INSECTS

Green cloverworms. They can now be found in soybean fields. So far populations are low in the fields examined. Sizes ranged from very small (1/4 inch) to about an inch in length. This green worm with white stripes will spring when it is disturbed. Six or more worms per linear foot of row are enough to decrease yields if feeding occurs during early pod fill. They rarely feed on the pods. To assess the populations level, shake plants over the center of the rows and count the worms on the ground.

STORED GRAIN INSECTS

Indian meal moth and other stored grain insect populations are increasing in stored wheat. Within the next 2 or 3 weeks some of these infested bins will be a snowstorm of moths with extensive webbing on the surface. Now is the time to apply that mid-summer surface treatment to prevent Indian meal moth damage and apply malathion or pyrethrin as a spray over the surface grain. On many farms, this insect has developed resistance to the commonly used protectant insecticide, malathion.

Malathion is still effective against the remainder of the insect complex (about twelve important ones) that attacks stored wheat. Satisfactory protection on most farms should still be realized through a continued use of malathion in a complete control program that involves (1) bin cleanup, (2) bin spraying, (3) spraying the grain as it is placed in storage [liquid spray treatment preferred to dust treatment], and (4) two surface treatments--one at the conclusion of storage and one in early- to mid-August.

HOMEOWNER PROBLEMS

Oystershell scale. Egg-hatch is complete in the central and southern sections of Illinois. This is the second generation of this scale, and the buildup may be heavy. The young crawlers like to set up housekeeping on lilac, dogwood, birch, and other shrubs and trees. They suck juices from the plant and, if abundant, can seriously retard growth and even kill the plants. The crawlers are very small and whitish in color. Spray infested shrubs thoroughly with malathion, using 2 teaspoons of 50- to 57-percent concentrate per gallon of water. Target dates for spraying are August 14 in the central section and August 21 in the northern section.

Fall webworms. They are defoliating certain trees--especially birch, ash, and elms. These pale-green or yellow worms (with a dark stripe down the back and a yellow stripe along each side) spin a web over the ends of the branches and skeletonize the leaves inside. They extend the web to take in fresh foliage. The damaged leaves curl, turn brown, and dry up. For control, spray with carbaryl, using 2 tablespoons of the 50-percent wettable powder per gallon of water.

Yellow-necked caterpillars. These have been observed feeding on pin oak, birch, apple, pear, and other forest trees. These black-and-yellow-striped caterpillars, up to 2 inches long with yellow rings around their necks, are gregarious and will feed in colonies on the leaves of trees. Small trees or single branches of large trees may be completely defoliated. For control, prune away and burn the infested branches, or spray with malathion.

Cicada killers. They have been observed burrowing in lawns. These are very large wasps, approximately 1-1/2 inches long, with a yellow-and-black body. The female wasps construct nests in the lawn by throwing up a mound of earth into the entrance of each hole. In some instances, burrowing in the lawn may be extensive. The female wasp will subdue the large dogday cicada with a sting and drag the paralyzed cicada to the previously prepared hole in the soil. The wasp deposits an egg on the body of the cicada, which hatches into a larva that feeds on the cicada.

Although formidable, these wasps are not vicious and will not attack humans. They can, however, inflict a terrific sting if handled and squeezed. If control is necessary spray the nests at night with carbaryl or chlordane and cover the entrance with a shovelful of moist soil after treatment.

Blister beetles. These pests are now feeding in gardens. They are long (3/4 to 1 inch), soft-bodied beetles. They feed on many species of broadleaved weeds, as well as on tomatoes, potatoes, and other garden crops. Blister beetles are usually present in swarms, devouring all green leaves as they go. Where one beetle is squashed on the bare skin, a blister usually forms. Carbaryl will control this insect.

WEEDS

DESICCANTS FOR DRYING WEEDS IN SOYBEANS

Paraquat is registered as a "harvest aid" for drying weeds in soybeans. It may be applied after soybeans are fully developed, when at least half of the leaves have dropped and the remaining ones are turning yellow. If paraquat is applied before the beans are fully developed, yield reductions can result.

Use paraquat at a rate of 1/2 to 1 pint per acre, broadcast. Use this rate in 20 to 40 gallons of spray per acre for ground application, or in 2 to 5 gallons per acre for aerial application. Add one quart of a non-ionic surfactant (X-77) per 100 gallons of spray. If cocklebur is a problem, use the higher rate.

Do not pasture livestock within fifteen days after treatment. Remove livestock from treated fields at least thirty days before slaughter.

Desiccants do not make weeds disappear. The coarse, stiff stems of weeds like jimsonweed, velvetleaf, and cocklebur may remain, as well as the wiry stems of grasses like foxtail. In one 1971 test, we were not able to show a significant decrease in the tensile strength of giant foxtail stems. However, a desiccant can dry out the leaves of both broadleaf and grass weeds, making harvesting easier and reducing dockage when the beans are sold.

By the time soybeans are mature, the weeds have already taken their toll through competition. The desiccant is not likely to reduce the viability of weed seeds that are already mature. There are no desiccants registered for use on grain sorghum.

Now is a good time to remind folks to place primary emphasis on early weed control practices next year.

WEED CONTROL FOR FORAGE CROPS

Having realized the benefits from using herbicides in row crops, farmers are showing an increased interest in using herbicides for forage crops.

Eptam (EPTC) worked into the soil before planting, at the rate of 3 pounds of active ingredient per acre (two quarts per acre), has given effective control of several annual weeds in alfalfa sown without a companion crop and without grasses in the mixture. Eptam controls grasses better than broadleaf weeds. Apply the herbicide and mix immediately to a depth of about two inches by disking before seeding alfalfa.

Balan (benefin) applied preplant at the rate of 3 to 4 quarts per acre and incorporated can control some annual grass and broadleaf-weed seedlings. This material can be applied within ten weeks before planting, but immediate incorporation is necessary after application.

2,4-DB can control many broadleaf weeds, such as wild mustard, pigweed, and lambsquarter. This material may be used on new seedings of alfalfa, red clover, ladino

clover, alsike clover, or birdsfoot trefoil. Apply when the weeds are less than three inches high. No portion of a treated crop should be fed to livestock within thirty days of application.

2,4-DB may also be used to control broadleaf weeds in established legumes. Follow the rates recommended on the product label. Do not graze or harvest treated crops for thirty days after treatment. Fall treatment will control most winter-annual broadleaf weeds.

Princep (simazine) can be used on pure stands of alfalfa that have been established for twelve months or more. Do not use Princep for mixed grass-alfalfa stands. Apply after the last cutting, but before the ground is permanently frozen for the winter. Princep will control many weeds that germinate in the fall. A rate of 1 to 1-1/2 pounds per acre for Princep 80W is suggested, depending on the soil texture. Do not use Princep on sandy or high-pH soils. Do not graze animals on a treated area for thirty days or cut hay for sixty days after treatment.

Alfalfa may sometimes show some injury from simazine, especially if the alfalfa undergoes stress from such factors as winter injury or disease, like bacterial wilt.

Some of the weeds that may be controlled by Princep include chickweed, henbit, shepherdspurse, pennycress, peppergrass, yellow rocket, wild mustard, white cockle, downy bromegrass, pigweed, and lambsquarter.

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AG COMMUNICATIONS: Ray Woodis.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 20, August 18, 1972

This is the last weekly issue in this series of bulletins that provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. If circumstances make it necessary, other issues will be mailed to you.

INSECTS

CORN INSECTS

Fall armyworms are appearing in very late field corn. This population will continue to increase until frost. The moths deposit pearl-gray eggs in clumps of about 100 eggs on corn leaves. They use their body scales to cover the egg mass. If the worms are found before they penetrate too deeply into the whorl, sprays of carbaryl, diazinon, Gardona, or toxaphene will control them. Follow label directions for interval between spray application and harvest. Do not apply toxaphene to corn that will be used as ensilage or stover for dairy cattle or animals being finished for slaughter.

European corn borer moths are still depositing eggs, and we are uncertain of the second-generation potential. We believe the infestation will be only moderate.

WHEAT INSECTS

Hessian fly populations are higher in central and southeastern Illinois than in previous years but numbers are quite similar to those of previous years. There was a build-up last fall because some susceptible varieties were planted early, and there also was a second or fall supplemental generation. Observation of proper seeding dates for susceptible varieties is encouraged. Resistant varieties may be planted early.

Hessian Fly Populations per 100 Tillers in July

Section	*1971*	*1972*
West	0	0
Central	0	6
East	..	..
West Southwest	2.3	1
East Southeast	5.5	4
Southwest	1.2	3
Southeast	1.2	14
State average per county	2.0	4.0

FORAGE CROP INSECTS

Alfalfa weevil adults will begin migrating back into alfalfa fields in another month or so. For the south half of the state, we encourage the application of an insecticide in November. This will control the adults before they deposit many eggs in the stems. Such a treatment in most instances replaces a spring application. There will still be weevils feeding on the alfalfa in the spring but usually not in great enough numbers to be of economic importance. Spring treatments kill natural enemies of the weevil such as wasp parasites, but fall treatment does not.

For fall treatments use methyl parathion, malathion, or diazinon in combination with methoxychlor, or try Imidan or carbofuran.

We do not yet recommend this fall application in the northern half of Illinois.

HOMEOWNER PROBLEMS

Crickets often migrate considerable distances at this time of year. Ordinarily their food supply (in pastures, fencerow, ditch banks, and other grassy areas) dries up in late August or early September. This food shortage--added to their instinctive desire to migrate--results in huge swarms, often suddenly appearing around lights at night. Whether or not this migration will occur this year remains to be seen. A chlordane spray around the house foundation and the doorway will help reduce the number of invaders that get into the house.

Leafhoppers also migrate in great numbers and are annoying in and around the home. These wedge-shaped green insects are attracted by the thousands to lights. As with crickets, they have the urge to migrate as they mature and their food dries up. Chlordane sprays will also be helpful here.

Ants and spiders as well as leafhoppers and crickets are controlled with foundation sprays of 1-percent chlordane in water. Use the emulsifiable concentrate and dilute with water to a 1-percent strength. Spray the foundation of the house to runoff, as well as a 4-inch strip of soil alongside the foundation.

Millipedes, the hard-shelled thousand-legged "worms," often migrate into homes in the fall. When disturbed they coil up into a tight ball or roll. A spray of carbaryl (Sevin) on the foundation and several feet out into the yard will greatly reduce the number of millipedes that enter the home.

Ground beetles are black, brown, or green beetles of various sizes. They run rapidly and are found almost everywhere. They migrate from the fields into homes where they are considered to be nuisances. However, they are beneficial--they feed on other insects. No control is recommended. If they are too great an annoyance in the home, a foundation spray of chlordane or carbaryl will help.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy.

PLANT DISEASES: M.C. Shurtleff and Ed Burns, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA's Agricultural Research Service, Plant Pest Control Branch.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 1, March 23, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

GENERAL INFORMATION

Farmers. Each year we urge people not to fill sprayers near wells. Keep the hose from the well out of the spray tank--back-siphoning can occur. Keep concentrates away from wells. Do not drain sprayers near a well.

Always wear gloves when handling pesticides. Never pour pesticides by holding a container above your head. Always pour granules into hoppers so that the wind will blow any dust away from you. Handle insecticides with care and respect.

Follow all precautions in order to prevent problems.

Homeowners. Store all pesticides out of the reach of small children. Read and follow carefully the instructions and precautions on the label.

INSECTS

FORAGE INSECTS

Alfalfa weevil development apparently is slightly earlier than last year. Eggs are being deposited in southern Illinois in alfalfa stems, and there have been some comparatively high egg counts. A few small larvae can be found commonly in leaf buds and axils, but no high larval counts have been encountered as yet. It is too early to predict the potential intensity of the infestation.

CORN INSECTS

European corn borer overwintering success has been near normal in the southern half of Illinois, but only half to two-thirds normal in some areas of northern Illinois.

Southwestern corn borer winter survival apparently has been very low in extreme southern Illinois. There are no live larvae in the field that was most heavily infested last fall.

HOMEOWNER INSECTS

Eastern tent caterpillars began to hatch during the warm period in mid-March. Their hatching and feeding activity was slowed down by the cooler temperatures this past week. These caterpillars feed on wild cherry, willow, peach, apple,

and many ornamentals. As the caterpillars defoliate limbs, they spin webs in the crotches of the limbs. If control is necessary, apply a spray containing carbaryl (Sevin) or malathion. For carbaryl, mix 2 tablespoons of the 50-percent wettable powder per gallon of water. For malathion, mix 2 teaspoons of the 50- to 75-percent liquid concentrate per gallon of water. For the present, however, we interpret the current law to mean that tank mixes are not legal unless the label of each material involved is cleared for such use. The responsibility for personal or crop injury and for residues above the tolerance level permitted is the responsibility of the individual user.

PLANT DISEASES

SMALL GRAIN DISEASES

Soil-borne wheat mosaic is now appearing in some wheat varieties ordinarily listed as "resistant or tolerant." However, with the return of more seasonal and sunny weather, these varieties should recover with little or no yield loss.

Soil-borne wheat mosaic symptoms are present in many winter wheat fields in southern and central Illinois. Plants usually appear light-green to bronze-yellow or light purple in color, depending on the variety and growing conditions. Other symptoms include leaf mottling, resetting, or stunted leaves and tillers.

The disease is most prevalent in low, wet areas or during years when fall precipitation is above normal. Wet field conditions and dark, overcast weather during the early spring also favor the development of this disease.

Soil-borne mosaic is caused by a virus that is transmitted by the fungus *polymyxa graminis*. Swimming spores produced by the fungus carry the virus through the soil to the roots and crowns of healthy wheat seedlings. These spores then penetrate and infect the healthy plants. The virus is not transmitted through the seed or by insects.

A more detailed description of the symptoms and control of this disease is available in *Report on Plant Diseases No. 102*, "Soil-Borne Wheat Mosaic."

Septoria, or speckled-leaf spot, causes the greatest damage if it attacks wheat during the fall and early spring. Cool, moist weather in the fall and spring will favor the infection of wheat seedlings. In an extremely bad year, leaf spot may kill most of the rosetted leaves and up to 50 percent of the tiller leaves. By harvest time, 90 percent of the leaves may be infected; 14 percent, dead.

Check wheat fields during the early spring for the appearance of light-green to yellow lesions between the veins of the wheat leaf blade. Severely infected leaves will turn yellow, wither, and die prematurely.

Last fall, infections developed from spores produced on wheat stubble or in nearby, volunteer wheat plants. The fungus overwinters in live wheat seedlings or on dead plant refuse.

In the spring, the lesions elongate, turn light-brown to reddish-brown, and are often surrounded by a yellowish band. As the lesions age, small dark-brown to black specks form in the lighter-colored centers of the lesions. These black specks are the spore-producing bodies of the fungus. During cool, wet spring weather, the fungus begins to grow and to produce spores again.

For control: (1) rotate wheat ground every year. (2) Plow wheat stubble soon after harvest. This may not be possible when double-cropping is used or when erosion control is necessary. (3) Destroy all volunteer wheat before seeding time. (4) Plant treated, cleaned, and certified wheat seed. (5) Do not spread leaf-spot infected straw manure on wheat ground. (6) If possible, select late-maturing wheat varieties that are less susceptible than the early-maturing varieties. No wheat variety is resistant to leaf spot. (7) Apply 1.6 pounds of Maneb-plus-zinc-ion (Dithane M45 or Manzate 200) to control leaf spot on wheat, oats, rye, and barley. Begin applications when the crop is in the jointing stage. Mix the fungicide in sufficient water to provide adequate coverage. Repeat application at ten-day intervals, but do not make more than three applications during a season. Do not apply within 26 days of harvest and do not graze livestock on treated fields for at least 26 days after application. Speckled-leaf spot fungicide applications are not usually economical unless the disease level is very high early in the season. Maneb-plus-zinc-ion also controls rust and Helminthosporium diseases when properly applied at the right time.

Rot and crown rots are most likely to develop in cool, wet soils--especially in fields where alternate freezing and thawing have caused heaving, injuring the roots and crowns of the plants. Some plants may be weakened and killed. Others may recover in warm, dry weather. But yields will be lower in terms of both quantity and quality.

Losses from root and crown rots are usually the greatest in moist soils where small grains and grasses are grown more or less continuously. Single plants may be affected, all the plants in small circular-to-irregular patches, or all the plants in large areas within a field.

Root and crown diseases are caused by many species of seed- and soil-borne fungi. Microscopic examination and laboratory culturing are usually necessary to determine the exact cause of root or crown rot. Two or more fungi are often associated with the disease on a single, affected plant.

There is little that can be done for small grains already in the field. If you are planting spring oats, barley, or wheat now, get high-quality seed; use a fungicide seed treatment; and plant in a fertile, well-prepared, well-drained seedbed at the time recommended for your area. Plant no deeper than necessary to provide sufficient moisture for good germination and emergence. Rotate small grains with soybeans and forage legumes. Where practical, plant resistant varieties.

For more details, see the *Illinois Agronomy Handbook 1973,* and *Report on Plant Diseases No. 113,* "Root Rots of Small Grains."

The common plant diseases that have attacked Illinois field crops, vegetables, fruits, turf, and ornamental plants during the past are likely to be present again this year. But whether the diseases develop and to what extent depends on the proper combination of (1) weather conditions, (2) the availability of susceptible plants, and (3) the presence of infectious agents (pathogens).

Weather conditions include sunlight, rainfall and humidity, temperature, wind, and atmospheric pressure. Any one, or some combination, of these elements may affect the occurrence of disease.

Illinois weather patterns vary considerably from area to area. This variation, plus the use of different plant varieties in different areas, results in variation in disease development throughout the state. For example, Stewart's leaf blight of corn is more severe in southern Illinois; northern corn leaf blight is more damaging in the northern regions.

Variations from characteristic conditions are often responsible for sporadic outbreaks of diseases that normally do not occur. In short, the climate of a region is a major factor in terms of what crops can be profitably grown; also, on the prevalence of diseases to which those crops are susceptible.

The following diseases may be moderate-to-severe in Illinois this year if cool, wet conditions prevail during spring and early summer and if the other conditions necessary for infection are present.

1. All plants: crown and root rots; leaf spots and blights; seed rot; damping-off of seedlings.
2. Small grains: Septoria leaf blotch; rusts, scab, and barley yellow dwarf virus.
3. Corn: leaf blights, Physoderma brown spot.
4. Soybeans: foliar diseases.
5. Potatoes, tomatoes, vine crops: blights, leaf spots, anthracnoses, fruit (tuber) rots, Sclerotinia white mold.
6. Lawns: leaf spots, melting-out, slime molds.

For more details, see *Report on Plant Diseases No. 1003*, "Weather and Plant Diseases " available from 218 Mumford Hall, Department of Plant Pathology, University of Illinois, Urbana 61801.

SPECIAL NOTE TO PESTICIDE DEALERS

Pesticides bearing the skull and cross bones are very highly toxic and should be handled with care. Caution all your customers to do this. Tell them never to reuse an empty pesticide container.

Between 1961 and 1971, there were only 25 accidental deaths from pesticides in Illinois. Although this is a remarkable safety record, some of these deaths could have been prevented. In several instances, highly poisonous pesticides were placed in soft drink bottles. Small children later drank from them. Never put a pesticide in anything but its original, well-marked container. Warn your customers about this.

Some aspects of United States Public Law 92-516 are now in effect, others are not. The law makes it illegal to use a pesticide except as specifically labeled. This leads to some confusion related to tank mixes of two or more pesticides, even though such mixes have been used for many years and have withstood the test of time. Within certain limitations, tank mixes were legal under the previous law.

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 2, March 30, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil are continuing to deposit eggs in alfalfa fields in southern Illinois. Some small green larvae are present in terminal growth, but no high populations have been found as yet. Warmer weather will accelerate the hatch of these eggs, and we may see an increase in larval populations soon. No larvae have been observed in central Illinois.

If 50 percent of the terminals now have alfalfa weevil feeding, using an insecticide is justified. But you can still delay application a few days to allow more eggs to hatch.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion, azinphosmethyl (Guthion), or Supracide--or 1/4 pound of carbofuran (Furadan). Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion, 7 days after using 1/4 pound of carbofuran, or 10 days after using 1/2 pound of Supracide. As a general precaution, wear protective clothing. Higher dosages of carbofuran will require longer waiting periods.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be about 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

The following comments are similar to those made in 1972:

Alfalfa and clover hay crops may serve as a breeding area for beneficial insects, such as lady beetles, aphid lions, and wasp parasites, that attack many species of aphids. When hay is cut, they move to other fields. Therefore, do not use insecticides in alfalfa or clover fields unless it is necessary to save the crop and unless you use all the hay you can produce. If there is a choice, harvest early.

We have recommended a form of integrated control, or insect pest management, for alfalfa-weevil control for the past three years. We encouraged fall applications of insecticides, or spring applications that would interfere the least with the natural enemies of this pest.

Two new insecticides, carbofuran (Furadan) and Supracide, control alfalfa weevils. We have tested these materials extensively and recommend their use for November application to control adult weevils. However, if these insecticides are used to control alfalfa weevil larvae in the spring, apply them only at half the minimum, labelled rate.

To some, our reasoning may seem odd. But these conclusions were reached after making extensive observations.

First, tiny parasitic wasps deposit their eggs on alfalfa weevil larvae. The small grubs that hatch live inside the weevil larvae. Parasitized alfalfa weevils live for some time, but feed very little. We have seen as high as 80 percent of the larvae parasitized in some fields of alfalfa; in past years, 50- to 70-percent levels were common. These wasps have been helping to control the alfalfa weevil populations.

Second, in order to maintain this parasitic wasp population some alfalfa weevils must remain as a reservoir for the wasps. If we kill these natural enemies with insecticides or kill 95 percent or more of the alfalfa weevils in a large area with insecticides over a period of time, the parasites will be eliminated by the chemicals or by the lack of any alfalfa weevil larvae to feed on. Without the help of these parasites, it might be necessary to spray several times. At present, one application is usually sufficient.

To maintain the wasp parasites so they will help control alfalfa weevils, a reasonable but noneconomic number of the alfalfa weevils must remain for the wasps to feed on. This is one step in integrated insect control or insect pest management. This principle is effective for controlling field crop insects, since 75- to 85-percent control will reduce the number of insects to noneconeconomic levels and will allow natural enemies to maintain their relative balance in the environment.

Years ago, we would probably have encouraged the use of these two chemicals at high rates. With the knowledge we have now, however, it is clear that this would have been unwise. At high rates, Carbofuran and Supracide are so effective on alfalfa weevils that no parasites remain. Thus, they should be used only at low rates in order to reduce weevil larvae to a noneconomic level while retaining the weevils' natural enemies. This practice will also reduce insecticide costs without yield loss. The insecticides we have recommended in the past do just this.

Apply an insecticide next November to kill adults. This will decrease egg laying during the fall, winter, and spring. Sprays applied in the spring usually are not needed; and again, this practice will maintain a suitable number of parasites. Large alfalfa producers use this method in order to avoid hurry-scurry in the spring during planting season for corn and beans.

In many cases, there is no information on naturally occuring biological factors that help suppress the populations of insect pests. Yet, ignoring known biological controls, as with the alfalfa weevil, is unsound and can only lead to a greater use of pesticides and to additional legal restrictions on their use.

CORN INSECTS

Wireworms can now be found in the top several inches of soil in occasional fields in which corn will be planted. If you have a field in which corn will be planted and you have reason to expect there will be wireworm damage, dig a sample a foot square and six inches deep in each of several spots and examine the soil for wireworms. We do not know positively how to interpret wireworm numbers but if you find one or more per 2 to 4 square feet, damage is likely to be common.

Plan to use one of the organo-phosphate soil insecticides normally suggested to control corn rootworms. Diazinon may also be used.

Black cutworms are always a threat, particularly in overflow ground or in low spots in fields. Plan now to examine such areas just as the corn emerges or shortly afterward. Watch for early leaf damage or minor cutting of plants. Use an apple pomace-carbaryl pelleted bait for control before damage becomes extensive.

HOMEOWNER INSECTS

Root maggots, wireworms, and other soil insects often cause trouble in home vegetable gardens. These maggots tunnel into radish, turnip, cabbage and similar cole crops, especially in the northern part of the state. Wireworms often damage root crops. Where soil insects are a problem, diazinon is the only insecticide suggested for control. Apply one ounce of actual diazinon or four ounces of 25-percent liquid concentrate diazinon (Spectracide) per 1,000 square feet. Add these four ounces (one-half cup) to three gallons of water and spray the garden area and then immediately work the insecticide into the soil. At the above rate, diazinon is labelled for use where any vegetable is grown. Do not use soil insecticides such as aldrin, dieldrin, heptachlor, or chlordane on the home vegetable garden.

PLANT DISEASES

SOYBEAN DISEASES

The USDA discontinued the federal soybean cyst nematode quarantine as of last September 30. Because this quarantine has been discontinued, some people assume that the soybean cyst nematode is no longer a problem. This is not the case.

Nematode infestations were confirmed in Jefferson, Washington, and White counties for the first time during 1972, bringing the number of southern Illinois counties with nematode infestations to twelve. Before 1972, infestations were found in Alexander, Pulaski, Massac, Union, Johnson, Pope, Williamson, Jackson, and Franklin counties. Undetected infestations may be present in others.

The Illinois Department of Agriculture will continue to administer and enforce an Illinois soybean cyst nematode quarantine that is parallel to the old federal quarantine in all requirements. Soil samples will be taken and will be examined for the presence of the nematode. Regulated areas will be revised to include any new infestations that are found.

Soybean seed purchased from areas infested by the soybean cyst nematode in Illinois as well as from infested areas in other states should be certified by the department of agriculture in the state of origin as being free from the soybean cyst nematode. This certification must be in addition to the regular seed certification and analysis tags. Used farm machinery and used, mechanized soil-moving equipment purchased or moved from infested areas must be cleaned of all soil to the satisfaction of an inspector. A certificate to this effect must accompany the equipment.

Several states and Canada have already instituted quarantines against the states that have soybean cyst nematodes. Seed beans as well as beans for processing are not allowed to enter unless the are certified as having coming from an area free of the nematode, or unless they have been cleaned to remove all soil.

For further information, contact the Illinois Department of Agriculture, Division of Plant Industry, 999 N. Main street, Glen Ellyn, Illinois 60137. Telephone (312) 469-8621.

WEEDS

NEW HERBICIDES

Cobex (dinitramine) has received clearance for use as a preplant-incorporated use herbicide. Cobex is similar to Treflan and controls the same weeds, but the margin of soybean tolerance is closer. The suggested application rate is 2/3 to 1-1/3 quarts per acre of Cobex 2EC. Minimize soybean injury by keeping the rate low and incorporating lightly.

Surflan oryzalin has received an experimental permit for preemergence use on soybeans on soils with less than 3-percent organic matter. Suggested application rates when Surflan is used alone are 1 to 2-1/3 pounds of Surflan 75W per acre. The material controls the same weeds as Treflan, but the need for rain is greater. If half an inch of rain does not fall within 7 days after application, the area should be worked over with a rotary hoe to control emerging weeds and to incorporate the herbicide. The experimental permit also allows tank-mixing Surflan with Amiben, Lorox, or dinoseb.

Sencor 50W metribuzin has received clearance for preemergence use on soybeans. The recommended application rates are 3/4 to 2 pounds of Sencor 50W per acre, depending on soil texture and organic matter. When used at optimum rates to prevent soybean injury, Sencor controls broadleaf weeds better than grass weeds. Tank-mixes with grass herbicides may be cleared in the future to improve tolerance and provide broader-spectrum weed control.

Bromex chlorbromuron, Soyex fluorodifen, and Norex chloroxuron, are NORAM trade names for products acquired under the CIBA-Geigy merger. CIBA-Geigy will continue to market them under the previous trade names of Maloran, Preforan, and Tenoran, respectively.

Furloe chlorpropham is the new trade name for Chloro IPC. Furloe 124 is a mixture of chlorpropham and an extender, which decreases the chlorpropham breakdown rate.

Eradicane EPTC plus R-25788 is a mixture of Eptam plus a "safening agent" that allows Eptam to be used more safely in corn to control Johnsongrass seedlings, wild cane and nutsedge.

Protect naphthalic anhydride is a seed treatment for corn that decreases chances of injury from Eptam. A two-ounce package will treat 1/2-bushel of seed corn.

NEW TANK-MIX COMBINATIONS

Bromex or Maloran can be tank-mixed with Lasso for preemergence weed control in soybeans. Bromex is similar to Lorox, but is less active (on a pound-for-pound

basis). Therefore, it takes about 50 percent more Bromex to achieve the same weed control and crop tolerance. Bromex and Maloran and their combinations, are best suited to soils with an organic-matter content of less than 4 percent.

Vernam plus Treflan is cleared for preplant incorporation in soybeans at the rate of 1/3 gallon of Vernam plus 1 pint of Treflan. This combination provides better soybean tolerance than Vernam alone. However, the combination may not control velvetleaf, morningglory, or nutsedge as well as the full rate of Vernam alone.

Amiben plus AAtrex is cleared for preemergence use in corn. The rate of Amiben used in the combination will reduce the risk of corn injury. This combination works best on soils with an organic-matter content of 3 to 6 percent.

Banvel plus Lasso is cleared for preemergence use on corn at the suggested rates of 1 pint of Banvel plus 2 to 2-1/2 quarts of Lasso on soils with 2- to 5-percent organic matter. The combination will control broadleaf weeds better than Lasso alone, and is less likely to injure corn than preemergence Banvel alone.

Lasso plus AAtrex plus Paraquat is cleared for zero-tillage corn. The suggested application rates are 2-1/2 quarts of Lasso, plus 1-1/4 to 2-1/2 pounds of AAtrex 80W, plus 1 to 2 quarts of paraquat.

AAtrex plus Princep plus Paraquat is not yet cleared for zero-tillage. If the tank-mix is cleared, the addition of Princep is expected to improve control of fall panicum and crabgrass.

Dyanap plus Lasso and Solo plus Lasso still have clearances pending for tank-mix, preemergence use on soybeans. The same is true on clearances for Bladex plus Lasso, preemergence and for Bladex plus Sutan, preplant incorporated.

NEW LABEL CHANGES

Lasso and Lasso plus AAtrex are now cleared for preemergence use on sweet corn. However, postemergence use on sweet corn has not been cleared. The combination is also cleared for early postemergence use on field corn, silage corn, and hybrid seed corn. The suggested application rates are the same as for preemergence use, but should be used before weeds reach the two-leaf stage and corn, the five-leaf stage.

Bladex 80W is now cleared for postemergence application as well as preemergence use. The suggested postemergence application rates are 1-1/2 to 2 pounds per acre, before weeds are 1-1/2 inches tall and before corn reaches the five-leaf stage. Do not use wetting agents or oils, and do not apply Bladex 80W when the corn is under stress or when injury to the corn may occur.

Bladex 80W and 15G have new suggested rates that were changed to allow better selection for organic matter and soil texture. Do not use Bladex 80W and 15G loamy sands or sands, because significant injury could occur.

Treflan is now cleared for use at double rates to control rhizome johnsongrass. However, this practice reduces soybean tolerance and soybean injury may occur. Two years of double-rate application are required for adequate control of rhizomes. Before planting corn or small grains on an area that has received a double treatment, grow soybeans for one year more and use no more than the normal application rate for Treflan.

WEED CONTROL IN WINTER WHEAT

2,4-D will control most troublesome weeds, such as wild mustard. However, 2,4-D does not do a good job of controlling wild buckwheat and smartweed.

Banvel can be used to control smartweed or wild buckwheat, but is weak on wild mustard. A mixture of 2,4-D and Banvel can be used where wild mustard and wild buckwheat present problems. Do not use Banvel or 2,4-D ester on winter wheat with a legume underseeding. Use 2,4-D amine at no more than 1 pint (a formulation of 4 pounds per gallon) to minimize legume injury.

2,4-D ester at rates up to 1-1/2 pints (the 4 pounds-per-gallon formulation) can be used to reduce the possibility of harvest-time dockage for wild garlic in wheat. The mild winter has favored the growth of wild garlic in some areas this year. The rate given above will be enough to kill legume underseedings, but can reduce aerial bulblet formation of wild garlic.

Wait until winter wheat has finished tillering before spraying it with 2,4-D or Banvel. Applying herbicides when wild garlic is small will improve control, but will also increase the possibility of wheat injury. Do not treat winter wheat when it is in the boot to soft-dough stage.

BRUSH CONTROL

2,4,5-T is not cleared for brush control around drainage ditches, homes, or recreation areas, but Silvex (2,4,5-TP) can be used in these areas. Silvex is sold as an ester formulation under two trade names, Kuron (Doro) and Weedone 2,4,5-TP (Amchem). The esters will mix with water or water-oil mixes. To reduce cost, combine 2,4-D ester and Silvex.

LAWN WEEDS

Balan or Emblem (benefin), Dacthal (DCPA), Betasan (bensulide), and Tupersan (siduron) are the preemergence herbicides recommended for crabgrass control.

Tupersan is the only preemergence herbicide that can safely be used on Kentucky bluegrass seedlings to control crabgrass.

Bandane is no longer recommended for use on lawns. Recent research has shown that annual applications may cause thatch development and poor rooting, and may also increase disease susceptability.

Thatch development has also been observed from annual applications of calcium arsenate. This herbicide is recommended only for use by professionals to control annual bluegrass.

The best control for crabgrass and other lawn weeds is to develop a dense, vigorously growing turf through adequate fertilization, proper mowing, and deep irrigation during drought periods.

SPECIAL NOTE TO PESTICIDE DEALERS

Some aspects of United States Public Law 92-516 are now in effect, some are not. One regulation states that it will be illegal to use a pesticide except as specifically labeled. This leads to some confusion concerning tank mixes of two or more pesticides, even though such mixes have been used for many years and have withstood

the test of time. Tank mixes were legal under the previous law within certain limitations. (See last week's Bulletin. The two following statements were missed.) For the present, however, we must interpret the law to mean that tank mixes are not legal unless the label of each material is cleared for such use. The user is responsible for personal or crop injury, and for residues above tolerances.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No.3, April 6, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil adults are now very active in southern Illinois, and egg-laying is progressing rapidly. Many very small weevil larvae are present. Feeding is common in some fields, but alfalfa growth is comparatively good. Within the next two weeks if we have average weather, applications of insecticide will be justified in some fields. The alfalfa may grow rapidly enough to overcome severe damage in some fields. If so, early cutting could be sufficient--but do not depend on this. Examine fields about twice a week during this critical stage.

Egg-laying has begun further north. Eggs can be found easily, but not in large numbers, as far north as central Illinois. An evaluation of the possible infestation north of Highway route 13 (Harrisburg to Marion to Carbondale) is difficult at this time.

If 50 percent of the terminals now have alfalfa weevil feeding, using an insecticide is justified. But you can still delay application a few days to allow more eggs to hatch. As numbers of larvae increase, a lower percent of terminal feeding justifies insecticide application, particularly if alfalfa growth is slow.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion, azinphosmethyl (Guthion), or Supracide--or 1/4 pound of carbofuran (Furadan). Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion, 7 days after using 1/4 pound of carbofuran, or 10 days after using 1/2 pound of Supracide. As a general precaution, wear protective clothing. Higher dosages of carbofuran will require longer waiting periods.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be about 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor,

diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

CORN INSECTS

Seed corn beetles and seed corn maggots can be controlled with diazinon seed-treater, applied either in the planter box or by treating the corn before putting it in the box. Empty the seed boxes a few times each morning and afternoon, to be sure that an excess amount of dust is not accumulating in the planter box and interfering with seeding rate. This is all the insecticide that may be needed in many Illinois cornfields.

Corn rootworms may be a problem--at least in the northern half of Illinois. If you suspect that a field will be infested with corn rootworms, use Bux, carbofuran (Furadan), Dasanit, Dyfonate, Jolt or Mocap, Landrin, or phorate (Thimet) as directed on the label as a soil insecticide applied at planting.

Wireworms, white grubs, and other soil insects have been partially controlled with applications of Dasanit, diazinon, Dyfonate, Jolt, Mocap, or phorate.

RESTRICTIONS ON INSECTICIDE USE

Dairy farmers. Do not store or use aldrin, chlordane, dieldrin, endrin, heptachlor, and lindane on dairy farms except around the farm residence. The Illinois Interagency Committee on the Use of Pesticides made this recommendation in 1970. The Illinois Department of Public Health adopted this as a ruling, effective in 1971.

Soybean growers. Do not plant soybeans this year in a field where either aldrin or heptachlor was used for corn soil insects in 1972, plus any other year back to 1967. The beans will contain slight residues. Even though these are so small that no public health problem could ever exist, the amounts are illegal. Of even more importance, do not apply aldrin or heptachlor to a field for corn, and then change your mind and plant soybeans.

Using aldrin and heptachlor is still legal. Their labels for use on corn soil have not been revoked. Hearings will be held soon by the federal EPA to determine the future of aldrin and dieldrin in corn production. Until then, the ruling for dairy farmers (given previously) is an Illinois Department of Public Health regulation. The soybean comments are suggestions made to Illinois farmers after four years of monitoring residues in soybeans.

HOMEOWNER INSECTS

Millipedes are brown, hard-shelled animals with two pairs of legs on each body segment. When disturbed, millipedes roll up in a coil. These animals are common in some homes near open fields or woods, or where there are large lawns or sodded areas. In the fall, they find debris like piles of leaves around house foundations in which to hibernate--entering homes as it warms up in the spring. Rake the debris away from the foundation.

If the problem is unbearable, a spray of carbaryl (Sevin) on the foundation and out into the lawn about a yard will help decrease the number of millipedes and, consequently, the number that enter the house.

WEEDS

CONTROLLING VOLUNTEER CROPS

Such crops may be more of a problem this year than usual because of wet weather and poor harvest conditions last fall. Using certain herbicides and crop rotations may help ease the problem.

Sunflowers. Fields planted to sunflowers last year should be planted to corn this year, rather than soybeans. You can use AAtrex (atrazine), Banvel (dicamba), or 2,4-D to control volunteer sunflowers in corn. AAtrex can be used either preplant, preemergence, or postemergence; while 2,4-D or Banvel are recommended as postemergence treatments.

The options for controlling sunflowers in soybeans are limited. Tenoran or Norex (chloroxuron) may provide some control when used postemergence, but this material must be applied before sunflowers are more than two inches tall. Sencor (metribuzin), Lorox (linuron), and Maloran or Bromex (chlorbromuron) may give some control of sunflowers if applied at the higher rates; but control may be erratic and there is some risk of soybean injury. Controlling volunteer sunflowers is definitely easier and safer in corn than in soybeans.

Sorghums. Cultivation plus the use of certain selective herbicides will provide control of volunteer grain sorghum, sudangrass, or sorghum-sudan crosses; also, wild cane or Johnsongrass seedlings.

Treflan (trifluralin), Vernam (vernolate), Cobex (dinitramine), and Planavin (nitralin) can be used preplant to control volunteer sorghum in soybeans. Use the maximum rate recommended for your soil type. Disk slightly deeper than is suggested to control other annual grasses.

Planavin is not adapted for use on soils with an organic-matter content of more than 2 to 3 percent.

Sutan (butylate), Eptam (EPTC), or Princep (simazine) can be used to control volunteer sorghum in corn. Use the maximum, labeled rate for your soil type and incorporate before planting. Eptam often injures corn, but safeners have been developed that decrease the risk of injury. Eradicane is a formulated mixture of Eptam plus a safener. Protect (naphthalic anhydride) is a seed-treatment that also protects corn from Eptam injury.

Volunteer corn. There are no good, selective treatments to control volunteer corn--especially "ear corn." Treflan or Cobex may provide some control of volunteer "kernel corn," but do not expect to control volunteer corn arising from "ear corn." Gleaning the field by hand or with animals is probably best, but the choices outlined may not always be possible or economical.

NEW CLEARANCES

Lasso-plus-Bladex (alachlor plus cyanazine) has been cleared as a tank-mix for preemergence use on field and silage corn. The recommended rate for Lasso 4EC is 2 to 2-1/2 quarts per acre. The recommended rate for Bladex 80W varies from 1 to 2.75 pounds per acre, depending on the soil texture and organic-matter content.

Eradicane (EPTC plus R25788) has received clearance for preplant use in corn. It is a combination of Eptam plus a safening agent to reduce the risk of Eptam injury. Eradicane will be sold in areas where wild cane, Johnsongrass seedlings, and nutsedge are major problems. In most other situations, Sutan will work just as well and will probably be more economical.

PLANT DISEASES

LAWN GRASS DISEASES

Helminthosporium leaf spot disease has been the most common disease problem on several home-lawn turf specimens received at the University of Illinois plant disease clinic this spring. The predominantly cool wet spring has favored this fungus-caused disease on bluegrasses, ryegrasses, fescues, and various pasture and wild grasses.

Helminthosporium leaf spot first appears as small, dark-brown lesions with purple or purplish-red margins. The centers of these spots fade to an ash-white to light-brown or straw color (eyespot). Under favorable conditions, the spots increase in size rapidly. Two or more lesions may merge and girdle the leaf, causing the death of the leaf blade. Girdling and the subsequent death of many leaf blades may result in a gradual browning or thinning of some lawns.

Recommended cultural-control practices for use against Helminthosporium diseases:

1. Grow locally-adapted, top-quality, disease-free seed or sod (Warren's A-20, A-34, Anheuser Dwarf, Fylking, Merion, Pennstar, etc.)

2. Apply N, P, and K according to local recommendations and soil tests.

3. Mow frequently at the height recommended for your area and the type of grass.

4. Increase light penetration and air movement, to help dry-out the grass quicker.

5. Remove excess thatch.

For chemical control, consider the following herbicides. Suggested rates are given, but be sure to READ AND FOLLOW LABEL INSTRUCTIONS:

Acti-dione-Thiram (2 to 4 ounces per 1,000 square feet); Thiram 75-percent wettable powder (3 to 6 ounces per 1,000 square feet); Daconil 2787 WP (4 ounces per 1,000 square feet); Folpet (phaltan), 50-percent WP; Captan, 50-percent WP; Ortho Lawn and Turf Fungicide, Dyrene, 50-percent WP; Fore, 80-percent WP; Zineb, 75-percent WP; Tersan LSR, 80-percent WP; and Manzate 200, 80-percent WP (4 to 6 ounces per 1,000 square feet

For further information, contact the Department of Plant Pathology, 218 Mumford Hall Urbana, Illinois 61801. Request Report on Plant Diseases No. 400, "Recommendations for the Control of Diseases of Turfgrasses," and RPD No. 405, "Helminthosporium Leaf Crown, and Root Disease of Lawn Grasses."

EQUIPMENT

NOZZLES FOR LIQUID HERBICIDE APPLICATION

Regular, flat-fan or flooding flat-fan nozzle tips are recommended when applying herbicides in liquid form.

Regular, flat-fan nozzles with a 25-percent overlap by adjacent nozzles will give the most uniform coverage for broadcasting pesticides. When applying herbicides, operate flat-fan nozzles at a pressure of 20 and 30 pounds per square inch, but never at more than 40 p.s.i. This avoids the chance of drift. The greater the pressure, the smaller the spray particles and the more the drift. Space regular flat-fan nozzles no more than 20 inches apart on the boom.

Flooding-type, flat-fan nozzles are becoming more popular for broadcasting herbicides. They have large round openings that are less likely to clog, and they can be spaced farther apart on the boom. When applying herbicides, a nozzle spacing of no more than 40 inches is recommended. The boom height can be adjusted or the nozzles can be rotated to give double coverage for best distribution. Flooding-type nozzles produce a satisfactory distribution pattern for herbicide application, but do not expect distribution to be as complete or as uniform as with the regular, flat-fan nozzles.

The spray from flooding-type nozzles has less of a tendency to drift than that from other types of nozzles. Flooding-type nozzles should be operated at a pressure of 15 to 25 p.s.i. Pressures as low as 5 p.s.i. can be used to achieve drift control.

Some herbicides must be incorporated soon after application. If such herbicides are applied in front of the incorporation tool, either the regular, flat-fan nozzles (mounted on a boom or on the tractor) or the flooding-type nozzles are recommended. Flooding nozzles are easier to mount directly on the incorporating tool.

Always select nozzle tips for your particular application needs. Select the nozzle type according to the uniformity required and the need for drift control. The nozzle size should be based on the recommended application rate, ground speed, operating pressure, and nozzle spacing involved.

Finally, take time to calibrate the sprayer before going into the field to apply a pesticide. For information on calibrating sprayers, write for Illinois Circular 1038, available from the Office of Agricultural Publications, 123 Mumford Hall, Urbana, Illinois 61801.

INCORPORATING HERBICIDES

Herbicides can be satisfactorily incorporated by using several tools. University of Illinois studies indicate that the tandem disk harrow is better than the field cultivator as an incorporating tool. These studies also show that two passes with a disk will provide more uniform incorporation than a single pass.

A light tandem disk with 18-inch blades operating about 5 inches deep was used in these studies. After two passes, most of the surface-applied material was incorporated in the upper three inches of soil. If a larger, heavier disk is used and operated at greater depths, the herbicide may be diluted with too much soil for good weed control.

Incorporation improves with higher ground speeds. Disking twice in the same direction is just as good as cross-disking the second time. Relatively uniform incorporation will occur to a depth of about 1-1/2 inches less than the operating depth. Herbicides that need incorporation work best when they are incorporated twice with a disk harrow or with a disk harrow followed by a field cultivator, according to the UI tests. Herbicides that are not normally incorporated may benefit from it when rainfall is limited after application.

If wet soil conditions continue to delay field operations, it may be necessary to incorporate herbicides where excessive plant residues have been left on the surface because the soil has been turned with a moldboard plow. Also, incorporation might be attempted on soils that are extremely cloddy. You should anticipate less than satisfactory herbicide performance in either situation.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

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WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

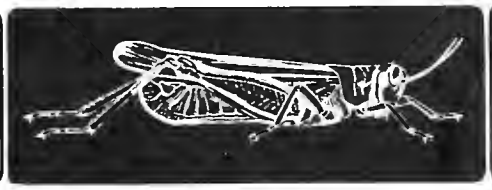
PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 4, April 13, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil egg hatch, larval development, and crop growth were slowed by cold weather this past week. An occasional field in southern Illinois had 70 percent tip feeding, but the number of larvae were generally low. Most fields averaged less than 3 larvae per sweep of the insect net. About 20 per sweep is considered an economic infestation.

Recent surveys show that alfalfa weevil egg numbers average 300 or more per square foot in some fields in southern Illinois. Depending on weather conditions, we would expect insecticide treatments to be warranted within ten days to two weeks south of Route 13. An extended period of warm weather in this area could bring about a sudden hatch and a rapid buildup of larvae.

If 50 percent of the terminals have alfalfa weevil feeding, an insecticide is justified. Note: As the number of larvae increase, a lower percentage of terminal feeding will justify treatment, especially if alfalfa growth is slow. Watch all fields closely from now on. As you examine alfalfa, the yellowish, newly hatched larvae (about 1/20-inch long) with shiny black heads can be found feeding within the folded leaves and buds of the plant terminals. Almost mature larvae are green with a white stripe down the back.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion, azinphosmethyl (Guthion), or Supracide--or 1/4 pound of carbofuran (Furadan). Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion, 7 days after using 1/4 pound of carbofuran, or 10 days after using 1/2 pound of Supracide. As a general precaution, wear protective clothing. Higher dosages of carbofuran will require longer waiting periods. Do not apply carbofuran more than once per season.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of

methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be about 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

Clover leaf weavils can be found in an occasional red clover field, but populations thus far are not very high. The larvae are green with a white stripe down the back and brown heads. They feed at night and hide under the ground debris during the day.

Check red clover fields that have a heavy straw or mat covering. If plant growth is slow and leaf-feeding becomes severe, a spray of 1 pound of malathion will control this insect. For best results, apply malathion when air temperatures are 60° F. or higher.

CORN AND SOYBEAN INSECTS

White grubs have been reported as numerous in some fields last fall and this spring, mainly ones in a continual corn-soybean rotation. The grubs are generally large, indicating that they will finish feeding about mid-June and burrow down into the soil to form the resting (pupal) stage. Next year about this time, the adult June beetles will emerge and lay eggs in soybean or sod fields to complete the cycle.

If a grub-infested field is to be planted to soybeans, a delay in planting to allow the grubs to finish their feeding period may be helpful. A planting-time treatment with diazinon at 2 pounds of actual diazinon per acre, applied as a 7-inch band ahead of the planter press wheel, may give some control.

If the field is planted to corn, planting-time treatments of the organic phosphate insecticides (Dasanit, Dyfonate, diazinon, Mocap, or Thimet) will give some help, but may not be adequate if the infestation is severe. The insecticides listed should be applied as a 7-inch band ahead of the press wheel.

HOMEOWNER INSECTS

Bagworms should be pulled off now. About half of these bags are full of eggs that will hatch within four to eight weeks. The more eggs that are destroyed now, the easier it will be to control the bagworms later.

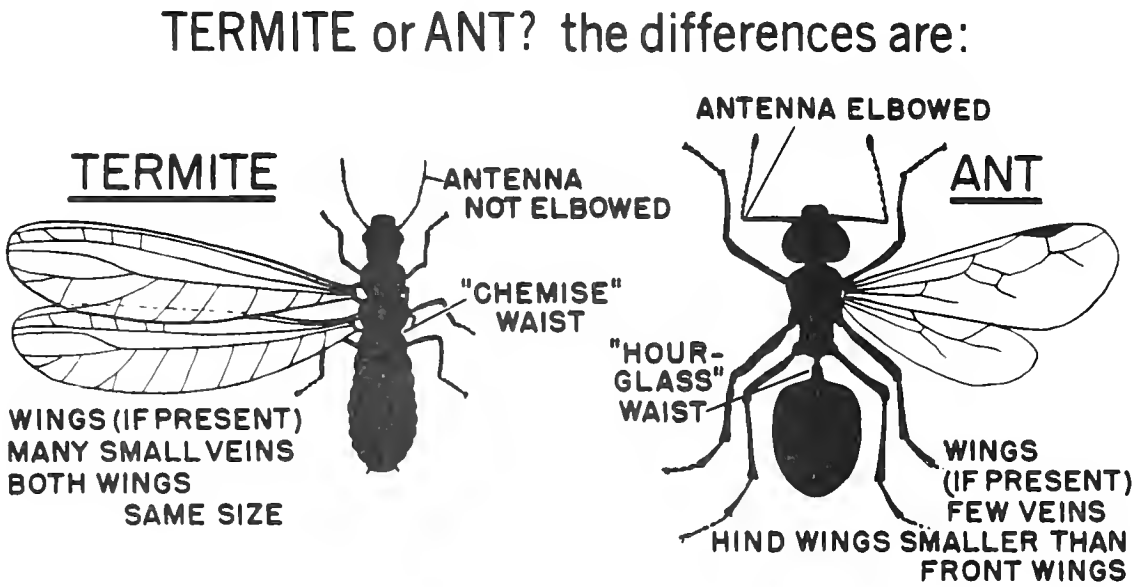
Eastern tent caterpillars are defoliating trees in some areas of southern Illinois. Cool weather has slowed their feeding activity, but warmer temperatures will bring increasing damage. These dark-colored worms with a white stripe down the back spin webs in the crotches of trees, especially wild cherry. Willow, peach, apple, and ornamental trees can also be damaged.

If control is needed, apply a spray containing carbaryl (Sevin) or malathion. For carbaryl, mix 2 tablespoons of the 50-percent wettable powder per gallon of water. For malathion, mix 2 teaspoons of the 50- to 57-percent liquid concentrate per gallon of water.

Winged termites and ants are making their spring appearance and are causing concern to homeowners. They can be distinguished from each other rather easily. A flying termite is always black. A flying ant may be black, yellow, tan, or almost red. The back wings of an ant are shorter than the front ones. The two pairs of wings on a termite are of equal size. An ant has a constricted, or narrow, waist just behind the wing-bearing section of the body, the termite does not. The antennae

of termites are straight, those of ants are elbowed. The diagram below shows the major differences.

If swarms of flying termites appear, check for mud tubes on the inside and outside of foundation walls. Many termite problems are extremely complicated and require the services of an experienced exterminator.



WANTED--WIREWORM PROBLEM FIELDS FOR INSECTICIDE EVALUATION

Dr. Ralph Sechriest, Entomologist, Illinois Natural History Survey, wishes to locate cornfields with wireworm infestations to evaluate various soil insecticides used for corn. If you know of a field, or fields, with a wireworm problem, please contact Dr. Sechriest, 167 Natural Resources Building, Urbana 61801. Telephone: (217) 333-6826.

WEEDS

CONTROLLING PERENNIALS

Quackgrass. It is still not too late to think about a quackgrass control program in corn. AAtrex (atrazine) provides the best control. Use 5 pounds of AAtrex 80W or 4 quarts of AAtrex 4L (4 pounds per-acre, active ingredients). These materials can be applied either as a single, preplow application or as a split application--half preplow, and half at planting time. The split application provides better control of annual weeds. When you use a high rate of atrazine, plan on planting corn the following year.

If you do not want to grow corn next year, you can use the regular preemergence rate of AAtrex preplow and follow with two cultivations during the growing season. The lower atrazine rate will allow you to grow soybeans, but not oats. You can also substitute Dowpon for the preplow treatment and use atrazine preemergence. However, this may delay planting because Dowpon used preplow requires a waiting period of four to five weeks before planting corn.

Yellow nutsedge. Nutsedge can be controlled in soybeans by combining an aggressive tillage program with a preplant-incorporated application of Vernam (vernolate) or Lasso (alachlor). Using narrow rows will also help soybeans "shade-out" nutsedge.

Planting corn early does not allow a preplant tillage attack to be effective on nutsedge. However, a combination of the right herbicides plus cultivation can often keep yellow nutsedge under control in corn. Sutan (butylate), Eptam (EPTC), Lasso (alachlor), or AAtrex (atrazine) can be applied as a preplant-incorporated treatment.

AAtrex is often combined with Lasso or Sutan to provide better control of nutsedge and broadleaf weeds. Eptam often injures corn. Using Eradicane (Eptam-plus-safener) or a seed-treatment called Protect, will lessen the risk of corn injury. A postemergence atrazine-plus-oil treatment will also control yellow nutsedge.

Johnsongrass. Plan your attack on Johnsongrass. Seedlings are usually the worst problems, but rhizome survival may be high this year because of the mild winter.

In corn, seedlings can be controlled with Sutan (butylate) or Eptam (EPTC). Eptam often injures corn. Using Eradicane (Eptam plus a safener) or Protect (a seed treatment) will lessen corn injury.

In soybeans, Johnsongrass seedlings can be controlled with Treflan (trifluralin),Vernam (vernolate), Cobex (dinitramine), or Planavin (nitralin). Use the higher label rates and thoroughly incorporate these herbicides.

A new program of double-rate Treflan for two years will control Johnsongrass seedlings and will also provide effective rhizome control. Another program for rhizome control is a combination of an aggressive preplant tillage program combined with an effective seedling program, as outlined previously.

If you have planted wheat and will not be double-cropping to soybeans, then you can use Dowpon after small grain harvest to control rhizome Johnsongrass.

PLANT DISEASES

SOYBEAN DISEASES

The cysts of soybean cyst nematodes may be spread from infested to noninfested areas by birds, according to research by University of Tennessee's James M. Epps. In Epps' studies, cysts were recovered from the excrement of blackbirds. The cysts contained live nematode larvae able to infect the roots of susceptible soybeans.

CORN DISEASES

Mycotoxins. The 1972 U.S. corn crop is being closely watched, both in this country and the Soviet Union, for signs of contamination by two naturally occurring fungus toxins--zearalenone (F-2) and a trichothecene compound called T-2. The following comparisons may clarify the situation:

	Zearalenone, F-2	T-2 Toxin
Source:	*Gibberella zeae*--common ear mold of field origin. (Some F-2 is also produced by *F. tricinctum.*)	*Fusarium tricinctum*--a less common ear mold of field origin.
Effect of mycotoxin on susceptible animals:	Estrogenic effects on pregnant females and breeding stock (primarily swine)--abortion, prolapse of the uterus, and so on.	Leukemia-type symptoms--predisposition to hemorrhage and exhaustion of bone marrow; alimentary toxic aleukia (ATA) disease in humans.
Major concern:	Human consumption of contaminated grain, presence in animal feed.	Human consumption of contaminated grain, presence in animal feed.

No specific toxic effects have been attributed to Giberella-infected corn fed to ruminants or poultry.

Alimentary toxic aleukia (ATA) disease was rampant in certain parts of Russia, particularly during World War Two. The disease was most often associated with people forced to scavenge old grains (wheat, corn, rye, oats, buckwheat, and millet) that had overwintered in the field.

F-2 (zearalenone), the toxin that produces the estrogenic syndrome in swine, is produced by *Gibberella zeae* in stored corn, especially corn stored in open cribs. Alternating low to moderate temperatures are necessary for toxin production. F-2 is also produced by *Fusarium moniliforme*, a common invader of corn ears and stalks.

The best way to avoid possible toxin problems is to plant ear and stalk rot-resistant varieties and to store the grain properly after harvest.

The FDA has chemical tests and gas chromatogram equipment to verify the presence of any mycotoxin contamination. Present information does not indicate a severe problem as a result of moldy corn.

The Corn Disease Compendium, edited by UI Extension Plant Pathologist Malcolm Shurtleff and published by the American Phytopathological Society, contains the first worldwide compilation of the parasitic (infectious) and nonparasitic diseases of corn. The primary purpose of the Compendium is to provide a reference for agriculturalists who do plant pathological work in the field or in a diagnostic laboratory. The publication should prove valuable to anyone interested in corn diseases.

The book contains 100 pages of data and is illustrated by 100 color and black-and-white photographs, plus 30 artist's drawings of detailed microscopic structures of more than 50 fungi that cause leaf, stalk, root, and ear infections.

Order from: The American Phytopathological Society
3340 Pilot Knob Road
St. Paul, Minnesota 55121

One to 9 copies. . .$2 (single copies $3 after May 1)
10 to 49 copies . . 1.75
50 to 99 copies . . 1.50
100 and over 1.25

ALFALFA DISEASES

Root and crown troubles of alfalfa may have several causes. But most problems result from winter injury and from root and crown rots caused by common soil-borne fungi. The fungi weaken plants and can substantially reduce the longevity of the stand, the yield, and the quality of the hay produced.

Alfalfa plants in fields that have low fertility, poor drainage, and a high water table are usually the first to be attacked. Damage is often severe on plants that have suffered winter injury.

Frost injury may kill the tops of alfalfa plants after growth begins in the early spring. Ice crystals formed within the tissue kill the leaves, which become light tan.

Heaving is caused by alternate freezing and thawing of the soil. The heaving action can break and tear the roots or crowns of alfalfa plants, providing ready access for pathogenic organisms.

Warm weather stimulates the growth of the disease-producing organisms that invade and infect weakened plants. The particular fungi associated with root and crown rots vary greatly, depending upon the area and season.

Phytophthora root rot (*Phytophthora cryptogea*) is favored by cool, wet conditions. Infected alfalfa plants wilt and die, with little or no stunting. Infected crown and taproot tissue becomes soft and watersoaked and turns yellow to tan in color. Phytophthora root rot is usually worst in the low, wet areas of fields.

Possible control measures include:

1. Grow only well-adapted, high-yielding varieties recommended for your area.

2. Avoid overgrazing, rank growth, and very high rates of nitrogen fertilizer.

3. Plow under thin, unproductive stands. Where possible, rotate every four to six years with nonlegume crops, preferably grasses or cereals.

4. Plant only in well-drained soil and avoid low areas that are subject to flooding.

See *Report on Plant Diseases No. 302,* Root and Crown Troubles of Alfalfa. Copies are available by writing to Department of Plant Pathology, 218 Mumford Hall, Urbana 61801.

EQUIPMENT

NEW EQUIPMENT

New equipment has become available recently for applying pesticides.

Span spray is one of the most recent developments. The span sprayer is a ground applicator that uses a hydraulic motor to drive a fan. From the hub of the fan, the pesticide solution is released into the air stream created by the fan. Several fans can be mounted to provide a swath up to 80 feet wide.

Research information is not yet available on the effectiveness of pesticide applications using the span sprayer, compared to using conventional sprayers. Studies are needed to discover particle distribution and drift when the span sprayer is operated under various conditions. Therefore, specific recommendations regarding its use cannot be made. However, the following comments based on field observation may be helpful.

The advantages of the span sprayer are faster pesticide application and the low volume of water required--in some cases less than a gallon per acre. The disadvantages of using this type of sprayer are the possible difficulty in obtaining uniform coverage and reasonable control of spray drift.

The span sprayer, like mist blowers, breaks up the concentrated spray into minute droplets. These tiny droplets are light and can become airborne--resulting in excessive drift, especially when they are required to travel a great distance before reaching the intended target. Even a slight cross wind would have a major effect on the distribution pattern. The problems of drift control and uniformity of distribution are somewhat similar to those encounted with aerial applications.

There are other potential problems relating to the span sprayer. Many herbicide labels specify that they are to be applied with larger volumes of water using ground equipment than the amount that would normally be used with a span sprayer. For example, the AAtre

label says to apply in 20 to 40 gallons of water per acre. Application in less water than that stated on the label for ground equipment could be interpreted as an unlabeled use of the herbicide. Also, many of our postemergence herbicides are not labeled for use over the top of crop plants and must be applied as directed sprays to the base of crop plants. This cannot be done with a span sprayer. Another problem is the potential danger to the operator. The person running a span sprayer is more exposed to the fine-spray particles of concentrated pesticides. The operator must wear protective clothing and a respirator, to prevent skin contact and breathing toxic pesticides.

Foam and air-induction nozzle systems have been developed recently. Researchers have measured drift, using available foam adjuvants with air-induction nozzles. Drift was compared for dyed spray solutions (with and without foam adjuvants), using several different types and sizes of air-induction nozzles and three sizes of conventional flat-fan nozzles. The large droplets produced by the air-induction nozzles (with and without a foam adjuvant) resulted in significantly less drift than sprays from the conventional flat-fan nozzles.

Large droplets are produced by the air-induction nozzles because of the low pressure at the second orifice. Because of that, a less-desirable distribution pattern would be expected with these nozzles than with regular, flat-fan or flooding-type nozzles operating at recommended pressures.

Whirl chamber nozzles have been available in Illinois for several years. These provide a hollow-cone spray pattern that gives poor distribution when mounted on a boom for broadcast application. Whirl chamber nozzles are primarily used in front of a disk or other incorporating tool when applying herbicides.

This nozzle should be tilted forward or backward about 30 degrees to obtain uniform coverage. Our concern with this arrangement is the potential for excessive drift and distortion of the spray pattern, especially in windy conditions.

Among nozzles of the same capacity and that are operated at the same pressure, the whirl-chamber nozzle produces smaller droplets than the flat-fan or the flooding-type nozzle.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

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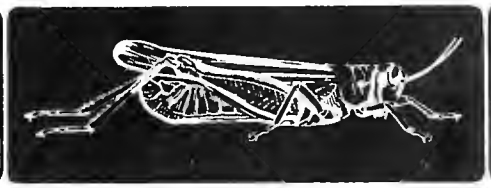


INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 5, April 19, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE CROPS

Alfalfa weevil development was slow this week. The alfalfa has been rapidly outgrowing the weevil feeding, but the new growth was set back by the frosts of a week ago. In such fields, weevil damage may soon become apparent. The number of weevils varies greatly, so examine each field carefully. Judge the need for an insecticide by the number of weevils and the damage.

In southern Illinois south of Highway Route 13 (Harrisburg to Marion to Carbondale), small larvae are very common. As many as 20 per terminal can be found. Robert Wetherell, Johnson County Extension Adviser, reports 30 to 40 larvae per sweep of an insect net. Ordinarily, 20 to 30 per sweep would warrant the use of an insecticide. Although most of the larvae are still small, their feeding is becoming serious in some fields. By next week, damage will be quite apparent. If a field is more than ten days from harvest, treatment will be justified and should be made right away. Eggs are still hatching, but these larvae may be so late that they will present no problem.

In south-central Illinois north of Highway 13 and south of Highway 50 (Lawrenceville to Salem to St. Louis), larvae can be found readily. In that area, they average from 1 to 15 per sweep. Adults are still common in fields, and are depositing eggs that will hatch in the next week. From 10 to 25 percent of the terminals show definite feeding. Within the week of April 23, weevil damage will become more apparent and the need for insecticides can be determined then. On south-sloping fields in the western part of the area, weevil infestations are more advanced, so insecticides can be applied profitably now.

In the rest of Illinois north of Highway 50, populations are still low. Thus, no positive statements can be made yet, except that adults were numerous as far north as Effingham.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion, azinphosmethyl (Guthion), or Supracide--or 1/4 pound of carbofuran (Furadan). Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion, 7 days after using 1/4 pound of carbofuran, or 10 days after using 1/2 pound of Supracide. As a general

precaution, wear protective clothing. Higher dosages of carbofuran will require longer waiting periods. Do not apply carbofuran more than once per season.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/2 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be about 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

RESTRICTIONS ON INSECTICIDE USE

Two weeks ago we mentioned that aldrin, heptachlor, and certain other insecticides can no longer be used legally on dairy farms in Illinois, by regulation of the Illinois Department of Public Health; also, that we had recommendations earlier in Illinois restricting the use of aldrin and heptachlor in a rotation involving soybeans. This was done despite the fact that these products did have a federal label registration.

We stopped recommending the use of aldrin, chlordane, and heptachlor as corn soil insecticides in 1970 because of insect resistance or residues. Our statement of two weeks ago was construed by some as a recommendation for these products. It was not.

HOMEOWNER INSECT PROBLEMS

Brown recluse spiders continue to attract attention in Illinois. Dr. John D. Unzicker, entomologist at the Illinois Natural History Survey, has identified specimens of this spider from 50 of Illinois' 102 counties (see map).

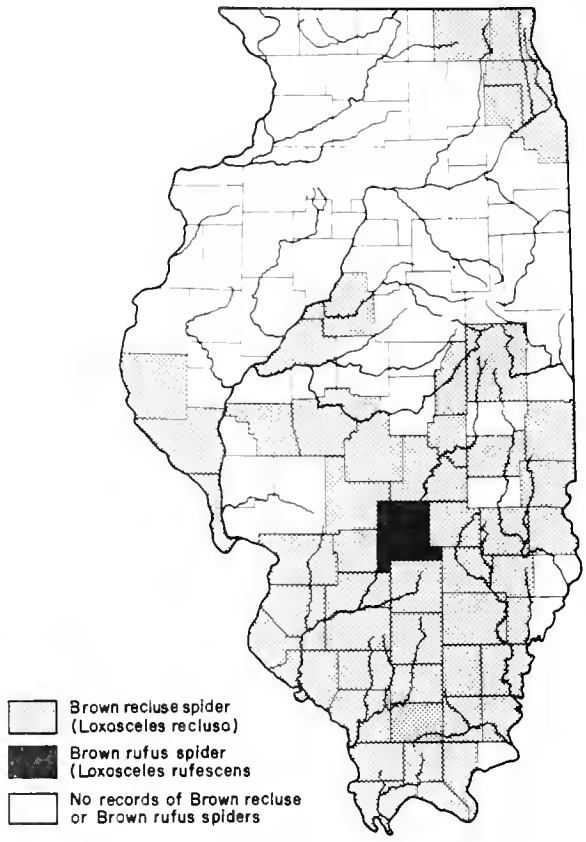
The body of this spider is about half an inch long. The leg span is an inch to an inch and a half. The color varies from light fawn to almost dark brown. There is a distinct, fiddle-shaped, dark marking behind the head (see picture).

Although reports of persons bitten by this spider are not numerous over the state, its bite is poisonous. Unfortunately, the origin of spider or insect bites is often unknown. Most are attributed to the brown recluse spider because of the resulting wound. This spider bites only when disturbed. Little or nothing is known about the bites of many common household spiders. Other species may be responsible for some of the bites attributed to the brown recluse spider. Consult a physician about any spider bite.

The brown recluse has a habit of living in dark, sheltered areas (such as attics or crawl spaces), in storage areas, basements, or barns, and bites only when disturbed. Unlike other web spinning spiders, it spins a small, irregular web.

According to Dr. Unzicker, the brown recluse is a southern U.S. species that cannot survive the winter outdoors in central and northern Illinois. Consequently, it prefers to live in or near buildings. In the southern part of the state where the winters are milder, it can survive outdoors.

We are cataloging the distribution of this spider in the state and it is important to take a closer look at the 52 counties from which we have no specimens of the brown recluse (see map). We encourage Extension Advisers in these 52 counties to send any spiders submitted to them as suspected brown recluse spiders to Dr. Unzicker, Room 93, Natural Resources Building, Illinois Natural History Survey, Urbana, Illinois 61801. Include your name, address, and where the spider was collected. Dr. Unzicker will identify the specimens and send you the identification. When spider bites occur, attempt to capture the spider and send it to Dr. Unzicker for identification.



Brown rufus spider, a similar species, is a close relative of the brown recluse. A single specimen turned up in Fayette County in 1971 (see map). This spider is an immigrant from the Mediterranean Region of southern Europe and northern Africa, and is identical in appearance to the brown recluse spider. It is just as poisonous as the brown recluse and causes the same kind of wound. It lives under the same conditions as the brown recluse, but does not appear to be established in the state at this time.

Ants, spiders, crickets, and other crawling insects can be prevented from entering the home by spraying the outside foundation wall with a 1-percent emulsion of chlordane and water. Purchase chlordane as a liquid concentrate and mix half a pint of 45-percent chlordane or 10 tablespoons of 72-percent chlordane in 3 gallons of water. Spray the foundation wall from the ground to the sill, or about a foot, to the point of runoff. In addition, spray 3 to 6 inches of soil adjacent to the wall, as well as the expansion joints along porches and steps. Do not spray shrubbery or flowers. The oil in the spray may burn the foliage.

For controlling ants already inside the home, use 0.5-percent diazinon or 0.5-percent Baygon. They are available in pressurized spray cans. Spray into old cracks, around baseboards, and other areas where the ants are observed.

Galls on tree leaves and twigs are sent in each summer for identification and control. These swellings can be caused by the feeding of immature wasps, aphids, midges, mites, or other insects. Some of the more common galls are maple bladder galls, especially common on silver maple leaves, caused by the feeding of mites. Galls on hackberry leaves are caused by young, jumping plant lice. Midges are responsible for vein pocket gall on pin oak leaves and pod gall on honey locust leaves.

The number of galls on the leaves of certain trees will vary from year to year because of climate, predators, and parasites. Chemical control is usually not necessary. If the tree is young and is being stunted by the leaf damage caused by the

galls, then control is justified. Apply malathion control on honey locust pod gall, vein pocket gall, or pin oak and hackberry galls. Apply when the new leaves begin to emerge in the spring. Malathion applied for maple bladder gall at the same time will give control, but a miticide such as dicofol (Kelthane) is more effective. When galls can be observed on the leaves, it is too late for chemical control.

WEEDS

HERBICIDE USAGE RESTRICTIONS

The new Federal Environmental Pesticide Act (FEPCA) requires that pesticides be used only according to the label. Misuses are subject to penalty, so follow the use precautions and restrictions on the label carefully. Tank-mix combinations of herbicides are not officially cleared until the manufacturers meet certain EPA regulations and procedures. Do not use tank-mix combinations unless they are officially cleared. Be sure to observe the restrictions on all components when using combinations.

Soybeans. Soybean forage is not normally fed or grazed, however, there are restrictions on some herbicides as to timing and how the soybeans can be used. Ramrod (propachlor): Seed soybeans only. Do not use soybean seed for food, feed or oil purposes. Do not graze or feed soybean forage from treated areas. Maloran, Bromex (chlorbromuron): Do not use forage for feed within 60 days. Do not graze treated areas with livestock. Preforan, Soyex (fluorodifen): Do not use treated plants for feed or forage within 60 days. Tenoran, Norex (chlorbromuron): Do not apply within 90 days of harvest. Do not graze treated fields with livestock. Preemerge, Sinox PE (dinoseb) directed-postemergence treatment: Do not graze or feed treated soybeans within three weeks. Butyrac 175, Butoxone SB (2,4-DB): Do not harvest beans within 60 days. Paraquat harvest-aid treatment: Remove livestock from treated fields at least 30 days before slaughter.

Corn. Lasso (alachlor): Do not harvest immature corn or feed to cattle within twelve weeks of treatment. AAtrex (atrazine): Do not graze treated areas or feed treated forage to livestock for 21 days.

Sorghum. Herbicides cleared for use on grain sorghum are not always cleared on forage sorghum (silage or sweet sorghum). Sorghum-sudangrass hybrids and sudangrass are not considered the same as forage sorghums. Ramrod (propachlor): Do not graze or feed sorghum forage or silage from treated fields to dairy animals. AAtrex (atrazine) grain sorghum, forage sorghum, or sorghum-sudangrass hybrids: Do not graze or feed forage from treated areas for 21 days. 2,4-D grain sorghum, forage sorghum, and sudangrass: Do not let dairy animals graze for 7 days. Banvel (dicamba) grain and forage sorghum: Do not graze treated areas or feed forage or silage before mature grain stage. Milogard (propazine) grain and forage sorghum: There are no feeding or grazing restrictions. Herban 21A or 21P (norea-plus-atrazine or propazine): Do not graze or feed forage within 90 days after treatment.

Small grain. 2,4-D: Do not graze or feed forage from treated fields within two weeks. Do not use straw for livestock feed, if used after the soft-dough stage for harvest aid. Banvel (dicamba): Do not graze or harvest for dairy feed prior to crop maturity.

Pasture. Normally 2,4-D or 2,4,5-T are used on pasture. A mixture of the two materials is often sold as brush killer. Banvel is sometimes used on perennial weeds. 2,4-D: Do not let dairy animals graze for 7 days after treatment. 2,4,5-T: Do not let dairy animals graze for six weeks, or let slaughter meat animals graze within

two weeks after application. Banvel (dicamba): Usage limitations for dairy animals and hay harvest vary with the rate. If 16 ounces (1 quart) is used, do not let dairy animals graze for 21 days or harvest for hay before 51 days. See the label for limitations on other rates. Do not let meat animals graze in treated fields within 30 days.

Alfalfa. Butozone ester, Butyrac 118 (2,4-DB): Do not graze or feed hay from treated areas to livestock within 30 days. This restriction also applies to small grains seeded with alfalfa and treated with 2,4-DB. Princep (simazine): Do not graze for 30 days or harvest for hay for 60 days.

Sunflowers. Amiben (chloramben): Do not graze or feed forage to livestock.

PREPLANT CORN HERBICIDES

During the spring rush, remember these precautions: (1) minimum tillage and crop residues on the surface will make incorporation much more difficult than usual; (2) Sutan (butylate) needs immediate incorporation because it is a volatile herbicide. The volatility loss will be especially great on warm days and on wet soils. Do not reduce the rates this year, especially where incorporation is less than optimum. Preplant application too far ahead of planting will decrease the length of seasonal weed control. The Sutan, Sutan-atrazine, Princep, and AAtrex labels specify: Do not apply more than two weeks before planting. Lasso (alachlor) should not be applied and incorporated more than one week before planting. Lasso and Lasso-AAtrex are usually preferred as preemergence applications, unless you are trying to control nutsedge.

NEW CLEARANCES AND FORMULATIONS

Basargran (bentazon) has received an experimental permit for 1973 usage as a postemergence herbicide in soybeans. An experimental permit allows a company to sell a limited amount of material for field usage, but they must keep certain records on usage and performance and report these data to the EPA before full clearance. (Note: Rate and timing information will be published in a later issue.)

Princep 4L (simazine) is a new, 4-pound-per-gallon suspension for preplant or preemergence use in corn. Liquid formulations such as Princep 4L and AAtrex 4L offer the advantages of easier mixing with water and the possibility of using a lower water volume, but have the disadvantage of a higher price than the wettable powder formulations.

CORRECTION

In the March 30 issue of this Bulletin and in the Custom Spray School Manual, the postemergence rate for Bladex was erroneously listed as 1-1/2 to 2 pounds per acre of Bladex 80W. The rate should be 1-1/2 to 2-1/2 pounds per acre of Bladex 80W for postemergence use. Use the high rate when drought conditions prevail; but, use only the low rate on very light sandy soils.

PLANT DISEASE

"MOLD SICKNESS" (RESPIRATORY PROBLEMS)

Several grain handlers and farmers have recently reported choking, shortness of breath, fainting, high temperatures, and other respiratory discomfort when cleaning musty grain storage bins or moving corn out of storage. High humidity from

excessive rainfall and stored high-moisture corn have favored the growth of storage and secondary molds (fungi).

When working in enclosed areas, such as bins, maintain adequate ventilation--turn on fans 15 minutes before entering a closed area, and wear a suitable dust mask and spore-protecting respirator. Dr. Harvey Hirning, UI Extension Agricultural Engineer, has a list of masks and respirators that are commercially available.

Clean empty storage bins thoroughly, and disinfect them with liquid household bleach (Clorox, Purex, Sunny Sol) by spraying the surfaces with a solution of one part bleach in four or five parts of water. Wear a respirator and rubber gloves. Keep the spray from contacting your clothing or skin.

The storage molds most likely to be encountered are *Penicillium* spp. and *Aspergillus* spp. This information may be useful if you consult a doctor about respiratory illness. We can analyze dust samples to determine which molds are present, but individuals differ greatly in their sensitivity to the wide range of molds found in grain storage areas.

Molds cause about 15 percent of all human allergies. It is better to take precautionary steps than to try and solve the problem after it occurs.

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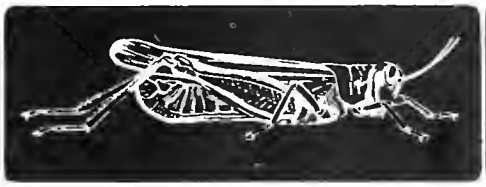


NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 6, April 27, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations increased rapidly in the counties south of Interstate 70 this past week. The heavy rains slowed the feeding activity and may have killed some larvae; but, in general, did not reduce the problem. Larval populations are generally higher and the damage more severe in the western half of the area south of I-70 than the eastern part. Some fields in Jackson, Perry, and Washington counties had an average of 80 larvae per sweep; fields in Clinton, Madison, and St. Clair counties, 8 to 25 larvae per sweep. Adult weevils are abundant in all fields.

Many fields south of Interstate 70, and particularly south of Route 50, will require treatment this week (April 30-May 5). Examine and evaluate each field on an individual basis. If 25 percent or more of the tips are being skeletonized, treat immediately. Fields south of Route 50 with high populations of weevils, if left untreated, can be expected to take on a silvery appearance as damage progresses.

Soggy, wet fields may prohibit the use of ground equipment in some areas, particularly where alfalfa weevils are numerous. Rather than waiting a few extra days or a week for the fields to firm-up, it would be advisable to spray these fields by air now.

Between Interstate 70 and Route 36, alfalfa weevil populations are low--except for an occasional field in the western area. North of Routh 36, very few larvae have been observed; adult weevils average about 40 per 100 sweeps.

Crop Residues and Planting

The prospect of late planting and fuel shortages prompts questions about insect damage when corn is planted without plowing under the old stalks or bean stubble. In emergencies such as we face, getting the corn planted is the most important thing. Some insects may be a bit more numerous when old stalks are not plowed under. The number of borers is low at present, and is not to be feared. If a field has a northern corn rootworm problem, you should at least straddle the old rows--since the beetles deposited their eggs mainly at the base of those old stalks last August and September. NOTE: Do not expect soil insecticides to be as effective on unplowed ground as on plowed soil.

Insecticide Residues

Some farmers have already broadcast aldrin or heptachlor in preparation for corn planting. If you have done this, you must plant corn--not soybeans. Soybeans planted on soil treated this spring with aldrin or heptachlor will have a definite, illegal residue in the beans at harvest.

LIVESTOCK INSECTS

The face flies now appearing on cattle are adults that have overwintered. They will soon lay eggs to produce the first generation of new face flies, in mid- to late May. The flies seen now will die before the new generation arrives. Consequently, there will be a period in the early to middle part of May when flies are not noticeable.

Face flies can be seen now on pastured cattle as well as on cattle in dry lots. These flies have overwintered in sheds, barns, and homes. To help reduce the first generation of face flies, leave the cattle (if possible) on dry lot for another two weeks. Face flies will not reproduce under dry-lot conditions. Insecticide controls applied now will also kill-off the overwintering adults before they lay eggs. One of these measures, taken now, will help delay a buildup of face flies for two to three weeks.

For insecticide control, use Ciodrin as a water- or oil-base spray, applied to the animals. Follow label directions. Do not apply Ciodrin within one day of slaughter.

For pastured beef cattle that cannot be conveniently sprayed with Ciodrin, install back oilers or face oilers charged with 5-percent toxaphene in oil. Do not apply toxaphene within 28 days of slaughter.

HOMEOWNER INSECT PROBLEMS

Clover mites are tiny, orange-to-black, moving specks about the size of the period at the end of this sentence. They may cover furniture, curtains, window sills, and walls. Although harmless, clover mites leave a stain when mashed. These mites are now leaving their winter hibernation sites beneath siding and in cracks and crevices. As these mites are warmed by the sun, they move to window sills and walls on the east and south sides of a house or other structure in large numbers.

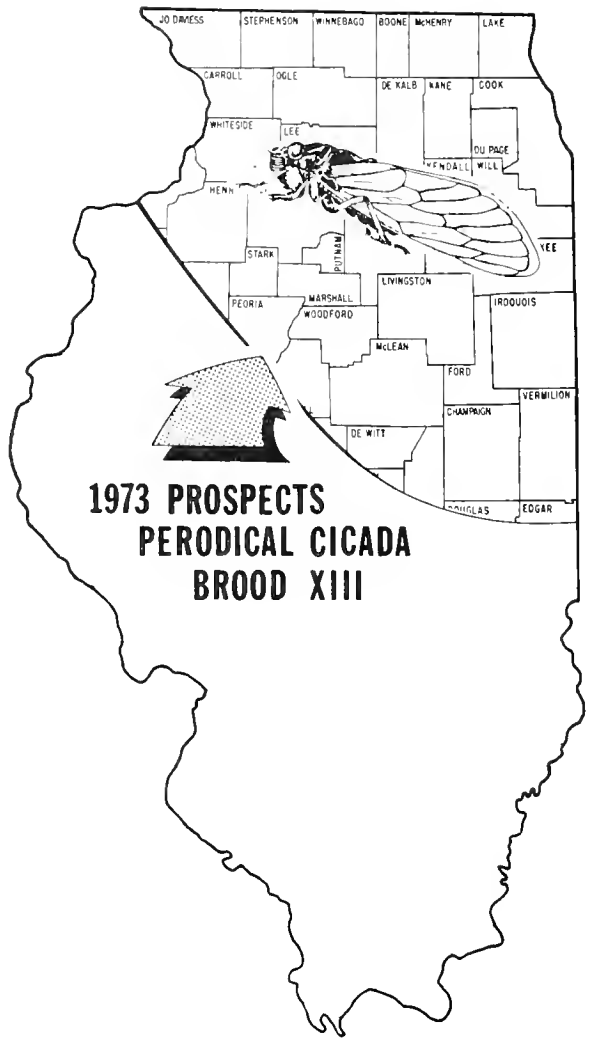
For control indoors, pick up clover mites with a vacuum cleaner; or, use a spray of 0.1-percent pyrethrum or 0.5-percent dichlorvos (DDVP) for a quick (but only temporary) knockdown.

To prevent further migration indoors, treat the foundation and house siding up to the first floor window sills and about a 10-foot strip of lawn adjacent to the house with 1 teaspoon of chloropropylate (Acaralate 2E), 2 teaspoons of dicofol (Kelthane 18.5-percent wettable powder), or 4-1/2 tablespoons of malathion (50- to 57-percent emulsifiable concentrate) per gallon of water. Repeat the spray in seven to ten days, if necessary.

Later this spring, remove the grass and weeds next to the foundation for a strip 18 to 24 inches wide. Very few clover mites will cross this barrier of bare soil in the fall.

The 17-year periodical cicada is expected to emerge in the northern third of Illinois, beginning in late May. This is Brood XIII. Records from the emergence in 1956 indicate that adult cicadas could be present north of a line from Rock Island to Peoria to Paris, as indicated on the map on page 3.

Some nurserymen indicate that populations of emerging adult cicadas in 1956 were very heavy in many wooded areas in Cook County and adjoining counties. Adult cicadas DO NOT eat plant foliage, but DO damage small branches by making slits in them in which to deposit their eggs. Such small branches often turn brown and die, sometimes breaking off. The female cicada prefers to lay eggs in the twigs of oak, hickory, apple, peach, and pear trees and in grape vines.



To prevent egg-laying damage, small shade trees and ornamental plants can be covered with netting, such as cheesecloth. Egg-laying usually begins about a week after emergence from the soil. Carbaryl (Sevin) applied as a spray is effective for controlling cicadas. Use this at the rate of 2 pounds of 50-percent wettable powder per 100 gallons of water, or 2 tablespoons per gallon of water. Repeat this spray five days later. Do not apply carbaryl to producing apple trees within thirty days after full-bloom, since doing so may cause fruit thinning. Do not apply Sevin to Boston ivy. There is no effective insecticide other than carbaryl that is labelled for use in controlling periodical cicada.

INSECTICIDE USE IN FOOD STORES

Insect control practices in food service establishments have been restricted by the Federal Environmental Protection Agency in two recent actions. The EPA has taken the position that residual-kill insecticides should not be employed in any location in a food-service establishment where exposed food is present at any time. Several insecticides (such as diazinon, Dursban, chlordane, malathion, and Baygon) have been used in the past with certain restrictions. They can no longer be used in food-service establishments, except in areas involved in receiving, shipping, storage, or warehousing packaged or canned food.

Even the quick-knockdown, contact-type insecticides, such as pyrethrin and dichlorvos (DDVP), may be used only after the establishment has been closed--and then only if all food and food-contact surfaces are covered. Of prime concern is the fact that continually operating faciltiies will be difficult, if not impossible, to service adequately under the EPA policy.

Food-service establishments include facilities such as cafeterias, delicatessens, restaurants, soda fountains, bars, clubs, catering services, galleys on planes or ships, mess or dining halls at military installations, colleges, schools, or other institutions. Boarding houses, nursing homes, and hospitals are also included.

WEEDS

NEW HERBICIDE CLEARANCE

Bladex (cyanazine) + AAtrex (atrazine) has been cleared as a tankmix, preemergence combination for corn. The mix is 1 part cyanazine and 1 part atrazine, except where

there is a high population of annual grasses (such as giant foxtail and fall panicum); then, use a 2-to-1 ratio.

Bladex 80W has also been cleared for application with fluid fertilizers when used pre emergence on corn. Postemergence use has not been cleared.

Basagran (bentazon) received an experimental permit for postemergence use in soybeans. Broadleaved weeds controlled are smartweed, cocklebur, velvetleaf, common ragweed, jim sonweed, venice mallow, and prickly sida. Bentazon will not control annual grasses, and its control of pigweed, lambsquarter, annual morningglory, and yellow nutsedge will vary. However, some of these weeds can be controlled with a preplant or preemergence application of Treflan (trifluralin), Cobex (dinitramine), Planavin (nitralin), Vernam (vernolate), or Lasso (alachlor).

The Basagran formulation is a 4-pounds-per-gallon, sodium salt of bentazon. The recommended application rate is 3/4 to 1 quart per acre when weeds are in the 2- to 6-lea stage. Soybeans should be in the 1- to 4-trifoliate-leaf stage. Basagran is cleared up to 1-1/2 quarts per acre for use on pigweed, lambsquarter, yellow nutsedge, and an nual morningglory.

The addition of Citowett Plus Spreader-Sticker (surfactant) at 0.25 to 0.5 percent, b volume, may increase the activity of Basagran at low application rates on large, sus ceptible weeds such as yellow nutsedge and morningglory. However, adding a surfactant may also increase the chance of injury to soybeans from Basagran.

Basagran should not be applied to soybeans growing under very high moisture condition since soybean injury is likely to occur. Do not apply Basagran within 65 days of ha vest. Do not feed treated forage or hay to livestock.

VOLUNTEER SUNFLOWERS IN WINTER WHEAT

These are now appearing. The March 30 issue of this bulletin had a note about weed control in winter wheat. Volunteer sunflowers can be controlled with 2,4-D or Banvel (dicamba). However, legume underseedings would be injured by Banvel or 2,4-D ester. Sunflowers should have at least two true leaves (not cotyledons or seed leaves). Apply 2,4-D before the wheat is in the boot stage (head can be felt in the stem). Appl Banvel before jointing.

WEED IDENTIFICATION

Please send questions or weeds you want identified and/or injury samples to the appropriate subject-matter specialist:

Field Crops--Ellery Knake, N-305 Turner Hall or M.D. McGlamery, N-311 Turner Hal (217) 333-4424.

Vegetables Crops--Herb Hopen, 206 Vegetable Crops. (217) 333-1967.

Turf and Lawn--A.J. Turgeon, 202 Floriculture. (217) 333-2123.

Forestry--L.B. Culver, 211 Mumford Hall. (217) 333-2777.

Aquatics--R.C. Hiltibran, 273 Natural Resources. (217) 333-6889.

Most of you are using the mailing boxes to send in specimens; however, a few samples are still being sent in envelopes. These tend to get crinkled. DO NOT put whole plants in plastic bags, as they tend to get moldy and stinky and hard to handle as well as to identify. Shake roots free of soil and wrap them in a moist paper towel or moist tissue. You can put a plastic bag around the roots, but not the whole plant.

Most of you can identify the common weeds, so we usually get the tougher ones. Please send as much of the plant as possible--including roots, leaves, stems, and preferably flowers or seed heads, too. Most identification guides are based on floral characteristics, so it is very helpful if you can include the flowers or seed heads, especially for grasses and the uncommon broadleaf weeds.

1973 AGRONOMY FIELD TOURS

Date	*Location*	*Time (CDT)*
June 8	Ewing[1]	1:00 p.m.
15	Brownstown	8:30 a.m. until noon
21	Urbana (Agronomy Day)	7:30 a.m. until 1:00 p.m.
29	DeKalb	8:30 a.m. until noon
July 24	Carbondale[2]	1:00 to 3:00 p.m.; 6:00 to 8:00 p.m.[4]
26	Belleville[3]	1:00 to 3:00 p.m.; 6:00 to 8:00 p.m.[4]
August 9	Dixon Springs	10:00 a.m.
24	Ewing	1:00 p.m.
28	Hartsburg	1:30 to 3:00 p.m.
29	Kewanee	1:30 to 3:30 p.m.
30	Aledo	1:30 to 3:30 p.m.
31	Carthage	6:00 p.m.
September 6	Brownstown	8:30 a.m. until noon
7	Toledo	6:00 p.m.
11	DeKalb	8:30 a.m. until noon
12	Dixon	1:00 p.m.
13	Elwood	1:00 p.m.

[1]Demonstration Field operated by Agricultural Extension Advisers in the Ewing area.
[2]Operated cooperatively by Southern Illinois University and the University of Illinois at Urbana-Champaign.
[3]Operated by Southern Illinois University.
[4]Two separate starting times (same program).

MACHINERY

FUEL SHORTAGES FOR SPRING TILLAGE AND PLANTING

Reports from fuel suppliers indicate that there will be a fuel shortage this spring. The severity of the shortage for farmers depends on several factors--including the weather, Mississippi River traffic, the extent of fuel hoarding, and tillage operations.

Because of the wet spring, farmers will be operating their equipment "around the clock" as soon as possible, in order to get their corn and soybeans planted. The later the crops are planted, the greater the probability for lower yields. For example, agronomists

estimate that corn yields decrease about 1 bushel per acre each day corn planting is delayed beyond the optimum planting dates. In addition, late planting delays crop maturity and probably will result in added fuel requirements for drying operations in the fall.

In light of complaints about high food prices and the need for more corn and soybeans, it is difficult to understand why a fuel shortage should be allowed to affect agriculture. Fuel used for tillage, planting, and harvesting operations totals less than 1 percent of the fuel used in the United States.

It may become necessary for farmers to conserve fuel supplies because of the probable shortages, however. Here are some practices to consider.

Reduced tillage to conserve fuel. The greatest reduction in fuel usage can be achieved by reducing the number of tillage operations, or changing to tillage operations that require less energy during seedbed preparation. Research by the University of Illinois Departments of Agricultural Engineering and Agronomy has shown that it is possible to obtain high corn yields with either of these methods.

Plow-plant. Tillage systems using the moldboard plow can be reduced by using only one tillage operation between moldboard plowing and planting. Such systems have been used in recent years. They are referred to as "plow-plant," or wheel-track planting--or simply as a form of minimum tillage.

Field comparisons on these tillage systems have produced yields equal to those with conventional tillage. The major problem with the plow-plant system is poor soil-to-seed contact, resulting in inadequate stands. This system works best when moldboard plowing gives a reasonably uniform, non-cloddy soil condition in which to plant.

No-plow systems. Moldboard plowing requires approximately 1.5 gallons of diesel fuel per acre, by far the most of any tillage operation. To make the largest reduction in fuel usage would require eliminating moldboard plowing from the tillage system.

Chisel plowing has been increasing in popularity. It has been used most successfully on soybean stubble in the fall. Chisel plowing in the spring does not work well, especially with wet soil conditions. Corn growth in chisel-plowed corn stalks is slower, the corn will tassel and silk later, and may yield less--depending on the weather during the summer months.

Compared to conventional tillage for continuous corn, yields were significantly less three out of five years in tests at the U. of I. Agriculture Engineering farm in Urbana. Chisel plowing soybean stubble and then planting corn has resulted in a yield decrease only once in five years.

Simply disking corn stalks or soybean stubble and then planting has produced corn yields as high as with conventional tillage. Considering the wet field conditions, the fuel shortage, and the fact that it is now time to plant corn, farmers should give this method some serious thought this year. Fertilizers can be applied before disking; and herbicides, before (preferably after) the planting operation. The disking operation will sufficiently cut corn stalks to allow rotary hoeing and cultivation with regular cultivators.

Special consideration should be given to herbicide selection and to application rates if any of the no-plow systems are used. These systems may require different herbicides and higher application rates. More volunteer corn can be expected with any of the no-plow systems.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

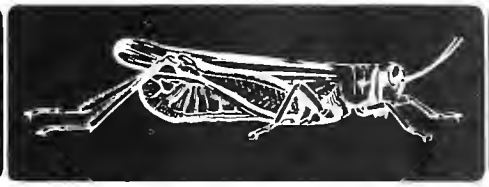
PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Don Button.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 7, May 4, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations did not increase greatly south of Highway Route 50 (Lawrenceville to St. Louis) during the past week, but those present have grown and their appetites have increased. As a consequence, severe damage is apparent in unsprayed fields. Some of this spring's larvae are already pupating, while some overwintering adults are still depositing eggs. The number of larvae should begin to decrease in about 10 days. Alfalfa is maturing, and it might be best to consider cutting the alfalfa for hay rather than spraying.

From Route 50 north to a line through Mattoon and Carlinville, larval populations are still increasing and damage is becoming more apparent. Adult weevils are common and are still depositing lots of eggs. Insecticide applications in severely infested fields will still be profitable.

There is tremendous variation in weevil populations and feeding and alfalfa vigor from one field to another. Judge each field on its own merits before deciding to spend money on insecticide applications.

As alfalfa weevil larvae are hatching and alfalfa plants are still small in the spring, we use 25-percent tip feeding as an indication of need for treatment, but as the larvae and the alfalfa become larger, we can adjust the percentage upward, As harvest approaches, even 100-percent tip feeding does not warrant use of an insecticide. So from now on, before applying insecticides take into consideration amount of tip feeding, size and number of larvae, and nearness to harvest. When using insecticides, record the date of application so you can follow the required interval between application and harvest.

The insecticide recommendations are:

1. Commercial applicators. Apply 1/2 pound per acre of methyl parathion, azinphosmethyl (Guthion), or Supracide--or 1/4 pound of carbofuran (Furadan). Use azinphosmethyl only once per cutting, and do not harvest for 16 days. Do not harvest for 15 days after a treatment with methyl parathion, 7 days after using 1/4 pound of carbofuran, or 10 days after using 1/2 pound of Supracide. As a general precaution, wear protective clothing. Higher dosages of carbofuran will require longer waiting periods. Do not apply carbofuran more than once per season.

2. Persons not equipped with protective clothing. Use: (1) Imidan at 1 pound per acre; (2) a mixture of 3/4 pound of malathion and 3/4 pound of methoxychlor per acre; (3) a mixture containing at least 1/3 pound of diazinon and 1 pound of methoxychlor (Alfa-Tox) per acre; or (4) 1-1/4 pounds of malathion per acre on days when air temperatures will be about 60° F. for several hours after application. Do not harvest for 7 days after treatment with Imidan, methoxychlor, diazinon, or mixtures of them. There is no waiting period for malathion. Do not apply Imidan more than once per cutting.

SMALL GRAINS

Armyworms may soon appear in lodged areas in wheat fields, but none have been found as yet. Shake plants in lodged areas vigorously, and examine the ground underneath for small worms. Armyworms do not need to be controlled until they are about 3/4 inch long as they do little damage until they are about two-thirds grown. Report any infestation to your county Extension adviser.

HOMEOWNER INSECT PROBLEMS

Tree borers have begun feeding under the bark of trees. Check for sawdustlike frass being pushed out of holes in the bark. These holes may be on the trunk at ground level or higher, or even on the limbs. Some limbs may already have been killed, especially on birch trees.

Bronze birch borers usually first attack birch trees in the upper trunk and limbs. The infested areas will have uneven raised areas in the bark. The adult beetles will soon be emerging from the bark, leaving small D-shaped exit holes. These beetles will be laying eggs in the central part of the state beginning in late May. For control, thoroughly spray the infested limbs with a spray containing dimethoate (Cygon, De-Fend) using 1 quart of the 2-pounds-per-gallon liquid concentrate per 100 gallons of water. Spray birch trees in central Illinois in late May and repeat again three weeks later. Apply the treatments one week earlier in the southern section and one week later in the northern section.

This same spray schedule is effective against flat-headed apple borers which may attack many species of shade trees, especially newly-set trees. Wrapping the trunk with heavy paper for two years after the trees are set will help protect them from borer attack.

Spring cankerworms, commonly called "inchworms," are hatching and feeding on tree leaves and buds in northeastern Illinois. This insect is a dark-green or black worm with three pairs of true legs plus two pairs of smaller prolegs on the underside of the abdomen. There is one yellow stripe along the body of the cankerworm.

Spring cankerworms feed on elm, apple, and many other trees, stripping the foliage. This defoliation does not kill a tree, but it does stunt young trees, and repeated attacks year after year will kill a tree.

If worms are feeding, a spray containing carbaryl (Sevin) is effective. Use 2 pounds of 50-percent wettable powder per 100 gallons of spray. A bacterial or biological agent, *Bacillus thuringiensis*, is also an effective control material. It is sold as either Biotrol, Dipel, or Thuricide. Follow label directions as to the amount of either one to use in a spray mixture. A band of sticky material around the trunk of the tree does help prevent egg-laying if applied in February but will be of no value if used at this time of the year.

Mosquitoes are bothersome in many areas because of the wet weather and extensive flooding of low land. Populations can be expected to increase for the next two to three weeks, even though floodwaters recede. These are the so-called "floodwater" or "temporary pool" mosquitoes that lay their eggs on soil in lowland areas before flooding occurs. They move readily from outlying breeding sites into urban areas, coming from as far out as 10 to 20 miles.

Floodwater mosquitoes do not transmit St. Louis encephalitis and, in general, do not present a health problem to man. Mainly, they are a nuisance because of the discomfort they cause. However, they can transmit heartworm (a roundworm) to dogs.

Permanent-pool mosquitoes and those that breed in back-yard bird baths, eaves, troughs, childrens' swimming pools, old tires, storm sewers, and similar places will generally not present problems for another four to six weeks. These are called the common house mosquito and are at their worst during dry periods.

The individual homeowner can do little to combat problems with floodwater mosquitoes. At best, control efforts around the home yard will only take the edge off for a short time. Tax-supported mosquito abatement districts, if large enough (usually at least countywide districts or larger), with trained personnel and equipment, are able to provide satisfactory control.

Individuals can help lessen floodwater mosquito problems in the home and home yard by following these suggestions:

Inside the Home

1. Keep the screens on doors and windows in good repair.

2. Hang plastic resin strips containing 20-percent dichlorvos (DDVP)--one strip per 1,000 cubic feet of space, or about one per room. These strips will kill mosquitoes and flies for several weeks. Do not use these strips in kitchens or other areas where food is exposed. Do not use them in rooms where infants or ill or aged persons are confined.

   A 0.1-percent (or stronger) pyrethrin space spray--applied from a pressurized spray can--can be used for quick knockdown in place of the dichlorvos resin strips. Repeat treatment will be needed.

Outside the Home

1. Apply a water-base spray containing 1-percent malathion (2 ounces of 50-57 percent liquid concentrate in a gallon of water) to shrubbery and tall grass. Repeat the treatment in about a week if needed.

2. For quick knockdown at cookouts, outdoor parties, or picnics, use either 0.1-percent pyrethrin or 0.5-percent dichlorvos (DDVP) as a space spray. Spray the mist or fog lightly beneath tables and chairs and into the air for a few feet around the area. Repeat the treatment as needed.

3. When entering mosquito-infested areas, use a repellent. One of the most effective mosquito repellents is DEET (diethyltoluamide).

Ticks are annoying campers, picnickers, hikers, fishermen, and other persons. The peak period of activity is in May and June. They cling to the vegetation along paths in and near wooded areas, waiting for man or other warm-blooded animals to come along. They

attach themselves by embedding their mouth-parts into the skin. When entering wooded areas or ones suspected of being tick-infested, use a repellent on socks, pants, pant cuffs, and exposed parts of the body to prevent tick bites. DEET (diethyltoluamide) is one of the best tick repellents. To control ticks in the home yard as well as in parks or playground areas, spray the grass, shrubs, and flowers with diazinon, malathion, or carbaryl (Sevin). Do not apply diazinon to ferns or hibiscus, malathion to Cannaert red cedar, or carbaryl to Boston ivy.

THALLIUM SULFATE BAITS PROHIBITED FOR HOME USE

Thallium sulfate, a highly toxic pesticide formerly approved for household control of roaches, ants, and rodents, is still being found in the marketplace more than seve years after the federal government warned of its dangers and acted to stop interstate sale for private home use. In recent years, a number of children have reportedly bee made ill by swallowing the compound.

The Environmental Protection Agency is requesting all retail outlets to voluntarily remove any supplies of thallium sulfate products they may still have on their shelves The EPA regional office in Chicago should be notified so that arrangements can be made to pick up the material.

If a dealer continues to sell such products, he may be subject to civil and criminal penalties under the provisions of the new federal pesticides law. Continued use of these products is also unlawful.

WEEDS

WEED-CONTROL ALTERNATIVES

The reduction of tillage caused by the late, wet spring may result in seedbeds that are rough and trashy. This can influence the degree of weed control with the pre-emergence herbicides because of poor distribution. Incorporating preplant herbicides may be more difficult also, especially with more volatile herbicides such as Sutan.

Considerable acreages may be planted without preplant tillage, but weeds that have already emerged must be controlled. If you are planning to use zero-tillage all the way, then you will be completely dependent on chemical weed control. Herbicides do fail sometimes.

Remember that herbicides are not the answer to all weed problems and that zero-tillag should not be used on land where there is a heavy growth of johnsongrass, yellow nut-sedge, or quackgrass. A well-planned program of weed control should allow the option of timely rotary hoeing and row cultivation. The threatened fuel shortage and the time limitations of the rushed season may limit their use, but timely cultivation can greatly improve marginal herbicide performance.

There are several alternate times for applying corn and soybean herbicides. We have preplant, preemergence, and postemergence herbicide choices, with which most weed problems in corn can be adequately controlled. In soybeans, however, the postemergence alternatives are somewhat limited, especially for controlling grass weeds. The preplant alternatives for soybeans are somewhat limited for controlling problem broadleaf weed such as cocklebur, velvetleaf, jimsonweed, giant ragweed, and annual morningglory. A choice of herbicide alternatives must always be based on the weed problem, the soil, and the available equipment, as well as on timing.

Preplant. If incorporation can be a part of seedbed preparation and the preplant choice fits into your program, go ahead with preplant-incorporated herbicides. They are the best choices for controlling yellow nutsedge, wild cane, and johnsongrass seedlings in both corn and soybeans.

Remember that Sutan, Eptam, Eradicane, or Vernam need to be incorporated immediately. Also, incorporation needs to be thorough for herbicides of low solubility such as Treflan and Cobex. If you use a field cultivator as the final incorporation tool, be sure to pull a drag in order to level the soil behind the back shanks, or streaked weed control may result.

Preemergence. Herbicides applied preemergence are another alternative for weed control. Planter attachments offer the possibility of banding. However, planter treatments may delay planting, and banding may mean that cultivation needs to be performed sooner. Do not plant too many acres and then expect to come back later and apply preemergence herbicides, since rains may prevent their timely application.

Some herbicides such as Ramrod or Lasso and their combinations with AAtrex can be applied until annual grasses have one to two leaves, but earlier application is usually much more effective. The soybean herbicides Preforan and Soyex or Solo should not be applied after soybeans have emerged, because severe injury can occur.

Postemergence. If you must control annual grasses after they emerge, then the choices are few, and the application must be early and timely. The triazine herbicides AAtrex, Bladex, and Outfox can control the foxtails (giant, green, and yellow) and barnyardgrass--if applied before the grasses are 1-1/2 to 2 inches tall. However, the control of fall panicum or crabgrass may not be adequate. If you rely on a postemergence program to control annual grasses, an application that is delayed by rain may mean a drastic decrease in performance.

Broadleaf weeds are controlled by the herbicides just listed; but if broadleaf weeds are the only problem, you can use 2,4-D or Banvel. Banvel is better on smartweed than 2,4-D, and corn tolerance is somewhat better with Banvel. However, the drift to soybeans can be more of a problem with Banvel.

Postemergence herbicides for soybeans will not adequately control annual grasses. These must be controlled earlier--either with a soil-applied herbicide or by rotary hoeing and cultivation. The choices for postemergence weed control in soybeans are limited in effectiveness, timing, and usage.

PRECAUTIONS

Observe the label directions and precautions with all of the postemergence herbicides concerning rate; time of application; drift reduction; use of surfactants, wetting agents, or oils; and application to crops growing under stress conditions.

Always read and heed the herbicide label. Closely read and observe the use precautions relating to the disposition of grain and forage. Take special note of preplant and rotational cropping statements. Proper mixing and accurate rate selection and application are absolutely necessary in order to minimize crop injury and herbicide carryover problems. For further information on weed control, see the *1973 Field Crops Weed Control Guide*. Copies are available from your local Extension Adviser.

HERBICIDE COMBINATIONS

The recent increase in the number of these combinations has created a real dilemma. Why use herbicide combinations? What are their advantages? One of the main reasons

for combining herbicides is to control more kinds of weeds. Combination rates are usually half to two-thirds of the rate for each component used alone. Too low a rate may let some weeds escape that would normally be controlled at full rates. Too high a rate will increase the cost and may cause crop injury.

Combinations often involve a grass herbicide and a broadleaf herbicide. Different kinds of applications may also be used to control more weeds. Contact herbicides may be combined with a preemergence herbicide, such as in the zero-tillage combinations.

Herbicide combinations are sometimes used to reduce herbicide carryover problems, especially in small grains, forage crops, and vegetable crops. Most of the herbicide carryover injury to soybeans in Illinois is caused by misapplication or improper rate selection.

Herbicides with marginal crop tolerance are sometimes used in combinations at reduced rates to increase crop safety. Herbicide combinations may be used to provide greater flexibility concerning soil, climatic, and cropping conditions. Herbicides are not always compatible in terms of application and the need for incorporation, so sequential applications are sometimes used--as with the "piggyback" and "stale seedbed" concepts.

Some of the disadvantages of herbicide combinations are caused by incompatibility problems with formulations and various brands. Emulsifiable-concentrate and wettable-powder formulations sometimes do not mix in the concentrate form, although they may combine if each formulation is mixed separately with water before being added together. Mixing with fluid fertilizers may decrease problems with wettable powders because of a better suspending ability, but the salt effect of the fertilizer may also break the emulsion when emulsifiable concentrates are used. Always check compatability in small containers before mixing large volumes of herbicide combinations, whether these are mixed with water or with fluid fertilizers.

Industrial incompatibility is caused by the failure of different manufacturers to cooperate on a combination clearance by exchanging information and using the same rates.

Herbicide combinations are not a panacea. Selection must be based on crop tolerance, the cropping program, weed problems, and soils. Trial use on a limited acreage is one of the best ways to determine whether a particular combination will be profitable for you.

DO NOT mix any two herbicides together unless they are labeled for such use. If they are not labeled for combination, you are responsible for possible crop injury or crop residue. The new federal pesticide law states that unlabeled uses are illegal and are subject to fine.

The current herbicide combinations for corn and soybeans are listed below. In tank-mixes, the herbicide with label or supplemental instructions on rates and restrictions is listed first. The Lasso and Lorox labels both carry instructions, but the rates and ratios do not agree.

CURRENT CORN HERBICIDE COMBINATIONS

NO-TILL (ZERO-TILLAGE) SYSTEMS

Paraquat + AAtrex
Paraquat + AAtrex + Lasso
Paraquat + AAtrex + Princep
(clearance is pending)

INCORPORATED PREPLANT

Prefox (cyprazine + ethiolate)
Sutan-atrazine 36-12 WP
Sutan + AAtrex
Lasso + AAtrex
(preemergence is usually preferred)

FORMULATED PREEMERGENCE

AAtram 20G (atrazine + propachlor)
Knoxweed (EPTC + 2,4-D)
Lasso/atrazine 15G
Ramrod/atrazine

PREEMERGENCE TANK MIXES

AAtrex + Princep
Amiben + AAtrex
Banvel + Lasso
Bladex + AAtrex
Bromex + Lasso
Lasso + AAtrex
Lasso + Bladex
Lorox + AAtrex
Lorox + Lasso
Lorox + Ramrod
Ramrod + AAtrex

POSTEMERGENCE

Banvel + AAtrex
Banvel + 2,4-D
Dowpon + 2,4-D (directed)
Lasso + AAtrex (preemergence preferred)
Ramrod + AAtrex (preemergence preferred)

CURRENT SOYBEAN HERBICIDE COMBINATIONS

PREPLANT

Vernam + Treflan

FORMULATED PREEMERGENCE

Amilon (chloramben + linuron)
Ancrack (naptalam + dinoseb)
Dyanap (naptalam + dinoseb)
Kleenup (naptalam + dinoseb)
Shamrox (DCPA + linuron)
Solo (naptalam + chlorpropham)

PREEMERGENCE TANK MIXES

Amiben + Lorox
Bromex + Lasso
Chloro IPC + Lasso
Lasso + Lorox
Maloran + Lasso
Preemerge + Amiben
Preemerge + Lasso
Solo + Lasso
(clearance is pending)

PLANT DISEASES

SOYBEANS

Soybean cyst nematode carried on machinery. Soil on machinery used in southern Illinois, Missouri, Arkansas, and the western parts of Kentucky and Tennessee may contain cysts of the soybean cyst nematode. This machinery should be cleaned thoroughly by steaming before being taken to the field, to reduce the chance of introducing nematodes into noninfested areas. For details on regulations and procedures, contact the Illinois Department of Agriculture, Division of Plant Industry, 999 North Main Street, Glen Ellyn, Illinois 60137. Telephone (312) 469-8621.

Fungicide seed treatment. Some farmers may have already decided whether to apply a seed-treatment fungicide. On seed beans germinating between 60 and 80 percent and where better quality seed is NOT available, a captan or thiram seed protectant may well insure a better stand of vigorous seedlings. Although the treatment may be done in the planter box, the preferable way is at a commercial seed-treating establishment where the seed can also be cleaned. If farmers decide to treat the

seed with a fungicide and to put on an inoculant, plant pathologists recommend inoculating the seed first, then applying the captan or thiram fungicide to the seed WITHIN TWO HOURS BEFORE PLANTING.

Seed quality and vigor are also down this year, so it will pay to prepare as good a seedbed as possible and to plant at a shallow depth in warm soil. After that, all we can do is hope for fair weather so that germination will be rapid. Many farmers will be adjusting their planting rate to bring these factors into balance. This year, extra care in planting should pay large dividends.

ALFALFA

Bacterial wilt and Phytophthora root rot. These are prevalent diseases in fields with poorly drained, heavy soil. Phytophthora root rot develops rapidly during cool, rainy weather. Plants in low spots wilt, wither, and die with little or no stunting. Look for crown and taproot tissue that is soft, water-soaked, and yellow or tan. Infected plants can often be pulled easily from the soil, leaving most of the root system behind. The same Phytophthora fungus causes alfalfa seedlings to damp-off before or after emergence. There are no good controls for Phytophthora root rot, except to avoid planting in low areas subject to flooding and to follow recommended cultural practices in order to keep plants growing as vigoruously as possible.

Bacterial wilt. This can be severe in low, poorly drained areas. However, the relatively low number of alfalfa stands that are over three years old and the development of resistant varieties now keep bacterial wilt from being the major problem it used to be. The causal bacterium is spread by surface water, equipment, and infected hay. It enters through wounds produced by winter injury or mechanical damage. Look for stunted, yellow plants that grow slowly and have a bunchy appearance. Affected plants may wilt during midday, recovering at night for a short time. During warm, dry weather, wilting and dying can occur rapidly. For positive diagnosis of bacterial wilt, cut through the taproot at right angles and look for scattered yellowish to brownish dots or a ring in the vascular tissue (normally a creamy-white color). To control bacterial wilt, grow one of many resistant varieties (see *Report on Plant Diseases No. 300*), or plan to keep an alfalfa stand for only two years.

Leaf and stem diseases. These are widespread following the recent cool, wet weather. Spots of various sizes and colors develop on the leaflets, causing the leaves to prematurely turn yellow and drop in large numbers. Several leaf-spotting fungi also attack the stems, producing reddish-brown to black spots and girdling cankers. Then, the foliage wilts and dies. The control for this disease is complex. Follow these practices: (1) grow varieties resistant to common leaf spot. (2) Cut heavily infected stands in the prebloom or bud stage, BEFORE a large percentage of the leaves fall. (3) Plant certified, disease-free seed. (4) Where feasible, rotate at least two years with corn, soybeans, or small grains free from volunteer forage legumes. (5) Do not leave high stubble in fields or allow weeds to mat around plants. (6) Maintain an adequate amount of potash in the soil.

WINTER WHEAT

Soil-borne mosaic. The top leaf may well be symptomless, while the lower leaves show varying degrees of light- and dark-green mottling (especially when leaves are held up to the light) or yellow streaks and blotches. Losses from soil-borne mosaic will be greater this year than for the past several years. This mosaic is found in poorly drained low spots. Infected fields have a patchy, or uneven, appearance.

Soil-borne mosaic appears when wheat starts to grow (about March), and continues until temperatures are continuously above 75° F.

A summary of notes taken by Dr. Henry Jedlinski and Charlie Brown of the advanced wheat nursery last week at the Agronomy South Farm in Urbana on soil-borne mosaic showed that even highly resistant varieties were affected. Notes were taken on prevalence (zero to 100 percent of the plants) and on the severity of infection (a scale of 0 to 5). The same wheat varieties found at the Agronomy South Farm were evaluated on May 1 at Brownstown by Drs. Jedlinski and Shurtleff. Soil-borne mosaic symptoms, although somewhat beginning to fade, could be seen on the lower leaves of essentially every plant of every variety.

	Replicate one		Replicate two	
Wheat variety	Prevalence (%)	Severity (0-5)	Prevalence (%)	Severity (0-5)
Triumph 64	70	3	20	1
Pawnee	100	4	0	
Gage	80	2	0	
Scout 66	100	5	50	3
Parker	50	4	50	2
Centurk	20	2	0	
Ottawa	60	3	0	
Tx 62A2522-8-2	80	4	40	4
Tx 65A1268	100	4	100	3
Bezostaia	30	2	0	
NE 68437	40	1	0	
NE 68440	60	3	80	4
Purdue 6834	0		0	
Monon	0		0	
Benhur	80	2	0	
Arthur	40	2	0	
Arthur 71	20	2	60	2
Abe	10	1	0	
Knox 62	0		0	
Timwin	30	2	0	
Blueboy	0		0	
Blueboy II	0		0	
McNair 4823	0		0	
Mo 7910	0		0	
Mo 7687	0		0	

Septoria leaf blotch. With the frequent rains and heavy dews, this disease has literally "exploded" in the past week. Look for pale-green dots that soon enlarge to yellow blotches between the veins on lower leaves. The yellow areas later elongate and develop brown centers. Then, several days later, black specks appear in these reddish-brown centers. Septoria is rapidly killing the lower leaves on wheat plants all over the state. The disease will continue to spread upward on the plants as long as the weather remains cool and moist.

Nitrogen deficiency and wet or "drowned out" spots. These are evident in wheat fields almost everywhere. The loss of wheat from root-rotting fungi under conditions of a water-logged soil is underestimated. It is not uncommon to have N-deficient symptoms, soil-borne mosaic, Septoria leaf blotch, and root rot all on the same wheat plant.

LAWNS

Helminthosporium leaf spot and melting-out. These problems are now severe on susceptible bluegrasses. Look for spotted leaves, a reddish-brown undercast to the turf, thinned-out areas, and dead spots. The fungi have girdled the leaf sheaths and are rapidly rotting the crown tissues. Lawns will look MUCH WORSE when hot, dry weather finally arrives and the weakened grass comes under water stress. A fungicide spray program is questionable now. The best bets are Acti-dione--Thiram, Daconil 2787, Dyrene, Fore, Tersan LSR, and Ortho Lawn and Turf Fungicide--applied according to manufacturers' directions at two-week intervals. Cultured controls include mowing frequently at the recommended maximum height, removing thatch if it has accumulated to half an inch, fertilizing with a slowly available fertilizer, and avoiding frequent light sprinklings or waterlogging the soil.

Fairy rings. These are evident now as lush, dark-green rings in turf. Fairy rings are more unsightly than damaging. Lawn fertilization with a nitrogen material plus pumping water into the soil at 1-foot intervals just inside the dark ring (using a root-feeder attachment on a garden hose) will mask the symptoms for several months to a year or more.

Dog spots. Such spots may resemble small fairy rings. Usually there is an outer ring of lush grass. It helps to train the dog to use an area in the back yard that is out of sight, fertilize with nitrogen, and flush down the more unsightly areas with a hose.

Leaf smuts. The Plant Disease Clinic is now receiving reports of lawns with dull-gray to blackish streaks--followed by leaf-shredding, stunted growth, and a general decline in growth. Dead patches of grass will appear when water stress becomes a problem. Bluegrasses differ in their resistance to leaf smuts (see *Report on Plant Diseases No. 402* and *409*). Overseeding with a resistant grass may be warranted. Soil drenches of benomyl (Tersan 1991 or Benlate) are effective. Apply 6 to 12 ounces of the systemic fungicide in 5 to 10 gallons of water per 1,000 square feet. Immediately after application, drench the area with an inch of water (600 gallons per 1,000 square feet) to make sure the benomyl moves down into the root zone where it can be taken up by the plants. The manufacturers' directions should be followed carefully.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology

AG COMMUNICATIONS: Don Button.

AG ENGINEERING: John C. Siemens.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 8, May 11, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil populations have reached their peak south of Interstate 70. Many larvae are now pupating; but because of an extended egg-laying period by adult weevils, larval populations will remain high for another week and then gradually decline. Wasp parasites are evident, and will help to reduce larval numbers. South of I-70, it would be best to cut alfalfa as soon as possible and to spray the new growth, if needed. Treat immediately if the new growth does not green-up in two or three days.

In the area between Interstate 70 and a line from Paris to Decatur to Carthage, weevil populations increased rapidly this week. Treatment was justified in most fields within that area this past week. Treatments, if not already applied, should be made now. Infestations were somewhat higher in the western part of this area than in the east side.

In the area north of a line from Paris to Decatur to Carthage and south of Interstate 74, watch fields closely this week and next. Weevil populations are expected to increase rapidly. North of Interstate 74, it will be another one to three weeks before infestations become serious.

In general, alfalfa weevil development is slower than normal so far this year. In many fields, it may be possible to take advantage of early cutting and to avoid the use of insecticides--particularly in the central, north-central, and northern sections. Harvesting first-crop alfalfa will often be as detrimental to the weevil larvae as applying an insecticide. So, use an insecticide treatment only when the field approaches 100-percent tip feeding and when cutting is ten days or more away. For insecticide recommendations, see last week's *Bulletin*, (No. 7, May 4).

Spittlebug froth masses can be found now in most areas, particularly in new seedings of clover and alfalfa. Populations are not expected to be damaging.

CORN INSECTS

Black cutworms could appear any time in the few fields of corn that have been planted. These worms could show up any time during the next month. Watch corn closely for the first signs of cut or missing plants. Dig around several of the damaged plants to find the worms. Treatment is justified if you find 1 or more worms per 25 plants.

Go to work on cutworms early. After cutting has become extensive, control (although effective) is not as profitable as with early treatments.

For control, apply 20 pounds of a commercially prepared bait of 5-percent carbaryl (Sevin) on apple pomace, or spray with 2 pounds of actual carbaryl and 2 quarts of molasses per acre. Commercially prepared spray baits are also available. Broadcast the apple-pomace bait, but concentrate the spray bait at the base of the plants. Trichlorfon (Dylox) at 1 pound per acre is also effective as a spray. Use 20 gallons of water per acre when band spraying with trichlorfon, and cultivate in order to throw soil over this band in the row.

SMALL-GRAIN INSECTS

No true armyworms were found in a check of wheat fields in south-central Illinois. However, tiny armyworms may soon hatch in lodged areas of wheat, barley, and rye. To find armyworms, shake the plants vigorously and examine the ground beneath. Armyworms do not need to be controlled until they are 3/4 of an inch long. Report any infestations to your county Extension adviser.

HOMEOWNER INSECT PROBLEMS

Oystershell scale hatch is about complete in the southern sections, and is underway in the central section. Check your dogwoods, lilacs, birches, willows, and soft maples as well as other shrubs for the presence of these small, brownish-gray scales. They often crawl on the leaves, but they will move to new areas on the bark and set up housekeeping by constructing a scale over their body. The old scales that have overwintered should still be visible on the old branches as a tell-tale symptom of oystershell scale problems. To help the situation, prune out old branches that are encrusted with scale.

In southern Illinois, apply control measures immediately; in the central section, begin about May 20; in the northern section, about June 1. For control, spray the plant thoroughly with malathion (mix 2 teaspoons of 50- to 75-percent liquid concentrate per gallon of water) or diazinon (mix 2 teaspoons of 25-percent liquid concentrate per gallon of spray). A repeat treatment may be needed in late July or early August to control second-generation oystershell scales. Do not use malathion on cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Fabric-eating insects are getting ready for a summer's feast on improperly stored woolens. Clothes moths and carpet beetles eat wool and other fabrics made from animal fibers or feathers. They do not eat synthetic materials. A few of these insects are usually present in most every home. They live in hard-to-clean places such as heating vents and behind radiators and baseboards, feeding on lint and hair deposits.

To keep woolens safe from damage, follow these directions.

1. Dry-clean or wash woolens and place them in clean, plastic storage bags or other insect-tight containers.
2. Woolens that are not dry-cleaned or washed should be hung in bright sunlight for a full day and brushed thoroughly before storing. Pay particular attention to pocket interiors, cuffs, and folds when brushing.
3. If the storage area is not insect-tight (as is true of most closets, trunks, and boxes), vacuum the container thoroughly and cover all of the inside surfaces lightly with a spray of 0.5-percent diazinon or Dursban, applied from a pressurized spray can.

4. Cedar-lined chests are usually insect-tight, but all fabrics need to be insect-free before storing. The cedar oil vapors destroy small larvae, but do not kill the larger ones. So be sure the articles are free of insects before placing them in cedar-lined chests.

5. Good housekeeping practices will help reduce the number of fabric-eating insects. Clean the house frequently to prevent lint and hair from accumulating--especially behind radiators, baseboards, and heating vents and in closets, as well as beneath large furniture and other hard-to-get-at places. If such places become infested, a light application of a 0.5-percent spray of diazinon or Dursban will insure protection. Keep children and pets away from the sprayed area until it is dry.

BIRD PROBLEMS

Dr. Glen Sanderson, Head of the Game Research and Management Section of the Illinois Natural History Survey, prepared the following report to help answer questions we have been receiving about the South American Parakeet, recently found in Illinois.

The South American monk, Quaker, or gray-headed parakeet is a native of South America. It is a medium-sized parakeet (length, 11.5 inches) that is greenish-gray above with a lemon-yellow belly and quaker-gray forecrown, cheeks, forethroat, and breast with darker margins to the feathers. The flight feathers are blue-gray, the tail is bluish-green, and is long and pointed. The feet are dark. The bill is a rosy flesh color.

In some areas of South America, flocks of this bird have damaged corn, sorghum, sunflowers, citrus fruits, and other fruits. In the U.S., this parakeet winters in suburban areas, perhaps attracted to feeding stations provided by bird watchers. Dr. Richard R. Graber, ornithologist for the Natural History Survey, reports that to the best of his knowledge there is a spotty and marginal populations from New England south to Virginia and west to Illinois and Oklahoma.

In 1968, about 12,000 of these birds were introduced into the U.S. and sold as pets. A few new releases are probably made each week, as pet owners tire of the outlandish screeching of these birds but are reluctant to kill their pets. At least one pair is known to be nesting in Illinois; however, most of the reports that come from the general public of parakeets at large in Illinois no doubt refer to the smaller Australian shell parakeets.

Thousands of these birds are released each year, mostly by accident. Although they can survive in the southern states, there are few wild populations in this country, and perhaps none that are maintaining themselves without additional releases each year. Monk parakeets are not nearly so numerous, but are potentially much more dangerous because they can be self-sufficient and can survive even in the northern states. They are robust and hardy. They would make good "starlings." At their present population level, they only pose a potential threat for Illinois farmers and orchardists. The Section of Wildlife Research at the Illinois Natural History Survey, Urbana (217/333-6870) would like to know about any sightings of the monk parakeet in Illinois. We will verify as many of the sightings as possible.

WEEDS

CONTROLLING WEEDS

Controls. Weeds that have emerged can be controlled either chemically or mechanically. Sometimes mechanical controls aren't enough. For example, shallow disking often does

not adequately control large weeds, such as early germinating smartweed and giant ragweed (horseweed). Be prepared to apply herbicides if these get an early start.

Minimum herbicide rates. Minimum tillage limits the thoroughness of preplant herbicide incorporation. This is not the year to try minimum herbicide rates, except perhaps on poor-quality soybean seed where slow emergence may increase the possibility of injury.

Herbicide application. In the rush to catch up, don't get sloppy about herbicide application and incorporation. Sutan, Eptam, and Vernam all require immediate incorporation. Accurate and uniform herbicide application is necessary in order to minimize the potential for herbicide injury or carryover. If you are considering aerial application don't forget the potential for drifting spray particles to contact trees, shrubs, and lawns.

Preplanting. If you want to retain the option of replanting from corn to soybeans, you must consider both herbicide and insecticide applications. Some herbicides are cleared for use with corn and soybeans while others have limited residual activity, reducing the likelihood of injury. However, some herbicides persist long enough to seriously injure soybeans. If you decide to use a postemergence application on corn (to leave the preplant option for soybeans open), don't forget that timely application is necessary to control annual grasses.

Weed control on winter wheat. Winter wheat should be sprayed with 2,4-D before the boot stage (the head can be felt in the stem) or with Banvil before the node stage (the nodes begin to form on the stem). Banvil works better on smartweed and wild buckwheat; but 2,4-D works better on mustards, such as yellow rocket.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 9, May 18, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE CROPS

Alfalfa weevil larval numbers, although still high, are beginning to decline in the southern third of Illinois. Small larvae are present, but many of the older larvae are pupating. Overwintering as well as newly emerged adults are present in most fields.

Damage may be so severe in some fields that using insecticides would be a waste of money. Cut the crop. If new growth is not noticeable in three to five days, examine the new growth closely for alfalfa weevil larvae. If they are devouring the new shoots, use an insecticide.

This same thing will occur in the central third of Illinois within a week. From now on this spring if the harvest of the crop is near, cut and treat the new growth in cases of excessive weevil populations.

SMALL GRAINS

Armyworms will appear within the next two weeks if they are going to be a problem. As yet, we have not found any damaging infestations in wheat, but have found a few in tall grass.

Look for armyworms in thick or lodged spots in wheat or barley fields. Shake the lodged plants vigorously, and examine the ground and debris underneath these plants. If you find no worms or just an occasional one in the thick or lodged spots, there is no need to look further. However, check the field again in about a week, since there could be additional egg hatch by then.

Do not confuse the striped armyworms with the transparent yellow to green sawflies. An armyworm has five pairs of abdominal prolegs; sawflies, six or more pairs. Sawflies were also present along with the armyworms in the fields this week. Sawflies do not damage wheat plants enough to require control.

Treatment is justified if there are 6 or more armyworms per foot of drill row as an average over the field. Apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy cattle, animals fattening for slaughter, or poultry. There is no restriction on the use of the grain. One and one-half pounds of malathion per acre may be used to within seven days of harvest, or 3/4 pound per acre of trichlorfon (Dylox) to within twenty-one days of harvest.

CORN INSECTS

Flea beetles will soon appear on newly emerging corn. Extensive feeding has already occurred on some early sweet corn. If corn fields become seriously affected, apply 3/4 of a pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre as a band spray over the row. Grassy areas bordering the field should also be treated. Avoid using carbaryl near beehives, and toxaphene near fish-bearing waters.

Seed-corn beetles and maggots may develop into a problem if germination is slow and if the soil is cool and wet. If replanting becomes necessary, use a diazinon planter-box seed treater or an organic phosphate soil insecticide applied in a 7-inch band ahead of the press wheel.

Black cutworms have not yet been reported. We have not been able to find any in cornfields as yet. With this year's delayed planting, small plants may be attacked as fast as they germinate or emerge. The plant may be "eaten into the ground," so watch for this type of damage as well as for cut plants. If cutting begins or if cutworms are eating plants into the ground, apply 20 pounds of carbaryl (Sevin)-apple pomace bait per acre. Sprays of carbaryl to which an attractant such as Tractum or molasses has been added will be fairly effective if the spray band is concentrated at the row. A spray of 1 pound of trichlorfon (Dylox) per acre will also control black cutworms. Use 20 gallons of water per acre when band-spraying with trichlorfon, and cultivate in order to throw soil over this band in the row.

Early detection of an infestation is essential if extensive damage is to be avoided. Again, we have not seen a severe black cutworm infestation as yet, but there undoubtedly will be some.

SOIL INSECTICIDE APPLICATION ERRORS

A few people continue to apply the organophosphates (Dansanit, diazinon, Dyfonate, Mocap, and Thimet) and the carbamate Bux directly into the planter shoe. This is a serious mistake. Germination will be decreased, even under ideal germinating conditions; and under adverse conditions, may be decreased by as much as 50 percent.

Apply these materials only as a band ahead of the press wheel. Band spreaders should be used, but if these are not available, drop the granules directly infront of the press wheel from several inches above the soil level. They will tend to disperse.

HOMEOWNER INSECT PROBLEMS

Succulent oak galls appear as little gooseberry or currant berry-like galls on pin oak leaves. Each gall contains the larva of a tiny wasp. These galls seem to be much more numerous this year than usual. Even so, no chemical control is necessary because no serious harm will be done to the tree.

Pine sawflies have been observed feeding on the needles of pines, especially the red and scotch varieties. These sawflies appear in large colonies on the tips of branches, feeding on the old needles. These greenish-brown worms can be controlled by spraying the pine trees with a spray containing carbaryl (Sevin), diazinon, or malathion.

Aphids are appearing in home gardens on cabbage and related crops, as well as on tomatoes. A spray of malathion mixed according to label directions should provide satisfactory control.

WEEDS

PREEMERGENCE HERBICIDES

In the rush to plant corn, some farmers have delayed the application of preemergence herbicides. Lasso or Ramrod and their combinations with AAtrex (atrazine) can be applied until annual grasses have two leaves. However, the earlier preemergence herbicides are applied, the more effective they will be.

Using the rotary hoe before weeds emerge will help keep many small weeds under control. However, rotary hoeing may be more difficult on some of the cloddy and trashy fields that have resulted from the minimum tillage used this spring.

The triazine herbicides, AAtrex, Bladex, or Outfox, can be applied until annual grasses are 1-1/2 inches tall. This is usually within two to three weeks of planting. Applying these herbicides to corn that is growing under stress can cause yellowing and stunting, but the injury is usually temporary.

Do not add any wetting agent or oil to Bladex, or serious crop injury may result. Adding an emulsifiable oil to AAtrex will help kill weeds more rapidly. Outfox is already formulated in oil. Broadleaf weeds can be controlled with 2,4-D, Banvel, or a mixture of the two. Banvel is more effective than 2,4-D on smartweed and also helps control Canada thistle. However, the risk of injury from drift to soybeans or other nearby susceptible plants is greater with Banvel. Spraying early, before soybeans are planted or at least while they are small, is one way to help minimize this risk.

Revised rates for Sencor. The following table gives the revised rates for Sencor (metribuzin). Careful application of Sencor is necessary in order to minimize the potential for soybean injury. Combinations with Sencor have not been cleared.

Pounds of Sencor 50-Percent Wettable Powder Per Acre

	Organic matter content (percent)		
	Less than 2	2 to 4	Over 4
LIGHT SOILS (sandy loam, loamy sand)	DO NOT USE	3/4	1
MEDIUM SOILS (loam, silt loam, silt, sandy clay, sandy clay loam)	3/4 to 1	1 to 1-1/4	1-1/4 to 1-1/2
HEAVY SOILS (silty clay, silty clay loam, clay, clay loam)	1 to 1-1/4	1-1/4 to 1-1/2	1-1/2 to 1-3/4

TIMELY PRECAUTIONS

In the rush of this busy season, don't forget to:

1. Calibrate and calculate dosages accurately. Overdosing can cause crop injury or carryover, while underdosing can cause poor performance.
2. Read and heed all label instructions and precautions.

3. Thoroughly clean out applicators when changing crops or herbicides.
4. Wash and rinse "empty" containers.
5. Dispose of empty containers properly.

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TO RADIO AND TV STATIONS

Your county Extension Adviser, who represents the University of Illinois Cooperative Extension Service in your area, may already be providing a regular weekly reporting service to you on the insect, weed, and plant-disease situation for your area. If not, you can have University of Illinois specialists on your local radio station each week telling listeners how to best control their insect pests or how to care for their lawn and shrubs. Call our automatic answering device according to the schedule shown below. You will get a taped report, with specialists from entomology, agronomy, ornamental horticulture, etc. summarizing the week's activity and forecasting next week's problems. Check the schedule and choose the time slots that have specific information for your listeners. Then call (217) 333-2614.

CALL IN WITH YOUR TAPE RECORDER RUNNING

Monday	9:00 a.m. to 5:00 p.m.	Homeowners Insect Report
Tuesday	9:00 a.m. to 5:00 p.m.	Lawn and Garden Tips
Thursday	9:00 a.m. to 5:00 p.m.	Illinois Crop and Soil Conditions

Friday	9:00 a.m. to 12:30 p.m.	Northern Illinois Insect Report
	1:30 p.m. to 5:00 p.m.	Southern Illinois Insect Report

In case of difficulty or if you need more information, call (217) 333-4783 and ask for Agricultural Communications Specialist Dave Warner.

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URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 10, May 25, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE CROPS

Alfalfa weevil larvae are continuing to decline in number, and the alfalfa continues to grow. Generally, it is too late now to treat with an insecticide. The best thing to do is to cut the alfalfa and remove the hay. If the weevil larvae are seriously damaging the new shoots, spray with one of the recommended insecticides. If you have had lots of alfalfa weevil problems this spring, now is the time to start thinking about a November application of an insecticide. This will kill the adults that would otherwise overwinter and deposit their eggs in the late winter and spring of 1974.

Alfalfa or potato leafhoppers are tiny, green, wedge-shaped insects that run sideways when disturbed. They feed on the undersides of the leaves. As they suck the plant sap, they secrete a toxic material causing the leaves to turn yellow or purple and stunt the plant. These insects overwinter near the Gulf of Mexico and migrate northward. The extent of this year's migration is unknown, but there seems to be a strip across central Illinois where populations are light to moderate. If the adults are quite noticeable on new growth of alfalfa after the first cutting, apply 1 pound of carbaryl (Sevin) or malathion, 1/2 pound of dimethoate (Cygon, De-Fend, and perhaps others), or 1/2 pound of methoxychlor per acre. When spraying alfalfa with carbaryl or malathion, there is no waiting period between application and harvest. With dimethoate, wait ten days; with methoxychlor, seven days.

SMALL GRAINS

Armyworms are becoming conspicuous by their absence in lodged spots in wheat fields in the areas of Illinois that are usually infested. We are finding some, but the number is small. The largest armyworms are about half an inch long, which is about half-grown.

The number of armyworms is much lower than one year ago, but the delayed spring may mean an infestation later than usual. Look for armyworms in lodged grain. If you find lots of them in such spots, examine the remainder of the field. Treatment is justified if there are 6 or more armyworms per foot of drill row as an average over the field. Apply 1-1/2 pounds of toxaphene per acre. Do not feed the straw to dairy cattle, animals fattening for slaughter, or poultry. There is no restriction on the use of the grain. One and one-half pounds of malathion per acre may be used to within seven days of harvest, or 3/4 pound per acre of trichlorfon (Dylox) to within twenty-one days of harvest.

CORN INSECTS

Seed-corn beetles and maggots may damage some corn fields before the corn seeds germinate. Cool, wet soil slows down the germination process and enhances the potential for damage by these pests. If replanting becomes absolutely necessary, use a diazinon planter-box seed treater or an organic phosphate soil insecticide, applied in a 7-inch band ahead of the press wheel.

Corn flea beetles may be numerous in the southern third to half of the state, and will concentrate on corn as it comes through the ground. These tiny, black and shiny beetles jump at the slightest disturbance. Only by approaching plants cautiously will you be able to see them. They strip the green tissue from between the veins, leaving little white or brown streaks on the leaf. If corn fields become seriously affected, apply 3/4 of a pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre as a band spray over the row. Grassy areas bordering the field should also be treated. Avoid using carbaryl near beehives, and toxaphene near fish-bearing waters.

Black cutworms have not yet appeared. Watch for feeding on the stalks and leaves, or for cut plants. Early detection of an infestation is essential for control. Apply 20 pounds of carbaryl (Sevin)-apple pomace bait per acre. Sprays of carbaryl to which an attractant such as Tractum or molasses has been added will be fairly effective if the spray band is concentrated at the row. A spray of 1 pound of trichlorfon (Dylox) per acre will also control black cutworms. Use 20 gallons of water per acre when band-spraying with trichlorfon, and cultivate in order to throw soil over this band in the row.

European corn borer development is near normal. Some emergence of these moths has occurred in the southern third of Illinois. European corn borer moths will have difficulty finding a good place to lay eggs except on weeds, wheat, some flowers, and a few patches of extremely early sweet corn. Survival should be very low. Pupation of the overwintering borers further north is well underway, but no moths have emerged as yet.

SOYBEAN INSECTS

Bean leaf beetles will feed on both green beans and soybeans as fast as they come through the ground. Although insecticides to control this pest on green beans are often necessary, control is rarely required on soybeans. If damage is so severe that the stand of soybeans is being noticeably reduced, apply either 1 pound of carbaryl (Sevin) or 1-1/2 pounds of toxaphene per acre.

HOMEOWNER INSECT PROBLEMS

Leafrollers on strawberries have been reported. These caterpillars fold strawberry leaflets around themselves, then proceed to chew on the foliage. Some patches have had certain areas severely defoliated.

For control, spray foliage with diazinon. Use 3 tablespoons of 25-percent liquid concentrate per 1,000 square feet of strawberry patch. Allow five days between application and harvest.

Plant bugs and leafhoppers are sucking plant juices from leaves of honey locust trees, causing the leaves to turn yellow and curl. Sprays containing malathion or diazinon will control these insects.

Bronze birch borer adults are emerging from the upper limbs of birch trees. The bronze beetles will lay eggs on roughened bark on the upper part of trees. Good control of this borer can be achieved if the trunk and limbs are sprayed with dimethoate (Cygon, De-Fend) as the eggs start to hatch. Use 1 cup of the 2-pound-per-gallon formulation per 25 gallons of water. Begin about May 25 in southern Illinois, June 1 in the central section, and June 7 in the northern area. Repeat the dimethoate spray three weeks later. Spray only those trees that are infested.

Bagworms are hatching in southern Illinois, and will be hatching in the central section by June 10. These tiny worms can defoliate evergreens such as junipers, as well as some shade trees. As they feed, these worms construct a spindle-shaped bag in which they live. In the southern section, sprays can be applied now. The target date for spraying in the central area is after June 15; in the northern section, after June 30. Control bagworms while they are small and easy to kill. Once the bagworms become half-grown or more, insecticide spraying often fails.

For control, apply a spray containing carbaryl (Sevin), diazinon, malathion or *Bacilus thuringiensis* (Biotrol, Dipel, Thuricide and others). Follow the directions on the label. Check carefully for plants that could be injured by the insecticides used.

Bean leaf beetles are beginning to chew holes in leaves of green beans. Some of these brown, yellow or dull-red, beetles have no black spots; others have two or four spots. Bean leaf beetles can be controlled easily with carbaryl (Sevin), applied as a commercially prepared 5-percent dust or as a spray containing 2 tablespoons of 50-percent wettable powder per gallon of water.

WEEDS

SENCOR

Sencor has been widely advertised, but supplies will be rather limited. Soybean tolerance to Sencor is also somewhat limited. Rates should be selected very carefully for the soil. Applications should be very accurate and uniform. Sencor will not be adapted to fields with wide variations in soils.

There is a strong desire for improved broadleaf weed control in soybeans. Sencor has the potential to provide this. But with only limited supplies available and the rather close soybean tolerance involved, we would suggest trying Sencor on a test acreage this year, in order to gain experience before using it on a large scale.

Sencor can control most of the major broadleaf weeds found in soybeans, including cocklebur. It is not a good answer for annual morningglory. Sencor can also provide some control of annual grasses, but a little higher rate is generally needed for grasses than for broadleaf weeds. And as you increase rates, of course, the risk of soybean injury also goes up.

The label rates for Sencor for our area are 3/4 to 1-3/4 pounds of the 50-percent wettable powder per acre on a broadcast basis, depending on soil. NOTE: The manufacturer recently lowered the recommended application rates. We would suggest going easy on rates above 1-1/2 pounds per acre on Illinois soils.

Combinations with reduced rates of Sencor plus a good grass killer to improve crop tolerance and grass control are possibilities for the future, but are not yet cleared. Registration for a Treflan preplant incorporated application followed by Sencor on the surface is being requested. Registration for a tank mix of Lasso plus Sencor is also being requested.

Many growers would like to put a broadleaf killer with Treflan for preplant incorporation. Limited research thus far suggests that incorporating Sencor may increase the risk of soybean injury, but more detailed research information is needed in order to know for sure. This practice is not registered or recommended for the 1973 season.

In summary, we hope Sencor will help control broadleaf weeds in soybeans. But for this year, if you insist on treating more than a few acres with Sencor and for any reason have soybean injury, "don't call us, we'll call you."

IF A LITTLE IS GOOD, MORE ISN'T ALWAYS BETTER

With current soybean prices, some growers seem to be quite anxious about weed control and seem willing to spend more than usual. Remember that increasing the rate of application above the recommended maximum does not necessarily mean that the result will be improved weed control or broader spectrum control; but doing so may cause soybean injury. In working to control weeds, don't use excessive rates, because that could mean excessive soybean injury.

AMIBEN RATES

One of the best places to improve performance is to use the full, recommended rate of Amiben. Many growers have been using 2 pounds of active ingredient per acre. The full rate recommended is 3 pounds. That is 1-1/2 gallons of liquid (2 pounds per gallon), or 30 pounds of 10G on a broadcast basis (proportionately less in a band).

TREFLAN FOLLOWED BY AMIBEN

There is increasing interest in using Amiben banded following a Treflan preplant incorporated application. The label states, "Band applications of Amiben may be made for broadleaf weed control over the top of preplant soil incorporated grass killers." Although this would appear to allow use following preplant applications of Lasso, Vernam, or Cobex, most of the research and field experience has been with Amiben following Treflan.

Since either Amiben or Treflan alone may sometimes cause soybean injury, the dual application would seem to increase the possibility of injury. However, thus far, injury from the dual application has not been a major problem in our research trials or in limited field use. Even so, this does not eliminate the possibility of a problem.

If you are using maximum herbicide rates--alone, in combinations, or in sequential applications, be sure to use one of the more vigorous soybean varieties.

INCORPORATING TREFLAN

Treflan has been applied to some fields that were in corn last year but not plowed in the fall or spring. The question would be, "Was disking adequate to incorporate the Treflan?" This depends on many factors, such as the condition of the soil when disked, the amount of crop residue present, and the type of equipment used. If the disk or other tillage tool gave relatively good mixing action, the Treflan may be adequately incorporated--but perhaps not quite as good as if the field had been plowed. You'll soon know the results as the weeds begin to grow.

SPRAYING WEEDS BEFORE TILLAGE

Weeds sometimes grow before tillage is possible to prepare the seedbed for soybeans. When this happens, should a herbicide be applied before the field is worked? Today's

equipment is much more effective than the old horse disc for controlling existing vegetation and may be adequate. Translocated herbicides, 2,4-D, and Banvel are not currently approved for such application, and cannot be recommended. There is a possibility of severe injury to soybeans--especially from Banvel, depending on the rate, interval between application and planting, temperature, and moisture conditions.

Using such a herbicide where not approved might also result in illegal residue in the crop. No one wants illegal residue in crops, and certainly not when soybeans are $10 a bushel. Paraquat is a possibiltiy for preplant use before corn or soybeans to control emerged weeds, but may only give a top kill of some of the weeds.

WILL INCORPORATED HERBICIDES BE LOST FROM DRY SOIL?

Not necessarily, and perhaps not as much as from wet soil. Some herbicides can be lost by volatilization and photodecomposition (the effect of sunlight). Soil that is very cloddy and thus has a lot of air space in it may allow more of a loss. When the soil is wet and when the air is dry and hot and the moisture is moving upward, there may be an increased loss of some herbicides. Do the best you can to incorporate herbicides such as Treflan, Sutan, and Vernam so they are in the soil and you are protected against such loss. Then, let nature take its course.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshall McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Don Button.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 11, June 1, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworms are reported to be damaging corn in west-southwestern Illinois. Watch fields closely for cut or missing plants--a sign that cutworms are at work. Dig around the base of the plants to find the worms. If you find 1 or more worms per 25 plants, apply controls immediately.

For control, broadcast 20 pounds of 5-percent carbaryl (Sevin) on apple-pomace bait per acre. Spray of 2 pounds of carbaryl and 2 quarts of molasses plus water per acre banded at the base of the plants are also effective. Commercially prepared spray baits containing carbaryl plus Tractum or molasses are available. Trichlorfon (Dylox) at 1 pound per acre as a spray will control black cutworms. Use 20 gallons of water per acre when band spraying with trichlorfon, then cultivate in order to throw soil over this band in the row.

True armyworms have been damaging newly emerging corn planted without tillage on grass sod, according to reports. The worms were found hiding in soil cracks and debris during the sunny part of the day. A spray of carbaryl (Sevin) or toxaphene applied at 1-1/2 pounds of actual insecticide per acre is effective. If most of the grass between the rows is dead, band the spray over the row. If there is still some green grass between the rows, use a broadcast spray treatment to kill any armyworms that may still be feeding on the grass. Do not feed toxaphene-treated corn as forage to dairy or beef cattle. There are no restrictions for carbaryl.

Common stalk borers are damaging no-till corn on grass sod. These striped worms with a purple band around their middle feed deep in the whorl. The damaged leaves that emerge are extremely ragged. Ordinarily this pest is serious only in the marginal rows of conventionally tilled corn, but in no-till corn the infestations often cover the entire field.

Control is difficult because the worm is protected inside the corn plant. A spray of carbaryl at 1 to 2 pounds per acre directed over the row may be helpful. As the borer leaves one plant and crawls to another, it will contact the insecticide and be killed.

European corn borer moths are emerging in the southern section (about 40 percent emergence), and egg-laying is starting. First-generation corn borers are not expected to

present a problem in this area. The overwintering population was low, and very little corn is mature enough to support the survival of the borers.

The pupation of corn borers has reached 90 percent in the central section, and a few moths are emerging. Pupation is underway in the northern section, but the moths will not emerge there for another week. The west-central section has the highest population of overwintering borers (84 borers per 100 stalks of corn last fall); but even there, only fields that were planted very early might have a problem.

LIVESTOCK INSECTS

Horn flies, face flies, and stable flies are just beginning to appear on pastured cattle. Begin your control program early before the number of these flies builds up. They cause reductions in milk flow and beef production.

For dairy cattle, apply crotoxyphos (Ciodrin) as a 1- to 2-percent, oil-base spray ready-to-use. Use it at 1 to 2 ounces per animal two to four times a week, or as a 1-percent water-base spray at 1 pint per animal per week. As alternatives, you can use oil-base sprays of 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrin spray applied at 1 to 2 ounces per animal per day can be used. Pay particular attention to the animal's legs and undersides when spraying.

Ciodrin is the most effective insecticide for controlling face flies. All of the above insecticides provide good control of horn flies and fair control of stable flies. Dust bags containing insecticides like coumaphos (Co-Ral) or crotoxyphos (Ciodrin) effectively control horn flies, but not face flies and stable flies.

For beef cattle, apply a water-base spray of 0.5-percent toxaphene at the rate of 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies. If face flies become a serious problem, use crotoxyphos (Ciodrin) as suggested for dairy cattle. A canvas or burlap head-oiler or back-oiler, saturated with a solution of 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER INSECT PROBLEMS

Slugs are common in strawberry patches, garden crops, flower beds, and lawns. The wet conditions have been favorable for their development. Slugs eat foliage and fruit, and leave a trail of mucus as they crawl. They have been described as snails without shells. Slugs are active at night and hide under boards and other debris during the daylight hours.

Heavy trash is conducive to slug development, so keep the garden cleanly cultivated. Lay small pieces of flat boards between the rows of vegetables or strawberries. The slugs will congregate beneath these boards, and can then be destroyed. A trap method using stale beer has been employed successfully in small areas. Imbed small, 4-ounce containers in the ground beneath foliage and fill them about half way with stale beer. The slugs are attracted to the stale beer and tumble in from the edges of the containers.

Bait formulations containing metaldehyde can be used around many fruit and vegetable crops, as long as the edible parts are not contaminated. The bait can be used between the rows of a crop like strawberries, as long as care is taken to avoid contaminating

the berries. This is according to an interpretation obtained from Mr. James Toughy of the Federal EPA Insecticide and Rodenticide Branch. There is no tolerance for metaldehyde residues on fruits and vegetables.

A new slug and snail bait called "Mesurol" has been cleared for use around ornamental plants, flowers, greenhouse plants, and structures. It cannot be used on food crops or directly on plant foliage. First, lightly water the area to be treated. Then, scatter the bait on the soil beneath the plants so that it can hardly be seen. Check the label for use directions.

Striped cucumber beetles are moving from overwintering sites to newly emerging cucumbers, squash, and similar vine crops in home vegetable gardens. Cucumber beetles feed on the new leaves, eating holes in them; but their greatest damage results from the bacterial wilt disease they often transmit to young plants. Infected plants will often wilt and die suddenly, after being fed on by the beetles. Carbaryl (Sevin) applied as a 5-percent dust or a spray using 2 tablespoons of 50-percent wettable powder per gallon of water will control these beetles.

WEEDS

CORN WEED CONTROL

Late Applications of Preemergence Herbicides. In the rushed planting schedule this spring, a considerable amount of corn was planted without a preemergence herbicide. We are now receiving calls about "late applications" of preemergence herbicides. Here are our suggestions:

Lasso or Ramrod and their combinations with AAtrex (atrazine) can be applied until annual grasses have two leaves. The earlier the application, the more effective the treatment. If possible, a timely rotary hoeing will help keep many small weeds under control.

AAtrex, Bladex or Outfox can be applied until annual grasses are 1-1/2 inches tall. This is usually within two or three weeks of planting. Applying these herbicides to corn that is growing under stress can cause yellowing and stunting. This injury is usually temporary, but occasionally has been serious.

Do NOT add any wetting agent or oil to Bladex, or serious crop injury may result. Outfox is already formulated in oil. An emulsifiable oil added to AAtrex will help kill weeds more rapidly.

Household Detergents as Additives. Every year about this time we receive a lot of questions about using household detergents as additives for postemergence herbicide sprays. These are often claimed to substitute for emulsifiable oils or agricultural surfactants. Studies with various additives indicate that the nonphytotoxic crop oils are more effective for weed control than products originally intended for use as household detergents.

It is usually advisable--and often more economical--to use emulsifiable oils or agricultural surfactants that are especially formulated for agricultural use. Do not use surfactants, crop oils or other additives with any herbicide unless such a mixture is specified on the herbicide label. An additive that improves weed kill may also increase crop injury.

VOLUNTEER SUNFLOWER CONTROL

We are receiving several calls about controlling volunteer sunflowers in corn and soybeans. Shattering, caused by delayed sunflower harvest last fall, plus minimum tillage operations this spring have created the volunteer sunflower problem.

Use AAtrex or 2,4-D to control volunteer sunflowers in corn. The AAtrex can be applied preplant, preemergence, or postemergence. Apply the 2,4-D postemergence. Follow the usual precautions on rate, size of corn, and timing.

Volunteer Sunflowers in Soybeans. These can be a real problem because the two most common soybean herbicides, Amiben and Treflan, are also cleared for use when producing sunflowers. Chloroxuron, which is sold as Tenoran or Norex, will give fair control if used when the sunflowers are small. Again, observe the usual precautions for additives, rates, and timing. Soybeans will often show a temporary yellowing after an application of chloroxuron. Basagran (bentazon), a new experimental herbicide for postemergence use in soybeans, maypprovide some control, but supplies are limited.

SOYBEAN WEED CONTROL

Preemergence Herbicides. Most such herbicides for soybeans should NOT be applied to soybeans that have emerged. "Browning" and serious soybean injury may result. Chlorbromuron (Maloran or Bromex), Lorox, and Sencor are photosynthetic inhibitors that may cause severe contact burn to exposed cotyledons and foliage. Solo and fluorodifen (Preforan or Soyex) applied early postemergence may also cause burning and a twisting of the soybeans.

"Preemergence" means before the crop and weeds have emerged from the soil. So apply preemergence herbicides at the proper time. If you get too far ahead in your planting, you may find that you are behind in your weed control program.

Weed Control in Flooded Areas. We have received several calls on how to control weeds in flooded areas where farmers hope to plant soybeans. Paraquat is the only herbicide cleared for vegetation control prior to planting soybeans. Paraquat is a contact herbicide. Be sure to use an adequate volume of water and to add a surfactant in order to obtain complete foliar coverage. The proper rate is 1/2 pint of Paraquat in 40 to 60 gallons of water.

PASTURE WEED CONTROL

If you have your other jobs done this spring, it is time to spray pasture weeds such as ragweed, hemp, goldenrod, fleabane, and ironweed. Use the low-volatile ester of 2,4-D at 1 to 1-1/2 pounds per acre (1 to 1-1/2 quarts of 4-pounds-per-gallon formulation) in at least 15 to 20 gallons of water per acre. Take proper precautions to prevent drift onto desirable vegetation (trees, shrubs, gardens). Observe the seven-day grazing restriction for dairy animals.

PLANT DISEASES

CORN DISEASES

Stewart's Wilt and Leaf Blight of Corn. Several sweet corn samples showing extensive flea-beetle feeding, but no traces of Stewart's disease, have been received at the Plant Disease Clinic in Urbana. Leaf blight symptoms--long, narrow, yellowish-tan

streaks with wavy margins--are most noticeable on plants that are less than two feet tall. Several streaks on a leaf will cause it to shrivel, die, and appear to be frosted or suffering from lack of water. The streaks are parallel to the leaf margins, and are generally associated with injury caused by flea-beetle feeding. Sweet corn is usually more susceptible to leaf blight than field corn, but field corn and even resistant sweet corn can be infected in the seedling stage.

The bacteria that cause Stewart's disease overwinter almost exclusively within the bodies of adult corn-flea beetles. In areas where wilt was severe the previous summer, about 20 percent of the beetles that come out of hibernation the following spring are contaminated with the silt-causing bacteria.

Sweet-corn producers should plant resistant sweet-corn varieties and follow Extension Entomologists' suggestions to control the corn-flea beetles. Write for *Report on Plant Diseases, Numbers 201 and 907*. They describe Stewart's wilt and leaf blight in more detail. Resistant sweet-corn varieties are listed in RPD Number 907.

Corn Genetic Abnormalities. Corn samples occasionally show long white streaks that can be mistaken for Stewart's leaf blight. These plants usually occur singly and are not common in the field. The streaks result from mutated cells within the plant that are not able to synthesize chlorophyll. All cells derived from the mutated (genetically abnormal) cells lack this ability; therefore, long streaks with SMOOTH margins are observed--all derived from common cells in the growing embryonic tissue of the seedling. The survival of abnormal plants depends on the extent of chlorosis (absence of green chlorophyll).

SMALL GRAIN DISEASES

Septoria Leaf Blotch of Wheat. *Septoria tritici* continues to exist on wheat. However, warm and dry weather slows down the progress of the disease. A normal year's loss in yield due to leaf blotch is about 5 percent, especially on early maturing varieties.

Dark-brown to black specks called "pycnidia" (spore-producing bodies) form in the dead lower leaves. Severely infected leaves turn yellow, wither, and die prematurely. Pycnidia can be observed readily with a hand lens.

Septoria Glume Blotch of Wheat. Glume blotch, caused by *Septoria nodorum*, infects the chaff (glumes) of wheat heads, as well as the culms (leaf sheaths) and leaves. Unlike Septoria leaf blotch, glume blotch is a disease associated with warm, moist weather. Glume blotch causes the highest losses when excessive rainfall occurs between flowering and grain harvest.

Small, irregular, grayish or brownish spots or blotches appear on the chaff, usually near the top third of the glume. As the blotches age, pycnidia appear in the chocolate-brown to tan areas.

The fungi that cause leaf blotch and glume blotch survive on volunteer wheat and on stubble left over from previous seasons. None of the wheat varieties adapted and recommended for Illinois are resistant to Septoria leaf blotch or to glume blotch. Early maturing varieties are generally more susceptible than late-maturing ones. Write for *Report on Plant Diseases Number 105* for more details on Septoria disease of wheat.

Wheat Streak Mosaic on Corn. Wheat plants that become infected with wheat-streak mosaic in the early spring develop leaf symptoms, but yield losses are usually slight. The virus that causes the disease is spread only by the feeding of tiny, white, cigar-shaped, wheat-curl mites.

As winter plants mature, the near-microscopic mites migrate to nearby volunteer wheat, grasses, and corn. Several corn fields in south-central Illinois showed typical wheat-streak mosaic symptoms in 1972. During the late summer and early fall, the wheat-streak virus is transmitted to volunteer wheat and to wheat planted in the fall.

No hard or soft wheats currently grown in Illinois are resistant to wheat-streak mosaic. Chemical control of wheat-curl mites has not been successful. Request *Report on Plant Diseases Number 120* for more details.

Soil-Borne Wheat Mosaic. Infection by this disease has been favored by this spring's wet soils and cool weather. The virus that causes this disease is transmitted through infections of wheat-seedling roots by a soil-borne fungus. Soil-borne mosaic appears in wheat fields when growth begins in the early spring, and it will persist until temperatures average about 75° F. At that time, the symptoms become masked. Parker, Triumph, and Centurk, are susceptible wheat varieties. Wheat throughout the state is now outgrowing the symptoms of soil-borne mosaic.

SOYBEAN DISEASES

Soybean Seed Treatment. There is little scientific evidence to indicate that treating high-quality soybean seed significantly increases yields. In blotter or field tests, treatment may increase the germination rate and the emergence of poor-quality seed by as much as 25 percent. Satisfactory yields have been obtained by treating poor-quality beans that have a germination rate of not less than 60 to 70 percent. However, treating high-quality seed (above 80-percent germination) produced little increase in germination, emergence, or yield in studies at several of the state experiment stations.

Inoculating soybean seed with *Rhizobium* bacteria is not generally needed in Illinois--especially where soybeans have been grown previously. If a grower needs both treatment and inoculation, the seed should be treated first and then inoculated within two hours after being planted in the field.

The recommended seed treatments are Captan (Orthocide) and Thiram (Arasan)--either alone or in combination. Thorough coverage of the seed is essential. Treated seed CANNOT be used for food, feed, or oil purposes--even if stored for a year after treatment. More information about treating soybeans is available in *Report on Plant Disease Number 506*.

Copies of the *Reports on Plant Disease*, are available from the Department of Plant Pathology, 218 Mumford Hall, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

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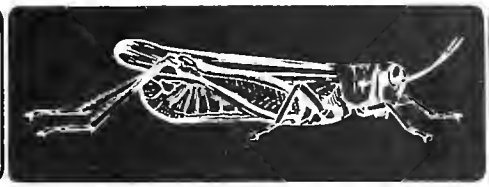

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 12, June 8, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworms are damaging corn in some areas, but infestations are not as serious as last year. The worms are still only about half grown (3/4 of an inch), and will feed for another seven to ten days. The cutworms are working closer to the soil surface because of wet conditions, and the corn is still small. Most of the plants are being cut above the growing point, and these plants will recover.

Corn fields should be watched closely during the next two weeks for cutworm damage. If the worms are still small and you find 1 or more per 25 plants, apply controls immediately.

For control, broadcast 20 pounds of 5-percent carbaryl (Sevin) bait per acre. A spray of 2 pounds of carbaryl and 2 quarts of molasses plus water per acre banded at the base of the plants is also effective. Commercially prepared spray baits containing carbaryl plus Tractum or molasses are available. Trichlorfon (Dylox) at 1 pound per acre as a spray will control black cutworms. Use 20 gallons of water per acre when band-spraying with trichlorfon, then cultivate in order to throw soil over this band in the row.

If replanting is necessary and if the majority of the cutworms are once more of small size (less than 1-1/2 inches), they could seriously damage the new planting. In that case, apply 5-percent carbaryl (Sevin) bait at 10 pounds per acre as a band over the row behind the press wheel when planting. If most of the worms are 1-1/2 to 1-3/4 inches or larger, the corn can be replanted without using an insecticide treatment.

Wireworms are causing damage in a few fields of corn. Wilting plants are an indication of wireworms. Examine the stalk just below ground level. If a hole has been drilled into it, sift the surrounding soil for this hard-shelled, reddish-brown, wire-like worm.

There is no proven way of controlling wireworms after the problem occurs. On a trial basis only (to protect the stand from further damage), apply 1 pound of actual Dyfonate or Thimet per acre as granules placed at the base of the plants. Cover with cultivation. A rain following treatment would improve the chances of success. If replanting becomes necessary, apply one Dyfonate or Thimet in a 7-inch band ahead of the press wheel. This will protect the plants against all but the full-grown wireworms.

First-generation corn borer moth emergence is now complete in southern Illinois. Corn damage is not expected to be a problem. In the central section, 15 percent of the moths have emerged and egg-laying has started. Pupation reached 32 percent in the northern section. First-generation borer infestations will also be low in these sections.

FORAGE INSECTS

Alfalfa weevil larvae are still numerous in many fields. In some cases, they are damaging the new growth of the second crop. If so, an insecticide application may still be warranted.

True armyworms were reported to be damaging a field of timothy grown for hay this week. Armyworms are also present in grass pastures and in grassy hay fields. If populations are heavy and their food becomes scarce, they may migrate to adjacent corn and cause considerable damage. Carbaryl (Sevin) at 1-1/2 pounds of the actual chemical per acre or trichlorfon (Dylox) at 1 pound of the actual compound per acre as a spray will effectively control armyworms in grasses. There is no waiting period for grazing or cutting after spraying with these insecticides.

INSECTS IN STORED GRAIN

These insects are lying in wait for their summer's feast. Wheat harvest is near. Follow these steps to effectively protect stored wheat from insect attack:

1. Clean out all old grain and other debris from within and around the bin. Clean out grain-handling equipment. Feed the first few bushels coming from the combine to livestock.

2. Spray the inside surfaces of the bin to the point of runoff with malathion. Mix 3 ounces of the 50- to 57-percent liquid concentrate per gallon of water.

3. If the wheat is to be held for a month or more in storage, apply a malathion/water-base spray to the wheat as it is augured or elevated into the bin. Mix 1 pint of 50- to 57-percent malathion liquid concentrate in 3 to 5 gallons of water and apply this amount to each 1,000 bushels.

4. Hang one dichlorvos (DDVP, Vapona) plastic resin strip per 1,000 cubic feet of overspace immediately after storage. Replace the strips in about eight to ten weeks with new strips.

5. Reinspect the grain at regular monthly intervals for the presence of insects.

HOMEOWNER INSECT PROBLEMS

Periodical cicadas are now emerging in many localities in the northern third of the state. Egg-laying will take place about a week after the moths emerge from the soil. Young trees and shrubs that may be damaged by egg-laying can be protected with a netting such as cheesecloth. Carbaryl (Sevin) applied as a spray when the female cicadas are laying their eggs will reduce damage.

Bagworms are beginning to hatch in the central section. These tiny worms can defoliate evergreens such as junipers, as well as some shade trees. As these worms feed, they construct a spindle-shaped bag in which they live. In the southern section, sprays

can be applied now. The target date for spraying in the central area is after June 15; in the northern section, after June 30. Control bagworms while they are small and easy to kill. Once they become half-grown or more, insecticide spraying often fails.

For control, apply a spray containing diazinon, malathion, or *Bacillus thuringiensis* (Biotrol, Dipel, Thuricide, and others). Follow the directions on the label. Do not use malathion on cannaert red cedar. Do not use diazinon on ferns or hibiscus.

Several gnat-like insects that swarm are reported to be biting farmers and other persons spending time out-of-doors in northwestern Illinois. The problem is most severe in areas near a river or a stream. We have no positive identification on the insect as yet, but we suspect that they are black flies (sometimes called southern buffalo gnats). When they bite, they inject an anticoagulant (a protein-base substance) that can cause severe itching and swelling of the affected area in sensitive individuals. There is also the possibiltiy that tiny "no seeums" are also involved. The black fly bite is usually not felt while the "no-seeums" bite feels like a small pin prick. Black flies commonly bite during the day; "no seeums" bite mostly in the early evening.

Little can be done for protection. The repellents used against mosquitoes are generally not effective against these small flies. Wear protective clothing (long-sleeve shirts with high collars, or sweat shirts, long pants, socks, and hat). Around the home or in recreational areas, using a spray of malathion over tall grass and other shrubbery may be of some help. Relief could be just around the corner, since the black fly season usually lasts only a few weeks.

SPECIAL NOTE TO PESTICIDE APPLICATORS

The U.S. Environmental Protection Agency has recently taken a stand on tank mixes of pesticides (mixing two or more pesticides in the spray tank at the time of application). The U.S. EPA states that tank mixes and serial applications (repeat treatments) fall into one of three categories:

1. Those tank mixes that have instructions provided on EPA-registered product labels for serial applications. A common example would be Alfatox (a mixture of diazinon and methoxychlor), used to control alfalfa weevils. Other examples would be the commercially prepared fruit and vegetable sprays and dusts that contain two or more pesticides. These uses can be continued. The U.S. EPA accepts the responsibility for their use.

2. Tank mixes covered by a state registration. The State of Illinois registers only those pesticide labels having U.S. EPA approval; therefore, this category would NOT apply in Illinois.

3. Various tank mixes and serial applications that are recommended by a state or are commonly used in that state for agricultural purposes. These uses can be continued if:

   a. the products in the mix are applied at a dosage rate not to exceed the label instructions for use of any product in the mix used singly for the same set of insects on the same crop; AND

   b. if the label on one or more of the products does not explicitly instruct against such mixtures.

The burden of responsibility for the continued use of the tank mixes in category three is that of the user, not the U.S. EPA. He applies them at his own risk with respect to any effects on crops and application equipment, applicator safety, environmental effects, and tolerance intervals before harvest.

The U.S. EPA is unofficially sanctioning the use of tank mixes, but is also absolving itself of responsibility. The EPA also states that in the future, it may take appropriate action to rule the use of specific tank mixes or serial applications as inconsistent with label instructions on a case-by-case basis.

WEEDS

WEED CONTROL IN CORN

GRASS CONTROL. AAtrex and oil should not be used after June 10 if any crop other than corn or sorghum will be planted in the field next year. Also, application should be made before grasses are more than 1-1/2 to 2 inches tall. If conditions are ideal, taller grasses may be controlled, but don't expect it. And don't expect significant increases in larger grass control by using higher rates either. Bladex used postemergence should be applied before the corn is in the four-leaf stage and before the grasses are 1-1/2 inches tall. Outfox should be applied before corn in 10 inches high and grasses are less than 2 inches tall.

BROADLEAF CONTROL. 2,4-D is an economical and effective treatment for controlling many broadleaf weeds in corn. For maximum effectiveness, apply 2,4-D when weeds are small. That is when they are the easiest to kill. You can broadcast over the top of the corn and weeds until the corn is about 8 inches high, but use "drop nozzles" or extensions from the boom after corn is 8 inches tall to help keep the 2,4-D out of the corn whorls and to decrease the possibility of corn injury.

Some corn is damaged by 2,4-D each year. Spraying 2,4-D during very cool, wet weather when corn plants are under stress or during very hot, humid weather may increase the possibility of corn injury. Some hybrids are more susceptible to 2,4-D injury than others. To help avoid damage to corn, apply 2,4-D at no more than the recommended rate.

The suggested rates per acre for broadcasting are a sixth to a fourth pound of the ester formulations and half a pound of the amines. The amines are less likely to have vapor drift. Many insurance policies do not cover the use of the ester formulations.

Banvel (dicamba) is more effective than 2,4-D for controlling smartweed. Use 2 to 4 ounces of dicamba (4 to 8 ounces of Banvel) per acre.

Soybeans are much more susceptible to drift injury from Banvel than from 2,4-D. The likelihood of soybean injury causing yield reductions goes up with the rate and the closeness of the soybeans to the blooming stage. Earlier applications at lower rates are more likely to control smartweed and less likely to cause reductions in soybean yields.

Air-induction nozzles are less likely to cause drift because they operate at lower nozzle pressures; thus, particle size is larger. Adding foam additives or drift inhibitors may help reduce drift and also visualize drift patterns.

WEED CONTROL IN SOYBEANS

We have received several calls about soybeans that were planted before the rains without a herbicide that have now emerged. The question is what can be done to control the weeds and not to injure the soybeans.

Rotary hoeing can help control early weeds and aid soybean emergence, especially if the soil is crusted. The rotary hoe is most effective after weed seeds have germinated, but before the majority of the weeds have emerged. Operate the rotary hoe at 8 to 12 miles per hour. Add enough weight to stir the soil and to kill the tiny weeds.

Dinoseb, sold under several trade names including Preemerge Dinitro Weed Killer and Sinox PE, is cleared for EARLY postemergence use--when the soybeans are still in the cotyledon stage. Do not apply dinoseb if the first leaves have opened to expose the terminal bud or if the soil surface is moist. If you do, severe soybean injury could occur.

Dinoseb is primarily a contact herbicide used to control broadleaf weeds. It does not control annual grasses well, and gives little residual control of seedlings that germinate after application. Dinoseb is cleared for tank-mixing with Amiben or Lasso, and is also packaged with Alanap (as Dyanap, Ancrack, and Kleenup) to improve residual control.

To control cocklebur, morningglory, and the like, dinoseb or "dinitro" may also be used as a directed-postemergence treatment when soybeans are 5 inches high up to the bloom stage. However, special directed-spray equipment is needed in order to minimize contact with the soybeans.

The rate of dinoseb varies from 2 to 3 quarts per acre, depending on the air temperature. Use the 3-quart rate when the maximum air temperature is below 75° F.; the 2-quart rate, when the maximum air temperature is 75 to 96° F. Do not apply dinoseb if the maximum air temperature within 24 hours is expected to be over 95° F. Be extremely careful when using dinoseb. It is quite toxic to man and animals.

Chloroxuron, sold under the tradenames of Tenoran and Norex, can be applied after trifoliate soybean leaves form and when broadleaf weeds are less than 2 inches tall. Chloroxuron will control most annual broadleaf weeds in soybeans. Velvetleaf control is erratic, however; and do not expect grass control. Soybeans usually show some temporary injury, but that usually will not reduce yields.

The broadcast rate for chloroxuron is 2 to 3 pounds per acre of Tenoran 50W or Norex 50W, plus 1 pint of a suitable surfactant per 25 gallons of spray. Use proportionately less for directed or semidirected sprays. A nonphytotoxic oil can be used at a rate of 1 gallon per acre instead of the surfactant with directed or semidirected sprays.

2,4-DB amine formulations are sold under the tradenames of Butoxone SB and Butyrac 175 for postemergence control of cocklebur in soybeans. 2,4-DB may also give some control of morningglory and giant ragweed. It can be broadcast over the top of soybeans from ten days prior to bloom until midbloom. Expect some soybean injury, such as leaf wilting, stem curvature, and possible stem cracking. Lodging may be increased and yields may be reduced under unfavorable conditions. Consider 2,4-DB for emergency control when the benefits from weed control will overshadow the risk of soybean injury.

Directed sprays may reduce the severity of injury. 2,4-DB can be directed when soybeans are at least 8 inches high and cockleburs are less than 3 inches tall, if this height difference occurs. Do not spray more than the lower third of the soybean plant. And do not apply 2,4-DB if the soybeans show symptoms of Phytophthora root rot disease or if the soybeans are under drought stress.

CORRECTION

Last week in the paragraph under weed control in flooded areas, the rate of paraquat was stated as 1/2 pint. This should have been 1 to 2 pints.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

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WEEDS: Ellery Knake and Marshall McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

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The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 13, June 15, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Black cutworm problem calls were not as prevelant this week as last. Occasional fields in the southern half of Illinois are infested, but the overall damage is light. Fields that showed damage prior to June 1 incurred little additional damage this past week. Damage is generally confined to the low areas in fields.

Corn fields should continue to be watched closely for cutworm damage for another week. The hot weather will encourage cutworms to feed at or below the soil line, rather than cutting above the growing point as was observed earlier. Plants cut below the growing point will not recover.

If most worms are less than 1-1/2 inches and you find 5 to 10 percent of the plants being cut, apply controls immediately. For control, broadcast 20 pounds of 5-percent carbaryl (Sevin) bait per acre. A spray of 2 pounds of carbaryl and 2 quarts of molasses plus water per acre banded at the base of the plants is also effective. Commercially prepared spray baits containing carbaryl plus Tractum or molasses are available. Trichlorfon (Dylox) at 1 pound per acre as a spray will control black cutworms. Use 20 gallons of water per acre when band-spraying with trichlorfon, then cultivate in order to throw soil over this band in the row.

If replanting is necessary and if the majority of the cutworms are once more of small size (less than 1-1/2 inches), they could seriously damage the new planting. In that case, apply 5-percent carbaryl (Sevin) bait at 10 pounds per acre as a band over the row behind the press wheel when planting. If most of the worms are 1-1/2 to 1-3/4 inches or larger, the corn can be replanted without using an insecticide treatment.

First-generation European corn borer moth emergence is complete in southern and central Illinois, and egg-laying and egg-hatch have begun. An occasional field that was planted early in west-central Illinois, particularly in bottom land areas, now has as many as 200 egg masses per 100 plants. These fields should be observed closely during the next seven to ten days. Some of these fields may require control measures during the week of June 25. In general, corn borer survival will be low in most fields since the development of the corn plants is much later than normal, except in the fields mentioned.

To determine the need for treatment, first check the tassel ratio. Dig up a plant and measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height and multiply by 100. This will give you the tassel ratio. If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre, and direct the spray to the upper third of the plant. Aerial applications should be as granules, not sprays or dusts. Allow 10 days between treatment and the ensiling of corn when applying diazinon; carbaryl has no waiting period. Commercial applicators may prefer to use parathion at 1/2 pound actual per acre, which will provide good control of the corn borer. Parathion has a 12-day waiting period between treatment and harvest.

Corn rootworm eggs have begun to hatch. Northern and western corn rootworms are expected to cause moderate to severe damage in fields of continuous corn (three or more years) in the area north of a line from Pittsfield to Springfield to Joliet.

To determine whether the larvae are present, dig up a corn plant and place the plant and soil on a piece of dark plastic or other material. Sift the soil carefully for the whitish rootworm larvae. Dissect the corn roots to determine if larvae are feeding inside the roots.

Newly hatched larvae are very difficult to find because of their small size. In fields already planted if you find two or more rootworm larvae per plant and if an insecticide was not applied at planting time, a cultivator application would be justified now. Apply Bux, carbofuran (Furadan), Dasanit, Dyfonate, Mocap, or phorate (Thimet) as a basal treatment during cultivation.

FORAGE INSECTS

Alfalfa weevils still need watching. The adults and larvae are damaging the new growth of the second crop in some fields recently cut. One field in central Illinois was severely damaged by adult weevils. Some fields in southern Illinois have a large number of cocoons on the ground, and the adult weevils will soon be emerging. These newly emerging adults will feed for a week or two before going into summer hibernation.

Adult feeding damage appears as a "feathering" along leaf margins and may occur in the southern half of Illinois as the pattern of emergence increases. After hay is cut, if the new growth does not show signs of greening up within two to four days, look for the 1/4-inch brown snout beetles in the small green larvae of the alfalfa weevil. One swing of a sweep net over the foliage will give an indication of the adult population.

To control the adult weevils and larvae, apply sprays of malathion and methoxychlor (2 to 3 quarts per acre of 4 pounds-per-gallon emulsifiable concentrate) or diazinon and methoxychlor (3 quarts per acre of Alfatox which contains 2.4 pounds per gallon EC). Methyl parathion at 1/2-pound per acre gives effective control of adult weevils, but should be applied only by commercial applicators. Use a minimum of 10 gallons of finished spray per acre on the stubble or 4 gallons by air.

SOYBEAN INSECTS

Clover root curculio larvae were observed damaging soybeans in Mason County this past week. The small, grayish-white grub stage of this insect burrows into the roots and kills the plants. There are no effective "rescue" treatments. The larvae will finish feeding shortly, then pupate and emerge as grey snout beetles.

These beetles often migrate into soybeans from adjacent alfalfa and clover fields when these are plowed or cut. The beetles feed on the soybeans, eating notches in the new leaves and gouging holes in the stems. A spray of toxaphene or carbaryl (Sevin) will provide control if needed.

LIVESTOCK INSECTS

House flies and stable flies are increasing in and around livestock barns and sheds. These flies will be nuisances until late September or early October. Both species spend the majority of their time resting on walls, ceilings, support posts, fences, feed bunks, and other places and only a short time on the animals. Stable flies reduce beef or milk production by attacking the legs and bellies of animals where they siphon blood, usually twice each day. House flies have little or no effect on production, but are a general nuisance.

Start control programs now, before house flies become too numerous.

1. Practice good sanitation. Eliminate fly-breeding materials--such as manure, rotting straw, wet hay, and feed--as often as possible. Spreading this refuse where it can dry makes it unsatisfactory for depositing eggs. When manure cannot be spread frequently, cover the pile with black plastic sheets, held down with old tires, sandbags, or other weights.
2. Apply a barn spray to the point of run-off on the ceilings and walls of all livestock buildings. Also spot-spray outside around windows and doors and along fences in the lot. The insecticides below are suggested for this purpose.

Insecticide	Amount per 100 gallons of water	Length of control
*diazinon, 50-percent wettable powder . .	16 pounds	2 to 3 weeks
dimethoate (Cygon), 23-percent liquid concentrate	4 gallons	3 to 4 weeks
fenthion (Baytex), 45-percent liquid . .	3 gallons	4 to 6 weeks
Rabon, 50-percent wettable powder . . .	16 pounds	2 to 4 weeks
Ravap, (Rabon plus dichlorvos), liquid concentrate	4 gallons	2 to 4 weeks
ronnel (Korlan), 24-percent liquid concentrate	4 gallons	1 to 2 weeks

*Do not use in dairy barns or milk rooms.

Use only ronnel or Rabon in poultry houses. All materials other than diazinon are cleared for use in dairy, beef, swine, sheep, and horse barns. Cover feed and water troughs before spraying. Do not spray animals with these materials at the dosages suggested. Remove animals before spraying the barns. Do not spray the milk-storage room.

3. Supplement good sanitation and barn sprays with a spray bait material. Use 4 ounces of dichlorvos (DDVP) or 2 ounces of naled (Dibrom) in a mixture of 1 gallon of clear corn syrup and 1/2 gallon of warm water. Apply this from a small tank sprayer to the favorite fly-roosting areas.

   Barn foggers using insecticides like dichlorvos (DDVP), pyrethrum, or naled (Dibrom) give a quick kill of flies during the fogging operation (5 to 10 minutes), but the effect is not lasting. When fly populations become intense, even twice a day fogging fails to provide satisfactory fly control for the farm--even though the barn is kept temporarily free of flies. As normally used, fogging does not leave enough insecticide deposit on the animals to protect the cattle from flies when on pasture. Coarse sprays applied to the animals are best for this purpose.

4. For large drylot and enclosed confinement operations, the use of a space spray applied from a mist blower has been successful. During peak fly periods, treatments will be needed every three or four days. The application can be made with cattle present, but avoid direct application to exposed feed and water. Do not apply in conjunction with animal or shelter treatments of organophosphate or carbamate insecticides. This should be the only chemical method of fly control being employed. There is no need to spray cattle in dry lot. The following insecticides and rates are suggested for mist blowers:

Insecticide	Amount per 100 gallons of water	Method
dichlorvos (Vapona), 22-percent liquid concentrate	2 gallons	Apply at 5 gallons of finished spray per acre
naled (Dibrom), 37-percent liquid concentrate	1 gallon	Same as above

HOMEOWNER INSECT PROBLEMS

Periodical cicada emergence is rapidly progressing in northern Illinois. As many as 10 cicada nymphs per square foot have been observed emerging from the soil in some areas. Egg-laying has begun and will continue over a period of three or four weeks. A single female may lay 400 to 600 eggs, depositing 12 to 20 in each puncture beneath the bark. These eggs will hatch in six to seven weeks. The tiny nymphs drop to the ground, enter the soil at the base of the plant, and attach to a suitable root. They will remain there, sucking sap from roots of shrubs and trees for the next seventeen years. Most adult cicadas live about 30 to 40 days, and probably will have disappeared by mid-July.

Sprays of Sevin applied to shrubs or trees when the cicadas are laying their eggs will reduce damage. Use 2 tablespoons of Sevin 50-percent wettable powder per gallon of water. A repeat application may be necessary in seven days. Young trees and shrubs can be protected by covering them with cheesecloth.

NOTE: It was incorrectly stated in last week's bulletin that cicadas are "moths." Our apologies! We know the periodical cicada belongs to the order Homoptera (not Lepidoptera), Family Cicadidae. "Gold stars" are hereby awarded to everyone who caught the error.

Aphids are appearing on many trees and shrubs--tulips, willows, sycamores, maples, poplar, honeysuckles, roses, and others. These small, soft-bodied insects (green,

yellow, black, or red) suck the sap from plants and may cause the leaves to begin to curl and dry. The aphids secrete a sugary, sticky material ("honeydew") that coats the leaves, making them glisten. A black mold may develop when the honeydew deposits are heavy.

Ants feed on the sugary secretions of aphids, so a large number of ants on a plant may be a sign that the aphids are numerous. Another "warning" signal is the presence of white specks on leaves. These are the cast skins of the aphids.

In most cases, aphids do little damage. If injury occurs, apply a spray using 2 teaspoons of 25-percent diazinon or 2 teaspoons of 50- to 57-percent malathion liquid concentrate per gallon of water. Do not use malathion on African violets or canaert red cedar. Do not use diazinon on ferns or hibiscus plants.

Galls, or wart-like growths, appear on many species of trees at this time of the year. These warty-looking growths usually develop on the leaves. They rarely cause any damage to branches of the trees, other than that of disfiguration. Some galls are caused by wasps, jumping plant lice, mites, and midges. The abnormal growth of plant tissue results from a stimulation by one of these pests, causing the tissue to develop around them. When galls can be observed on leaves, it is generally too late for control. (See Bulletin No. 5 for suggestions on control)

Lace bugs are appearing on sycamore trees--which in many areas are already having their problems with sycamore anthracnose. They are small, usually whitish insects and can be recognized by the sculptured lace-like pattern on the upper surface of the body. This pattern is found only in adults; the nymphs are usually spiny. Their feeding on the underside of leaves causes a yellow spotting of the leaf and with continued feeding the leaf becomes brown and falls off. If control is necessary, apply sprays of carbaryl (Sevin) or malathion.

SPECIAL NOTE TO EXTENSION ADVISERS ON CICADAS

Dr. L.J. Stannard, Entomologist and Taxonomist with the Illinois Natural History Survey, would like to obtain specimens of nymphal skins and adult periodical cicadas from northern Illinois. Please send these to: Dr. L.J. Stannard, 285 Natural Resources Building, Illinois Natural History Survey, Urbana, Illinois 61801. Please include the location (county and town) where the specimens were collected.

PLANT DISEASES

WHEAT DISEASES

Septoria leaf blotch and root rots are the diseases primarily responsible for thin, weak wheat stands throughout the state. As a result of the unusually cool, wet weather that prevailed all spring, Septoria can now be found even on the flag leaves of growing wheat. This is one of the worst years in history for this disease.

Septoria glume blotch, caused by a closely related fungus, is now attacking glumes, causing a dark, purple-brown discoloration. As this disease advances, small, black specks (fungus-fruiting bodies) develop in the infected area.

Scab is the most important wheat disease to watch for now. Look for prematurely bleached heads that are empty or contain shriveled kernels. Pinkish-orange mold may also develop, especially at the bases of the glumes. Later, look for black specks

scattered in groups, especially near the tips of the glumes. Scab is caused by the same fungus (*Gibberella zeae*) that causes seedling blight, stalk rot, and ear rot of corn. Scab-infected grain is highly toxic to hogs. None of the wheat varieties available are resistant to scab.

Leaf rust can be found in traces in some fields, but is generally of no consequence.

SOYBEAN DISEASES

We are getting reports of poor and uneven soybean stands where (1) farmers planted low-quality beans, or where (2) seed was not treated with a fungicide. Some fields may need to be replanted.

Phyllosticta leaf blotch can be expected to appear soon after the beans first emerge. Check the first-formed leaves for brown, V-shaped blotches with the widest part of the blotch toward the leaf margin. Infected areas become papery and later tear away, leaving damage that resembles hail injury. This disease, although it appears unsightly, causes no loss in yield because it rarely attacks above the first trifoliate leaves.

In low, wet areas or where recent rains were heavy, expect stunting, wilting, yellowing, and dying of plants in patches or in sections of rows. Dying can occur at any time during the season.

If the stem is firm and discolored brown *above* the soil line, Phytophthora root and stem rot is probably the cause. If the stem *below* the ground line is soft and water-soaked (at least during initial stages) and the plants are easily pulled up, leaving the roots in the soil, Pythium is probably the cause of the problem. Rhizoctonia is the third possible cause of soybean seedling blight and root and stem rot. Rhizoctonia infection causes reddish-brown to brick-red discoloration, generally in sunken cankers below the ground.

Phytophthora and Pythium infections occur in low wet areas of fields or following heavy rains. Rhizoctonia thrives in dry or wet soil on high or low ground. Many soybean varieties are resistant to Phytophthora, and these varieties should be planted in low-lying areas, especially where there is a past history of the disease. There are no varieties available that resist Pythium or Rhizoctonia.

LAWN DISEASES

Fairy rings are now readily apparent in nitrogen-deficient lawns where the dark green rings, arcs, or "horseshoes," stand out. Mushrooms (toadstools) pop up in these rings following rains or heavy sprinkling. Fairy rings are unsightly and can be masked by (1) fertilizing the lawn with a nitrogen-containing fertilizer and (2) pumping water into the circles at about one-foot intervals, using a root-feeder attachment on a garden hose. Push the root feeder 12 to 18 inches into the soil and pump in all the water the soil can take. A single treatment will mask the rings for as long as 18 months.

Slime molds are also common on lawns now. Look for small patches (usually up to 6 to 8 inches in diameter) with a bluish to grayish-white mold growing on the surface of the leaf blades that can be easily wiped off with the fingers. No control measures are generally warranted except, perhaps, to mow the grass or wash-rake the areas. Slime molds are harmless and use grass or other low-lying vegetation, such as alfalfa, clover, and strawberries, strictly as a surface on which to reproduce. Slime molds normally live in soil or thatch areas and break down organic matter into useful nutrients.

Powdery mildew has been evident on lawn areas close to buildings and in the shade of shrubs and trees for the past several weeks. Spraying with Karathane, Acti-dione-Thiram

or benomyl (Tersan 1991) may be warranted. Two or more applications, spaced 7 to 14 days apart, are recommended. A more effective, long-term solution to the problem is to seed shady areas with a shade-tolerant grass, such as a fine-leaf fescue or rough bluegrass (*Poa trivialis*). If the shade is extremely dense, consider a shade-tolerant ground cover or use redwood bark chips and stones to cover the area.

Helminthosporium leaf spot has now advanced to melting-out. The crowns of lawn grasses turn dark-brown to black and rot. Lawns infected with this disease have been getting thin for the past several weeks and areas have turned brown. The remainder of the lawn usually has a reddish-brown cast. Fungicide sprays are of little value in controlling the disease now, but you should consider overseeding late this summer with a resistant Kentucky bluegrass variety.

Sclerotinia dollar spot and rust can also be found on lawns now. On Kentucky bluegrass, fine-leaf fescues, and bermudagrass, dollar spot appears as bleached-tan spots 4 to 6 inches in diameter. Individual grass blades are girdled by yellow to light-tan lesions with reddish-brown borders.

CORN DISEASES

Anthracnose. Corn growers, home gardeners and commercial producers alike, should be on the lookout for a seedling leaf blight. This disease, which attacks both sweet corn and field or dent corn, is known as anthracnose. Sweet corn appears to be considerably more susceptible than dent corn. Anthracnose is caused by the fungus *Colletotrichum graminicolum*, which requires high humidity, heavy dews, or rainy weather to infect and spread. The pathogen overwinters as spores or mycelia in crop residues. New spores are produced in the spring and summer during wet periods and are carried from the debris by wind and splashing rains.

Small (1/16 to 1/8 inch), round to slightly oblong spots appear on the leaves. The spots at first appear water-soaked, but then turn yellow. The spots may grow as large as 1/2 inch in diameter and become tan in the center with a narrow, yellowish halo or reddish-brown border. Later, leaf tissues turn yellow in streaks that extend from the lesions and the lesions may grow together. Severely infected leaves turn yellow, then brown, and finally die. The same fungus may cause root and stalk rots later in the season.

The fruiting bodies of the fungus that causes anthracnose appear as translucent, spore-bearing structures and large, black, sterile setae that look like pin cushions under the microscope. The setae are the identifying sign of the disease.

Control measures include crop rotation, sanitation, and balanced fertility. To date, no chemical has been cleared by the federal Environmental Protection Agency (EPA) for use on sweet corn, popcorn, or dent corn to control anthracnose and the University of Illinois, at this time, is recommending no chemical to control anthracnose.

However, greenhouse experiments have shown that the zinc-ion plus maneb complex (Dithane M-45, Manzate 200)--which is registered by the EPA--will control the disease. Zinc-ion plus maneb can be applied within seven days of harvest on sweet corn and popcorn and within 40 days of harvest on dent corn to control Helminthosporium leaf blights (northern and southern), at the rate of 1-1/2 pounds of fungicide per acre in sufficient water to wet the foliage. Adding a suitable spreader-sticker (surfactant) will improve the efficiency of the fungicide.

Stewart's Disease. Populations of flea beetles--the insect that transmits the bacterium *Xanthomonas stewartii*, which causes Stewart's disease of corn--are high in some

areas of the state. Seedlings infected with the bacterium may appear wilted on hot dry days and when the base of the plant is cut lengthwise it may reveal a dark brown, wet rot of the crown area. Symptoms on older plants are long pale-green to brown streaks that originate from corn-flea beetle feeding wounds. Controls include growing resistant varieties and controlling beetles. Many sweet corn varieties are available that resist this disease after the third-, fourth-, or fifth-leaf stage and dent corn is generally much more resistant than sweet corn. Resistance to Stewart's disease has been correlated with resistance to northern corn leaf blight.

Beetles can be controlled by spraying or dusting plants with recommended insecticide. More information is available in Report on Plant Diseases No. 201, *Stewart's Leaf Blight of Corn*, available from the Department of Plant Pathology, University of Illinois, 218 Mumford Hall, Urbana 61801.

WEEDS

HERBICIDE INJURY

When diagnosing possible herbicide injury,be sure to get all the facts before jumping to conclusions. We have had several inquiries about symptoms of herbicide injury, but we have also had several cases of injury caused by crusting or by corn leafing-out under the soil surface.

It's difficult to generalize about herbicide injury, but here are some of the problems that have occurred:

Several soybean samples that show yellowing of the lower leaves have been received. The symptoms of all photosynthetic-inhibitors, such as AAtrex (atrazine), Lorox (linuron), Maloran or Bromex (chlorbromuron), and Sencor (metribuzin), are the same whether the cause is atrazine carryover from last year or a current season application of a soybean herbicide. Marginal carryover plus marginal crop tolerance may combine to cause serious injury.

We have also received some calls on drift injury resulting from aerial application of herbicides. Drift is a function of particle size, height of fall, and wind speed. Particle size is smaller and height of fall is greater with aerial application and drift is often more serious than with ground application.

Span sprayers (low-volume air-propellant sprayers) have been promoted in some areas for herbicide application. These sprayers tend to produce a small particle size and may poorly distribute the particle behind the applicator. We do not think that span sprayers should be used to apply herbicides.

SORGHUM WEED CONTROL

Delayed corn planting in some flooded areas and a demand for feed grains have raised questions about growing grain sorghum and grain-sorghum weed control. Corn herbicides that are also cleared for use on sorghum are Ramrod, Ramrod/atrazine, Ramrod plus AAtrex, AAtrex, and 2,4-D. AAtrex and 2,4-D are cleared for use only as postemergence treatments on sorghum. Lorox plus Ramrod can also be tank-mixed and used preemergence on grain sorghum. Milogard (propazine), Herban 21A (norea plus atrazine), and Herban 21P (norea plus propazine) are labeled only for sorghum and are not generally available in Illinois because of limited sorghum production. Milogard can also be tank-mixed with Ramrod for sorghum weed control.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshall McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff, Ed Burns, and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Don Button.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

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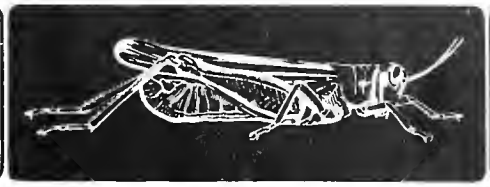

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 14, June 22, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

FORAGE INSECTS

Alfalfa weevil damage is decreasing rapidly. Most of the larvae have pupated and the adults are emerging from the pupae. The adults are feeding on the leaves, but this is slowing down. These adults soon will go into their summer hibernation stage, and will not become active again until the weather turns cooler this fall.

Alfalfa producers in the southern half of Illinois who had trouble with alfalfa weevil this spring should plan now to apply an insecticide to their fields in early November. The adult weevils will have migrated back into the alfalfa fields by then and can be killed before they deposit their eggs.

Potato leafhoppers are also pests of alfalfa. These tiny, green, wedge-shaped insects run sideways when disturbed. They feed by sucking sap from the plant and inject a toxin as they do so. Damaged alfalfa plants turn yellow to purple and are severely stunted. When this occurs, cut the field; the new growth should be all right. If populations of leafhoppers are very high, however, an application of 1 pound of malathion or 1/2 pound of methoxychlor will provide good control. There is no waiting period between the application of malathion and harvest, but there is a week's waiting period for methoxychlor.

SMALL GRAINS

Stored-grain insects can be a problem if wheat is to be stored; clean up and sweep out the storage bins and the area around the bins before putting in new grain. (See Bulletin No. 12, June 8, 1973, for details about spraying the bin and the grain.)

CORN INSECTS

Corn leaf aphids could be a problem on late corn. Plan now to examine these fields at regular intervals in late July and early August.

Corn blotch leaf miners will soon appear on corn leaves. The white trails that appear on the leaves are made by dirty yellow maggots burrowing between the upper and lower surfaces of the leaves. When these maggots are abundant, the leaves appear to have alternate green and white stripes. They are not thought to be economically important, but many people become quite concerned when they see the damage.

Armyworms have been appearing in no-till corn, particularly corn on sod. Severe damage to small plants can occur. Investations are readily controlled by spraying with carbaryl (Sevin), malathion, toxaphene, or trichlorfon (Dylox). Do not feed toxaphene-treated forage to dairy or beef cattle.

Yellow-striped armyworms are brown to black worms with a yellow stripe along each side of the back. They are present now, but usually are not damaging.

Common stalk borer infestations continue to be reported from no-till corn on sod. There may be damage all over the field. The worms feed deep in the whorl, giving the plant a ragged appearance as the leaves emerge. This damage may not be too severe; but when these worms tunnel into the stalk proper, plants can be killed or stunted. Control is difficult because stalk borers are protected inside the corn plant. A spray of carbaryl at 1 to 2 pounds per acre directed over the row may be helpful. As the borer leaves one plant and crawls to another, it will contact the insecticide and be killed.

SOYBEAN INSECTS

Thistle caterpillars or the larvae of painted lady butterflies have been reported in western and northwestern Illinois, migrating from weeds (especially thistles and related plants) to soybeans and feeding on them. These caterpillars have a black head with a mottled, velvety-black or dark-green body with a pair of light-green stripes down the back and one stripe on each side. The body is covered with dark-tipped spines.

These caterpillars web the leaves together in a nestlike manner and eat chunks out of the leaf margins, in the same way as grasshoppers. One worm will move a foot or two along the row as it feeds. When full grown (1-1/2 inches), the larvae become silvery, pink, hard-shelled cocoons attached to the undersides of the leaves.

In general, infestations are usually much less serious than they appear to be. Soybeans can withstand considerable defoliation (30 to 40 percent) before bloom without greatly affecting yields. Toxaphene and carbaryl (Sevin) have both provided good control of this insect. Do not feed soybeans as forage to livestock if treated with toxaphene.

LIVESTOCK INSECTS

Face fly populations on cattle have about doubled during the past two weeks. For detailed control recommendations, see Bulletin No. 11, June 1, 1973.

House mosquito larvae are developing in the effluent of livestock waste lagoons. Even a small lagoon (as small as a twentieth of an acre--2,000 square feet) can produce millions of adult mosquitoes in a single summer. Livestock and humans in the immediate vicinity of the lagoon suffer most. Large lagoons (a quarter of an acre or larger) with low embankments will generally provide less-desirable conditions for mosquito development (greater wave action from the wind) than small lagoons with high, steep banks.

Follow these suggestions to reduce and help eliminate mosquito breeding in your waste lagoon:

1. Remove the marginal vegetation including any flooded vegetation for about three feet from the edge of the effluent all around the lagoon. Rake the dead vegetation and any floating debris away from the edge of the effluent.
2. The marginal vegetation can be killed easily with a contact herbicide. Dr. Marshal McGlamery, University of Illinois Agronomy Department, suggests a herbicide mixture

containing 1 to 2 pints of paraquat (2 pounds per gallon, liquid concentrate) and 1/2 to 1 pint of dicamba (Banvel, at 4 pounds per gallon of the liquid concentrate) per 100 gallons of water sprayed over an acre. A mixture containing 2,4-D or silvex and dalapon (Dowpon) could be used as an alternative. These herbicides should not be used in water intended for irrigation, crop spraying, domestic use, stock watering, or fish production.

Black plastic sheeting three feet or more wide placed over the marginal and flooded vegetation could be used in place of the herbicide. Weekly mowing and raking of vegetation along the margin would be helpful in reducing the number of mosquitoes, but it is not expected to provide altogether satisfactory results.

3. For emergency control when mosquito wigglers are present, apply Flit MLO at 5 gallons per acre, or No. 2 fuel oil at 10 gallons per acre as a spray applied to the three to four feet of effluent next to the shore. The treatment will need to be repeated every one to two weeks for satisfactory results.

HOMEOWNER INSECT PROBLEMS

Elm leaf beetles are skeletonizing the leaves of Chinese and other elms. These small, dirty yellow-to-black worms feed on the undersides of leaves and congregate in large numbers next to the trunk at ground level when they are ready to pupate. A spray of carbaryl (Sevin) or malathion is effective. Spray treatment may be needed again in late July in the southern section of the state to control second-generation worms.

Cottony maple scale, which resembles patches of cotton or popcorn-like formations, is very common now on the branches of soft maples and other trees and on some shrubs in many areas of Illinois. This scale insect secretes this white wax that covers the branch. In some instances, the population increases until the branches, and occasionally the trees, are killed.

Young scale crawlers move onto the undersides of leaves and will feed on plants until early September. Great quantities of honeydew are excreted. This sticky substance drips on foliage, sidewalks, and automobiles as well as anything else under affected trees.

The young crawlers feeding on the leaves can be controlled by spraying with malathion, using 1 quart of the 57-percent liquid concentrate per 100 gallons of water. Spray the foliage thoroughly after July 1 when the hatch is complete. Where the infestation is severe, repeat the spray two weeks later.

Spraying for control has been unsatisfactory in some cases where treatments were applied too early in the summer, before the egg-hatch was complete. Also, in some cases, the pest has been wrongly identified as a disease of maple rather than as in insect.

Spittlebugs, which appear as small, frothy masses of spittle, are feeding on the needles of juniper shrubs. The insect is inside the frothy mass. These insects can be controlled with methoxychlor, carbaryl (Sevin), or malathion. Do not use malathion on cannaert red cedar.

WEED CONTROL

HERBICIDES FOR REPLANTING

Consider the herbicides you have used already before replanting drowned or injured corn fields to soybeans. Two important considerations are: (1) Will the herbicide remaining

in the soil injure soybeans? (2) Is there a legal tolerance set for any herbicide that may be in the soybeans at harvest?

If you used AAtrex (atrazine) alone or in combination with another herbicide for corn, do not replant to soybeans. The risk of atrazine injury to soybeans is high. Sorghum has tolerance to atrazine, Ramrod, and Lorox--but not to Sutan, Eptam, or Lasso.

Sutan--if used for corn weed control--could also cause injury if soybeans are planted too soon. The manufacturer says, "If it is too late to plant corn again, soybeans may be planted providing no atrazine was used with the Sutan. Do not plant soybeans sooner than 21 days after application of Sutan."

Lasso is approved for both corn and soybeans, so there is no problem if you replant soybeans in fields where Lasso alone was used for earlier corn-weed control. Ramrod is cleared for corn and seed soybeans, but that means only for soybeans to be used for replanting and not for food, feed, or oil uses.

Lorox and Bromex are cleared for corn and soybeans, but few people use Lorox or Bromex alone on corn. Some use Lasso in combination with Lorox or Bromex because there is no problem if it is necessary to replant to soybeans.

HERBICIDES FOR DOUBLE-CROPPING

Double-cropping soybeans immediately following early wheat harvest looks like a good bet for many farmers. If you have a no-till planter planting directly in wheat stubble has the advantage of conserving moisture and time.

Lorox (linuron) plus a surfactant may control small weeds that have emerged in the wheat stubble. If weeds are too large for adequate postemergence control with Lorox, you will need to use 1 to 2 pints of Paraquat to knock down existing weeds. Adjust the rates of Lorox to the organic-matter content of the soil, but 1-1/2 to 2 pounds of Lorox 50W are the usual rates. If annual grasses appear to be a serious problem, consider adding 1 to 2 quarts of Lasso and reducing the rate of Lorox. For postemergence knockdown of weeds, use plenty of water for good coverage (30 to 50 gallons per acre) and add a suitable surfactant.

Grain sorghum is also sometimes double-cropped after wheat. AAtrex (atrazine) as an early postemergence treatment may control the weeds but if weeds are more than 1-1/2 to 2 inches tall, it is better to use Paraquat at planting.

DIRECTED POSTEMERGENCE APPLICATIONS FOR CORN

Directed sprays are sometimes considered for emergency weed control in corn when grass weeds become too tall to control with cultivation. However, weeds are often too large for directed sprays to be very practical by the time help is sought. Directed sprays cannot be used on small corn, and a height difference between corn and weeds is needed in order to keep the spray off the corn. Directed nozzles can be attached to the boom with rigid pipes, on skids or gauge wheels, or on cultivator shanks. The main precaution is to minimize the spray contact with the corn foliage.

Lorox 50W (linuron) can be applied as a directed spray after the corn is at least 15 inches high, but before the weeds are 8 inches tall. Use 1-1/4 to 3 pounds of Lorox 50W (broadcast basis). Use the lower rates on small weeds, lighter soil types, and soils that are low in organic-matter content. Add Surfactant WK at the rate of 1 pint

per 25 gallons of spray mixture. Cover the weeds with the spray, but keep it off the corn as much as possible.

Evik 80W (ametryne) is cleared for directed use when the corn is more than 12 inches tall and when the weeds are less than 4 inches tall. Use 2 to 2-1/2 pounds of Evik 80W per acre (broadcast basis). Add a surfactant (such as X-77, WK, or Tronic) at the rate of 2 quarts per 100 gallons of spray mixture (0.5-percent of the spray volume).

Dowpon (dalapon) may be applied as a directed spray when the corn is 8 to 20 inches tall from the ground to the whorl. Use "leaf lifters" to keep Dowpon off the corn plant. Direct the spray into the row, and do not let the spray contact more than the lower half of the stalk or more than 7 inches (whichever is greater). Use 2 pounds of Dowpon or Dowpon M (not Dowpon C) on a broadcast basis. You can add 2,4-D to control broadleaf weeds. Basfapon is another trade name for dalapon, and it may be used in a similar manner.

Adjust the rates of all these herbicides for directed bands if you do not broadcast the spray between the rows. Refer to the labels for other precautions. Consider these only as emergency treatments.

HERBICIDE INJURY

Sutan injury to corn has been the topic of several calls received this week. The cool soil temperatures of previous weeks combined with the high temperatures last week are probably a contributing cause to the lateness of the injury symptoms. Corn hybrids vary in their susceptibility to Sutan injury, but climate is also a factor. Sutan injury symptoms are twisted, malformed leaves that may appear to be "onion leafed," or show a laddering effect as the result of the leaf tips failing to unfold normally. Grass weed seedlings are likely to show the same effect if not controlled earlier. If the leaves are not rolled too tightly, the corn will probably break through and recover.

BROADLEAF WEEDS IN CORN

2,4-D and Banvel (dacamba) are the two top choices for broadleaf weed control in corn. 2,4-D will control most annual broadleaf weeds effectively and economically. Use "drop pipes" or nozzle extensions from the boom to keep the spray out of the corn whorl, if the corn is more than 8 inches tall. Do not spray with 2,4-D after the corn begins to tassel.

The rate of 2,4-D to apply depends on the strength of the concentrate and the type of 2,4-D used--amine or ester. If you use the amine form, apply 1 pint of a 4-pound-per-gallon formulation. If you use the ester form, use 1/2 pint or less of the 4-pound-per-gallon formulation. The amine form is less likely to cause drift problems, but most farmers consider the ester form as more active and less likely to wash off with a rain. Weeds are easier to kill when they are small, so adjust the rate to the weed size.

Each year 2,4-D damages some corn. The symptoms are an elbowing of the stalk, abnormal brace roots, and "onion leafing." Corn seems most susceptible to 2,4-D damage when it is under cool, wet-weather stress or when it is growing fast during hot, humid periods. Adjust the rates for directed, band sprays. Corn stalks are often brittle for seven to ten days after spraying with 2,4-D, so delay cultivation if possible.

Banvel is cleared for use on corn until the corn is 36 inches high or until ten days before the tassels emerge. Banvel is similar to 2,4-D, but it provides more effective control of smartweed and Canada thistle. Banvel drift often affects soybeans near treated corn fields, causing a cupping of the soybean leaflets about two weeks after

application. Soybeans generally outgrow the injury without serious effects on yield. To minimize Banvel drift, use low pressure and avoid spraying when the wind velocity is more than 5 miles per hour. Using drop nozzles will lessen the chance of corn injury and help minimize drift. Air-induction nozzles and foam additives may also reduce drift. Applying Banvel early when soybeans in the vicinity are small presents less risk than when soybeans are closer to blooming.

POISON IVY CONTROL

Apparently there is no absolute immunity to poison-ivy infection, although some people are more susceptible than others. Persons who consider themselves immune may become more susceptible after sufficient exposure. Clothing, garden tools, and pets can become contaminated and can serve as sources of the irritant. Smoke from burning poison ivy may also carry the toxin.

The first step in poison ivy control is proper identification. This may prove difficult because the plant can assume many different appearances. Poison ivy may vine on fences, walls, or trees. It may spread along the ground, or it may even appear as an erect shrub. Each leaf is made up of three leaflets. They may be glossy or dull-green, and may have smooth, toothed, or lobed edges. Variations can occur on the same plant.

Amitrole or amitrole-T often provide the most effective control, although several other chemicals can also control poison ivy. Ammate (ammonium sulfamate) and "brushkiller" (a mixture of 2,4-D and 2,4,5-T) will control poison ivy. Be sure and observe the restrictions not to use 2,4,5-T around homes, on lakes, ponds, ditch banks, or on food crops.

Apply the materials any time after the plant leaves have reached full size. Soak the plants thoroughly with the spray, but do not let amitrole contact desirable grass or broadleaf plants or allow "brushkiller"' to drift to desirable trees, shrubs, or flowers. Avoid skin contact with Ammate.

Further information can be obtained from Illinois Circular 850, "Controlling Poison Ivy," available from the county Cooperative Extension Service office, or from the Office of Agricultural Publications, 123 Mumford Hall, Urbana 61801.

WEED CONTROL IN FENCE ROWS

Use only 2,4-D to control weeds in fence rows, if the vegetation consists primarily of broadleaf weeds. If there are undesirable grasses (such as foxtail or Johnsongrass), you can mix Dowpon (dalapon) with the 2,4-D for control. Spray grasses before the seedheads form. Mix 1 quart of 2,4-D (4-pound-per-gallon formulation) and 5 pounds of Dowpon with 50 gallons of water for spraying 2 miles of fencerow 4 feet wide (2 acres). Increase the amount of Dowpon to control larger grass weeds or perennial grasses. If only small annual grasses are present, or if desirable perennial grasses are present, decrease the rate of Dowpon.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

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AG COMMUNICATIONS: Ray Woodis.

AG ENGINEERING: John C. Siemens.

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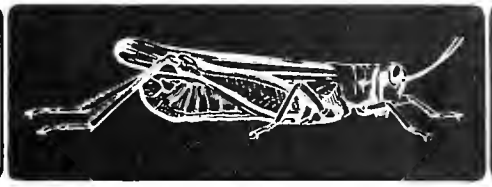
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 15, June 29, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

European corn borer populations are generally light in Illinois except for an occasional early planted field in the western area. The combined factors of a low overwintering population, delayed corn planting, and heavy rains have all but eliminated the threat of first-brood corn borer this year.

We suspect that many corn borer moths were killed by the rains before they deposited their eggs. Or, they may have laid their eggs and the small larvae may have died before the corn crop was mature enough for them to survive.

However, there is always the "occasional" field that bears watching. As insurance, continue to check the tallest corn or fields that were planted early for signs of fresh whorl feeding, particularly in the western region. If infestations are severe enough to warrant control, treatments should be applied now.

To determine the need for treatment, first check the tassel ratio. Dig up a plant. Measure from the bottom of the plant to the tip of the longest leaf. Split the plant and find the developing tassel. Measure from the bottom of the plant to the tip of the tassel. Divide the tassel height by the plant height, and multiply by 100. This will give you the tassel ratio.

If the tassel ratio is 30 or over and if 75 percent or more of the plants have corn-borer feeding on the whorl leaves, the field should be treated--but not until the tassel ratio is at least 35, preferably 40 to 50. The percentage of infested plants required to justify treatment can be reduced with higher tassel ratios.

Use 1 pound of actual diazinon in granular form per acre, or 1-1/2 pounds of carbaryl (Sevin) as granules. For spraying, use the same amount of actual insecticide per acre. Direct the spray to the upper third of the plant. Aerial applications should be as granules, not as sprays or dusts. Allow ten days between treatment and the ensiling of corn when applying diazinon. Carbaryl has no waiting period.

SPECIAL FIELD MEETING

Corn rootworm control with fifteen different soil insecticide treatments will be evaluated on July 16 and 17 in Henderson County at the James Darrah farm, located

three miles north of Junction 164 and 94 and three miles east. "Root ratings" and "pull tests" will start at 1 p.m. on July 16. Worm (larval) counts will be made on July 17, starting at 9 a.m. See the announcement at the end of this newsletter for details. Your help at this "rootworm party" will be welcomed. Everyone will get a first-hand look at 1973 control data--and have some fun too!

SOYBEAN INSECTS

Thistle caterpillar damage to soybeans is rapidly declining in most areas. In general, most larvae are approaching full growth, and are ready to pupate. Some have already pupated. Caterpillars that are 1-1/4 to 1-1/2 inches long now are virtually full-grown and do not warrant control. If damage to soybeans exceeds 30- to 40-percen defoliation and the majority of larvae are less than 1-1/4 inches in length, spraying with toxaphene or carbaryl will give good control.

Leafhoppers have been observed on soybeans in the central and western areas of Illinois. These small, green, wedge-shaped insects sometimes suck sap from the soybean leaves. In general, most soybean varieties in Illinois have pubescent leaves. This hair on the leaves prevents or deters feeding by leafhoppers.

We have had plots in which smooth-leafed soybean varieties were damaged by leafhoppers. If leafhoppers are abundant and are causing the leaves to yellow or brown (die back from tip), treat with malathion at the rate of 1 pound per acre.

Green cloverworms can be found in some soybean fields. These light-green worms with white stripes running the length of their body feed on leaves, not the blossoms or pods. The green cloverworm population is still light, but the situation bears watching. Control measures are not needed at this time. The damage potential is most critical on beans from the blossom to early fill periods. Parasites and a fungus disease attack the larvae and help control them.

FORAGE INSECTS

Potato leafhoppers, both nymphs and adults, are numerous in some alfalfa fields. They reduce hay yields as well as the quality of the hay by lowering the content of Vitamin A and protein. These leafhoppers cause a yellowing of second- and third-crop alfalfa. Treatment is indicated if swarms of these small (1/8-inch), green, wedge-shaped insects are observed during cutting, or on the new growth of the second crop. See last week's bulletin (No. 14) for recommendations.

GENERAL INFORMATION

Grasshoppers are abundant now in many hayfields, fence rows, ditch banks, grass waterways, and similar sod areas. If the growth in these areas continues to be luxuriant, many of the 'hoppers may remain there until they are mature.

To avoid problems later, we recommend that areas where there are concentrations of grasshoppers be treated now while the 'hoppers are small and easy to kill. A spray of 1-1/2 pounds of toxaphene per acre can be applied to fence rows, ditch banks, grass waterways, and roadsides before the 'hoppers disperse. Toxaphene is preferred if weeds are blooming and attracting bees. DO NOT apply toxaphene to or near fish-bearing waters. Toxaphene can be applied to corn or soybeans, but not if they are used as forage.

On hay crops, apply carbaryl (Sevin), diazinon, malathion, or naled (Dibrom). No interval is required between the application of malathion or carbaryl and harvest.

Allow four days between application and harvest when using naled, and seven days for diazinon.

HOMEOWNER INSECT PROBLEMS

Bagworm hatch is complete in the northern part of Illinois; and the larvae are feeding on evergreens, shrubs, and some trees. The newly hatched bagworms are conical in shape, and are rather easily overlooked because of their small size. By late summer, the bags will be 1-1/2 to 2 inches long and easy to spot, but it is too late then to achieve good control. Sprays of diazinon, malathion, or *Bacillus thuringiensis* (Dipel, Biotrol, Thuricide, and so on) will give control if applied now. Do not use malathion on cannaert red cedar. Do not use diazinon on ferns or hibiscus. Follow the directions on the label.

Mimosa webworms have begun to feed on mimosa and honey locust trees. They web the leaves together to form a nest and feed inside this enclosure, where they skeletonize the leaflets. Badly damaged leaflets become dry and brown. These pale gray-to-brown worms have five white stripes running lengthwise on the body. They are slightly more than half an inch long when full-grown, and move very actively when disturbed. For control, spray with either malathion, carbaryl (Sevin), or *Bacillus thuringiensis*. A repeat treatment may be needed in two or three weeks.

Picnic beetles are beginning to make their presence known around backyard cookouts, picnics, and gardens. These tiny black beetles with four yellow-to-orange spots on their backs are attracted to food odors, and are often uninvited guests in and around the home. The generally wet conditions in May could result in moderate to heavy populations of this nuisance insect this summer.

For cookouts, spray the shrubbery and any nearby tall grass or weeds with malathion or diazinon several hours before eating. A space spray of pyrethrins of dichlorvos (DDVP) applied from a pressurized spray can just before eating will provide a quick knockdown of the beetles.

Sod webworm moths can be observed over lawns, near shrubbery, on window screens, and around lights at night. They are laying eggs for the first-generation larvae, which will feed during late June and early July. This first generation of worms is seldom numerous enough in lawns to cause economic damage, although an occasional lawn may sustain some injury.

The second-generation of sod webworm that hits in early August causes the big problem. Therefore, chemical control for sod webworms should be applied in August, rather than now.

Spider mites are attacking some evergreens. Injured evergreens show pale patches. Some branches may be killed. Silken threads or webbing are usually present. To detect these mites, hold a sheet of white paper under a branch and shake the branch vigorously. If mites are present, you will be able to see them moving on the paper. To control spider mites, spray with dicofol (Kelthane) or chloropropylate (Acaralate).

WEEDS

CROP CONDITIONS

While some parts of the world are concerned about drought, one of our major concerns in Illinois is excessive moisture. Some fields have been "drowned out." Others have been too wet to cultivate, and the weeds are now too big for cultivation or chemical control. Many fields have been replanted, some more than once.

We have little to suggest for control of grass weeds in corn or soybeans. It is too late for AAtrex and oil in most fields. But if your weeds are still small enough for this treatment, be certain to plant only corn or sorghum next year.

Dowpon, Lorox, and Evik were discussed in last week's bulletin (No. 14) as directed sprays for corn. The weeds in many fields are now too large for these treatments, and most Illinois growers are not equipped for the accurate directed application which is essential for these materials. But be certain that applications are made carefully to minimize injury, since corn has very limited tolerance for these materials. Where corn and weed heights are still appropriate and you can get the right equipment, you might still consider these.

Broadleafed weeds in corn can still be controlled with 2,4-D or Banvel. Be fully aware of the risk of corn injury and the possibility of injury to nearby, susceptible plants. Use appropriate precautions.

There is little you can do now to control grass weeds in soybeans except to use good cultivation in those late-planted fields where weeds are still small enough.

For broadleaf weed control in soybeans, it is too late for Tenoran or Norex in most fields. Dinoseb (dinitro) may be used as a directed postemergence spray when soybeans are about five inches tall and until they begin to bloom. This requires special equipment in order to minimize injury to soybeans. Dinoseb is one of the more toxic herbicides, and should be used with extreme care.

2,4-DB is still a possibility for controlling cocklebur, annual morningglory, and giant ragweed in soybeans. There is some risk of injury to soybeans, so spray only where these weeds actually exist. Be certain that application rates are accurate and uniform.

A little Basagran is available for experimental use on a limited basis. It may help in some fields where the weeds are still relatively small.

Dyanap, Ancrack, and Klean Krop are combinations of naptalam (Alanap) and dinoseb (dinitro). These combinations are not cleared for postemergence use on soybeans in Illinois.

Sutan injury to corn this year appears to be greater than in any previous year. The symptoms are leaves that are rolled and plants that are distorted and twisted. Often, only scattered plants are affected. You may even find a good plant and an affected plant in the same hill.

Sometimes, less than 5 percent of the corn in a field is affected, and the injury is not considered serious. If the injury is not severe, the leaves may unroll or the plant may break through the rolled leaves; but if the plants are badly twisted, they may remain stunted. Surprisingly, some stunted plants may produce ears.

If only Sutan was used without atrazine and injury is severe enough to justify replanting, the manufacturer indicates that soybeans can be planted--but no sooner than 21 days after the Sutan was applied. The injury in most fields is probably not severe enough to justify replanting now, but each field should be carefully inspected and considered individually.

Some of the injury may be associated with factors such as the hybrid involved, excessive rates, overlapping, a poor job of incorporation, the physical condition of

the soil, soil moisture, and weather. Hopefully, the manufacturer will add a "safening agent" to further reduce the possibility of injury next year.

Soybeans have had their problems, too. In fields with "sick" beans, it is often difficult to attribute the problem to only one, definite cause. The variety, seed that lacks good vigor, wet conditions, compact soil, diseases, some effect from last year's or this year's herbicides, and the vagaries of nature can all be contributing factors. Any one of these factors alone may not be too serious; but the more of them you have, the greater the stress and the more the effect is noticeable.

If the field record, pattern of injury, and symptoms indicate that herbicides are the main problem, you can usually replant to soybeans with less risk of injury--provided that the herbicide application was close to the recommended rate and applied uniformly. Favorable conditions and adequate time for the dissipation of some of the herbicide are also essential.

In selecting a variety for late planting, consider going to the next-earlier-maturing group. Another suggestion would be to select a fairly tall variety. If you are uncertain whether the soybeans will get worse or better, consider planting between the rows and then cultivating out whichever planting looks worse.

THE NAME OF THE GAME

The possibility of herbicide injury is part of using herbicides. If you are not willing to risk herbicide injury, do not use herbicides. If you are feeling sad about a little corn or soybean injury from herbicides, look across the fence at your neighbor's weedy field where he did not take time to apply herbicides this year and where it has been too wet to cultivate. Weeds can severely stunt corn and reduce yields, too. But of course, that is "natural."

WEEDS IN SMALL GRAIN

The only herbicide cleared for treating weeds shortly before the harvest of small grain is 2,4-D. It can be applied from the dough stage to harvest. 2,4-D is cleared for barley, oats, and wheat.

WILD SWEET POTATO IN CORN

Use the regular rate of 2,4-D. Timing is critical. Treat at the bud stage just before the wild sweet potato flowers begin to develop.

WEED-CONTROL PLOTS NEAR DE KALB

These plots at the Northern Illinois Agronomy Research Center southwest of DeKalb are marked. You are welcome to visit the field and review the plots at your convenience. The field is located one mile east of Shabbona and 4-1/2 miles north.

PLANT DISEASE CLINIC

The following diseases were identified in the plant disease clinic during the period June 11-25. Also listed are the corresponding Reports on Plant Diseases (RPD's) for each disease. These publications, which detail symptoms, disease cycles, and controls, are available from the Department of Plant Pathology, University of Illinois at Urbana-Champaign, 218 Mumford Hall, Urbana, Illinois 61801.

Host	*Disease*	*RPD No.*
Apple, crabapple	Scab	803
Bluegrass	Helminthosporium leaf spot	405
Corn	Moldy stored grain	206
	Anthracnose	
	Sun scald	
	Hail damage	
Oats	Bacterial stripe blight and halo blight	106
	Yellow dwarf (Red leaf)	101
	Septoria leaf spot	111
Plum	Plum pockets	805
Rhubarb	Leaf spot	
Soybean	Pythium x Phytophthora root rots	504
	Rhizoctonia root rot	504
	Hail damage	
	Phyllosticta leaf blight	
Strawberry	Red stele	701
	Leaf blight	702
	Leaf scorch	702
Raspberry	Leaf curl and mosaic	710
Tomato	2,4-D injury	
Wheat	Scab	103
	Septoria glume blotch	105

PLANT DISEASES

OATS

Halo blight is caused by the bacterium *Pseudomonas coronafaciens*. Mature leaf spots are oval to oblong and may be pointed at one end. The margin of the gray-brown lesion is outlined by a wide, pale-green, halo-like border that later turns yellow to brown.

Bacterial stripe blight is caused by *Pseudomonas striafaciens*. Lesions first appear as sunken, water-soaked areas. These later enlarge (coalesce) and may extend the entire length of the leaf. Halo-like borders do not form, as they do with halo blight. In moist weather, a bacterial ooze may form and later dry, leaving crystalline scales along the leaf.

Halo blight and bacterial blight are usually not sufficiently destructive to warrant specific control measures.

BARLEY DISEASES

Barley yellow dwarf (a virus-caused disease) is prevalent in many late-planted oat fields this spring. Aphids which are the ONLY source of transmission, feed on younger, late-planted seedlings and deposit the virus. Symptoms first appear as yellowish-green blotches near the leaf tip. These blotches fuse and turn red, brown, or yellow-orange. Infected leaves often die. Blasting of florets also occurs. Kernels may

shrivel, and test weight may be reduced. Control is possible by planting high-yielding, resistant varieties such as Jaycee and Otee.

SOYBEAN DISEASES

Many poorly drained fields are showing the row-gap symptoms of damping-off. Diseased areas of plants found in these fields are translucent, soft, and watery. *Pythium spp* and *Phytophthora spp* fungi are commonly isolated from these plants. Healthy plants that are next to diseased plants compensate for missing plants by producing additional branches and pods. As a result of increased branching, there is probably little reduction in yield, except when the gaps are longer than a foot.

Phyllosticta leaf blight is evident now as brownish, V-shaped, blotches in the first true leaves. These will soon fall away, but no permanent damage or loss of yield will result.

FIELD MEETING ON CORN ROOTWORM CONTROL

We will be evaluating the performance of various soil insecticides for controlling corn rootworms on July 16 and 17 in Henderson County at the James Darrah farm. We can use your assistance at the "rootworm party." You will also get first-hand results of rootworm-control tests with various soil insecticides for 1973.

July 16	1:00 p.m.	Henderson County. The James Darrah farm. Go three miles north of Junction 164 and 94 and three miles east. We will be taking "root ratings" and making "pull tests" on this day. Call Curt Eisenmayer, Henderson County Extension Adviser in Stronghurst, for further information. Telephone: (309) 924-4071
July 17	9:00 a.m.	Same location as above. We will be making larval counts. Bring a pocket knife for examining roots.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

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PLANT DISEASES: M.C. Shurtleff and Tim Bowyer, Department of Plant Pathology.

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The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS



INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 16, July 6, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Fall armyworms, corn earworms, and common stalk borers can all be found in occasional spots in cornfields about this time of year, and 1973 is no exception--although corn earworms have not as yet been reported.

The feeding most commonly occurs on the leaves as they are rolled up in the whorl. When they emerge, the plant appears ragged. Fall armyworms are just now appearing, but some of the common stalk borers, present for two or three weeks, have been leaving the whorls now and are boring into the lower parts of the stalks, killing the plant.

In conventionally tilled corn, common stalk borers attack a few plants in the outside crop rows next to the fencerows, ditch banks, grass waterways, and similar areas. The ones you see now are all there will be. They may kill a few more plants, but they won't be increasing in number, and there is only one generation a year. The moths lay eggs in weedy spots in August. These eggs hatch the following spring. The control measure for next year is to cut the weeds by August 1. In zero-tillage corn these pests may be more common over the entire field. Control presents problems, and we are working on this.

An occasional corn earworm sometimes can be found in the whorl of a plant here and there. A corn earworm moth has laid a single egg in the whorl. Usually only one plant in a place is affected. With field corn, this type of infestation is not a problem. Ear infestations in late corn this fall could create difficulties.

Fall armyworms are brown, slick-skinned worms that appear in late-developing corn, either in spots of replanted areas or over the entire field if the corn is uniformly late and the infestation is severe. With mild infestations, several plants--perhaps 15 or 20--will be affected in small areas within a field. Although control is difficult and usually unneeded, carbaryl (Sevin), diazinon, Gardona, or toxaphene granules may reach the worms deep in the whorls.

Corn leaf aphids have appeared on some sorghum in southern Illinois. Their importance in sorghum production is debatable. Damage to corn can be severe if these aphids appear during a stress period (pollination and silk production), particularly if the plants are in need of moisture.

Our rule of thumb says if corn leaf aphids are present in moderate numbers on 50 percent of the corn plants when the field is in the pretassel to early silk stages and the field is in need of rain, apply diazinon or malathion for aphid control.

LIVESTOCK INSECTS

Face fly numbers have increased dramatically during the past two weeks. Counts of 10 to 15 face flies per animal in unsprayed herds two weeks ago were common. This week, the counts were 50 to 80 per animal in the same unsprayed herds.

Horn fly numbers are noticeably low, and stable fly numbers are about average for this time of year.

We repeat from our June 11, 1973 Bulletin:

Horn flies, face flies, and stable flies are just beginning to appear on pastured cattle. Begin your control program early before the number of these flies builds up. They cause reductions in milk flow and beef production.

For dairy cattle, apply crotoxyphos (Ciodrin) as a 1- to 2-percent, oil-base spray ready-to-use. Use it at 1 to 2 ounces per animal two to four times a week, or as a 1-percent water-base spray at 1 pint per animal per week. As alternatives, you can use oil-base sprays of 1-percent dichlorvos (DDVP) or a 0.1-percent pyrethrin spray applied at 1 to 2 ounces per animal per day can be used. Pay particular attention to the animal's legs and undersides when spraying.

Ciodrin is the most effective insecticide for controlling face flies. All of the above insecticides provide good control of horn flies and fair control of stable flies. Dust bags containing insecticides like coumaphos (Co-Ral) or crotoxyphos (Ciodrin) effectively control horn flies, but not face flies and stable flies.

For beef cattle, apply a water-base spray of 0.5-percent toxaphene at the rate of 1 to 2 quarts per animal every three weeks. Toxaphene provides excellent control of horn flies, fair control of stable flies, and poor control of face flies. If face flies become a serious problem, use crotoxyphos (Ciodrin) as suggested for dairy cattle. A canvas or burlap head-oiler or back-oiler, saturated with a solution of 5-percent toxaphene in oil, will provide some relief against face flies. Do not apply toxaphene to beef cattle within 28 days of slaughter.

HOMEOWNER INSECT PROBLEMS

Bagworm larvae can be found inside the small "tents" they are building. In about four to six weeks, they will be full-grown and all their damage will have been done. Some people who spray then will wonder why the bags do not disappear or why the worms are not killed. Once they become full-grown, sprays seldom kill them. If you wait until then, do not spray. Begin a campaign of picking off the bags. Put them in a sack, coffee tin, or similar container and place them in the garbage can. This will minimize the number you will have to combat in 1974, since they winter as the egg stage in these bags.

Now, not later, is the time to spray for this year's crop of bagworms. Use sprays of carbaryl (Sevin), diazinon, malathion, or *Bacillus thuringiensis* (Dipel, Biotrol, Thuricide). Do not use malathion on canaert red cedar. Do not use diazinon on ferns or hibiscus. Follow the directions on the label.

Mimosa webworms are pale gray-to-brown worms that have five white stripes running lengthwise on the body. They feed on the leaves of mimosa, locust, and similar species. These worms web the leaves together to form a nest. They feed inside this enclosure, skeletonizing the leaflets. In about two weeks, Mimosa webworms will be dropping from the trees on their webs. For control, spray soon with malathion, carbaryl (Sevin), or *Bacillus thuringiensis*. A repeat treatment may be needed in two or three weeks.

Aphids can be found on many trees and shrubs. This week they were observed commonly on tulip trees. These small, soft-bodied, light-green insects suck the sap from plants and secrete a sticky material called "honeydew." This sugary material coats the leaves, making them glisten. A black mold may develop when the honeydew deposits are heavy. Cars parked beneath infested trees will become covered with sticky spots.

Ants feed on the sugary secretions of aphids. Thus, the presence of a large number of ants on a plant may be a sign that aphids are numerous too. Various species of flies also are attracted to this secretion. Lady beetle adults and larvae are also present and are eating the aphids. The white specks on the leaves are the cast skins of the aphids. In most cases, aphids or plant lice do little damage. However, if leaves begin to curl, turn yellow to brown, and then dry, apply a spray using 2 teaspoons of a 50- to 57-percent malathion or a 25-percent diazinon liquid concentrate per gallon of water. Do not use malathion on African violets or canaert red cedar. Do not use diazinon on ferns or hibiscus plants.

FIELD MEETING ON CORN ROOTWORM CONTROL

We will be evaluating the performance of various soil insecticides for controlling corn rootworms at research plots on July 11, 12, and 13 at the Harold Gardner farm, Coldbrook, and the demonstration performance plots on July 16 and 17 in Henderson County at the James Darrah farm. Your help to evaluate the old and the new will be appreciated. You will see the first-hand results of rootworm-control tests with various soil insecticides to be recommended for 1974.

July 11, 12, and 13 . . . .8:00 a.m. . . .	The test field is located just west of the Holiday Inn sign on the Harold Gardner farm at Coldbrook on Route 34 between Galesburg and Monmouth, Illinois.
July 16. . . . . 1:00 p.m. . . .	Henderson County. The James Darrah farm. Go three miles north of Junction 164 and 94 and three miles east. We will be taking "root ratings" and making "pull tests" on this day. Call Curt Eisenmayer, Henderson County Extension Adviser in Stronghurst, for further information. Telephone: (309) 924-4071
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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 17, July 13, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Corn leaf aphids are present in almost all corn fields, but numerous natural enemies are present. One species, the insidious flower bug (which looks like a miniature chinch bug) is very abundant. It inserts its siphon-like beak into other insects and siphons-out the body fluids. This species may help hold down the aphid populations.

Swollen brown aphids, each with a tiny hole in the back, have been parasitized by a wasp. A large number of such aphids indicates lots of natural control help. Brown, flattened cottony-looking aphid bodies are aphids that have died from a fungus disease. High humidity favors the spread of this disease. It can actually annihilate an aphid infestation. We did not see wasp parasites or aphids killed by fungus this week.

Each aphid killed now by a natural enemy prevents the birth of a thousand aphids during the next two weeks. But ordinarily, natural enemies are unable to contain a pest population when conditions are favorable for a high reproductive rate of the pest.

Despite some favorable things, we must be pessimistic about corn leaf aphids during the next three to four weeks. Damage from them is accentuated during stress periods of growth from the pretassel to dry silk stages. The same aphid population in a period of drought can be far more damaging than during a time of plentiful moisture. Hopefully, soil moisture will be sufficient to help corn plants through the stress of growth during the next four weeks.

Aphid reproduction and survival is highest when corn development is from pretassel to dry silk--most corn fields will be in that stage of growth during the next few weeks. On the favorable side is the fact that we do not, to our knowledge, have a large acreage of susceptible hybrids as we did in the late 1960's when damage was severe.

This week, we found corn leaf aphids in all of the fields examined. However, in this random examination of over a hundred fields, we saw only one we thought would develop into a problem field. But we did find aphid reproduction occurring in almost every field. Fields averaged from 2 or 3 aphids per plant on 10 to 20 percent of the plants to the one field, which averaged over 100 per plant.

Aphids give birth to living young. They do not lay eggs. Every aphid you see in a corn field is a female--there are no males. A mature aphid gives birth to 2 to 7 aphids

per day. Within 2 to 5 days after birth, an aphid may be mature and giving birth to young. One aphid today can be 1,400 in two weeks.

The white skins you will see on the plants during the next two weeks will be the cast skins of the aphids. All insects grow by shedding their external skeletons, leaving the shed skeleton remains.

The sticky material on the plants is honeydew, an exudate from the aphids. When this is excessive, the plant becomes shiny. Sooty mold will soon develop on the honeydew, and the plant will look sooty-black.

All of these facts about corn leaf aphids are not meant to panic anybody. But you may need this information during the next four weeks. This week's observations leave us undecided about aphid possibilities.

When faced with a decision about treatment, you should estimate the aphid population, length of time for the corn to reach the dry silk stage, the number of natural enemies, weather predictions (dry is bad), and the susceptibility or resistance of the hybrid. If you decide that treatment is required, 1 pound of malathion or diazinon will provide adequate control.

Our rule of thumb is to treat if corn leaf aphids are present in moderate numbers on 50 percent of the corn plants when the field is in the pretassel to early silk stages and is in need of rain.

Fall armyworms are quite common in the southern half of Illinois. This is a grey to greasy brown worm with a distinct, inverty "Y" on the head. They can be found in a wide range of fields, but most commonly in corn that is knee- to head-high. A corn whorl usually ends up with only one worm--they are cannibalistic. The worm feeds in the whorl; and as the leaves emerge from the whorl, they are ragged. It is common to find damage and no worms, since many worms have matured already and have entered the soil to pupate. The corn will grow out of this damage.

The moths deposit clusters of eggs and cover them with their gray body scales, giving the egg mass a feathery or cottony appearance. Since dozens of eggs are deposited in one cluster, infestations are concentrated in patches within a field involving several plants. In severe cases,all of the plants in large areas in a field may be infested.

Severe infestations can certainly depress corn yield, but the losses from considerable feeding by this insect are usually hard to measure. We may have some late fields severely infested by the next generation. From now on,watch closely fields that were planted late. If this pest continues to increase, it could present a problem in some fields.

The white capsules attached to the skin right behind the head of the fall armyworm are the eggs of a fly. These eggs will hatch and the tiny grubs will enter the insect's body--causing eventual death, often after the damage has been done. But once this build-up of parasites occurs, future infestations of fall armyworms may be prevented or at least minimized.

Although control is difficult and usually unneeded,carbaryl (Sevin),diazinon, Gardona, or toxaphene granules may reach the worms deep in the whorls.

European corn borer first-generation populations are generally low, but are great enough in a few exceptionally early fields to be slightly damaging. This includes both field and sweet corn. Whether or not sufficient moths will be produced to cause a

second-generation problem cannot yet be determined. These second-generation moths will deposit their eggs in a few fields between the late whorl and early silk stages.

Moths are now emerging in southern Illinois, and will begin to emerge in central Illinois in about two to three weeks. However, it now appears that there will be enough late corn that the moths will scatter their eggs in many fields, and perhaps not concentrate in a few. We will not know this until later.

True armyworms can now be found in moderate numbers in a few weedy corn fields in northern Illinois, as well as in no-till corn on sod. These worms also have many parasite eggs on them and these parasites may help control later populations of true armyworms, fall armyworms, cutworms, and perhaps similar pests.

If control is necessary, carbaryl (Sevin), toxaphene, malathion, and so on will be helpful.

FLY CONTROL AT FAIRS

The following is copied from last year's report. No changes from last year's recommendations are necessary:

Fair officials will need to be sure that manure, garbage, refuse, and soft-drink bottles are removed from the grounds every day. This is a must.

A few days before the fair starts, spray livestock sheds, outdoor privies, empty food tents, and other buildings thay may harbor flies with dimethoate (Cygon), fenthion (Baytex) or Ravap. A farm crop sprayer, equipped with a lead of hose and a spray gun, can be used for this purpose. Apply the spray to the ceilings and walls to the point of runoff. Most rotary pumps on these sprayers can be adjusted to operate at 250 to 300 pounds of pressure. If the water pressure is good (30 p.s.i. or more), a spray gun that fits on the end of a garden hose will do a good job of applying the insecticide.

Sprays should also be applied to refuse containers, garbage cans, and the like before and during the fair. A couple of men with compressed-air tank sprayers can do this job.

Flies are attracted from great distances to the odors of animal waste and foods. These flies are not killed until they land on a treated surface. For a quick knockdown of these incoming flies in animal shelters and other places, use a small electric fogger with oil- or water-base pyrethrum, dichlorvos (DDVP), or naled (Dibrom). These fogs can be applied best in the early morning when no people are around. Animals need not be removed, although horses may be frightened by the fog.

Urge that food stands keep some pyrethrum or dichlorvos in a pressurized spray can for the quick kill of adult flies. These sprays should be used at night after the stands close. The local health department should insure that all stands maintain the required standards of cleanliness.

HOMEOWNER PROBLEMS

Again, we copy from last year's bulletin. After all, fleas are fleas.

Fleas ordinarily annoy only dogs and cats. But left uncontrolled, fleas can become a serious problem in a home or a yard by late summer. They attack people on the legs, often leaving a series of two or three punctures in a row. Persons who take their cat or dog with them on vacation or put them in a boarding kennel may find a multitude of hungry fleas waiting when they return home. These adult fleas have developed from the eggs and larvae that were scattered about the house.

In the worm (larva) stage, these fleas live in the bedding of dogs and cats, in rugs and upholstered furniture, and even in the dirt in flower and shrubbery beds. The worm stage is usually not noticed and is harmless, but adult fleas suck the blood of warm-blooded animals.

Your dog or cat is a walking bait station for fleas. As long as the pet is around, people are seldom attacked. During the warm months (May to October), use a dust on your pet of either 4-percent malathion or 5-percent carbaryl (Sevin), Apply the treatment every month or so, especially if your pet is in contact with neighbors' pets or if the pet animal roams a lot. Treatments should also be made once or twice during the colder months (November to April) for added protection.

For emergency use, the plastic resin flea collars containing dichlorvos (Vapons, DDVP) are generally effective in preventing problems with fleas. Some dogs and cats are allergic to these collars; if so, skin ailments can result. Be alert for allergic reactions if you use flea collars on your pet. Also remember that these collars are effective for several weeks, but not the entire year.

In case of severe problems in a home, treat the pet as suggested above; but also spray a mist lightly over rugs, upholstered furniture, beds, and other areas where fleas are numerous. Use 0.1-percent pyrethrum or 1.0-percent dichlorvos (DDVP), applied from a pressurized spray can. This will give a quick knockdown and kill of the fleas hit with the mist, but it is not lasting. Repeated treatments may be needed.

WEED CONTROL IN SMALL-GRAIN STUBBLE

A good job of controlling weeds in corn and soybeans will reduce the supply of weed seeds in the soil, according to the results of a long-term field study at Urbana. But when foxtail, johnsongrass, ragweed, and other weeds are allowed to grow and produce seeds in small-grain stubble, the weed-seed supply in the soil is quickly replenished.

Controlling both grasses and broadleaf weeds. To do this in fields where there is no underseeding of desirable legumes and grasses, consider spraying with a mixture of dalapon and 2,4-D. The rate will depend on the kind and size of weeds present. When used at a rate of 2 to 3 pounds of commercial product per acre, dalapon may control foxtail that is only a few inches high. Johnsongrass, however, may require 5 to 7 pounds per acre; a later treatment may also be needed. For easy-to-kill broadleaf weeds, 1/4 to 1/2 pound of 2,4-D per acre may be enough to do the job; for tougher broadleaves, 1/2 to 1 pound of 2,4-D per acre.

Treating johnsongrass with dalapon. One of the most effective and practical control programs is to apply dalapon on johnsongrass after small grain harvest, thus controlling old plants and rhizomes, and then to follow on the next spring with Treflan and soybeans for seedling control. Check the dalapon label and Illinois Circular 827 for specific recommendations. Follow the instructions, precautions, and restrictions on the product labels. Do not graze livestock on fields where dalapon is used. If 2,4-D is used alone, do not graze dairy animals for seven days.

Tillage alone or in combination with herbicides. This also provides effective weed control in small-grain stubble. Mowing may reduce weed growth; but weeds, such as foxtail, can grow up again rapidly and still produce heads with considerable seed.

WEED CONTROL IN PASTURES

Pasture land is probably the most neglected acreage on Illinois farms. Yet, just a small investment in herbicide and fertilizer can improve both the yield and quality of forage from permanent pastures.

Treating with 2,4-D. This can provide control of most broadleaf pasture weeds. Apply a half quart to a quart per acre (4-pounds-per-gallon formulation) of 2,4-D amine or ester when the weed leaves are fully grown. This treatment should be applied before the weeds mature and produce seed. Perennial weeds, such as Canada thistle, will need to be retreated as soon as new growth occurs.

Using 2,4,5-T, or mixtures of 2,4,5-T and 2,4-D. This may be necessary to control some species of brush and weeds. 2,4,5-T is still registered for use on grass pastures.

Following the grazing restrictions. Be sure to do this when using any herbicide. Keep dairy cattle out of pastures treated with 2,4-D for seven days after application, and do not graze dairy cattle on pastures treated with 2,4,5-T for six weeks. Beef cattle should not be allowed to graze on pastures that have been treated with 2,4,5-T within two weeks of slaughter. Restrictions on grazing areas treated with Banvel depends on the rate. Check the restrictions on the label.

Applying amitrole and Tordon. They are not registered for use on pastures.

All of the herbicide treatments listed in this section will injure forage legumes as well as controlling broadleaf weeds. Use these treatments on only grass pastures or where injury to the legume is permissible.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

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The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 18, July 20, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

CORN INSECTS

Corn leaf aphid populations have not increased much since last week. We examined several dozen fields across the central half of Illinois this week. These fields varied in the stage of development, from whorl to pollination. Fields in the western half had slightly greater infestations than those in the east; but even the fields with the highest aphid populations had not yet reached an economic level, although a few were approaching it.

Some lady beetles and aphid lions are present. A predator, the insidious flower bug, was present in moderate numbers on most plants. These tiny predators may kill several aphids per day. This predation will delay or even prevent a future buildup of aphids, particularly if it occurs when the number of aphids is as low as it is now. However, watch for any increases in aphid numbers, since a "dry spell" may be starting. Aphid feeding is more important in dry weather, because the plant cannot afford to lose the moisture taken by the aphids. Threat of aphids may be over in three weeks--at least fields with brown silks probably will not be severely damaged. (See Bulletin No. 17, July 13, for details.)

Do not apply phorate (Thimet) or diazinon granules to seed fields that are being detasseled by hand.

European corn borers are more numerous than they have been for some time. Very few fields had first-generation populations great enough to cause economic losses, but many fields are harboring a small number of borers. Moderate numbers of first-generation borers in a reasonable number of fields may supply enough second-generation moths to cause trouble. This year, we expect a noticeable increase in the number of second-generation corn borers, versus the past few years. Late-maturing fields will be the most attractive ones to the moths for egg-laying.

Some moths have emerged in southern Illinois. Egg-laying should be starting there, and will continue for several weeks. Late fields may be handled the same as for the first generation. (See Bulletin No. 13, June 15.) A third generation is quite possible for the southern third of Illinois.

In central Illinois, we found that over 20 percent of the first-generation borers had already pupated. The moths should be emerging soon--at least by July 25. A few moths may have already emerged. Egg-laying will start shortly.

No pupation has been noted in northern Illinois.

Fall armyworm numbers have decreased in corn fields that were infested earlier. These worms have pupated in the soil and will emerge as moths to produce another generation in August. Egg-laying will be continuous until frost. These worms not only feed in the whorl of the corn plant, but occasionally they will cut into the stalk. They often feed on the ear, as an earworm does.

Corn earworms were found in the whorls of field corn as far north as Galesburg. These were found in late whorl to early tassel stage. Even though the number of infested plants in a field may be small, the total number of worms over a large area can be great. These earworms will be mature worms in about ten days; they will drop to the ground and pupate in the soil. They will remain in the soil for two to three weeks before emerging as moths to deposit eggs on fresh silks.

Corn in the late-whorl to pollinating stage after August 10 may have moderate to severe infestations of corn earworms, fall armyworms, and European corn borers. Corn earworm moths prefer fresh silk to wilting silks for egg-laying; corn borer moths prefer the late-whorl to early silk stage; and fall armyworm moths prefer the late-whorl stage. However, if these preferred sites are not present, these moths will deposit their eggs in corn fields where corn development is closest to their choice. It is likely that all three may be found in abundance in the same field.

Low infestations of larvae in a large acreage of early to mid-season corn will supply large numbers of moths. They will concentrate their egg-laying in the smaller acreage of later corn. For this reason, some late fields may have enough infestations from all three species to cause very serious damage. Unfortunately, we cannot suggest an excellent control measure. Sprays of carbaryl (Sevin), diazinon, or Gardona are used. There is no waiting period between the application of carbaryl and harvest. Gardona requires a five-day interval; and diazinon, 10 days.

We hope these three corn worms will just disappear. But the potential for damage is there, and we feel we must mention it.

Special note to sweet corn growers and processors, and to hybrid seed producers. Take note of the statements about European corn borers, fall armyworms, and earworms. Egg-laying by these three could start by August 1, but is more likely by August 10.

Alert your field men. You know the European corn borer and corn earworm eggs. The fall armyworm eggs look like a grey, cottony mass. They are usually layed on the undersides of leaves, but not always. There are dozens of eggs in one bunch.

True armyworms have been reported from several fields. Usually, they are not present in great enough numbers to present a serious problem, but we have had reports of a few heavily infested fields. At this late date, it is difficult to settle back and relax when armyworms are feeding on the corn leaves--even if this feeding is not too serious. In the rare situations where armyworms are numerous and stripping plants, several insecticides will effectively control them.

Northern and western corn rootworm beetles are beginning to appear on silks in some corn fields. If pollination has occurred, silk feeding is usually of no importance. But if 50 percent or fewer of the ears have been pollinated, five or more beetles per ear may be damaging. Applications of carbaryl (Sevin), diazinon, or malathion are effective.

These beetles will lay eggs in the soil. They overwinter and produce the rootworms for the 1974 crop. Some indication of the 1974 potential can be determined by counting the beetles present in August. However, do not count the adults per ear to determine potential for 1974 rootworms for at least another two weeks.

SOYBEANS INSECTS

Green cloverworms can be found in some fields. These green worms with white stripes are the ones that spring by arching their bodies when disturbed. They also run very rapidly. They eat the soybean foliage. At present, most of these worms are small, but worms with the eggs of parasitic flies on their backs are not common. A fungus disease that kills these worms will not be seen unless we have a rainfall and high humidity.

Normally, 6 worms per foot of row are considered damaging. We will reduce that to 3 or 4 this year. Hold plants over the middle of the row and shake them vigorously. Count the worms on the ground.

If the beans are between early blossom and early pod fill, a loss of 40 to 50 percent of the leaf surface was economic at prices of a few years ago. Perhaps we can reduce that figure for 1973. If much foliage loss is occurring from insect feeding, you may want to apply carbaryl or malathion to control the leaf-feeding soybean insects, particularly if the beans are between early blossom and early pod fill.

Cabbage loopers are much more common this year than for the past several years. They have been abundant on cabbage, green beans, lima beans, peas, and tomatoes. They may appear on soybeans. Do not confuse them with green cloverworms. These loopers are inchworms that move slowly and deliberately. It is unlikely that carbaryl, malathion, or toxaphene will control them. Naled (Dibrom) will provide control, and is registered for use on soybeans with a four-day interval from application to harvest. *Bacillus thuringiensis* (Biotrol, Dipel, and Thuricide) will control these loopers in cabbage, but there is no label clearance for use on soybeans.

Black cutworms have been very severe on late beans and on corn in the flood plain of the Mississippi River on the Missouri side. We have had moderate to severe infestations in a limited acreage on the Illinois side of the river, as well as on the overflow land of the Illinois River. Black cutworms prefer corn or grass crops for food, but will not hesitate to eat soybeans when grass crops are not available.

They have been difficult to control because in the dry soil, they have been two to three inches below the surface. No controls have been highly effective. Fortunately, their number is now decreasing.

Leafhoppers have been reported on soybeans. They are in the nymphal or wingless stage, are tiny, and are light green to yellow. Most commonly they are found on the undersides of the leaves. We rarely advise control because they have never injured pubescent or hairy-leafed soybeans, which are our common varieties. Leafhoppers will damage glabrous or smooth-leafed varieties.

If you feel that control is needed, either carbaryl or malathion will be adequate, the same as for cloverworms.

HOMEOWNER INSECTS

Striped cucumber beetles have been observed in many home gardens and in commercial plantings of vine crops. They carry a bacteria that causes a bacterial wilt on the

vine crops. Cucumbers and other vine crops have been reported to be wilting these past two weeks. To prevent bacterial wilt, the cucumber plants need to be protected from feeding by the beetles. Carbaryl (Sevin) applied as a dust or as a spray will control this insect. If blossoms are present, treat late in the day after all bee activity has ceased.

Mimosa webworms are rapidly becoming noticeable on many honey locust trees. These caterpillars feed and spin webs around terminal leaves and branches, causing the outer area of the tree to turn brown. These webworms have been present for some time, but may still be controlled with sprays containing malathion or carbaryl (Sevin).

Sod webworm second-generation moths are emerging in central Illinois, and will soon be emerging in the northern section. These white millers can be observed flying over lawns at dusk and around lights after dark. During the day, they hide in shrubbery and grass. Egg hatch and larval feeding damage usually follows moth flight by about 10 to 14 days. Sod webworm damage symptoms will appear as irregular brown spots in the lawn; birds feeding in the turfgrass; or upon close examination, the presence of grey or dusky-green caterpillars in the grass.

If numerous sod webworm moths have been flying over your lawn, you may wish to apply an insecticide about two weeks after moth flight for control. Use either diazinon, (Spectracide), carbaryl (Sevin), or chlorpyrifos (Dursban)--either as a spray or as granules. Follow directions on the label for the correct amount to use. Fertilizing and watering the lawn will often help overcome webworm damage.

Leafhoppers are wedge-shaped green insects that suck plant juices from the leaves of beans and potatoes, causing them to crinkle and curl. Leafhoppers secrete a toxin into the leaves that causes a browning of the leaf tips and edges and the death of the entire leaf, or even the entire plant. Green beans and potatoes in many home gardens now show severe damage. Sprays or dusts containing carbaryl will control leafhoppers on these vegetables.

Picnic beetles are nuisances when they visit your picnic table. They also invade gardens, where they attack fruits and vegetables damaged by weather or other insects. These beetles particularly like to penetrate ripe tomatoes with growth cracks.

These black beetles with the four yellow-to-orange spots on their backs are difficult to control. Sprays of carbaryl (Sevin) may be helpful. Use 2 tablespoonfuls per gallon of water in your garden. Diazinon sprays around garbage containers and in some vegetables may also be helpful. Do not harvest tomatoes for at least 24 hours after application. Follow label directions for use in home gardens.

WEEDS

CORN WEED CONTROL

Do not spray with 2,4-D when corn is between the tassel and dough stages. By tassel stage, we mean the time when the tassels are just beginning to emerge--about four to five days before corn silks begin to show. Research at Iowa State University has indicated that spraying with 2,4-D during this critical period may result in a failure of the kernels to develop properly on the ears. The problem does not appear to be caused by the presence of 2,4-D on the silks or tassels, rather by 2,4-D that moves into the leaves and through the plant to the ears. After the kernels are well-formed and have reached the dough stage (having the consistency of soft dough when pressed), it is safe to resume spraying 2,4-D with high-clearance equipment.

This problem is not a common one in Illinois, but it has occurred in research fields and occasionally in farmers' fields. We know it can occur. The best way to avoid it is to heed the 2,4-D label directions, being careful not to spray from the tassel to the dough stage.

GARDEN WEED CONTROL

Symptoms of 2,4-D injury may show up on some garden crops at this time of the year. The injury may appear as a crinkling or "puckering" of the leaves and as parallel veination--the veins of the leaf tend to run parallel to each other and in the same direction as the midrib.

An extremely small amount of 2,4-D moving into a garden may be enough to produce these symptoms. Although 2,4-D is not considered a highly toxic herbicide, the psychological effects on people who have eaten produce from an affected garden can be real--even if no actual danger to health exists. In some cases, 2,4-D may be blamed for an entirely unrelated illness.

To be on the safe side, it is best NOT to recommend eating any garden produce that has been contacted by a herbicide--unless the herbicide is registered for use on that specific crop and a tolerance has been set.

PLANT DISEASES

SMALL-GRAIN DISEASES

Crown rust--or leaf rust--of oats is now showing up, especially in northern Illinois. Small, scattered, oval-to-oblong, orange-yellow pustules develop primarily on oat leaves, but may also occur on the leaf sheaths, stems (culms), and panicles. The pustules soon break open to release a dusty mass of golden-colored summer spores.

The number and size of the pustules vary greatly, depending on the susceptibility of the oat variety and the severity of the infection. If the weather favors infection (high humidity, fogs, frequent heavy dews or light rain, and temperature about 70° F.), the pustules become numerous and may run together as the season progresses. A new generation of summer spores may be produced every seven to fourteen days. These spores, in turn, are blown by air currents, spreading the disease from plant to plant and from field to field during the remainder of the growing season.

As the oats mature, black overwintering spores are formed. These spores may also develop during periods of adverse weather--for example, during periods of extreme drought, excessive moisture, or very high temperatures.

The most effective control measure is to grow varieties that are resistant to crown rust, that mature early, and that are adapted to your area. Early maturing varieties often escape moderate to severe rust damage. Planting as early as possible in the spring also helps the crop escape the rust. Whenever possible, eradicate rust-spreading buckthorn growing within a mile of oat fields.

For more information on this disease, see *Report on Plant Diseases No. 109*, available from the Department of Plant Pathology, 218 Mumford Hall, Urbana, Illinois 61801.

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COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 19, July 27, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Green cloverworms were common this week (the week of July 23) on soybeans in western Illinois and in parts of central and northern Illinois. Only a few were found on soybeans in southern, southwestern, and southeastern Illinois. These worms were most common in fields that were blossoming, but were also found in less-mature fields.

Green cloverworms vary in size from about 1/16 to 1/8 of an inch long, almost hair-like, to over 1-1/2 inches in length. Apparently, plenty of eggs are still hatching; small worms are numerous.

The rains may be killing the small worms. A parasitic fly deposits white globe-like eggs just behind the head of the worm. A maggot which hatches from one of these eggs, burrows into the worm's body. Feeding is slowed down, and the worm may die. A fungus disease also kills these worms and they appear as white, moldy, dead, and almost mummified worms. This disease spreads rapidly in the worm population during periods of hot, humid weather.

This fungus, the parasites, and hard rains are capable of eliminating the potential threat from this pest. So assess the present population, the size of the worms, the weather, the degree of parasitism, and the presence of dead white worms. We hope that the parasites and the fungus disease together will eliminate the need for insecticides, but a serious potential exists and each soybean field should be examined carefully.

In some of the more mature fields this week, feeding by the worms was already well advanced, and the worms had matured. Treatment may no longer be beneficial. Small worms were present in some fields that were not yet in bloom. In such fields, the use of an insecticide may be warranted later.

To estimate the populations of green cloverworms, bend plants over the middle of the row and shake them vigorously. Watch the soil for about five munutes to be sure you have seen all the worms. Do this in several places in the field. If you find 3 or 4 medium-sized worms per foot of row, using an insecticide may be justified--particularly if there are also 3 or more small worms per foot of row and if the beans are in the blossom to mid-pod-fill stage.

Various studies have shown that partial defoliation at this stage can have a marked effect on yields. Therefore, examine carefully and critically those fields between the stages of early blossom and mid pod-fill. This year, we probably should say that a 25- to 30-percent defoliation will result in economic loss and that treatment should be applied when the loss of foliage is 15 to 25 percent. Most soybean growers have encouraged us to be less conservative this year on our damage statements.

Yield losses commence when 25 to 30 percent of the foliage is removed at the full-bloom stage. If that foliage loss is greater, so are yield losses. These losses become even greater when such defoliation occurs from early pod set to mid-pod-fill. By full-pod-fill, yield losses moderate. [This statement is courtesy of W.O. Scott, Professor of Agronomy.]

If your field warrants the use of an insecticide, we suggest carbaryl (Sevin)or malathion. Bees do not frequent soybean blossoms to any great extent, but if you see honey bees, wait until late in the day to spray. Toxaphene would be safer for use around bees, but farmers complained about erratic results in our last outbreak several years ago.

Leafhoppers are also present in soybean fields. You will find these green, wedge-shaped insects on the ground after you shake the plants as you count green cloverworms. Many of them are winged and some fly away, but a number of them are bright yellow-green to yellow and wingless. These are the young or nymphal leafhoppers. We do not know what damage they do to Illinois varieties, but we usually cannot measure an effect on yield. Any smooth-leaved variety will be damaged. NOTE: if you do treat for green cloverworms, the leafhoppers will also be killed.

Bean leaf beetles are yellow, green, or red. They have a black line all the way around the wings. There are usually two to four square, black spots on their backs. These beetles can also defoliate beans. We have not seen them in great quantity yet, but they may appear in a few weeks. Again, the insecticides for green cloverworms will control bean leaf beetles.

CORN INSECTS

Corn leaf aphid populations have not materialized, except in an occasional field. Generally, most of the corn crop will escape damage. But we did see one field in northern Illinois and one in west-central Illinois this week in which treatment might be warranted.

Rains have generally helped reduce the numbers of aphids. But if you are in one of those narrow areas where moisture is a problem, continue to watch for this pest in later-maturing corn.

European corn borer populations in the southern part of Illinois appear to be low generally, but there may be one area in southeastern and possibly one in west-southwestern Illinois where corn borers will increase this year--particularly if we should have a third generation of them. Moths are flying in southern Illinois. A few were observed in central Illinois this past week. We also found a few egg masses in pretassel corn in southern Illinois. Except for these two areas, we believe that the second generation will not be serious in the southern part of Illinois, but a third generation could create a problem in late corn fields.

Pupation of first-generation corn borers is quite high in the northern half of the state. Some emergence was recorded, so eggs will begin to appear soon. Peak moth

flight will occur during the next three weeks. Our survey of this area for first-generation corn borers will not be completed until early next week. This will provide us an intensity index for the second generation.

Fall armyworms are common throughout the southern half of Illinois, particularly the southern third. These worms vary in size, but can be found in corn in the late-whorl stage; also, in less mature corn. A number of plants in an area in the field will usually be infested.

These grey-to-brown, greasy-appearing worms can be found deep in the whorl, or even feeding further out on the leaf. Ordinarily, you will find only one fall armyworm deep in the whorl, since they are cannibalistic.

We now find fall armyworms from small to full-grown, and we are finding moths. From this, we may anticipate a continuing infestation until fall. Eggs will be layed most commonly on pretassel corn, so watch these fields more than you do those that are already tasseled out.

We do not have adequate damage studies, but one hates to lose too much leaf surface to worms. When 10 to 20 percent of the plants in a field show moderate leaf feeding and the worms are half to three-quarters grown, you may want to apply carbaryl (Sevin), Gardona, or toxaphene. Sprays provide good control as long as they reach the worms. If the worms are deeper in the whorl, granules (when available) will be helpful. Usually, we discourage use of insecticides to control this pest, but circumstances this year are not ordinary.

Corn earworms are usually found in one plant in a place. These worms are yellow, green, or light brown. Whorl-feeding by this pest is usually not serious. Corn earworm moths were observed flying in the fields in southern Illinois this week. Corn in the silk stage, tomatoes, green beans, and possibly soybeans may be attacked by this pest. Check all of these crops. Carbaryl sprays will be helpful in reducing infestations.

Woolly bears are eating corn silks, but do not affect yields.

Cat-tail caterpillars are orange, yellow, and brown bristly worms. They are now eating corn leaves. These caterpillars usually are eliminated by wasp parasites.

Picnic beetles are common in field corn, and are literally packed in corn borer burrows. Sometimes they are thick in the silk. So far, we have been unable to find that they affect yields. These beetles do help drive European corn borers out of their tunnels and expose them to the weather.

SORGHUM INSECTS

Sorghum webworms may be a problem on late-planted grain sorghum. Frequent inspections should be made, beginning in the bloom stage and continuing until hard dough. The larvae have a reddish-tan, dark-brown body with three darker lines down the back. They gnaw circular holes in the grain. The mature larva are about half an inch long, and are covered with closely spaced spines and fine hair. Carbaryl, diazinon, or malathion are suggested when 25 percent of the heads are infested with five or more larvae per head.

Fall armyworms. Damage to sorghum by fall armyworms was observed in southern areas of the state last week. The small larvae feed on the outer leaves. The larger worms feed

down in whorls. Control is suggested when 25 percent of the plants, less than three feet in height, show whorl feeding.

Granules are preferred, but sprays applied with ground equipment using 10 to 20 gallons of water per acre with the spray directed over the whorls will provide fair to good results, depending on the size and location of the worm. For control use 1-1/2 pounds of carbaryl (Sevin) or toxaphene. For carbaryl, there is a 21-day waiting period between application and removal of grain, but none for forage. For toxaphene, wait 28 days before removing grain. Do not apply toxaphene more than once after heads start to form. Do not use treated forage for silage.

Corn leaf aphids may be present in the whorls of sorghum. Research conducted in other states indicates that these aphids seldom affect sorghum production. If the infestation is heavy, malathion will control them. These aphids will suddenly begin to disappear just before the sorghum heads. However, it is difficult to sit idly by when aphids are matted on the leaves and the upper leaves are turning brown.

Lady beetles and their young eat aphids. It takes two to five per plant to make inroads into the aphid population. As the lady beetles consume the aphids, the beetles will migrate to other crops. This will help control the aphids.

Greenbugs, a stubby-looking aphid, may be found on sorghum. They can damage sorghum from the seedling up to the early preboot stage, and will often cause the plant to die. As greenbugs suck the plant's sap, they inject a toxin into the leaves that causes a reddish discoloration to develop around the point of feeding. We have not had any reports of greenbug damage to sorghum in Illinois so far. Greenbugs are yellowish or bright green, with a reddish tinge on the back of the body. Only the tips of their cornicles and antennae are black. They usually feed on the undersides of the lower leaves. Corn leaf aphids, by contrast, are usually found in the whorls. Whenever greenbugs are causing the death of more than two normal-sized leaves, they should be controlled.

The sprays that can be applied by commercial applicators are demeton (Systox), disulfoton (Di-Syston), or ethyl parathion. Do not use methyl parathion because of possible injury to some sorghum varieties. The sprays that producers can apply with ground equipment are diazinon, dimethoate (Cygon), or malathion. Allow 28 days to elapse between an application of dimethoate and grain harvest, 35 days for demeton, 7 days for disulfoton, 12 days for parathion, and 7 days for diazinon and malathion.

Sorghum midge. Damage to sorghum by this insect has been reported in southern Illinois Injury is caused by tiny maggots feeding inside the seed. If the infestation is severe the heads appear to be blasted or blighted and will produce little or no grain. Johnsongrass serves as a natural reservoir for infection.

Damage can only be prevented by controlling the adult midge before the eggs are deposited. Thus, control requires precise timing of insecticide applications. The adult midge is an orange-colored gnat or fly about 1/12 of an inch long. The flies deposit their eggs in the spikelet or seed husk of the plant, and the orange-colored larvae or maggots live within the developing seeds.

Late-planted sorghum is usually subject to more damage than plantings made earlier. Because of the critical timing required, chemical control for midge may not be very effective--particularly where late-planted sorghum shows uneven plant development with head emergence spread over a three- to six-week period.

Missouri recommendations suggest treating where there is an average of one or more adult midges per head. Two determinations should be made before deciding to apply an insecticide.

First, make sure midges are present. Look for tiny, orange-colored flies during the early morning hours. It is very difficult to identify how many are present. They may be seen flying around and crawling over the heads at first bloom.

Second, it is important to time applications so that the first one is applied at approximately 50 percent of the heads have emerged; the secone one, 3 to 5 days later, or by the time 90 percent of heads have emerged from the boot. Two applications may be needed, unless the field is uniform in terms of head emergence.

For control, use 1/2 pound of diazinon, ethyl parathion, or carbophenothion (Trithion), or 1-1/2 pounds of carbaryl (Sevin) per acre. Do not apply carbophenothion more than once per season, and do not graze or cut for forage within 21 days after application. There is a 21-day waiting period for carbaryl between application and removing the grain, but no time limitations for forage.

LIVESTOCK INSECTS

Face fly populations remain high on pastured cattle. Untreated cattle have an average of 60 to 80 face flies in the northern section, 30 to 60 in the central section, and 15 to 50 in the southern section. Face flies are expected to continue to be a problem for at least the next four to six weeks. Stable flies and horn flies are also attacking pastured cattle. In some herds, stable flies are numerous. Cattle on dry lot confinement are not attacked by face flies and stable flies.

For dairy cattle, apply crotoxyphos (Ciodrin) as a 1- or 2-percent, ready-to-use, oil-base spray at 1 to 2 ounces per animal as often as needed. As an alternative, use a 1-percent, water-base spray at 1/2 pint per animal per week. Spray over the animal's head, back, sides, and legs.

For beef cattle, use Ciodrin as suggested for dairy cattle. A mist blower is a convenient method of applying these water-base sprays to beef cattle. Only about 2-1/2 percent of the spray applied from a mist blower actually impinges on the animals. Do not apply crotoxyphos to cattle within 24 hours of slaughter.

Dust bags and canvas or burlap face or back oilers, used will and properly operating, effectively control horn flies; but do not control face flies and stable flies when populations are heavy. Check the label precautions given with the insecticide you use in these devices for waiting periods between treatment and slaughter.

HOMEOWNER INSECTS

One Japanese beetle was found in Jackson County this summer. This is a new infestation.

Mosquitoes are annoying people and children in some parts of the state. Homeowners can do a few things to help:

1. Eliminate standing water in such places as eave troughs, old tires, tin cans, children's toys, storm sewers, and the like.
2. When needed, sparingly apply a water-base spray containing 0.5-percent malathion (1 ounce of 50- to 57-percent liquid emulsion concentrate per gallon of water) to shrubbery and tall grass. During problem periods, repeat this every week or two. Do not use malathion on canaert red cedar. Also, mow weed patches near children's play areas. Mosquitoes harbor there during the day.

3. For quick knockdown at cookouts or outdoor parties, use either 0.1-percent pyrethrin or 0.5- to 1-percent dichlorvos (DDVP) as an oil- or water-base space spray. Spray the mist lightly beneath tables and chairs and into the air for a few feet around the area. If the mosquitoes are numerous, it may be necessary to spray beforehand as well as once or twice during the event.
4. When entering mosquito-infested areas, use a repellent on the exposed parts of the body. One of the most effective mosquito repellents is DEET (diethyltoluamide).

WEEDS

NEW CLEARANCE

Solo (naptalam-plus-chlorpropham)-plus-Lasso (alachlor) recently received a federal clearance for use as a tank-mix combination for preemergence weed control in soybeans. The combination will provide better grass control than Solo alone, and better broadleaf weed control than Lasso by itself. The treatment had been cleared for use in some neighboring states before the federal clearance was announced. Illinois does not register herbicides or combinations until they have received federal registration.

HERBICIDES NOT CLEARED

Naptalam-plus-dinoseb (sold as Dyanap, Ancrack, and Kleenkrop) is not cleared for use as a salvage postemergence treatment for soybeans. The Federal Pesticide Act of 1972 states that herbicide treatments not applied according to label are illegal, and illegal treatments are subject to fine.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection Service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

NSECT, WEED & PLANT DISEASE SURVEY BULLETIN

ATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 20, August 3, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Green cloverworms are present in many fields of soybeans in the northern one-half to two-thirds of Illinois. Some fields are being damaged and need treatment, but the potential for more widespread damage exists. Many small worms (green and threadlike and 1/8 to 1/4 inch long) can be found and many more may yet hatch. Several fields averaging 5 to 7 of these small worms per foot of row were observed this week in the north-central section. However, some of the large worms were found infested with a fungus disease. This disease kills the worms, and they appear white, dry, and hard. Wet, humid weather is conducive to the spread of this disease. A few parasitized worms with a small white egg glued behind the head were seen also. Diseases and parasites are often high when populations of green cloverworms are high, and this may alleviate the situation.

Continue to check your soybean fields that are between bloom and full-pod development, and if you find 4 or more worms (half-grown worms or larger) per foot of row, treatment is justified. An alternate method is to apply an insecticide when 20 percent or more of the foliage has been eaten and the worms are still present.

For control, apply carbaryl (Sevin) or malathion at 1 pound per acre as sprays over the foliage.

CORN INSECTS

Second-generation European corn borer moth egg-laying is well along in the southern section of Illinois, is under way in the central section, and is just beginning in the northern section. Our first-generation corn borer survey showed populations to be generally low throughout the state. There are localized areas like bottomlands in western Illinois with relatively high populations, so second-generation corn borers could still be a problem in some areas. A third generation of corn borers could also present problems in the southern section later on.

The moths prefer to deposit their eggs on corn in the late-whorl to early-silk stage. Egg-laying will continue for 2 to 3 weeks.

Check late-maturing fields this week in the southern and central sections and next week (August 5) in the northern sections to determine whether treatments are needed. If there is an average of one or more egg masses per plant, apply an insecticide after

a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon as granules or sprays. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules and not sprays. Direct ground-applied sprays into the whorl of whorl-stage corn, and from the ear zone upward in tasseled corn. Use 1-1/2 pounds of carbaryl or 1 pound of diazinon per acre. Wait 10 days after applying diazinon before ensiling the corn. No waiting period is required for carbaryl.

In late-maturing sweet corn, apply an insecticide every 3 to 5 days if there are 20 or more unhatched egg masses per 100 plants and the corn has a tassel ratio of 30 or more. For corn in silk, spray at the ear zone every 3 to 5 days to protect against both corn borer and corn earworm. The addition of 0.5 to 0.75 pound of parathion to the 1-1/2 pounds of carbaryl applied per acre improves earworm control. Allow 12 days between the last application of parathion and harvest.

Fall armyworms continue to damage late-maturing corn, particularly in the southern half of the state. Infestations will continue until fall as new generations are produced. Generally, the damaged plants are not killed but recover and produce a near normal yield. Therefore the benefits from control have been somewhat questionable. However, if 20 percent or more of the plants are infested and the worms are less than 1-1/4 inches long, control is probably justified. A full-grown fall armyworm is about 1-1/2 inches long when it ceases to feed. Yellow-striped armyworms, corn earworms, and cat-tail caterpillars are also present in some fields.

Carbaryl, Gardona, or toxaphene at 1-1/2 pounds per acre or diazinon at 1 pound are effective. Sprays are effective when they reach the worms. If the worms are deep in the whorl, granules are generally more effective. Wait 5 days after applying Gardona and 10 days after applying diazinon before ensiling the corn. Do not feed toxaphene-treated corn as forage to dairy cattle or livestock fattening for slaughter.

Corn rootworms. The adults are becoming more numerous as they continue to emerge from the soil. The yellowish to pale-green northern rootworms, the yellow and black-striped western worms, as well as the twelve-spotted southern corn rootworms, feed on fresh silks. They can interfere with pollination and reduce kernel set.

Continue to check fields coming into fresh silk, particularly in the northern half of the state. If there is an average of 5 or more of these beetles per plant and if the field is not over 50-percent silked, treatment is justified. Apply carbaryl (Sevin), malathion, or diazinon at 1 pound of actual chemical per acre. There is no waiting period between application and harvest for carbaryl. Allow five days for malathion and ten days for diazinon.

Count the number of beetles per plant for the next three to four weeks. When the average is one or more beetles per plant each week, the field may profit from a soil insecticide treatment next spring, if the field is planted in corn.

HOMEOWNER INSECTS

Second-generation sod webworm moths have been emerging and laying eggs in lawns. This egg-laying will continue for several more weeks. Apply ample fertilizer and water to the lawn to help lessen the possibility of serious damage by these insects. Once started, this program must be continued to avoid serious damage. If needed, an application of carbaryl (Sevin), diazinon, or chlorpyrifos (Dursban) as a spray or granules will effectively control the worms for a week or two. Use 3 to 4 gallons of water per 1,000 square feet of lawn area. A good time to apply the treatment is about two weeks after a heavy moth flight. An additional treatment may be needed if egg-laying continues heavy into late August.

European pine shoot moth caterpillars are feeding on the new growth of pine species, especially muhgo, Scotch, and red pine. The overwintering worms fed on and tunneled into the new "candles" in April and early May. This second generation of worms appearing now are feeding on the ends of branches. Sprays containing dimethoate (Cygon, De-Fend) applied now will control these worms. To mix, use 2 teaspoons per gallon of water. Pruning of infested tips of branches will also reduce the overwintering infestation.

Oystershell scale eggs will be hatching soon in the central section. The young crawlers set up housekeeping on shrubs like lilac and dogwood. They suck the juices from the plant and if abundant, they can seriously retard growth and even kill the plant. This is the second generation of this scale and the build-up is often heavy. If you have had a history of problems in your yard, spray the shrubs thoroughly with malathion using 2 teaspoons of the 50- to 57-percent liquid concentrate per gallon of water. Target dates for spraying are right now in the southern sections, August 10 in the central section, and August 20 in the northern section.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE [illegible] No. 21, August 10, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Green cloverworms continue to be seen in many soybean fields in the northern two-thirds of the state. In northern Illinois, many small worms are present with very few large worms. In the central section, there are many small worms along with half- to full-grown worms. This situation has remained almost constant for the past three weeks. It appears that egg-laying and hatch have continued during this period; and as the worms have increased in size, many have disappeared. Only a small percentage of the many small worms present two weeks ago can be observed now as half- to full-grown worms. Some fields have spots in them with up to 25 worms per foot of row, but only 2 or 3 of these worms are half-grown or larger. There are areas in the state where counts of the larger worms range up to 8 to 10 per foot of row.

Diseased cloverworms can be found in these fields. Diseased worms which have died will be chalky-white, dry, and hard. Wet or humid weather helps spread this disease. Many of the larger worms are also parasitized. The parasitic fly lays small white eggs behind the head of the cloverworm. These eggs can be seen easily when observing the worms. Diseases and parasites both increase when the populations of green cloverworms are high, and both have gone up during the past week. In some fields, 15 to 20 percent of worm population were dead from disease.

Continue to check soybean fields that are between the bloom stage and full-pod development. If you can find an average of 4 or more half-grown or larger worms per foot of soybean row, treatment is justified. An alternate method is to apply an insecticide when 20 percent or more of the soybean foliage has been eaten and cloverworms are still present. For control, apply carbaryl (Sevin) or malathion at 1 pound actual per acre as sprays over the foliage.

CORN INSECTS

European corn borer moths have almost completely emerged in the northern section of Illinois. Egg-laying for second-generation borers in most sections appears to be generally light, but there are localized areas where second-generation borers could be a problem.

The moths prefer to deposit their eggs on corn in the late-whorl to early silk stage. Egg-laying will continue for two to three weeks. Check late-maturing fields this

week in the southern and central sections and next week in the northern sections to determine whether treatments are needed. If there is an average of one or more egg masses per plant, apply an insecticide after a few eggs have hatched. If the corn is in the whorl stage and if 75 percent or more of the plants are showing recent whorl feeding, apply carbaryl (Sevin) or diazinon as granules or sprays. Aerial sprays on tasseled corn are effective; but on whorl-stage corn, aerial applications should be granules and not sprays. Direct ground-applied sprays into the whorl of whorl-stage corn, and from the ear zone upward in tasseled corn. Use 1.5 pounds of carbaryl or 1 pound of diazinon per acre. Wait ten days after applying diazinon before ensiling the corn. No waiting period is required for carbaryl.

In late-maturing sweet corn, apply an insecticide every three to five days if there are 20 or more unhatched egg masses per 100 plants and the corn has a tassel ratio of 30 or more. For corn in silk, spray at the ear zone every three to five days to protect against both corn borer and corn earworm. The addition of 0.5 to 0.75 pound of parathion to 1.5 pounds of carbaryl applied per acre improves earworm control. Allow 12 days between the last application of parathion and harvest. Parathion should only be applied by experienced applicators.

Fall armyworms are still numerous in very late-planted fields over the entire state. Numbers have decreased in older fields that were infested earlier. These worms not only feed in the whorl of the corn plant, but occasionally will cut into the stalk. They often feed on the ear, as an earworm does.

Corn leaf aphid colonies continue to show up in some fields over the northern half of the state. There are fields that have tasseled and the aphid population has decreased, leaving behind white skins shed by the aphids plus a sticky secretion on leaves and tassel called "honeydew." Parasites and predators are commonly found among the aphid colonies. Swollen brown aphids, each with a tiny hole in the back, have been parasitized by a wasp. Lady beetles and syrphid flies are the common predators feeding on aphids now. In many other fields, the aphid population has not decreased.

The white skins you see on the plants are the cast skins of the aphids. All insects grow by shedding their external skeletons, leaving the remains. As noted, the sticky material on the plants is honeydew, an exudate from the aphids. When this is excessive, the plant becomes shiny. Sooty mold will soon develop on the honeydew, and the plant will look sooty-black.

When faced with a decision about treatment, you should estimate (1) the aphid population, (2) the time needed for the corn to reach the dry silk stage, (3) the number of natural enemies, and (4) the susceptibility or resistance of the hybrid. If you decide that treatment is required, 1 pound of malathion or diazinon will provide adequate control. Our rule of thumb is to treat if the corn leaf aphids are present in moderate numbers on 50 percent of the corn plants when the field is in the pretassel to early silk stages.

HOMEOWNER INSECTS

Fall webworms are defoliating certain trees--especially birch, ash, and elm. These pale-green or yellow worms (with a dark stripe down the back and a yellow stripe along each side) spin a web over the ends of the branches and skeletonize the leaves inside. They continue to extend the web to take in fresh foliage. The damaged leaves curl, turn brown, and dry up.

A spray of carbaryl (Sevin), using 2 tablespoons of the 50-percent wettable powder per gallon of water, is effective.

Willow aphids are dark red or dark brown, and can be found in clusters on the twigs of weeping willow and other willow species. Malathion provides excellent control.

WEEDS

DESICCANTS FOR DRYING WEEDS IN SOYBEANS AND SORGHUM

A defoliant, or desiccant, is occasionally needed on soybeans before harvest, primarily when the growth of weeds has been excessive and the crops are near maturity. If a desiccant is used on soybeans before they are nearly mature, the yield and quality will be reduced. The extent of this reduction is directly related to the stage of maturity.

Desiccants will not make weeds disappear. The coarse, stiff stems of weeds such as jimsonweed, velvetleaf, and cocklebur will remain--as well as the wiry stems of grasses such as foxtail. However, a desiccant can dry the weeds, and may make harvesting easier and reduce dockage.

By the time soybeans are mature, the weeds have already taken their toll. Also, the desiccant is not likely to reduce the viability of weed seeds that are already mature.

Paraquat is registered as a "harvest aid" for drying weeds in soybeans. It may be applied when beans are fully developed when at least half of the leaves have dropped and the remaining leaves are turning yellow. If applied before beans are fully developed, yield reductions can result.

The recommended rate is 1/2 to 1 pint per acre on a broadcast basis. Use the higher rate on cocklebur. Use the suggested rate in 20 to 40 gallons of spray per acre for ground application, or in 2 to 5 gallons per acre for aerial application. Add 1 quart of a non-ionic surfactant (X-77 or a similar surfactant) per 100 gallons of spray. Do not pasture livestock within fifteen days of treatment, and remove livestock from treated fields at least thirty days before slaughter.

The total cost of the paraquat and surfactant plus application will probably be about $3 to $6 per acre.

Dinoseb ("dinitro" or DNBP), diquat, and endothall have been cleared for use on soybeans raised for seed, but not for soybeans to be harvested for food, feed, or oil purposes.

Now is a good time to remind folks to place primary emphasis on early weed control practices next year.

No desiccants are registered for use on grain sorghum.

CONTROL ALGAE IN WATER TANKS

Occasional use of copper sulfate can control algae in livestock water tanks. A convenient way to obtain the recommended dilution (1/2 p.p.m.) is to dissolve 1 ounce of copper sulfate in a pint of water in a glass jar or enamel pan. Do not use galvanized containers, because the copper sulfate will react with zinc in the galvanizing. Determine the amount of water in the tank, and add three tablespoons of the solution for each 1,000 gallons of water. Mix thoroughly. Keep livestock away from the treated tank for at least twelve hours. The water may then be discarded or used for watering livestock if necessary.

After the copper-sulfate-treated water has been in contact with the algae for 12 hours or more, empty the tank and give it a thorough cleansing. Treatment is only temporary and may need to be repeated as algae or moss regrows.

HERBICIDE USE AND CROP SAFETY

Improper herbicide use may cause serious injury to crops or desirable plants. Three factors to consider are drift, contaminated equipment, and excessive herbicide rates.

Drift hazards. These are greatest when herbicides that affect the leaves of plants are applied. These may be growth-regulatory herbicides, such as 2,4-D and silvex, or contact herbicides, such as paraquat, the petroleum oils, and "dinitro." To reduce spray drift, use low pressure (10 to 30 p.s.i. for ground sprayers) and a nozzel with a large opening that gives a coarse spray. Do not spray if the wind is blowing toward nearby, susceptible plants.

Contaminated equipment. It is extremely risky to use spray equipment that has been used for the phenoxy herbicides (2,4-D, silvex, and others) to spray susceptible plants. Tomatoes, grapes, and red bud trees are especially sensitive.

Whenever possible, it is best to have separate spray equipment to apply phenoxy herbicides. If it is absolutely necessary to use the equipment for other purposes, clean it very thoroughly. The spray barrel or tank is the greatest source of contamination, followed by the hoses. It is best to change the barrels and possibly the hoses; but when this is not practical, we suggest the following steps to remove 2,4-D and related materials from metal tanks:

1. Add a small amount of water, and "slosh" it around in the barrel. Empty and repeat. Using kerosene or fuel oil helps to remove herbicides that are oil-soluble. The ester forms of 2,4-D emulsifiable concentrates that form emulsions when mixed with water usually are formulated in oil and are oil-soluble. Amine salts are water-soluble and are generally easier to remove. Following an oil rinse, rinse with a detergent in water several times to remove the oil.

2. Rinse the entire system with water containing a wetting agent or a detergent. Repeat and flush part of the rinse through the sprayer, and empty the remainder.

3. If the ester form of 2,4-D was used, fill the tank with water and household ammonia at the rate of 1 quart of household ammonia to 25 gallons of water. Pump enough solution through the hose and nozzles to completely fill those parts. Then fill the tank, close it, and leave it for 24 hours. Rinse thoroughly with water. [NOTE: Adding ammonia to equipment contaminated with 2,4-D does not "inactivate" the 2,4-D. It converts ester forms of 2,4-D to water-soluble ammonium salts. Then the 2,4-D salts must be completely washed out of the sprayer.]

4. Activated charcoal is also useful for cleaning herbicides from spray equipment. Usually, 2,4-D and similar herbicides can be removed fairly well by rinsing the sprayer for about five minutes with a 0.3-percent suspension of activated charcoal (1/4 pound of activated charcoal in 10 gallons of water containing a household detergent). Drain and thoroughly rinse with clean water. Activated charcoal can be obtained in 1-pound bags at some dry-cleaning establishments.

To remove wettable-powder herbicides, first check to see that none of the material remains caked in the bottom of the tank. A thorough rinsing with water and a detergent is usually sufficient to clean the tank. Take screens and nozzles apart to be

sure no material is left in these parts. Repeated rinsing with water plus a detergent is usually enough to also remove most water-soluble herbicides.

Excessive herbicide rates. To avoid crop injury, apply only the amount recommended on the label of the product. An excess of some chemicals may remain in a field and injure succeeding crops. Know how much water your sprayer applies per acre before you add any chemical. Replace worn nozzles regularly. Calibrate your sprayer before starting the spraying season and two to three times during the season. When using wettable powders, be sure the sprayer has either an adequate bypass for good agitation or a mechanical agitator.

Never add concentrated herbicide to an empty sprayer. First fill the tank a quarter to a half full with water, then add the chemical with agitation. Do not let sprayers containing wettable powders stand idle for more than an hour or two. Before starting to spray again, check the bottom of tank to be sure none of the herbicide has settled-out.

Always shut off the sprayer before stopping in a field, and do not leave sprayer on when turning at the ends of the rows. Use nondrip nozzles with a spring that allows a more positive shut off at the nozzles when pressure is shut off. Do not disconnect hoses or spill concentrated herbicide in fields. Be sure the spray swaths do not overlap. [Adapted from the North Dakota Pest Report.]

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 22, August 17, 1973

This series of weekly bulletins provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted), along with suggested, abbreviated, control measures. Each individual should check his own fields to determine local conditions.

INSECTS

SOYBEAN INSECTS

Green cloverworms were a major topic of conversation in many farm circles this week. Our telephones as well as those of the County Extension Advisers rang almost constantly. With the soybean futures as they are, we did not know whether to discourage the use of insecticides or not. Although some fields may have been treated needlessly, others will show a profit from treatment. Even though dead worms were found in many fields, few farmers were willing to gamble for a few more days to see what would happen.

Here is how we looked at it. If you found 3 or 4 medium-sized or larger worms per linear foot of row, many tiny ones were almost always present, too. If 20 percent of the foliage had been consumed, this would be approaching the level of economic damage if the beans were in the early pod-set to full-pod stage. Actually, you can only measure yield losses when 25 to 30 percent or more of the foliage is removed at this stage of growth.

So we said that if 4 or more medium-sized or larger worms were found per foot of row and if 20 percent of the foliage had already been eaten, an insecticide should be used. We also said that if 10 to 15 percent of the foliage had been consumed, you may not want to wait any longer for fear you will end up making a treatment after the damage had been done.

Fungus disease has killed many worms. Without this help, some soybean fields would have been defoliated. This fungus has killed worms steadily, particularly the tiny worms. These tiny worms have been numerous in fields constantly since July 10, as we have reported; but few have lived to be half-grown worms. Moderate weather finally allowed some to mature. These were the medium-sized ones we were finding. Where it has rained and the weather is humid, this fungus may now finish the job. It usually does.

As high as 60 percent of the worms in some fields are now dying of fungus disease. They can be found on the ground and hanging on the plants. Soon after they die, the dead body disintegrates. A close watch is in order now, since the need for treatment may end soon in these areas. In dry areas, green cloverworms may continue to be a problem.

If your field warrants the use of an insecticide, we suggest carbaryl (Sevin) or malathion. Bees do not frequent soybean blossoms to any great extent; but if you see honey bees, wait until late in the day to spray. Toxaphene would be safer for use around bees, but farmers complained about erratic results during our last outbreak several years ago.

We have had serious damage from carbaryl to one bee yard surrounded by soybean fields. Be careful to check and see what is in the vicinity before you spray.

Blister beetles are present in some soybean fields. These soft-bodied, elongated beetles may be solid black, black with a gray stripe around the wing covers, grey or brown and yellow striped. They are usually found only in spots, and no control is needed.

Yellow-striped armyworms are also showing up in soybean fields. When less than full-grown, they are black to brown with a yellow stripe down each side of the back. When full-grown, they have a definite block pattern on the back. Usually, no control is necessary.

Bean leaf beetles are appearing in numbers in some fields, but are not a problem now. Later, they may feed on pods--which is not a common problem.

CORN INSECTS

Corn leaf aphids are still present in many fields. But these populations appear to be decreasing, except in very late fields.

European corn borers have us stymied. Our first-generation larval survey indicated only a small number, and not much of a second-generation potential. But we know of areas where the first-generation borers were numerous. Moths are common in some of these areas. We have found few eggs on field corn, but there are some small worms. We believe there will be an increase in the number of corn borer over last year. To determine the need for treatment, see Bulletin 21 (August 10, 1973).

Corn rootworms were present this year. Even so, do not blame them for all the corn lodging, which is common. In a few fields, the rootworms did eat the roots; and some lodging resulted. But lots of corn is shallow-rooted, and will tip over now. If you do not find beetles in the fields and see no worm tunnels in the brace roots, rootworms were not the problem.

Count the rootworm beetles. If you find an average of one or more per ear tip or per plant, plan to use a rootworm soil insecticide next spring if you intend to plant the field in corn again.

HOMEOWNER INSECT PROBLEMS

Cottony maple scale crawlers are now sucking plant juices from the leaves of maple trees in many areas of northern Illinois. They are also giving off honeydew, a sticky substance that can be seen on the leaves and that drips from the trees onto sidewalks, cars, or other object underneath. Mature cottony maple scales produce cottony, or popcorn-like, masses on maple branches during the fall and spring months.

The crawler scales that are present now can be controlled by thoroughly spraying the maple foliage with malathion.

WEEDS

CANADA THISTLES

Various types of Canada thistles respond differently to herbicides, according to a study by ARS researchers in Montana. The researchers have defined ten different Canada thistle ecotypes and have determined that the ecotypes vary in the amount and kinds of hydrocarbons, waxes, fatty acids, and alcohols present on the leaf surfaces (the materials that make up the waxy coat and cuticle); also, in the ratio of epidermal cells to stomata. The differences were consistent for the ecotypes grown under three different altitude and rain-fall environments in Montana and Idaho and help to explain the different responses to herbicides.

READ THE LABEL AND FOLLOW ALL PRECAUTIONS

This weekly report was prepared as follows:

INSECTS: H.B. Petty, Steve Moore, Roscoe Randell, Don Kuhlman, and Tim Cooley, College of Agriculture, University of Illinois at Urbana-Champaign and the Illinois Natural History Survey.

WEEDS: Ellery Knake and Marshal McGlamery, Department of Agronomy, and A.J. Turgeon, Department of Horticulture.

PLANT DISEASES: M.C. Shurtleff and Tim Bowyer, Department of Plant Pathology.

AG COMMUNICATIONS: Ray Woodis.

AG ENGINEERING: John C. Siemens.

The information for this report was gathered by these people, staff members, county Extension advisers, and others, in cooperation with the USDA Animal and Plant Health Inspection service.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
AND NATURAL HISTORY SURVEY
URBANA, ILLINOIS

INSECT, WEED & PLANT DISEASE SURVEY BULLETIN

STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE No. 23, August 24, 1973

This is the last weekly issue in this series of bulletins that provides a general look at the insect, weed, and plant disease situation (fruit and commercial vegetables excepted) along with suggested, abbreviated control measures. Each individual should check his own fields to determine local conditions. If circumstances make it necessary, other issues will be mailed to you.

INSECTS

WHEAT INSECTS

Hessian fly populations are about the same as last year in Illinois. Highest populations were found in the southern section of the state and the east-southeast section. Observation of proper seeding dates for susceptible varieties is encouraged. Resistant varieties may be planted early.

Hessian Fly Populations per 100 Tillers in July

Section	1972	1973
West	0	0
Central	6	0
East	--	--
West southwest	1	0
East southeast	4	1.3
Southwest	3	5.6
Southeast	14	6.0
State average per county	4.0	2.2

FORAGE CROP INSECTS

Alfalfa weevil adults will begin migrating back into alfalfa fields in another month or so. For the south half of the state, we encourage the application of an insecticide in November. This will control the adults before they deposit many eggs in the stems. Such a treatment in most instances replaces a spring application. There will still be weevils feeding on the alfalfa in the spring but usually not in great enough numbers to be of economic importance. Spring treatments kill natural enemies of the weevil such as wasp parasites, but fall treatment does not.

For fall treatments use methyl parathion, malathion, or diazinon in combination with methoxychlor, or try Imidan, carbofuran, or Supracide. Methyl parathion, carbofuran, and Supracide should be applied only by experienced applicators.

We do not yet recommend this fall application in the northern half of Illinois.

HOMEOWNER PROBLEMS

Crickets often migrate considerable distances at this time of year. Ordinarily their food supply (in pastures, fencerow, ditch banks, and other grassy areas) dries up in late August or early September. This food shortage--added to their instinctive desire to migrate--results in huge swarms, often suddenly appearing around lights at night. Whether or not this migration will occur this year remains to be seen. A chlordane spray around the house foundation and the doorway will help reduce the number of invaders that get into the house.

Leafhoppers also migrate in great numbers and are annoying in and around the home. These wedge-shaped green insects are attracted by the thousands to lights. As with crickets, they have the urge to migrate as they mature and their food dries up. Chlordane sprays will also be helpful here.

Ants and spiders as well as leafhoppers and crickets are controlled with foundation sprays of 1-percent chlordane in water. Use the emulsifiable concentrate and dilute with water to a 1-percent strength. Spray the foundation of the house to runoff, as well as a 4-inch strip of soil alongside the foundation.

Millipedes, the hard-shelled thousand-legged "worms," often migrate into homes in the fall. When disturbed they coil up into a tight ball or roll. A spray of carbaryl (Sevin) on the foundation and several feet out into the yard will greatly reduce the number of millipedes that enter the home.

Ground beetles are black, brown, or green beetles of various sizes. They run rapidly and are found almost everywhere. They migrate from the fields into homes where they are considered to be nuisances. However, they are beneficial--they feed on other insects. No control is recommended. If they are too great an annoyance in the home, a foundation spray of chlordane or carbaryl will help.

The first gypsy moth catch recorded in Illinois was trapped and identified this past week. The male gypsy moth was captured in a disparlure-baited trap, one of many traps operated by personnel of the Division of Plant Industry, Illinois Department of Agriculture and Animal and Plant Health Inspection Service, Plant Protection and Quarantine Programs, U.S. Department of Agriculture. The first gypsy moth found in the state was caught in Palos Township in south Cook County by a ranger of the Cook County Forest Preserve District.

The gypsy moth, a serious pest of trees in the northeastern United States, has slowly moved westward. The moths hitch rides on campers returning from infested areas or deposit their egg masses on automobiles, campers, railroad cars, and other mobile units. Male moths have dark-brown forewings, have a 1-1/2-inch wingspread, and are strong fliers. Female moths are white with black wing markings, are much larger than the males, and do not fly.

Egg masses often go unnoticed by owners. Egg masses look very much like a small section of sponge. They may be found on pieces of bark, live trees, rocks, logs, fallen branches, and other items. An egg mass may contain from 50 to 800 eggs, depending upon the age and intensity of the infestation and site conditions.

Young caterpillars are slightly over 1/10 inch long just after emerging from the eggs. They have black heads and brownish-yellow bodies, well covered with long hairs. Mature larvae reach a length of 2-1/2 inches. As larvae mature, markings become more distinct, revealing a double row of conspicuous blue and red dots or tubercles down the caterpillars' backs.

The larva of the gypsy moth is the stage of the moth's life cycle that does the damage. It moves from tree to tree, often defoliating entire forest stands. A single 2-1/2-inch caterpillar eats one square foot of leaf surface every 24 hours. It feeds on the leaves of many forest, shade, and fruit trees. There has been an increase in infestations in both Michigan and Ohio this year, but none have been found in Indiana.

If you observe what may be adult gypsy moths or the immature larvae, send specimens to Extension Entomologist, 169 Natural Resources Building or to L.B. Matzenbacher, Horticulture Inspection Supervisor, Division of Plant Industry, 999 N. Main Street, Glen Ellyn, Illinois 60137 for a positive identification. An increase in the search for other possible specimens is being made in the south Cook County area in an attempt to determine the extent of the infestation.

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STATE/COUNTY/LOCAL GROUPS/U.S. DEPARTMENT OF AGRICULTURE COOPERATING

FOR IMMEDIATE RELEASE

No. 24, November 13, 1973

SPECIAL ISSUE

Many inquiries have been received about proposed changes in pesticide laws and recommendations for 1974. The following is a brief report of the major changes expected. The complete set of detailed recommendations for pesticides will be available in early January.

CHANGES IN PESTICIDE LAWS

FEDERAL

The Federal Environmental Pesticide Control Act passed by Congress in 1972 amends the Federal Insecticide, Fungicide, and Rodenticide Act. This new amendment provides for certain changes that may affect many farmers in Illinois. The new law takes effect in October, 1976. One of the provisions in the amendment calls for all pesticides to be classified for *restricted* or *general* use. *Anyone applying a restricted-use pesticide must be certified*--this includes *commercial* and *private* (farmer) applicators who apply restricted-use pesticides on agricultural commodities. At present, the federal E.P.A. has not determined what pesticides will be in the general-use or restricted-use categories.

Educational training programs for *private applicators* (farmers) and *commercial pesticide* applicators will be conducted by the Cooperative Extension Service to prepare persons for certification early in 1976. The actual certification and issuing of permits of licenses will probably be handled by the Illinois Department of Agriculture.

STATE

Currently, a commercial applicator applying pesticides for hire outside a structure must be licensed under Illinois law. Illinois law now permits a farmer to apply any pesticide to his own farm and the farms of two others without being a licensed applicator.

LICENSING IN ILLINOIS

Two types of licenses are being issued to those applying pesticides commercially in Illinois. The *applicator's license* is required for those in management who determine the pesticide to be used, rates, etc. The *operator's license* is required for those who actually operate the machine, but who do not make decisions about rates, etc. Further details may be obtained by writing the Department of Agriculture, Division of Plant Industry, Emmerson Buliding, State Fairgrounds, Springfield, Illinois 62706.

PESTICIDE RESTRICTIONS--ILLINOIS

The chlorinated hydrocarbons--aldrin, chlordane, dieldrin, endrin, heptachlor, and lindane--cannot be used on dairy farms except around the farm residence. This ruling was adopted by the Illinois Department of Public Health in 1971. The use of DDT in Illinois is also banned except where special permits are obtained from the Illinois Department of Agriculture or Department of Public Health.

INSECTICIDE RECOMMENDATIONS, 1974

FIELD CROPS

Corn-insect complex in soil. Many farms in Illinois do not have major soil-insect problems in corn. On these farms, and particularly in fields where corn follows soybeans, a *diazinon* planter-box seed treatment at planting time gives protection against attack by seed-corn beetles and seed-corn maggots during germination.

Corn-rootworm control. Some major changes in soil-insecticide recommendations for rootworm control have been made for 1974. A new rootworm soil insecticide, Counter, will have a temporary label and sales permit in 1974. Only limited quantities will be available in 1974. Counter, an organic phosphate, has given excellent control of rootworms in research plots and is comparable to carbofuran (Furadan) in effectiveness. Buxten and Mocap are no longer recommended as planting-time treatments for corn rootworm control. These insecticides have given inconsistent control of rootworms in test plots the past two years.

For a severe corn rootworm infestation, Furadan or Counter applied at 1 pound of active ingredient per acre (a.i.p.a.) will provide the best control. For light to moderate rootworm infestations, planting-time treatments of Counter or Furadan at 3/4 pound a.i.p.a., or Dasanit, Dyfonate, Landrin, or phorate (Thimet) at 1 pound a.i.p.a. will give satisfactory control. See table below.

	Lb. active ingredient per acre (40" rows)	
	Planting time	*Cultivation*
Bux.	...	1
carbofuran (Furadan 10G)	.75-1	.75
Counter 15G.	.75-1	...
Dasanit 15G.	1	1
Dyfonate 20G	1	1
Landrin 15G.	1	1
Mocap 10G.	...	1
phorate (Thimet 15G)	1	1

Wireworm, white grub complex. If these insects are expected to be a problem, any of the following insecticides may be relatively effective. If wireworm or white grub infestations are severe, control may not be satisfactory.

	Lb. active ingredient per acre (40" rows)	*Placement*
carbofuran (furadan 10G).	2	In furrow
Counter 15G	1	7-inch band
diazinon 14G.	1.5	7-inch band
Dasanit 15G	1	7-inch band
Dyfonate 20G.	1	7-inch band
Mocap 10G	1	7-inch band
phorate (Thimet 15G).	1	7-inch band

General. We have discontinued recommending aldrin, chlordane, and heptachlor in Illinois. All three corn rootworm species, seed-corn beetles, seed-corn maggots, and possibly wireworms and white grubs are no longer effectively controlled by these insecticides. Farmers are cautioned to omit the use of aldrin or heptachlor for one crop year before growing soybeans in a field. Research data indicate that trace amounts of insecticide residues are detectable in soybeans where these insecticides were used the preceding year. The tolerance for residues in soybeans is zero.

Alfalfa weevil. We encourage alfalfa growers in the southern half of Illinois to consider a fall insecticide-application program in fields where weevils have been a problem. Insecticides applied in early to mid-November kill the adult weevils before they deposit eggs in alfalfa stems in late fall. Best results will occur if the insecticide is applied when the average temperature remains above 45° F. for two days after treatment. Suggestions for fall treatments are listed below.

	Lb. active ingredient per acre
carbofuran (Furadan 4 Flowable)*	.5
methyl parathion*	.5
Supracide*	.5
azinphosmethyl (Guthion)*	.5
malathion and methoxychlor	.75 and .75
diazinon and methoxychlor (Alfatox)	.5 and 1
Imidan	1

* Should be applied by commercial applicator.

No-till corn insect complex. No-till corn presents a different set of conditions for insects than does conventionally tilled corn. In no-till corn, insects have a more stable habitat, and this sometimes favors the development of certain pests problems. For example, armyworms, common stalk borers, billbugs, flea beetles, and wireworms are some of the insects that may attack no-till corn planted in grass sod. We have had an opportunity to test some of the soil insecticides on the market. Based on these trials, planting-time treatments of carbofuran (Furadan 10G) at 2 and 3 pounds of active ingredient per acre were relatively effective in suppressing damage from armyworms, common stalk borers, billbugs, European corn borers, flea beetles, and wireworms. Furadan, a systemic insecticide, may be applied as a 7-inch band or placed "in the furrow" with the seed. Our suggestion to Illinois farmers growing no-till corn is to apply Furadan at 2 pounds (20 pounds of 10-percent granules) per acre as a 7-inch band or in the furrow. As an alternative, the organic phosphates will give reasonable protection against wireworms and white grubs.

STORED-GRAIN INSECTS

Sanitation, bin spraying, and grain treatment are the key steps to a successful control program. Malathion is still the mainstay for bin spray and grain-treatment spray since it effectively controls the complex of stored-grain insects with the exception of the Indian meal moth. Resistance of this insect to malathion has become widespread, and we can no longer depend on malathion to control this problem. Dichlorvos (DDVP) plastic resin strips received registration for use in the overspace of grain bins, including soybeans. Hang one strip per 1,000 cubic feet of overspace about June 1 or at storage. Replace with a new strip in about 8 weeks (mid-August). These strips effectively prevent Indian meal moth infestations from developing in enclosed bins (metal bins) but may fail to provide effective control in wooden open-top bins. Sealing these latter bins with polyethylene sheeting should allow the dichlorvos strips to perform effectively.

It will require about four weeks to bring an existing Indian meal moth infestation under control with the dichlorvos strips. For immediate control of the moths, apply a pyrethrin spray to the surface of the grain, sidewalls, and ceiling, or use a grain fumigant.

LIVESTOCK INSECTS

Cattle. Face fly and stable fly populations were higher than normal on pastured cattle during the summer of 1973. The above-normal rainfall in most areas was favorable to fly development. Animal treatments with 1- to 2-percent crotoxyphos (Ciodrin) water- or oil-base sprays applied at 1 to 2 ounces per animal two to four times per week or 1-percent water-base spray applied at 1 pint per animal per week gives the best control of the fly complex on pastured cattle. Excellent control of face flies, horn flies, stable flies, and horse flies was obtained on a herd of pastured beef cattle treated with a water-base spray of 1.25-percent Ciovap (1.0-percent crotoxyphos + 0.25-percent dichlorvos) applied from a tractor-powered mist blower. Three ounces of spray material was applied per animal per treatment, with about 1 ounce of spray actually impinging per animal. A total of about 8 minutes was required to treat the herd. Total time for mixing, applying, and cleaning the sprayer was about 30 minutes. Treatments were applied every 3 to 4 days during the peak fly period (July and August). Because of its convenience and effectiveness, this method of application has been added to our control suggestions.

Rabon was registered for use in dust bags and back oilers for control of flies attacking both dairy and beef cattle in 1973. Three years of testing insecticide dust-bag treatments on cattle using crotoxyphos (Ciodrin), coumaphos (Co-Ral), Rabon, and prolate have shown that these devices effectively control horn flies but not face flies and stable flies. An increasing number of beef and dairy farmers are using dust bags because of their convenience (animals treat themselves) and relatively low cost. We rate insecticide dust-bag and back-oiler devices as a second-rate method of controlling flies on cattle.

Horses. For control of flies and mosquitoes attacking horses on pasture, use 1.25-percent Ciovap as a water-base spray or sponge-on treatment. Apply the spray at 1 pint per animal per week or 1 to 2 ounces per animal per day (spray or sponge on). Use rubber gloves when sponging on the insecticide. Lice can be safely and effectively controlled on horses with a 0.5-percent malathion water-base spray. Cover animals thoroughly to saturation and repeat in 14 days.

LAWN INSECT CONTROL

We have dropped our recommendation of applying chlordane as a preventive treatment for control of annual white grubs in lawn areas. The only effective insecticide labelled for use is diazinon applied at the rate of 5 pounds of actual ingredient per acre. Also, the insecticide should be drenched into the upper inch of soil for it to be effective. This is done most effectively by soaking the treated area with a lawn sprinkler. Annual white grubs, if a problem, will attack the roots of grass from August through October.

PESTICIDE TRAINING SCHOOLS: DATES TO REMEMBER

26th Illinois Custom Spray Operators Training School

January 9, 10, Illini Union Building, University of Illinois, Urbana-Champaign

1974 Urban Pesticide Dealers and Applicators Clinics

January 14, Rantoul, Redwood Inn
January 15, Peoria, Heritage House, Rt. 88 North
January 16, Springfield, Heritage House, Rt. 66 South
January 17, Belleville, Augustines, Rt. 460 & Rt. 158
January 18, Marion, Holiday Inn, I-57 & Rt. 13
January 21, LaSalle-Peru, Holiday Inn, I-80 & Rt. 51
January 22, Rockford, Howard Johnsons, Rt. 51 South
January 23, Rock Island-Davenport, Holiday Inn, Davenport, Iowa
January 24, Des Planes, Seven Eagles Restaurant
January 25, Joliet, Holiday Inn-South

Advance registration is required for the meeting held at Des Plaines. Contact James Fizzell, Cook County Associate Extension Adviser, Room 3, 622 Graceland Avenue, Des Plaines, Illinois 60016. Advance registration is also necessary for the Rock Island-Davenport meeting. Contact J.E. Kenney, Rock Island Extension Adviser, 1188 Coaltown Road, East Moline, Illinois 61244. There will be a registration charge of $1.50 for a manual containing educational materials and information discussed at the meeting.

1974 Agricultural Pesticide Dealers and Applicators Clinics

Pesticide dealers and applicators are invited to attend one of the regional agricultural chemical clinics listed below. The discussions will include current recommendations for controlling weeds, diseases, and insects in field crops, as well as information on application equipment. The programs start at 9:00 a.m. and will conclude at 2:30 p.m. Mr. Juett Hogancamp, Illinois Department of Agriculture, will conduct examinations for the custom spray applicator's and operators's licenses at the conclusion of the program.

February 18, Rantoul, Redwood Inn
February 19, Jacksonville, Black Hawk Restaurant
February 20, Edwardsville, Riedel's
February 21, Marion, Holiday Inn
February 22, Effingham, Ramada Inn
February 25, Bloomington, Williams Towne Hall Restaurant
February 26, Quincy, Holiday Inn
February 27, Galesburg, Sheraton Inn
February 28, Sterling, Emerald Hills Country Club
March 1, Joliet, Holiday Inn-South, Larkin and I-80

The registration fee is $4 per person. All participants will receive the *1974 Custom Spray Operators Training School* manual and additional reference materials.

WEEDS

NEW CORN HERBICIDES FOR 1974

The shortage crunch has not yet greatly affected the supply of herbicides. However, competition for alcohols and some of the other raw materials from the petroleum industry is reportedly beginning to have a slight effect on the price of 2,4-D, the supply of Amiben, and the availability of crop oil.

Sutan+ is a formulation of Sutan plus a safening agent to reduce the possibility of corn injury. Prompted partly by a slight increase in the incidence of corn injury from Sutan during 1973, the manufacturer plans to convert entirely to Sutan+ in 1974.

Eradicane is a formulation of Eptam+, a safening agent that holds promise for revitalizing control programs for johnsongrass seedlings, wild cane, and nutsedge.

Atrazine will be available in a wider variety of containers this year. One major distributor plans to market atrazine from a different manufacturer under the name Atrafine.

Lasso granules will be available as a 15-percent, rather than a 10-percent, formulation in 1974. The new formulation will be known as Lasso II. The new formulation will make handling more efficient and will tend to encourage use of a higher rate that should improve performance even more.

Bladex will probably be cleared for use in a wider variety of combinations during 1974. Bladex is already cleared for use with Lasso and with paraquat and clearance has been requested for tank-mixing Bladex with Sutan for preplant incorporation as well as for sequential treatment with Bladex applied to the surface following Sutan preplant.

Banvel-plus-Lasso will likely be more widely promoted during 1974. At the approved rate of one-half pound of active ingredient per acre, corn tolerance to Banvel-plus-Lasso has generally been adequate on some of our major Illinois soils. But corn injury is possible when the combination is used at higher rates or under certain soil and weather conditions. The Banvel in the combination improves control of broadleaf weeds, including smartweed and velvetleaf.

Because both formulations are liquids, the Banvel-Lasso combination offers convenience and flexibility for cropping the following year. Replanting corn fields that have been treated with Banvel-plus-Lasso, however, to soybeans during the same season is not feasible.

NEW SOYBEAN HERBICIDES FOR 1974

For soybeans, several new materials will be available in 1974. Several dinitroaniline herbicides that are chemically similar to Treflan will be available. The rates needed and the degree of crop tolerance varies, but with appropriate adjustments, the new materials perform about the same as Treflan. Tolban, Cobex, and perhaps Amex will likely be available for use during 1974.

Sencor will control most broadleaf weeds commonly found in Illinois soybean fields, with the major exception of annual morningglory. Sencor will also control grass weeds, if a high enough rate is used.

Soybean tolerance to Sencor is limited, but you can reduce the risk of crop injury by using another herbicide for grass control and lowering the rate of Sencor. Sencor is not well adapted to fields with much variation in organic matter, and rates need to be selected carefully for the soil and applied extremely accurately.

Because incorporation of Sencor has increased the degree of soybean injury and has sometimes reduced weed control, surface applications are generally preferred. Surface applications can be made following preplant application of a herbicide, such as Treflan, or in combination with another herbicide, such as Lasso. Dupont has recently announced that it plans to market Lexone, a herbicide that has the same active ingredient as Sencor.

Basagran for postemergence application is another new herbicide of major interest for improved broadleaf weed control. Basagran continues to perform well in trials,

and if full clearance is obtained and the product becomes more readily available, use can be expected to increase.

Tolerance of commonly grown soybean varieties to Basagran has been good in research studies thus far. And Basagran will control most troublesome annual broadleaf weeds if applied sufficiently early. The label indicates the relative susceptibility of various weed species. Basagran does not control grass weeds, but some control of nutsedge has been noted.

Glyphosate shows considerable promise for control of both grass and broadleaf perennial weeds such as Canada thistle, johnsongrass, and wirestem muhly. The material will be sold under the trade name Roundup. Clearance for use on noncropland is anticipated for 1974 and for use on cropland possibly for the 1975 season.

DEFINITIONS

Freezing temperature: What causes a busted pump.

Busted pump: What you get if you haven't drained the pump on your spray rig and prepared it for winter storage.

Sorry: What you are if you have a busted pump.

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