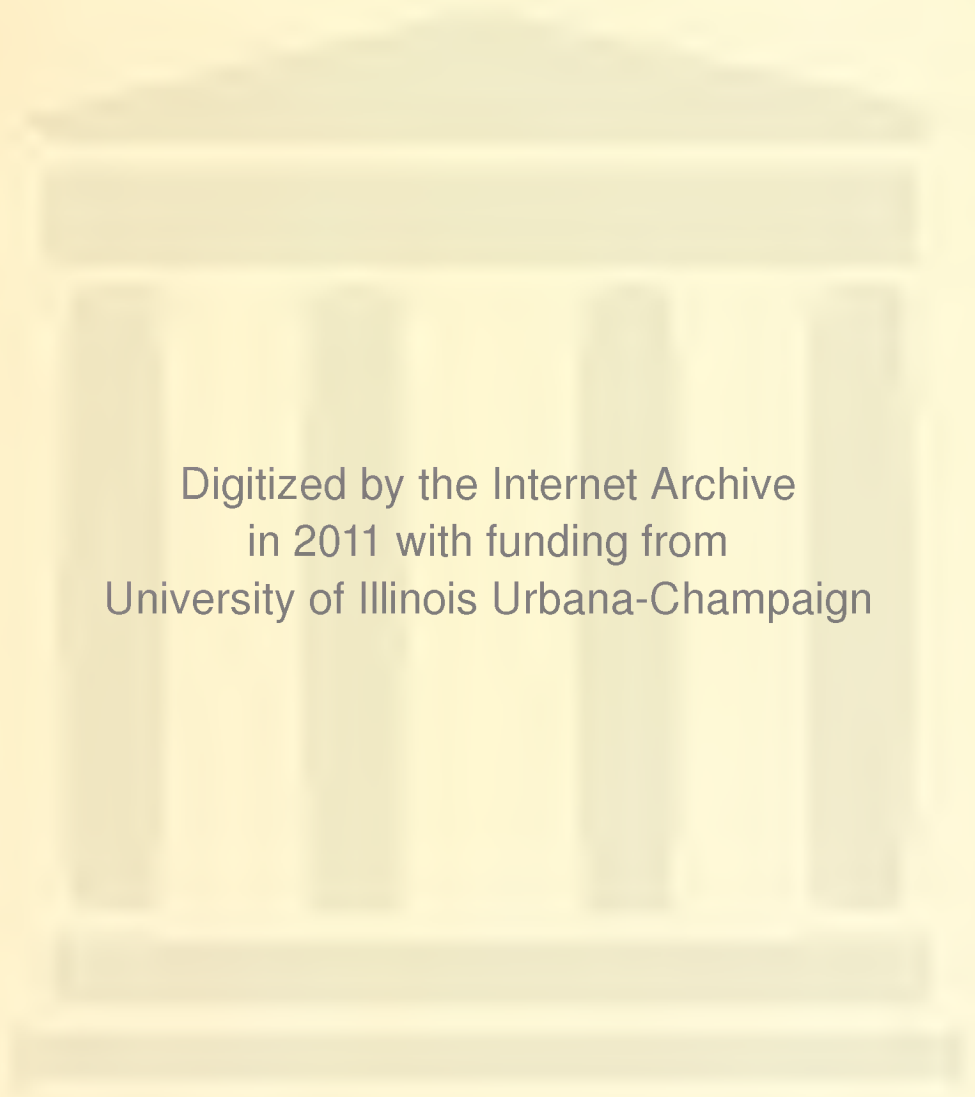

The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII | January 3, 1934 | Number 1

Few Farms Too Small To Cash In On Corn-Hog Benefits

Almost no Illinois farm is too small to get some of the benefits of the government's corn and hog adjustment program, and every farmer who does take part will stand with his neighbors in helping to restore a fair exchange value for these two farm products, it is pointed out by the extension service of the College of Agriculture, University of Illinois. Any farmer who can comply with one of four different combinations of corn and hog production can get a contract and receive the benefit payments.

Every corn and hog farmer in the state will have a chance to learn the details of the plan in community meetings which county farm advisers and the extension service of the College of Agriculture, University of Illinois will hold throughout the state.

Permission for a farmer to sign the contract for only one commodity is made possible through a special ruling of the Agricultural Adjustment Administration.

If in 1932 and 1933 a farmer grew an average of 10 or more acres of corn and marketed four or more litters of pigs, he may sign the adjustment contract to reduce his corn acreage in 1934 at least 20 per cent and his hog production 25 per cent. He thereby becomes eligible for benefit payments on both corn and hogs. He must reduce his production of both to be eligible for either or both payments.

If the farmer, in the two-year base period, grew an average of more than 10 acres of corn but marketed less than three litters of hogs, he can sign up for the corn payments, but will not be eligible for any hog benefits. In 1934, however, he must not increase his hog production.

If any _____ county farmer grew less than 10 acres of corn as an average for the two years, 1932-1933, exclusive of corn for silage, but marketed three or more litters of hogs, he may sign up for the benefit payments on hogs. He must not, in this case, increase his corn acreage in 1934.

If the farmer grew an average of 10 or more acres of corn in 1932 and 1933 and only three litters of pigs, he has a choice between two possibilities. He may reduce his corn acreage by 20 per cent and agree to produce not more than three litters, thereby becoming eligible for corn benefits but will not receive payments on hogs. If he desires, he may agree to reduce his corn production as specified and his hog production to two litters, thereby becoming eligible for payments on both his hogs and corn.

Any farmer who grew less than 10 acres of corn and marketed less than three litters of pigs during the base period is not eligible to sign a contract.

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director.*

Roundup Of Day's Issues Will Climax Farm-Home Week

Inflation, taxation and all the other leading issues of the times will be covered in eight general sessions which will climax the program of the thirty-sixth annual Farm and Home Week, January 15 to 19, at the College of Agriculture, University of Illinois, it is announced by Dean H. W. Mumford.

As a foundation for the eight general sessions, 25 special short courses, all keyed to the recovery and adjustment needs of farmers and homemakers, will run throughout the week. Special entertainment features, meetings of a number of the state's rural organizations and other features will be combined with this instruction to make the week a "new start" for the hundreds of farmers and homemakers who annually attend the event.

A "planned" agriculture for the future is expected to be touched upon in the first general session of the week, Monday afternoon, January 15, when DeWitt C. Wing, of the Agricultural Adjustment Administration and a former farm paper editor in Illinois, comes back from Washington, D. C., to speak on, "Farming on Facts and Faith."

Needed reforms to reduce the cost of town and county government, a problem close to the hearts of farm people, will be discussed in the Tuesday morning general session, January 16, by Dr. M. H. Hunter, University of Illinois professor of economics.

Inflation will get its hearing at the Tuesday afternoon session when Dr. Max J. Wasserman, University of Illinois assistant professor of economics, speaks on, "The Experience of France With Inflation."

The Wednesday morning session, January 17, will bring one of the highlights of the week for many farmers when Wood Netherland, general agent of the Farm Credit Administration, St. Louis, Mo., speaks on, "The Farm Credit Administration and Illinois Agriculture."

"Buying standards for Consumers," will be discussed Wednesday afternoon by Miss Ruth O'Brien, chief of the division of textiles and clothing in the bureau of home economics, U. S. Department of Agriculture, Washington, D. C.; "European Trade Barriers in Relation to American Agriculture," Thursday morning by Dr. C. L. Stewart, chief in land economics, U. I. College of Agriculture, and "The Outlook for Farming From the Farm Boy's Standpoint," Thursday afternoon by Liberty Hyde Bailey, author and horticulturist, Ithaca, N. Y.

Claude R. Wickard, assistant chief of the AAA corn-hog section, is scheduled to close the Farm and Home Week program Friday morning, January 19, with a report of progress in the corn-hog campaign.

-M-

Three Major Items Figure In Costs Of Producing Eggs

The three big items in the cost of producing the 12 million dollars' worth or more of eggs that Illinois farmers sell every year are feed, depreciation, which includes mortality, and labor, according to records which 20 poultrymen kept during the past year in cooperation with the extension service of the College of Agriculture, University of Illinois.

Any flock owner who cuts down on these items therefore will be going a long way toward getting a wider margin of net return out of the cash that he receives for his eggs, it is pointed out by H. H. Alp, poultry extension specialist of the college.

"Probably the best opportunity to reduce feed cost is to improve the average egg production of each hen in the flock, as the good layers eat but little more feed than the mediocre layers. Too many flocks carry about 20 per cent defaulters--hens that start laying and then quit--and it is this class of birds which runs up the feed cost of a dozen eggs.

-M-

Illinois Dairymen Set Example For Sure Relief Plan

Illinois' most progressive dairymen are not waiting for a government plan to kill off diseased and unprofitable cows or for some other emergency relief project to help bolster their incomes. Already those dairymen who are members of dairy herd improvement associations organized by the extension service of the College of Agriculture, University of Illinois are proceeding with a cow culling plan at a rate which if followed by all dairymen would mean the disposal of 222,200 of the poorer cows in the state within a year.

In this respect the cow culling which the Illinois dairymen already are practicing is quite similar to recent proposals made to the federal administration for adjustments in the dairy industry.

Figures compiled by J. G. Cash, assistant in dairy extension at the agricultural college, show that in October of the past year 1.7 per cant of the 20,000 cows enrolled in the 52 dairy herd improvement associations of the state were culled, while in November, 1.5 per cent were sent to the butcher's block.

"At this rate approximately 20 per cent of the cows in dairy herd improvement association herds would be culled within a year. If all herd owners in the state went after the unprofitable cows that are helping pile up the surplus, it would mean that approximately a fifth of them, or about 222,200 would be disposed of."

Illinois farmers get approximately 23 per cent of their gross income from the sale of dairy products, and the policy of "fewer and better" cows long has been advocated by the extension service of the agricultural college as a means whereby the margin of net return on this business could be protected.

To illustrate how dairy returns may be improved by better handling of "fewer and better" cows, Cash cites the records of a member of the Hancock County Dairy Herd Improvement Association for two recent months. The first month this farmer milked 33 cows, and the records indicated that eight of them did not produce enough to pay for their feed. Then he sold 14 of the cows. The following month the 19 returned $16.34 more above feed cost than the 33 did the previous month. Likewise the 14 cows that were disposed of relieved the congested markets of 4,251 pounds of milk a month.

-M-

AAA Problems Of Land Handling Up At Farm-Home Week

Between 1,860,000 and 2,715,000 acres of Illinois land may be contracted to the government as a result of the AAA programs on wheat and on corn and hogs. How best to handle this land, together with other soil and crop management problems in relation to the agricultural adjustment program, are expected to bring a record number of farmers here for the soils and crops short course of the thirty-sixth annual Farm and Home Week, January 15 to 19, at the College of Agriculture, University of Illinois.

Farmers of the state have been adjusting their cropping programs for years, as shown by the fact that the acreage of legumes has been steadily increasing and the acreage of wheat and corn has been declining, it was pointed out by Dr. W. L. Burlison, head of the college agronomy department. However, the AAA program will speed up the rate of adjustment, and the Farm and Home Week program will be designed to help farmers meet the new pace, it was explained.

The soils and crops program, itself, will not get under way until after the annual Illinois Seed Grain and Utility Corn Show has been opened on Monday afternoon, January 15, and farmers have had a chance to inspect the samples and exhibits.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII | January 10, 1934 | Number 2

1,000 Meetings To Spread Corn-Hog Plan In Illinois

By sitting in on one of approximately 1,000 community meetings to be held throughout the state, every Illinois farmer will have an opportunity within the next week or so to learn how he can participate in the government's corn-hog adjustment program and thereby get his share of the $350,000,000 in cash payments and other benefits, it is announced by the extension service of the College of Agriculture, University of Illinois.

Few farmers in the state are operating on so small a scale that they can not come in for some of the benefits of the program, and the community meetings which county farm advisers and the extension service of the agricultural college are now starting are designed to carry the details of the plan down to the last corn and hog farmer, no matter where he may be.

County leadership schools have just been held by the college and farm advisers to train local farmers who will preside at the community meetings.

In northern Illinois, Stark, Woodford, Marshall and Putnam counties were among the first to begin their community meetings, but other counties representing all the other sections of the state are not far behind. At these meetings sample contracts, work sheets and other pointers on the corn-hog plan will be distributed and explained. Administrative rulings on special points in the contract and on other puzzling questions are to be discussed and explained.

As soon as every farmer has had an opportunity to become familiar with the details of the program, the state campaign will reach its climax with the establishment of about 1,000 contract sign-up stations throughout the rural districts of the 102 counties in Illinois.

One of the most important things that corn and hog producers should do preparatory to signing the government's adjustment contract is to collect all possible "supporting evidence" regarding their corn and hog transactions during the past two years. This should include information about the number of hogs sold, date of sale, estimated average weight and to whom sold. Such information should cover the two base years, December 1, 1931, to December 1, 1933. Signers also will be asked to show how many feeder pigs they bought and sold during that time, and must certify the number of home-farrowed pigs and feeder pigs bought and on hand on December 1, 1933.

A reduction of at least 20 per cent in the average corn acreage grown in 1932-1933 and a cut of 25 per cent in the number of litters farrowed and hogs marketed in the same two-year base period is required of those signing contracts. If all Illinois corn and hog producers sign up, they would be eligible for a total of approximately $40,000,000 in benefit payments which would start as soon as their contracts were accepted by the Secretary of Agriculture.

The aim in seeking the reductions is to balance the supply of corn and hogs with the effective demand and thereby aid in bringing the price of farm products up to a fair exchange value in relation to the prices which farmers must pay for the things they buy.

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director*.

Farm Credit Aids Will Be Outlined At Farm-Home Week

Prominence of Illinois in current farm credit activities assures farmers that they will get ample help in ironing out their financial troubles when they attend the thirty-sixth annual Farm and Home Week, January 15 to 19, at the College of Agriculture, University of Illinois, it is pointed out by those in charge of the program.

Wood Netherland, general agent of the Farm Credit Administration, St.Louis, will be the headliner and will appear on the Wednesday morning general session program at 11 o'clock to speak on, "The Farm Credit Administration and Illinois Agriculture." Herbert W. Mumford, dean of the U. I. College of Agriculture, is a member of the board of directors of the Farm Credit Administration in the St. Louis area.

Prof. H. C. M. Case, chief of the college's division of farm management, who is now on leave as assistant to Dr. W. I. Myers, governor of the Farm Credit Administration in Washington, will return to discuss farm debt conciliation and refinancing. He is in charge of this work for the FCA.

This event will come Wednesday morning, January 17, at 9 a.m., as the opening number in the special course on farm credit problems. This farm credit course is one of 25 different ones being offered throughout the week as a means of helping farmers and homemakers work out their own recovery and adjustment programs.

Following Prof. Case's opening of the farm credit course, C. E. Hopkins, a director of the Farm Credit Administration, St. Louis, Mo., will tell what is happening to farm mortgage indebtedness in Illinois.

Illinois is now the first state in the Union to be completely organized for production credit purposes, and this phase of farm credit work is to have the whole of Wednesday afternoon program, January 17, devoted to it. Leading off the discussion will be Dr. L. J. Norton, assistant chief in agricultural economics at the college, who is now on leave doing special production credit organization work for the Farm Credit Administration. He will discuss production credit problems and procedures.

Potential use of cooperative banks by Illinois associations will be the subject of a round-table discussion which will be led by J. R. Cosgrove, acting president of the St. Louis Bank for Cooperatives, St. Louis, Mo. Speakers will include L. R. Marchant, manager of the Illinois Farm Supply Company, Chicago; C. H. James, Southern Illinois Seed Growers' Exchange, Flora, and Harrison Fahrnkopf, of the Illinois Grain Corporation, Chicago.

-M-

PWA Funds May Give Farm Communities A Meeting Place

Many rural communities of Illinois now have a chance to overcome one of their worst drawbacks--the lack of a community meeting place--by getting through a CWA or PWA project for the building of a community center, it is pointed out by D. E. Lindstrom, associate in rural sociology at the College of Agriculture, University of Illinois. More than 400 community groups have been organized throughout the state during recent years by the extension service of the agricultural college, and there are scores of other groups that have been in existence for years, he said. Lack of a good community meeting place where such groups can have their social and educational programs is one of the real barriers in rural advancement, he believes. For the first time an opportunity for having such a building is opened up to rural communities through the provisions of the PWA and the CWA. Any rural community can submit a project for community building improvement, community building construction or park improvement.

-M-

Balanced Dairy Rations Mean $12,000,000 In Relief

If Illinois farmers made just one New Year's resolution--to feed their milk cows balanced rations this year--they would get at least $12,000,000 worth of "relief" in feed bills, says J. G. Cash, assistant in dairy extension at the College of Agriculture, University of Illinois.

All they would have to do in order to pocket this cash would be to save $1 a month a cow in the feeding of the 1,111,000 cows now on farms of the state.

This is an extremely conservative goal, Cash believes, because it is based upon accurate records taken on cows owned by progressive dairymen who are members of dairy herd improvement associations organized by the extension service of the agricultural college. Considering all dairy herds of the state, it is likely that a change from the almost universal use of unbalanced rations to balanced, might save much more than the $12,000,000 total in 12 months.

"That this is not an unreasonable possibility is shown by actual records from dairy herd improvement association herds. In Knox county, for instance, a new member of a herd improvement association was feeding an unbalanced ration of farm grains to his 14 cows. He revised his feeding methods, as suggested by the cowtester, and reduced his feed cost $15.06 in one month without lowering his production level.

"One month a new member of the Kankakee association fed 2,520 pounds of an unbalanced ration. The next month he fed 2,511 pounds of a balanced ration with the result that his feed bill was $7.40 less than the previous month. Here,again, their was no change in the cows' milk production.

"By changing his ration from corn, oats and a high-priced protein supplement to corn, oats, bran and cottonseed meal, a Christian county dairyman reduced the price of his ration 11 cents a hundredweight without affecting production. This will make a saving of approximately $36 for the year on his herd of 18 cows."

-M-

Destructive Pest Of Fruit Trees Is In For "Big Year"

San Jose scale--the little insect that plays havoc with promising peach and apple crops--had a rather prosperous 1933, and may have a "happier and more prosperous New Year," warns S. C. Chandler, assistant entomologist of the Illinois Natural History Survey, in a statement issued to the extension service of the College of Agriculture, University of Illinois.

"That is," says Chandler, "there is likely to be a large increase in San Jose scale infestation throughout Illinois orchards, unless fruit growers spray their trees this winter and early spring with oil emulsion or miscible oil to check the threatened 'prosperity' of the insect."

The annual San Jose scale survey completed a short time ago showed a very marked increase in this insect over the late fall of 1932. One hundred thirty-eight peach and apple orchards located in the southern fruit sections of the state showed 27 per cent of them to have a moderate to severe infestation in at least some part of the orchard. A year ago only 6 per cent of the surveyed orchards were in this condition.

Two reasons account for this situation--lack of spraying and a favorable season. In 1932 many growers took advantage of the small amount of scale and as an economy measure omitted the dormant spray. Then too, the warm weather of late October and the first half of November this past fall allowed an extra brood to develop, which if not checked by a dormant spray this winter will result in dead and dying limbs in 1934.

The standard Illinois recommendation for scale control is either oil emulsion used at the rate of 3 gallons to each 100 gallons of spray or miscible oil used at the manufacturer's recommendation.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII | January 17, 1934 | Number 3

Five Thousand Leaders Ready For Corn-Hogs Sign-Up

Approximately 5,000 "lieutenants" have received their instructions and are all set to lead the Illinois corn-hog adjustment drive to its climax, when the statewide sign-up days are announced, says the extension service of the College of Agriculture, University of Illinois, following a series of educational conferences held throughout the state.

These 5,000 farm leaders represent practically every rural community in Illinois, and during the past 10 days they received special training in schools conducted by farm advisers and members of the college extension staff. Instructions dealt with the contract that will unite farmers of the corn belt in a movement to raise the market prices of corn and hogs to a fair exchange value with the things rural people buy. To attain this price improvement, the producers agree to cut their 1934 corn acreage at least 20 per cent and their hog production 25 per cent below their 1932-1933 average, and in return shall receive a proportionate share of the nearly $350,000,000 in benefit payments to be made by the Agricultural Adjustment Administration to cooperating farmers.

Within the next ten days the 5,000 lieutenants will aid farmers in their respective communities to fill in the work sheets, prepare maps of their farms, gather supporting evidence regarding corn and hog sales during the past two years and answer questions that arise in the application of the contract to individual farms.

When the 1,000 community sign-up stations are established at the peak of the campaign, these especially-trained leaders will man the booths and help the thousands of cooperating farmers fill in the final contract and other documents.

Interest in the corn-hog adjustment program is said to be running high in Illinois and a large percentage of the state's 210,000 farmers is expected to take part. It is estimated that at least two days will be required for the 5,000 leaders to receive and compile the signed contracts.

One of the first contract signers in the state has been reported from Christian county by Farm Adviser T. H. Brock. Without waiting for the sign-up days, this farmer collected all the necessary information and evidence on his corn and hog production and came to Farm Adviser Brock's office of his own accord to complete the sign-up.

-M-

McDonough County Wins Two Major Corn Titles Of Year

Clarence Watson, of Macomb, McDonough county, became the new "corn king" of Illinois when his ten-ear sample of yellow utility corn won the grand sweepstakes in the annual Illinois Seed Grain and Utility Corn Show held in connection with the thirty-sixth annual Farm and Home Week at the College of Agriculture, University of Illinois. His sample scored 83.7 points out of a possible 100. Frank Brown, of Aledo, won the sweepstakes prize on ten-ear samples in the junior classes and thereby became the "corn prince" of the state. H. B. Smith, Bardolph, McDonough county won the annual Illinois Ten-Acre Corn Growing Contest when he scored a total of 89.97 points out of a possible 100 on yield, costs and quality of grain.

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Planned Marketing Is Necessary To Get Most From AAA

Illinois farmers who sign the corn-hog adjustment contracts must also give attention to how and where they sell their hogs, if they hope to get the greatest benefits from the AAA program, says R. C. Ashby, associate chief of livestock marketing of the College of Agriculture, University of Illinois.

"Granting that there is a surplus of hogs, will not a reduction in supplies result in a surplus of packing plants or plant capacities, and in a surplus of distributive organizations and personnel?" asks Prof. Ashby. "As the volume of slaughter decreases, packers must accept a lower margin per hog or cut operating costs, which is probably difficult under NRA provisions, or widen the margin between the price of hogs and the wholesale price of hog products. The packers also have the alternate of leaving hog margins unchanged but charging a larger portion of overhead expense against beef cattle and lamb operations.

"Likewise, assuming reduced hog supplies, it may be expected that competition between packers for both quality and quantity will be stimulated. However, to get the full benefit from such transition, the producers must adopt and support sound policies of marketing." In this connection Prof. Ashby explains that such a marketing policy might well include:

1.--Elimination of all ineffective hog salesmen and sales agencies both cooperatively and privately operated.

2.--Better coordination of sales objectives by sales agencies on each market. Twice in 1933, sales agencies at Chicago demonstrated that a sales program can receive the united market support.

3.--Coordination of markets in support of a sound sales program.

4.--Patronize only those local markets which demonstrate ability to sell hogs on a parity with competing terminals--quality and yield considered--and which return to stockmen their full share of the possible savings.

"Individual producers can not achieve such a program," says this market specialist, "but groups of stockmen can when enough of them demand it. Planned marketing is the logical sequel of planned production."

-M-

Even Old Dairy Bulls Get "New Deal" On Many Farms

Old dairy bulls in Illinois are not "headed for the last round-up" but are in line for a "new deal", as a result of a higher regard held for them by dairymen of the state, says C. S. Rhode, member of the dairy department of the College of Agriculture, University of Illinois.

Many Illinois dairymen plan to reduce the size of their herds, explains Prof. Rhode, and to work with fewer but better cows. Since the quality of the cows, and not the number, is being emphasized, these men naturally turned their attention to the selection of dairy bulls that will sire efficient producing daughters. Many farmers have had the experience of butchering the best bull they ever owned before his daughters came into production.

A program launched by the extension service of the college, calling for a careful selection of young sires, keeping the good bulls until their daughters come into production, and securing production records through dairy herd improvement associations has been responsible for retaining many good old bulls. Such sires' caliber fit into the national farm adjustment programs planned to give greater net returns on reduced volume and expense, says this dairy authority.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII | January 24, 1934 | Number 4

Aides Named For Corn-Hog Work In Illinois Counties

Illinois corn and hog producers are assured of additional help in qualifying for the $40,000,000 in benefit payments to be distributed by the AAA as a result of the appointment of 28 agricultural assistants announced by the extension service of the College of Agriculture, University of Illinois.

These men, it is said, will assist the county and community campaign committees in holding educational meetings, in distributing literature relative to the corn-hog program and in establishing sign-up stations in the larger corn and hog producing counties throughout the state. Some of them have been appointed for counties which do not have farm advisers. It is estimated that agricultural assistants may be appointed in some 35 to 40 counties as the campaign progresses.

Those who have been appointed to date and the counties in which they will work include:

L. S. Johnson, Whiteside county; Earl Wenzel, DeKalb county; C. L. Dexter, Mercer; J. R. Johnson, Henry; A. L. Dickinson, Bureau; C. L. Mast, LaSalle; Earl Bruington, Warren; George B. Whitman, Knox; C. W. McMillen, Peoria; Lee Piper, Kankakee.

Arthur C. Johnson, Marshall-Putnam; Tallmadge Bergen, Livingston; J. E. Crum, Hancock; Wilfred S. Myers, Adams; Everett Johnston, Tazewell; F. H. Congleton, McLean; C. W. Brown, Logan; H. P. Joy, Morgan; Homer Kearnaghan, Sangamon.

J. B. Turner, Christian; George V. Day, Macoupin; P. V. Hemphill, Montgomery; E. H. Walworth, Fayette; Clarence Ems, Edgar; C. J. Thomas, Perry; Will Brett, Vermilion; Elmer E. Williams, Lee; and R. E. Mullen, Green County.

At the present time farmers are collecting supporting evidence, drawing the required maps of their farms and determining how their farm operations can be arranged to fit into the corn-hog program. In a number of counties educational meetings are still in progress throughout the rural communities, preparatory to the sign-up days to be announced soon.

As the preliminary work leading up to the sign-up gained headway, farmers were warned to beware of hog buyers and small processors who, when purchasing live hogs for commercial slaughter, are reported to be deducting all or part of the amount of the processing tax from the regular market price quoted to the producer-seller.

"Country buyers and others who, in settling for hogs with the seller, make deductions for the processing tax on the bill of sale are penalizing the seller and are tending to frustrate the declared policy of the Agricultural Adjustment Administration," it was pointed out by officials. "Farmers are urged not to sell to buyers who make or propose to make such deductions. Names of hog purchasers following such practice, together with full details on individual cases, should be forwarded to Dr. A. G. Black, chief of the corn-hog section of the AAA, Washington, D.C."

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director.*

Wheat Checks To Illinois Growers Exceed $1,135,000

Buying power of Illinois farmers has been increased by $1,135,891 within recent weeks as a result of participation in the wheat production adjustment program last fall, according to figures compiled by the extension service of the College of Agriculture, University of Illinois.

This amount is represented in checks mailed to 21,894 farmers in 67 counties of the state by the Agricultural Adjustment Administration, Washington, D. C., as the first benefit payment made to those who agreed to reduce their 1934 wheat acreage by 15 per cent as compared to their average acreage during the three base years, 1930-1932. Checks to wheat cooperators in the other 35 Illinois counties are being sent out from the AAA headquarters as quickly as the contracts can be checked and accepted by the Secretary of Agriculture.

This first payment is at the rate of 20 cents a bushel on the allotment each farmer received, and the second payment of 8 cents a bushel, minus the pro-rata cost of administering the plan in each county, will be made after the spring planting season. Illinois farmers will receive approximately $2,618,000 in benefit payments on their 1934 wheat crop.

With a total of $89,170 in 2,117 checks, St. Clair county leads in total payments made in Illinois so far. Mason county ranks second, at this time, with 1,100 checks to farmers totalling $70,074. Randolph county has received $61,932 in 1,251 checks, Cass $52,570 in 706 checks, Menard $39,698 in 502 checks, Washington $37,267 in 886 checks, Scott $32,809 in 589 checks, Pike $31,524 in 390 checks, Macoupin $23,592 in 669 checks and Jackson county $22,476 in 481 checks.

More than 8,000,000 acres will be taken out of wheat production in the United States in 1934 as a result of the wheat production adjustment program. The purpose of the project is to reduce domestic production in line with actual consumption and exports, which in turn is designed to bring wheat prices up to a fair exchange value with the things farm people must buy.

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Assured Sale Of Crops Is Essential On Small Farms

Thousands of city dwellers who are considering the possibilities of moving onto a small farm with the hope of improving the family income should bear in mind that such farms are likely to be disappointing unless careful plans are made for the production and sale of the products, says H. C. M. Case, chief of farm management in the College of Agriculture, University of Illinois.

"The 'small farm, well tilled' idea was prominent 25 years ago," points out Prof. Case. "As with any form of farming, 50 per cent of the chance for success rests with the individual. Actual farm experience plays a large part in determining a man's chances of succeeding."

No one type of small farm is best. Some people are more successful with poultry, while others succeed better with some specialized fruit or vegetable production or a small dairy farm. Usually the small farm can not well develop many different kinds of production because of the cost of maintaining different kinds of equipment. In a period like the present, when large diversified farms are hardly meeting operating expenses, there is little chance for the small diversified farm.

The small farm, it is explained, should look first of all to the provision of family needs, and secondly, to the development of some one or two important sources of income for which the market is quite definitely assured. The small farm is the most successful and has its most important place in supplementing some income from other sources. But in any event, success depends mainly upon the ability of the farmer to make a good plan and to carry it through.

-M-

Oats As Feed For Swine Suggested By Illinois Tests

Wider utilization of oats, which are still extensively produced in spite of the declining market for them, is suggested in a new circular, "Oats as a Feed for Swine," by W. E. Carroll, chief in swine husbandry in the College of Agriculture, University of Illinois, and now available for distribution.

With the disappearance of 800,000 horses and mules from farms and city stalls in Illinois--the chief outlet for the state's 4,500,000 acres of oats--farmers have been casting about for suggested uses of this grain. The usefulness of oats in the cropping system has been the important reason for their retention on Illinois farms, but in view of continued extensive production and the reduced market value of oats, it has been desirable to find some way of expanding their use. Feeding oats to swine under certain conditions and methods is suggested by Prof. Carroll.

More than 1,000 pigs have been fed at the Illinois experiment station since the spring of 1926 in an effort to determine the most profitable way to use oats in swine feeding. The results to date, as summarized in the bulletin are:

1.--Oats can be used extensively in place of corn in the rations of pregnant sows without noticeably reducing the efficiency of the ration. They may also be used in sow rations during the suckling period, but to a less extent.

2.--For growing-fattening pigs, one-third of the ration may consist of oats without reducing the rate of gain compared to the rate when corn is used.

3.--Grinding 100 pounds of oats and feeding them as one-third of the ration saves about 27 pounds of feed as compared with the amount used when whole oats are fed in otherwise similar rations.

4.--Hulling oats and feeding the kernels to growing-fattening pigs is less profitable than feeding ground oats.

5.--Only when oats are as cheap as corn per pound will a ration that contains oats in any form produce as cheap gains as will a ration of corn and a protein supplement.

A copy of this circular, No. 414, "Oats As a Feed for Swine," may be had by writing the College of Agriculture, University of Illinois, Urbana.

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Cleaning Ditches By CWA Workers Is Boon To Farmers

Using CWA workers to clean out ditches and natural channels is helping farmers in one of the most important drainage problems Illinois agriculture faces today, says E. W. Lehmann, head of the department of agricultural engineering at the College of Agriculture, University of Illinois. This work also is bringing benefits to communities and the state at large.

"The problem of cleaning out ditches is a serious one in many localities," explains Prof. Lehmann, "and the lack of a plan for maintenance makes it necessary in many cases to organize so that the work can be done and the cost distributed among the people in the district who are benefited. The use of CWA workers, not only accomplishes this reduction in cost to the farmers, but aids in poor relief efforts, relieves to an extent the pressing problem of unemployment and gives idle workers an opportunity to sustain their self esteem.

"The growth of weeds and brush in many open ditches retards the water flow to a point that the effectiveness of the drainage is greatly reduced, even though the outlet from tiles may be satisfactory under normal conditions."

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII | January 31, 1934 | Number 5

Outlook Indicates Most Hopeful Farm Year Since 1929

The most promising year that they have had since 1929 is ahead of Illinois farmers as they begin to plan their operations for 1934, according to the annual state agricultural outlook report prepared by the College of Agriculture, University of Illinois. Details of the report are being studied by farmers throughout the state following district outlook meetings held by the extension service of the agricultural college for the purpose of distributing and discussing the report. In all, 21 different meetings are to be held in different parts of the state.

The prospect that 1934 holds more promise for farmers than any year since 1929 is based upon the improvement made in the general situation in 1933 and upon measures designed to relieve the problem of acute surpluses of certain products, the report explains. It adds, however, that progress in agriculture must be expected to be slow and somewhat erratic and that its extent will depend upon the rate and extent of improvement in general business conditions.

"During the past year the inauguration of plans for agricultural recovery have created new hope among farmers and have brought a reversal in the long downward trend in prices of farm products," Dean Herbert W. Mumford points out in the outlook report. "While such measures prescribe certain restrictions upon the cooperating farmers, they are by no means a substitute for their own planning. They serve rather to emphasize the need for group planning, not only in order to adapt the farm program to the emergency situation, but also to assist in the more permanent adjustment of farm production to market demands."

The report discusses in detail the outlook for the principal crops and livestock products of Illinois farms. An added feature is a listing of ten favorable facts in the agricultural situation, contrasted with seven unfavorable factors and three uncertain factors.

Any farmer or other interested person can get a copy of the report from his county farm adviser or direct from the College of Agriculture, University of Illinois, Urbana.

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Hatcherymen Told Of Deadline On Code Certificates

Operators of the 800 hatcheries in Illinois must display their compliance certificates not later than the date of their first hatch or if they are already operating, not later than February 1 in order to comply with the code of fair competition for the hatchery industry, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois. He has been placed in charge of the educational work on the code in this state. In order to get their compliance certificates in time, hatcherymen should file application at once with the National Coordinating Committee, 215 Pershing Road, Kansas City, Mo., Alp advised.

"In his application the hatchery operator should list the total hatching capacity, including all incubator trays, nursery trays and separate hatchers. He should include with his application his pro-rata share of the code expense in the amount of 15 cents for each 1,000 hen-egg hatching capacity. The minimum fee is $2, and all dealers must pay the minimum."

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director*.

Culling Sows Is Profitable Even Without AAA Program

Getting rid of the poorer sows in Illinois' swine breeding herds would be a profitable way for Illinois farmers to cut their pork costs and at the same time reduce future unwieldy pork supplies, even if there was no AAA corn-hog adjustment program to pay producers for making the reduction, says R. H. Wilcox, of the department of agricultural economics, College of Agriculture, University of Illinois.

The fact that it costs the same to carry a sow whether she produces a large or a small litter makes it a profitable practice to weed out those that give any indication of being poor breeders and poor mothers, he pointed out.

"Cost figures collected by the college, when applied to the present hog situation, show that a 13-per cent reduction in pork supplies could be made under present corn price levels without reducing the total farm profit a cent if the remaining 87 per cent of pork was produced from sows weaning seven pigs to the litter instead of an average of only four.

"Thirty per cent of the cost of raising pigs for market is consumed in feeding, housing and caring for the sows on the average corn-belt farm," explains Prof. Wilcox, in referring to the fact that Illinois farmers may proceed individually, and at the same time collectively through the corn-hog program, in their efforts to adjust production and obtain a profit in swine production.

"Under present price conditions, most Illinois farmers could well afford to cull out and sell five out of every ten sows on the farm, if this culling leaves five sows that will wean three more pigs to the litter than the average of the ten."

This statement is borne out by investigations of 106 cost records kept by 34 to 37 central Illinois farmers for a three-year period. Figures from these farms show that 29 per cent of the sows weaned spring litters averaging four or less pigs, while another 20 per cent weaned spring litters of seven or more. These two groups were within a few cents of each other in the cost of maintaining a sow.

More detailed information relative to these facts is given in Bulletin 390, entitled "Some Important Factors Affecting Costs in Hog Production." Copies of the bulletin may be had by addressing the College of Agriculture, University of Illinois, Urbana.

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Horse And Tractor Expenses Compared On 2,000 Farms

Two thousand Illinois farmers have proved that whether an operator should use horses or a tractor for power still depends upon the farmer's individual abilities, his financial resources and the particular condition of his farm. There is no basis, so far as net income is concerned, for recommending any one type of power for any large group of Illinois farms.

This is revealed in a study of the cost of horse and tractor power on Illinois farms made by P. E. Johnston and J. E. Wills, of the farm management division of the College of Agriculture, University of Illinois. Details relative to the study have just been made available in Bulletin 395, published by the university agricultural experiment station.

The actual experiences of some 2,000 farm operators, as shown by financial records kept on 1,351 farms in 1930 and 1,599 farms in 1931, were used for this study. Standard tractors, general-purpose tractors and trucks were included.

Many farmers have asked the college if they could increase their net incomes by changing from horse to mechanical power, or from standard to general-purpose tractors. Horse-operated farms, standard-tractor farms and general-purpose tractor farms, according to this new bulletin, were found in general to have the same net incomes when comparison was made between groups of farms comparable in size, although the gross incomes were higher on the tractor farms.

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"Corn King" Wins After Seeking Honor For 30 Years

When Clarence Watson, 48-year-old McDonough county farmer of Macomb, won the "corn king" title of Illinois during the recent thirty-sixth annual Farm and Home Week at the College of Agriculture, University of Illinois, he climaxed a 30-year quest that he has been making for corn growing honors in the country's second largest corn producing state.

He won the title when his ten-ear sample of yellow utility corn won the grand sweepstakes in the annual Illinois Seed Grain and Utility Corn Show held in connection with Farm and Home Week. He has been growing and showing utility corn ever since the University of Illinois introduced it more than 13 years ago, but even before that he had been growing and exhibiting seed corn for almost a score of years. However, this is the first time that he has ever won state honors, although he has been getting a little higher every year, he reported.

He is a firm believer in the Illinois' system of permanent soil fertility as worked out and advocated by the college of agriculture. His four-year crop rotation system includes corn, corn, oats and clover, and he uses limestone and phosphate wherever it is needed on his farm. In addition to producing about 2,000 bushels of seed corn a year, he feeds around 200 head of Hampshire hogs and 50 head of Hereford cattle.

He is enrolled in the farm accounting project sponsored by the extension service of the agricultural college, and for four years has been a member of the agricultural economics advisory committee to the experiment station of the college. He also has served as a director of the Illinois Crop Improvement Association.

He and his father are the only farmers, besides the initial owner, who have ever lived on the 160-acre farm which he now operates. His father bought the farm in 1880. Both the father, who is 81, and the mother, who is 74, are still living in Macomb.

It was in 1908 that Watson first attended the university short courses that have since become the annual Farm and Home Week. That year he won a free trip to the event as a prize on a bushel of seed corn in a local corn show at Macomb. He has been coming to Farm and Home Week more or less regularly ever since.

His prize-winning sample at this year's show was picked out of 1,000 ears grown in a 40-acre field that averaged 65 bushels an acre despite the handicap of dry weather.

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Trees May Prove Real Pay Crop On Retired AAA Land

Growing trees on land contracted to the government through the AAA wheat and corn-hog adjustment programs will prove more advantageous to farmers in many parts of Illinois than crops planted on the same ground, says L. E. Sawyer, extension forester of the College of Agriculture, University of Illinois and of the Illinois Natural History Survey.

"On a large majority of farms throughout Illinois, where corn-hog and wheat contracts are signed, the less productive land will be removed from cultivation," explains Sawyer. "Under the terms of the contract such land may be planted to trees for woodlot, windbreak or forest purposes. This is a decided advantage to farmers living in northern and central portions of the state. It gives them an opportunity to establish the long-needed protection without reducing the area of the farm that is available for cultivation.

"In many cases this less productive land will grow trees to better advantage than it will grow farm crops, even under more normal conditions. In the future such tree plantings will yield valuable timber crops, or they will aid in the control of erosion, or both."

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Expert Figuring Shows Advantages Of Corn-Hog Plan

Terms of the government's corn-hog adjustment contract are so advantageous to Illinois farmers that under some circumstances it might be more profitable for them to sign up and not produce any hogs at all than it would be to go on producing in the old way. These and other "believe it or not" facts are revealed in a series of formulas worked out on the AAA corn-hog contract by Prof. H. P. Rusk, head of the department of animal husbandry, College of Agriculture, University of Illinois.

Terms of the contract require that cooperators agree to reduce their number of litters 25 per cent below the average number for 1932-1933 and the number of hogs raised for market 25 per cent below the average of those base years. As compensation, contract signers will get benefit payments of $5 a head on their hogs, minus the local administrative expenses. This will be in addition to the gross sales returns.

Unless 250-pound hogs can be sold in 1934 for $5.47 a hundredweight and assuming that the average feed cost is $4 for each 100 pounds market weight, it would be more profitable to sign up and not raise any hogs this year than it would be to ignore the corn-hog program and raise the same number as the 1932-1933 average. It should be remembered, however, that this might leave the producer without a base if the program is continued after 1934. When calculating this comparison, Prof. Rusk makes a small deduction from the $5 a head benefit payments to cover the cost of local administrative expenses.

Further proof that the corn-hog plan is fair to the producer is shown by one of Prof. Rusk's formulas which proves that with the full $5 a head benefits, hogs will have to bring $15 a head in 1934, regardless of weight, before the gross returns of the non-signer will equal those of the farmer cooperating with the AAA. Below a market price of $15 a head, the contract signer's returns will exceed those of the non-signer; above $15 the gross returns of the non-cooperator will exceed those of the producer who reduces his production 25 per cent in 1934.

For example, let it be assumed that the contract signer produced an average of 100 head of hogs in the two base years, and in 1934 he agrees to raise only 75 head. If the market price should jump to $15 a head, he would receive $1,125 from the sale of hogs and $375 in benefit payments, or a total of $1,500. The non-signer will continue to raise his average of 100 hogs and will receive $15 a head from the sale of the stock, or $1,500 in gross returns.

When the weight of the hogs is considered and a small deduction from the benefit payments is made for local administrative expenses, Prof. Rusk explains that 200-pound hogs must bring an average of $7.35 a hundredweight before Illinois producers can afford to pass up the opportunity of signing a corn-hog contract. This, of course, is assuming that the non-cooperator will produce the same number of hogs in 1934 as he averaged in 1932 and 1933. The corresponding price for 240-pound hogs is $6.125 a hundred pounds.

The non-signer who raises feeder pigs to around 70 pounds is gambling that the market value of his young stock will jump to $21 a hundred, or war-time prices in 1934.

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Stockmen Now Have Chance To Dicker With Terminals

Rapid increase in the number of local livestock markets within recent years has put Illinois farmers in a strong position to bargain with the larger terminal markets for a reduction in the marketing expenses on the 175 million dollars worth or more livestock they sell every year, in the opinion of R. C. Ashby, associate chief in livestock marketing at the College of Agriculture, University of Illinois.

How prominent local livestock markets have become can be judged from the fact that an estimated 70 per cent of all Illinois hogs moved direct to market in 1932 without going through terminal markets, Ashby pointed out.

"If stockmen were sufficiently organized and decided that it were advisable to renew terminal market patronage, they could go to operators of the terminal market involved, specify the volume of livestock they were in a position to return to that market and bargain for a reduction in marketing expense.

"This would be in line with the recent agitation of stockmen for a larger patronage of terminal markets. In some sections stockmen have signed up to market all livestock at terminals for a specified period.

"Should stockmen continue their campaign for increased patronage of terminals without organized bargaining for reduced terminal charges in return for increased receipts, they will have overlooked an excellent opportunity. Business men would never pass up such a chance. In the same way organized producers who preferred to keep on patronizing local markets could bargain for a higher price with the alternative of going to the terminal market if the local market did not meet requirements.

"Every terminal stockyards company could handle 50 per cent more livestock than it is handling now and do it at relatively little more cash expense than in handling current receipts. If assured a definite increase in volume of livestock, the company could afford to make concessions in its charges. One stockyards executive said but a few months ago, 'If we could double our volume, our cash handling expense would not be proportionately increased and we could afford to reduce our charges. Speaking for our own company, we would be glad to do it.'

"In one area stockmen already have approached officials of a terminal market as to the reduction of charges in proportion to increased receipts."

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Advises Planting Locust Trees On Retired AAA Land

Planting black locust trees on retired wheat and corn land contracted to the Agricultural Adjustment Administration supplies a four-fold purpose that might well be considered by many Illinois farmers, says L. E. Sawyer, extension forester of the College of Agriculture, University of Illinois and the State Natural History Survey. Black locust trees comply with the AAA requirements, they prevent soil erosion, aid in improving the nitrogen content of the soil and in time will furnish a crop of durable fence posts.

"Soil erosion, which is so destructive over a large portion of Illinois," explains Sawyer, "may be controlled easily and economically by planting trees, and one of the best varieties for this purpose is the common black locust. Being a legume, this tree enriches the soil, and where black locust has been planted a heavy sod becomes established within a few years. In addition to its soil-holding ability, black locust produces one of the most durable fence post woods that can be grown in this section of the country. In 10 to 12 years it will often produce posts 4 to 5 inches in diameter."

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Care Of Sows Is More Essential Under Corn-Hog Plan

To get the most out of the "new deal"--which to Illinois farmers means cooperating with the AAA corn and hog adjustment program--producers might profitably give greater attention to reducing spring pig death losses, says W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois.

The corn-hog contract requires that a cooperator reduce by 25 per cent, not only the number of hogs marketed, but also the number of litters farrowed. Thus getting an allotted number of pigs for market from a given number of litters makes it highly desirable that the producer have reasonable control over the death losses of the pigs. "Only 14 of every 100 pigs farrowed weak live to be weaned, while 90 out of 100 strong pigs live to a weaning age," explains Prof. Carroll. "Then too, 3 to 15 per cent of all pigs farrowed have no chance of surviving because they are born dead."

The chances of the pigs surviving are determined during the gestation period, and healthy sows are, of course, necessary for healthy pigs, it is said. The kind and amount of feed the sow receives apparently influences the strength of the pigs at birth, for a certain amount of protein and mineral matter are essential for the development of the unborn pigs. A mineral mixture composed of equal parts of limestone, bone meal and salt is as good as any, except in goitrous areas where 1 to 2 ounces of potassium iodide should be mixed with each 100 pounds of the simple mineral. Exercise of the sow during gestation also contributes to the strength of the pigs.

Any of the common farm grains can be used as a basis for the ration for pregnant sows. Legume hay is essential for best results when pasture is not available. Whether to feed protein supplements in addition to the grain and hay will depend largely on the age and condition of the sows. Gilts are more likely to need such a supplement than mature sows. One-fourth pound of tankage, one-half gallon of skim milk or one-half pound of soybeans per head will usually suffice and is good insurance against pig-eating in sows craving additional protein the last month before farrowing.

Sows should not be allowed to become so fat that they are lazy and awkward. They should, however, be put in high enough condition to milk well after they farrow.

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AAA Wheat Money Used For Wide Variety Of Necessities

"The butcher, the baker, the candlestick maker"--all are sharing in the $1,377,851 in benefit payments that have been received to date by more than 26,000 Illinois farmers and landowners who cooperated with the AAA in adjusting their wheat acreage in 1934 and 1935, according to a survey made by the extension service of the College of Agriculture, University of Illinois.

Even Santa Claus got a "lift" in some counties where the government checks arrived before Christmas, while other beneficiaries included doctors, hospitals, insurance companies, grocers, clothing merchants, bankers, implement dealers, threshing men, hired help, and so on along the line.

The wheat benefit payments received so far, it is said, do not represent all that is coming to the farmers from the AAA this year. Before another wheat harvest is over, the total bonus for the 1934 wheat adjustment will amount to approximately $2,618,000. Further improvement in the Illinois farmer's income is anticipated when the exchange value of the products rural people have to sell is increased as a result of the various AAA programs.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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First 20,000 Signers Reported In Corn-Hog Campaign

Sign-up of Illinois farmers in the government's corn and hog production adjustment program passed the 20,000 mark Tuesday night, February 13, although up to that time progress reports had been received from only 60 of the 102 counties and the campaign was considered only a little more than well started, according to an announcement by Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois and director of the agricultural extension service, who is chairman of the state advisory committee on the campaign.

The line-up of the ten leading counties on the basis of incomplete progress reports received by the extension service from county farm advisers up to Tuesday night was: Iroquois, Farm Adviser C. E. Johnson, 2,171; Livingston, Farm Adviser S. G. Turner, 1,937; Bureau, Farm Adviser Paul V. Dean, 1,022; Adams, Farm Adviser S. F. Russell, 918; DeKalb, Farm Adviser R. N. Rasmusen, 846; Whiteside, Farm Adviser F. H. Shuman, 800; Kankakee, Farm Adviser G. T. Swaim, 753; Hancock, Farm Adviser T. H. Hafer, 723; Madison, Farm Adviser T. W. May, 688, and Grundy, Farm Adviser R. V. Watson, 520.

Within the next few weeks it is estimated that as high as 85 per cent of the eligible producers in the state may join with their neighbors in the voluntary cooperative movement to adjust production to demand and thereby overcome the effects of farm prices that have sunk lower and lower as a result of the loss of foreign markets and other causes. In no county has the campaign been completed at the present time, and in practically all counties farmers are busy filling in work sheets, collecting supporting evidence and signing contract applications.

Approximately 1,000 sign-up stations will be conducted at different points in the state during the campaign to make it easy for every Illinois farmer to join the plan and become eligible for his share of the $40,000,000 or more in benefit payments to be distributed to cooperating farmers in this state, it was estimated by Prof. J. C. Spitler, state leader of farm advisers. He is representing the extension service of the College of Agriculture, University of Illinois in the campaign.

Paving the way for the sign-up, educational meetings have been held in practically all counties of the state by county farm advisers and the extension service of the agricultural college. Sixty-eight of the 102 counties have reported 1,293 meetings attended by 130,888 farmers anxious to learn about the contract and the purpose of the campaign.

Inasmuch as only two-thirds of counties holding corn and hog educational meetings have reported, it is believed that the total number of Illinois farmers who have given preliminary information relative to the adjustment program will amount to 50 per cent more than the 130,881 reported, or 196,321.

F. H. Shuman, farm adviser of Whiteside county, reports that more than 4,800 farmers in that county have attended the corn-hog educational meetings, the largest total attendance reported to date. Other corn and hog producing counties that have reported include Henry, with a total attendance of 4,555; Edgar with 4,069; Crawford and Jasper counties with a combined attendance of 3,800; Greene county with 3,740, and Christian county 3,353.

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Chinch-Bug Count Shows Five Times 1933 Hibernation

Last year chinch bugs reduced the corn crop in 70 Illinois counties from 15 to 50 per cent, and unless May and June of this year are unusually dry, the 1934 damage from this insect may be double that of last year, says W. P. Flint, chief entomologist of the Illinois Natural History Survey in a report of the extension service of the College of Agriculture, University of Illinois. A study of the records of the weather bureau also reveals that the chances are three to one that the two crucial months will be favorable to the chinch bugs.

A recent survey of the former infested areas indicates that there are at least five times as many chinch bugs in hibernation now as at the same time last year, a serious threat to the state's nine million acres of corn. Only the counties in the extreme northern and southern ends of the state are exempt from possible chinch bug damage, explains Mr. Flint.

Possibly 10 per cent of this likely menace can be checked by farmers who will burn over areas where chinch bugs are prone to winter. From 80 to 90 per cent of these over-wintering insects will be found at the bases of bunch-forming grasses, particularly the native grasses such as blue stem, prairie grass, bunch grass and broom sedge. They will be found on the south slopes of ditch banks, roadsides and the south and west sides of hedges where accumulations of grass and leaves are evident. From 100 to 5,000 chinch bugs under each square foot of cover have been found on farms in central and north central Illinois.

These favored types of protective cover should be burned off sometime between the first of December and the middle of April, when conditions are dry enough so that the fire will burn close to the ground. Burning against the wind so that the fire will spread slowly is recommended.

It is not necessary or advisable to burn over whole tracts of woodland or the whole farm, explains Mr. Flint. The bugs are nearly all in the south edge of the woods or in the favored locations mentioned previously. Well established stands of blue grass seldom contain large numbers of bugs and should not be burned. It is better to look over the favored hibernating places and concentrate in burning these thoroughly, rather than burning over the whole farm, it is said.

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Market Check-Up Is Next Move After Planned Farming

Now that stockmen and farmers of Illinois and other corn belt states are going in for planned, adjusted production on a larger scale than ever, their next move might well be a shrewd appraisal of the advantages and disadvantages of local livestock markets as against terminal markets, according to R. C. Ashby, associate chief in livestock marketing at the College of Agriculture, University of Illinois.

"Major advantages to farmers of local markets include (1) convenience, (2) no delay in securing returns, (3) some apparent saving in marketing expenses and (4) avoidance of risk of price change, since on short haul deliveries the approximate price can be known before the hogs leave the farm.

"Major disadvantages, less apparent to the farmer and hence frequently disregarded, include: (1) less assurance of accurate weights, (2) non-competitive sorting and grading, (3) payment not guaranteed whereas at terminal markets all sales agencies are under government approved surety bonds guaranteeing payment to shippers, (4) local markets have, on the whole, tended to weaken the level of hog prices and (5) while affording an apparently desirable outlet for hogs, many local markets do not handle other livestock, leaving the producer to dispose of cattle, calves and sheep elsewhere."

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Industrial Rise Is Seen As Boon To 1934 Agriculture

A world-wide reversal from a downward to an upward trend in industrial activity is of basic significance to American farmers, but unfortunately the growing spirit of nationalism in different countries has set up conditions which greatly limit the foreign market outlets, according to the annual state agricultural outlook report just released by the College of Agriculture, University of Illinois.

The AAA program now being applied to export supplies should, however, aid United States farmers in getting full advantage of whatever improvement is made in industrial activity in this country, it is pointed out by agricultural economists of the college. The purpose is to adjust production to the reduced foreign demand while supplying fully the domestic requirements, it was explained.

Improvement in industrial activity looms large in the farmer's hopes, for such activity determines the incomes of non-agricultural consumers and these consumers, in turn, are the principal source of the farmer's income, the report points out.

The latest available index indicates an increase in industrial production in the United States of 26 per cent in 1933 as compared with the 1932 low point, an increase in England of 13 per cent, 17 per cent in France, 23 per cent in Germany, 9 per cent in Italy and 25 per cent in Japan.

This increase in foreign industrial activity would be a more hopeful sign for the American farmer than it is if it were not for the fact that European nations have progressed in their campaigns for agricultural self-sufficiency, the report points out. Improved foreign outlets for U. S. agricultural products apparently must come from negotiation of reciprocal trade treaties, which are of limited possibilities, or result from a devalued U. S. currency, the effects of which would be temporary.

"Germany is now on a surplus basis in rye, wheat and meat. France has begun to export wheat. Italy is self-sufficient in wheat. England has adopted a definite program of increased production of domestic bacon supplies, imports being restricted more than 16 per cent for 1934. The United States quota is only slightly more than 6 per cent of the total British import. As a result of the London wheat conference the United States was assigned a quota of 47 million bushels of wheat exports for 1934 in contrast to 26 million bushels exported in 1933 and 82 million bushels in 1932.

"Agricultural exports constituted 49.9 per cent of the total United States exports during 1909-1914, but only 36.4 per cent during the period 1927-1932. Whereas 14 per cent of our total agricultural production was exported in 1921-1925, only 7 per cent was exported in 1930-1931."

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New Bulletin Sifts Basic Factors In Milk Marketing

A decline of from 10 to 15 per cent in the per capita consumption of milk and cream in important fluid milk markets of the United States during the past several years has been caused principally by retail prices which have been too high in relation to consumers' declining purchasing power, according to results of a study made by Dr. R. W. Bartlett, of the department of agricultural economics, College of Agriculture, University of Illinois. Findings made in the investigation have just been published by the experiment station of the college in a bulletin entitled, "Prices and Consumption of Milk in Specific Cities as Related to Industrial Payrolls and Other Economic Factors."

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Second 50,000 Corn-Hog Contracts Now Being Signed

Illinois had its first 50,000 signers in the government's corn and hog production adjustment campaign and was headed for the second 50,000 on the basis of reports which state headquarters in the extension service of the College of Agriculture, University of Illinois had received from county farm advisers up to Tuesday, February 20. Practically every county in the state is now represented in the sign-up, although in some counties the work is just getting under way and in others it is nearing the final stages. It will be the first of March before the sign-up work is completed throughout the state.

Iroquois county, where Farm Adviser C. E. Johnson is in charge of the sign-up, leads all counties with a total of 2,853 applications for contracts signed and completed. This county is in the territory in which C. M. Linsley, soils extension specialist of the College of Agriculture, University of Illinois, is acting as district supervisor for the corn and hog campaign. Livingston county, another one in the same territory, was in second place with a total of 2,729 applications for contracts reported by Farm Adviser S. G. Turner.

Eight other counties each had 1,000 or more applications for contracts on the basis of reports received up to February 20. Whiteside county was the leader of this group with a total of 1,728 applications for countracts. Farm Adviser F. H. Shuman reported that this represented 78.4 per cent of the eligible farmers and that several thousand of those who have not yet signed up might be expected to join the plan before the sign-up is completed. Bureau county had 1,601, LaSalle 1,500, Adams 1,319, DeKalb 1,261, Edgar 1,117, Ogle 1,000 and Macoupin 1,000.

Macon county was the only one with between 900 and 1,000 applications for contracts signed up, but there were seven with between 800 and 900. DeWitt had 886, Peoria 875, Coles 875, Warren 863, Greene 849, Marshall-Putnam 835 and Ford 800.

Close behind was a group of eight counties with between 700 and 800 contracts to their credit. At the head of this list was Kankakee with 783 and then came Shelby with 780, Vermilion 764, Carroll 757, McLean 750, Madison 750, Kendall 730 and Grundy 723.

Counties that had hit the 600 mark and that were on their way to a 700 total were Logan with 665, McDonough 655, Stark 650, Fulton 643, Champaign 623, Stephenson 617, Effingham 609, Clark 600 and Knox 600.

The 500-contract group included Montgomery with 590, Tazewell 582, JoDaviess 537, Woodford 525, Cass 515 and Hancock 500.

Five counties figured in the returns as the reports on the second 50,000 of contract applications started coming in, Tuesday, February 20. Coles county was outstanding in this group with a first report from Farm Adviser E. W. Rusk showing that 875 farmers have signed applications for contracts in that county. McHenry county also got into the sign-up column for the first time when Farm Adviser W. E. Herrington sent in a report of 203. E. D. Walker, farm adviser of Henderson county, added 301 to his previous total to bring the number for that county up to 475, while H. A. deWerff, farm adviser of Woodford county, put that county's total up to 800 when he reported 275 new signers. Menard county's mark went from 150 to 347 when Farm Adviser L. W. Chalcraft added 197 new signers.

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Grass Seed Need Doubled By AAA And Other Programs

Thousands of farmers in Illinois now taking part in the government's corn-hog and wheat adjustment programs will do well to look to their immediate supply of pasture and hay seeds on hand, for the demand this spring may be double that of previous years, says J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

It is anticipated that approximately 1,700,000 acres of Illinois corn land may be retired from production under the AAA corn-hog contracts, while last fall some 256,000 acres were withheld from normal wheat seeding as a result of the federal wheat production control program. It is likely that these nearly 2,000,000 acres will be planted to legumes or grasses--an acreage nearly equivalent to all the tame hay produced in Illinois in either 1932 or 1933.

Additional demands are being made on the nation's grass seed supplies as a result of other governmental activities, such as the federal soil erosion service, work of the civilian conservation corps, civil works administration projects and the Tennessee valley project.

"Legume seeds in general are not as plentiful as in many former years," points out Prof. Hackleman. "The supplies of alfalfa, red, alsike and mammoth clovers at the close of the 1933 harvest were slightly in excess of normal demand, but probably not sufficient to meet the extra demands as a result of the AAA programs. Since harvest, however, alfalfa and red clover seeds have been leaving our shores in much greater quantities than average years.

"The 1933 September-December export of alfalfa seed was nearly twice the average for the same period in the 10 years of 1923 to 1932, inclusive. Likewise, red clover exports during the same three months of 1933 were 10 times as great as the 10-year average foreign demand. Timothy and other grass seed exports were relatively much less significant in view of the seed supplies and the normal movement of these seeds at this season of the year.

"Illinois harvested the shortest soybean crop in 1933 that it has had in several years, owing to a reduced acreage and the low yields resulting from late plantings. Soybean processors anticipated their needs by early purchases in October, November and December of last year, and half of the threshed bean supply is now in their hands. The remaining beans must meet the usual demand for seeding approximately 750,000 acres in Illinois, as well as planting contracted acres to be turned under.

"Thousands of bushels of cow pea and Korean lespedeza seed will be needed in southern Illinois for seeding on contracted land that is too acid or too low in phosphorus to grow alfalfa, red, alsike or mammoth clovers.

"The supply of grass seed, however, is more nearly adjusted to meet anticipated demands.

"It is advisable for farmers who have a limited supply of home-grown clover seed on hand to send recleaned samples to the state analyst for examination, so that they may be ready to sell any extra supply. Illinois farmers who do not have sufficient seed on hand to fill their requirements should make the necessary arrangements immediately," says Hackleman.

In this connection it was announced that the U. S. Department of Agriculture has just issued a new mimeographed circular entitled, "Pasture Plants and Pasture Mixtures Suggested for Seeding on the Acreage Taken out of Cotton, Tobacco, Wheat and Corn for Erosion Prevention and Soil Improvement."

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AAA Dairy Plans Touch Extensive Illinois Industry

Illinois would take front rank prominence in any dairy production adjustment program such as recently outlined by Secretary of Agriculture Henry A. Wallace, for the state stands fifth among all states in total milk production, it is pointed out by members of the dairy department, College of Agriculture, University of Illinois. During the past four years the average annual cash income from the sale of dairy products off Illinois farms has been almost 71 million dollars.

The tentative plan which the administration is offering to the dairy industry is an individual voluntary farm allotment proposal financed by a processing tax on all butterfat in milk and its products and a compulsory tax on oleomargarine. The rate of the processing tax would eventually reach 5 cents or more a pound of butterfat in all milk and its products with a compulsory tax on oleomargarine equivalent to the tax rate on butter.

A three-year base period, with individual production of butterfat for 1931, 1932 and 1933 established for each farmer, is contemplated.

The goal to be sought is an individual reduction of 15 per cent in milk and butterfat produced for market in the year ahead below the quantities sold in the past year, with the prospect that this would assure a 10 per cent net reduction.

The method of securing reduction on the farm is to be left to the judgment of cooperating producers. Compensation to cooperators is to be secured through benefit payments or premiums on sales on an agreed reduction basis under contract.

Fewer and better cows, producing higher quality products at more economical and more profitable costs have long been urged upon Illinois farmers by means of dairy herd improvement association work and other extension activities of the College of Agriculture, University of Illinois, it was pointed out by dairymen of the college. It appears, however, that more drastic steps are now necessary. Secretary Wallace himself has said that, "If some sound and comprehensive program is not adopted soon, the path of the dairy industry is likely to be rough. Our course will be determined by the response of dairy farmers and their representatives to this program."

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Growing Quality Small Fruits Now Being Made Easier

Small fruit growers, including both the home-gardener type and the commercial producers, this spring will have the best chance that they have ever had to get started with superior, higher-quality varieties at a reasonable cost, according to Dr. A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois. Nevertheless, prospective buyers should make sure that the varieties they buy are adapted to the climatic, soil and other conditions in their particular locality.

During the past several years many small fruits have been developed through controlled methods of plant breeding which are greatly superior to the older varieties, formerly standard, Dr. Colby said. Many of these newer varieties might well be given a place in the 11,000 acres or more of small fruits that were reported for Illinois in the last census, he said.

Most nurseries are cooperating with the state nursery inspection service to grow and sell only disease-free stock, usually true-to-name, points out Dr. Colby, and the prospective buyer may purchase from any one of several reliable nursery firms with the certainty of getting high-class plants.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Illinois Corn-Hog Sign-Up Now Nearing 90,000 Mark

The 90,000 mark loomed up on Tuesday, February 27, as a near-at-hand goal that might be reached or passed by the end of the week in the Illinois sign-up on the AAA corn-hog production adjustment program. Reports received up to Tuesday noon showed that the number of applications for contracts that had been signed by Illinois farmers stood right at the 73,000 mark, and additional reports were coming in almost daily from counties where the sign-up campaign was at its height, it was announced by Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois, and chairman of the state advisory committee on the campaign.

New zest was added to the campaign during the week in a report on corn-loan sealings made by J. H. Lloyd, assistant director of the Illinois State Department of Agriculture, to Prof. J. C. Spitler, state leader of farm advisers, who is representing the extension service of the agricultural college in the various AAA programs. Up to Saturday noon, February 24, a total of 33,278 warehouse certificates covering 46,553,911 bushels of ear corn had been reported to the department of agriculture by warehouse supervisory boards, according to the report from Lloyd. Every farmer who gets a loan on his corn is required to sign a contract for corn-hog adjustments in 1934. An average of slightly more than one million bushels of corn had been placed under seal during each of the seven days preceding Saturday, Lloyd reported.

Livingston county went into the state leadership as the Illinois corn-hog sign-up passed into the final stages, with a total of 2,992 applications for contracts reported by Farm Adviser S. G. Turner. Iroquois county, which was the Illinois pacemaker throughout the early stages of the sign-up, dropped to second place with a total of 2,853 contracts reported by Farm Adviser C. E. Johnson. One other county--Bureau--was past the 2,000 mark with a total of 2,028 contracts reported by Farm Adviser Paul V. Dean.

Following these three leaders there were 26 Illinois counties with 1,000 or more signers. McLean, the largest county in the state with its 4,060 farms, was leading this group with a total of 1,795 applications for contracts. The line-up for the 25 other counties with more than 1,000 agreements was: Whiteside 1,668, DeKalb 1,523, Adams 1,500, Sangamon 1,500, LaSalle 1,500, Edgar 1,463, Shelby 1,402, Champaign 1,378, Warren 1,345, Hancock 1,314, Vermilion 1,250 Marshall-Putnam 1,230, McDonough 1,227, Lee 1,150, Logan 1,135, Montgomery 1,100, Ogle 1,100, Peoria 1,100, DeWitt 1,092, Coles 1,050, Knox 1,028, Tazewell 1,028, Fulton 1,007, Ford 1,000 and Macoupin 1,000.

It is hoped that by the middle of March, community elections for the selection of permanent community committeemen will have been held in practically all counties of the state. These community elections will be the forerunner to the formation of the county corn-hog production control associations under which the administration of the program will pass into the hands of farmers themselves, following the preliminary educational and organization work by county farm advisers and the extension service of the College of Agriculture, University of Illinois.

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New Sign-Up Opens Way To Further Wheat Adjustments

Possibilities for further adjusting the acreage of wheat on Illinois farms have been brightened by a telegram which Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois, has received from AAA headquarters in Washington announcing the reopening of the wheat sign-up to admit any farmers who could not or did not sign up last fall. Plans for extending the Illinois sign-up were started immediately upon receipt of the telegram.

Illinois farmers, guided by the teachings of the College of Agriculture, University of Illinois already had reduced their acreage of all wheat 61 per cent since 1919, but they went even farther in the AAA sign-up last fall and put the state in fifteenth place among all states in the percentage of wheat acreage signed up. The 1,001,804 acres that were put under contract in the 24,359 contracts signed last fall represented more than 55 per cent of the state's average acreage during the three-year base period, 1930-1932. The total required reduction under the terms of the contracts was a cut of approximately 154,000 acres below the average for the 1930-1932 base period.

Reopening of the sign-up in the AAA program opens the way to further adjustments. Growers who come in now will be eligible for the final 1933 benefit payments and for subsequent benefits on the 1934 and 1935 crops, but not for the first 1933 benefit payment which already has been made. A special revision of the regulations will make it possible for a contract to be drawn up for the farmer who had an unsatisfactory base acreage under the original plan, but the new contracts will not give late signers an advantage over original signers.

The fifty county and district wheat production control associations which were organized following the close of the sign-up last fall will be used in extending the sign-up under the plan announced in the Washington telegram, it was stated by Prof. J. C. Spitler, state leader of farm advisers, who is representing the extension service of the College of Agriculture, University of Illinois in the various AAA programs.

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Sweet Clover Meets Real Need On Contracted Acres

Virtually one-tenth of the crop acres of Illinois may be retired from production in 1934 through the AAA corn-hog and wheat programs, and unless soil conservation and improvement practices are adopted by contract signers, a considerable portion of the state's wealth which lies in her soils may be washed or leached away, says A. L. Lang, assistant chief of soil experiment fields, College of Agriculture, University of Illinois.

Sweet clover has proved its value in the prevention of soil erosion and its reputation as a green manure crop is attested by data collected from the Illinois soil experiment fields. At the Dixon field, on a soil of good productivity, sweet clover in a rotation of corn, oats and wheat improved the soil to the extent of 17 bushels of corn an acre annually, as a three-year average, where it was the main fertilizing constituent. Where wheat and oats straw were returned to the land, they enhanced the value of sweet clover as a soil builder by 7 bushels of corn an acre. At Mt. Morris in Ogle county, with a fertility level approximately the same as at Dixon, residues from timothy, soybeans, red clover and alfalfa fell short of equalling the benefits of sweet clover combined with oat and wheat straw on the Dixon field by 30, 17, 12 and 7 bushels of corn to the acre, respectively.

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Oats Smut Takes Heavy Toll Off Farms Of Illinois

Last year oat smut extracted a tax of approximately 4,583,000 bushels from Illinois farmers, and a similar oat loss may be expected in 1934 unless growers properly treat their seed to prevent this common disease, says Benjamin Koehler, associate chief of crop pathology at the College of Agriculture, University of Illinois. This toll amounts to an average loss of 5.5 per cent of the oat crop for the state, and although the disease is an easily-controlled one, smut damage on some farms amounted to as high as 25 per cent last year, it is said. For control, two treatments--the formaldehyde and the Ceresan--are recommended.

The most satisfactory way of applying formaldehyde to the oat seed is the 50-50 method, which is practically a dry process. A pint of commercial formaldehyde is mixed with a pint of water in a quart-size sprayer of the kind used in gardens and cow sheds. As one man shovels the oat seed from one pile to another, an attendant handles the sprayer, giving two to four "shots" of the liquid on each scoopful of oats as it is picked up. About a quart of the formaldehyde-water mixture should be applied to each 50 bushels of seed.

After this has been done, the oats should be turned over again by shoveling the seed into another pile, or into sacks or a wagon box. If the seed is not sacked, it should be covered with canvass or other cloth for at least five hours. The oats are then ready to use or may be stored for several days without serious damage. The cost of this method is about two-thirds of a cent a bushel.

New Improved Ceresan, another recommended disinfectant for treating oats, is a dry dust which should be applied at the rate of one-half ounce to each bushel of seed. It is best to mix it thoroughly with the grain by means of a regular treating machine or a concrete mixer. If the mixing is thorough, the oats can be seeded at once, otherwise the seed should be covered with canvass or sacked and stored overnight. Storage for longer than a few days or a week, however, will reduce the yield.

While this latter method is a little more expensive, costing about two cents a bushel, it helps control other diseases that are sometimes present in addition to smut, it is said.

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Local Buying Threatens Terminal Livestock Markets

Unless local and terminal livestock markets can be better coordinated or new influences change existing conditions, the vast terminal markets which have been built up in this country must eventually give way to the newer local agencies, predicts R. C. Ashby, associate chief in livestock marketing at the College of Agriculture, University of Illinois. This conclusion is supported by the findings of a three-year study by Ashby which shows the effects of the operation of local livestock markets upon terminal markets.

Local livestock markets have greatly decreased the hog receipts of the terminals, Ashby found. Until 1926, hog receipts at the public stockyards exceeded the federally inspected slaughter, but by 1932 terminal receipts amounted to only 77 per cent of the hogs inspected by federal authorities. In 1922 but 22 per cent of all hogs slaughtered under federal inspection were purchased outside of the public markets, while 10 years later this figure had increased to more than 43 per cent. Then, too, local markets have decreased supplies of hogs available for sale on the public markets even more than they have reduced receipts. At Chicago in 1932, more than 34 per cent of the hogs received were not offered for sale on the open market. Moreover, operation of local markets has tended to lower the quality of terminal market receipts, particularly at Chicago.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Corn-Hog Sign-Up In Illinois Nearing 100,000 Mark

A total of 100,000 Illinois contracts signed up in the Agricultural Adjustment Administration corn-hog program by the end of the week is not improbable, on the basis of reports which state campaign headquarters at the College of Agriculture, University of Illinois had received from county farm advisers up to Tuesday noon, March 6. At that time the number of contracts signed up by farmers who have agreed to reduce their corn and hog production during the coming year had passed the 90,000 mark and reached a total of 90,197, it was announced by Dean Herbert W. Mumford, who is chairman of the state advisory committee on the campaign.

Livingston county was the first one in the state to go over the 3,000-contract mark, but close behind it were a half dozen other counties with more than 2,000 contracts already signed up and others still coming in. Farm Adviser S. G. Turner, of Livingston county, reported a total of 3,044 to make the state leadership safe for a while at least. Iroquois county, the state leader during the early stages of the sign-up, was pressing Livingston with a total of 2,930 contracts reported by Farm Adviser C. E. Johnson and his workers.

Farm Adviser C. E. Gates, of LaSalle county, reported 2,760 contracts, R. J. Laible, of McLean county, 2,442, Paul V. Dean, of Bureau county, 2,117, C. C. Burns, of Champaign county, 2,022, and F. H. Shuman, of Whiteside county, 2,000.

These were the only counties with 2,000 or more contracts signed up in the reports that had been received up to noon, March 6, but there were 36 other counties that had 1,000 or more agreements to their credit as the state sign-up campaign went into the final stages.

The lineup of these included: Vermilion 1,832, Shelby 1,711, Adams 1,609, Hancock 1,595, DeKalb 1,581, Ogle 1,580, Macon 1,547, Lee 1,514, Sangamon 1,504, Warren 1,500, Fulton 1,500, Edgar 1,463, Tazewell 1,407, Knox 1,400, McDonough 1,362, Marshall-Putnam 1,361, Logan 1,339, Mercer 1,325, Henry 1,307, Woodford 1,300, Coles 1,274, Macoupin 1,263, Stephenson 1,259, Montgomery 1,239, Peoria 1,210, Morgan 1,150, DeWitt 1,147, Pike 1,135, Christian 1,108, Greene 1,092, Madison 1,077, Carroll 1,060, JoDaviess 1,053, Grundy 1,044, Ford 1,000 and Douglas 1,000.

Counties in the 500 to 1,000-contract group included Piatt 947, Cumberland 911, Stark 889, Kankakee 879, Kendall 866, Fayette 860, Will 828, Winnebago 820, Clark 808, Schuyler 750, Jasper 748, Moultrie 730, Menard 702, Bond 700, Effingham 655, Cass 644, Brown 641, Henderson 601, Mason 600, Jersey 580, Gallatin 548, White 534, Rock Island 530, and Crawford 500.

Working toward the 500-contract goal were Randolph with 479, Wabash 450, Calhoun 440, Edwards 420, Jefferson 413, St. Clair 400, Wayne 400, Lawrence 385, Scott 375, Franklin 357, Clay 356, Richland 355, Saline 355, Marion 354, McHenry 307, Kane 305, DuPage 285, Jackson 268, Clinton 235, Massac 218, Boone 190, Johnson 181, Monroe 153, Pope-Hardin 134, Perry 122, Pulaski-Alexander 85, Hamilton 97, Williamson 60, Union 57, Lake 30, and Washington 20.

The one remaining county out of the 102 in the state is Cook, in the dairy and market gardening section. The sign-up had started there, but it was too early for a report.

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Seed Mixture For AAA Acres Include Several Choices

With probably a hundred forage plants to choose from, Illinois farmers taking part in the AAA corn-hog and wheat adjustment programs have a singular opportunity to restore some of their old permanent pastures or seed new ones on the retired acres, says J. J. Pieper, associate chief of the crop production at the College of Agriculture, University of Illinois. At least 25 of these crops are used more or less commonly in the state.

To make the most of their opportunities farmers must select the ingredients for their pasture mixtures that are best adapted to the soil and that at the same time fit the needs of the grower.

Kentucky bluegrass is one of the most popular for pastures, explains Pieper, and is adapted to the better soils somewhat inclined to be sweet. Timothy has a wide adaptation for fertility and drainage in all parts of Illinois, while red top is a favorite on poor, acid and wet land where other grasses find it difficult to get a stand.

White clover is the most important permanent pasture legume but will not do well on poor, acid soil, while alsike will grow where it is too wet and acid for alfalfa, sweet or red clover. In the southern two-thirds of the state, Korean lespedeza may be substituted in pasture mixtures on soils too acid for alsike clover.

Mixtures that may be seeded for permanent pasture on the various types of soil, together with the amounts to be sown on each acre are suggested by Pieper as follows:

Good, well-drained land--Kentucky bluegrass 5 pounds, red top 3, timothy 4 and alsike and white clover 2 pounds each.

Wet fields--Red top 4 pounds, timothy 5, meadow foxtail 4 and alsike clover 3 pounds.

Poor, acid soils--Orchard grass 5 pounds, red top 4, Canada bluegrass 5 and alsike clover 3 pounds. Lespedeza may be substituted for alsike clover in southern half of Illinois.

Shaded areas--Orchard grass 5 pounds, rough-stalk meadow grass 5, red fescue 4 and alsike and white clover 2 pounds each.

Where the soil is sweet and fertile, alfalfa or red clover may be added to the above mixtures or used to replace other legumes at the rate of 4 pounds to the acre for alfalfa and 3 pounds for the red clover.

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Chinch-Bug Invasion Will Not Catch Farmers Unaware

Although chinch bugs threaten the heaviest invasion in many years, the destructive insect will not catch Illinois farmers unaware, says D. E. Lindstrom, associate in rural sociology at the College of Agriculture, University of Illinois. During March and April some 417 rural community units located in all parts of the state will hold their regular monthly meetings at which time the chinch bug and recommended methods of control will become almost a campaign issue as the chief topic for discussion. From 1 to 28 such groups will meet in every Illinois county.

Burning over areas where chinch bugs are prone to winter, revision in crop rotations, use of chinch-bug resistant crops and other suggested control practices will be included in the discussions at the community meetings. Farm advisers, local farmers, members of the college extension staff and entomologists of the Illinois Natural History Survey will be the feature speakers.

Community action, as the result of an educational campaign through rural organizations which make up the 417 community units, is believed to be quite effective in fostering combat practices. Through group action, the burning of railroad right-of-ways has been accomplished in some localities, and where the danger of killing wild life is small, other public waste places commonly infested by chinch bugs may be cleaned up.

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Soybean Yields Respond To Limestone On Certain Soils

"Believe it or not," soybeans which are often spoken of as an acid tolerant crop will produce from two to five times as much hay to the acre, when given the benefit of limestone on some of the light-colored soils, says C. J. Badger, associate on soil experiment fields, College of Agriculture, University of Illinois.

Evidence showing the value of an application of the "soil sweetener" is revealed in the results of four years of tests at two soil experiment fields of rather low productive levels maintained by the state university.

At the Sparta field in Randolph county, where the soil is a light gray silt loam, the use of manure gave a yield of 340 pounds of soybean hay to the acre, but when limestone was applied in addition to manure, the yield of bean hay was 1,700 pounds an acre. The field that received no treatment returned about the same as where manure had been spread. The increase resulting from limestone, when it was applied in addition to manure, amounted to 1,360 pounds, or more than a half a ton to the acre.

In Massac county, the Unionville experiment field consisting of a yellow-gray silt loam gave somewhat better yields. Soil with no treatment returned 1,040 pounds of soybean hay to the acre; the manure treatment improved the yield to an average of 1,420 pounds, and applications of both manure and limestone jumped the harvest to 2,980 pounds, or practically a ton and a half of hay to the acre.

The response to manure over no treatment amounted to 380 pounds, while the response to manure and limestone over manure alone was 1,560 pounds an acre. However, manure and limestone gave returns of 1,940, or nearly a ton to the acre, over the plot which did not receive any treatment.

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Sheep Men Warned Against Lambing Disorder In Ewes

With sheep and lamb values 25 per cent higher than a year ago and now one of the more favored phases of farm production, Illinois farmers can well afford to be on their guard against pregnancy disease of ewes, which has appeared in many localities of the state, says Dr. Robert Graham, chief of animal pathology and hygiene at the College of Agriculture, University of Illinois.

Prevention of the disease in ewes is primarily a problem of management, which involves proper rations and abundant exercise, for it is rare when these factors are ideal. No specific medical remedy of value has been developed, and successful control is dependent upon the correction of faulty methods of management.

The disease is also known as lambing paralysis and autointoxication because it appears about lambing time, and is the most common cause of loss of breeding ewes during the winter and early spring. At autopsy, the principal organs affected are the liver and kidneys.

Staggering, unsteady gait, grinding of the teeth, disturbed vision, loss of appetite and finally inability to stand, followed by unconsciousness, are common symptoms, points out Dr. Graham. Death may occur in one to six days after the appearance of the symptoms, and rarely do animals recover.

Ewes with twin or triplet pregnancies are the usual victims of the disease, though it occasionally may be observed in ewes carrying only one lamb. Non-pregnant ewes do not suffer from the disease, and it is assumed that ewes carrying twin lambs have an increased excretory burden over those with single lambs. Toxic by-products of the unborn lambs, when discharged in the maternal system, are factors in this disease. No other satisfactory explanation of the cause has been accepted.

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Illinois Corn-Hog Sign-Up Mounts Past 102,000 Mark

Illinois' first 100,000 contracts and some more, too, were signed up on scheduled time in the AAA corn-hog production adjustment program, and at the present time the final drive for the completion of the sign-up campaign is under way throughout the state, according to Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois and chairman of the state advisory committee. By the end of the week a deadline probably will have been set, and plans will be going forward for closing the work. A total of 125,000 contracts is not improbable for Illinois.

Totals in the Illinois sign-up passed the 100,000 mark in the regular weekly reports made by county farm advisers on March 9, and by Tuesday noon, March 13, the number of contracts reached a new peak of 102,265. There are many more farms than this under contract to reduce corn and hog production during 1934, inasmuch as two, three and sometimes more farms may be covered by one contract, it was pointed out by officials of the college.

One Illinois county--Livingston--had more than 3,100 contracts, 10 others had between 2,000 and 3,000 and 47 had more than 1,000 contracts each on the basis of reports received from county farm advisers up to noon, Tuesday, March 13.

Livingston's 3,120 contracts reported by Farm Adviser S. G. Turner kept that county in the lead, but McLean county, the largest in the state, had moved up to a challenging position with 2,950 contracts reported by Farm Adviser R. J. Laible. In third place was Iroquois county with 2,947 contracts reported by Farm Adviser C. E. Johnson, while LaSalle was fourth with 2,800 reported by Farm Adviser C. E. Gates. C. C. Burns, farm adviser of Champaign, had that county in fifth place with 2,343 contracts, and then followed Bureau with 2,320, Vermilion 2,234, Shelby 2,070, Sangamon 2,015, Henry 2,004, and Whiteside 2,000.

Totals for the remaining counties were: Edgar 1,825, Adams 1,782, Hancock 1,711, Lee 1,678, Knox, 1,673, DeKalb 1,633, Tazewell 1,605, Macon 1,591, Ogle 1,580, Warren 1,580, Fulton 1,500, McDonough 1,500, Pike 1,480, Logan 1,470, Marshall-Putnam 1,465, Woodford 1,450, Mercer 1,450, Coles 1,431, Christian 1,424, Stephenson 1,410, Macoupin 1,351, Ford 1,350, Peoria 1,325, Morgan 1,300, Montgomery 1,300, JoDaviess 1,255, Greene 1,184, DeWitt 1,175, Madison 1,149, Grundy 1,116, Kankakee 1,064, Fayette 1,061, Carroll 1,060, Douglas 1,050, Will 1,030, and Piatt 1,028.

Kendall 946, Stark 927, Cumberland 890, Clark 860, Jasper 849, Henderson 846, Schuyler 836, Winnebago 820, Jersey 795, Rock Island 774, Moultrie 752, Menard 742, Bond 740, Brown 714, Cass 689, Mason 680, Effingham 670, Randolph 621, Crawford 600, Gallatin 582, White 572, Jefferson 560, Wabash 530, Scott 504, Wayne 500, Richland 500, St. Clair 475, Edwards 466, Calhoun 440, Lawrence 440, Clay 420, Saline 410, McHenry 402, Marion 380, Franklin 357, Jackson 346, DuPage 331, Boone 330, Kane 305, Massac 262, Clinton 253, Monroe 226, Johnson 200, Pope-Hardin 163, Lake 155, Pulaski-Alexander 155, Perry 152, Union 96, Williamson 89, Cook 52, and Washington 20.

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Wheat Cash Has Paid Half Million In Old Farm Debts

Nearly a half million dollars in old debts have been paid off this winter by Illinois farmers who signed up in the AAA wheat adjustment program, if a survey of the use of the first benefit payments made in Mason county may be considered as a borometer for the state, says Marshall Harris, of the agricultural economics department, College of Agriculture, University of Illinois. In addition, some $202,419 in current debts have been liquidated with funds from the same source.

According to the latest figures available, $1,511,723.48 in wheat benefit payments have been received by farmers in the state who agreed to reduce their 1934 wheat acreage 15 per cent below their average production during the three years of 1930-1932. A check of the use of this money in Mason county indicates that 31.14 per cent of it went for the payment of old debts and 13.39 per cent was paid on current accounts. When these percentages are applied to the total Illinois wheat payments to date, they indicate that approximately $673,170 in rural obligations have been cleaned up.

Mason county is considered as typical of the state's wheat producing area, and it is believed that the use of the benefit money there is applicable to the nearly 25,000 growers who signed up in the wheat adjustment program in Illinois. As the Mason county growers came to the county wheat control office for their checks, they were asked by Farm Adviser C. S. Love to fill in a questionnaire indicating how they intended to spend the money.

Less than 5 per cent of the benefit money was not spent immediately, according to the survey, indicating that the farmers put the cash back into active circulation in a short time, where it aided in improving the financial condition of business in general.

Other uses to which the farmers planned to apply their benefit payments, and the percentage consumed by each, included: Purchase of food and clothing 13.82 per cent, machinery 8.92, repairs 6.85, taxes 6.52, labor 6.42, livestock 3.04, seed 1.54, household equipment 1.48 and miscellaneous expenses 2.43 per cent.

Continued wise utilization of AAA benefit funds to clear up old indebtedness and to supply the current necessities of the farm and home will do much to relieve agricultural economic conditions and to start the wheels of industry functioning normally, it is pointed out.

-M-

Illinois Turkey Producers Organize To Push Quality

It may be a long time until people will be thinking about buying a Thanksgiving or Christmas turkey, but Illinois turkey growers already have started plans for educating consumers to the superior quality of this state's birds, while at the same time further improving that quality.

For the first time, turkey growers of the state have organized a state association, and chief among their objectives will be the matters of consumer education and quality improvement, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois, who is assisting with the project.

Illinois was producing more than 91,000 turkeys annually, according to the last census, but most of the turkeys sold to Illinois consumers are range-fed birds from Texas, Alp pointed out. Turkeys produced in Illinois are of superior quality because they are fattened in closer confinement, he explained.

Earl Kennedy, of Amboy, was elected first president of the turkey growers' association when the organization was formed at the recent meeting in Bloomington.

-M-

Record Tree Crop Being Set Out In Illinois This Year

A record number of 151,000 trees are being put out on Illinois farms this spring as part of the plans to speed up the proper utilization of land and bring about better planned agricultural production, according to L. E. Sawyer, forestry extension specialist of the College of Agriculture, University of Illinois and of the Illinois Natural History Survey. This total of 151,000 trees is the largest on record for any one year in forestry projects sponsored by the extension service of the agricultural college and other agencies, Sawyer said.

Almost half of the 151,000 trees, or about 60,000 of them, are black locust that will be planted for erosion control and the holding of blow sand land in different parts of the state. Twenty-five thousand of the black locust trees are going to farmers in Schuyler county for an erosion control project which Farm Adviser L. E. McKinzie is conducting in cooperation with the extension service of the agricultural college. The First National Bank of Arenzville, Cass county, is putting out 22,000 black locust, red pine, pitch pine, white ash and Norway spruce trees.

About 32,000 pitch pine trees will be planted on sandy soils and on worn out farm soils as a timber crop. In addition about 40,000 Norway spruce and white spruce are being planted for Christmas trees and for windbreaks. One planting of 20,000 Christmas trees is being made in DeKalb county, and another of 10,000 in Livingston county.

There are also about 8,000 red pine trees in the 151,000 that will be set out this spring, and the rest are ash, maple and a variety of other species that are to be used in reforestation work. The plantings will be scattered in Hardin, Edwards, Richland, Johnson, Williamson, Vermilion, Piatt, Fulton, Clark and McLean counties, in addition to the several counties mentioned.

Planting for the 151,000 trees is going forward at a time when the outlook for forestry is much brighter than it has been for several years, Sawyer pointed out.

-M-

AAA Programs Will Cut Costs On Many Illinois Farms

With less corn and wheat and fewer hogs to tend, the thousands of Illinois farmers participating in the government's AAA programs will have an opportunity to reduce their operating costs in 1934, particularly in the case of labor and power, in the opinion of J. E. Wills, of the farm management division, College of Agriculture, University of Illinois.

On a great many farms, says Wills, there will be less spent for fuel and other tractor costs; and the expenses for horses can be reduced, if the animals are fed according to work done. If extra labor is normally hired for field work and hog production, it is possible that AAA cooperators may be able to reduce this item of expense.

On farms where the operator and members of his family perform all or nearly all of the work, the chief problem will be to use the existing supply of labor to good advantage. In such cases, it will be possible to give more time to a number of practices known to pay well, yet requiring little or not outlay other than labor.

Among these practices might be included the careful selection and testing of seeds, testing of soils for limestone and phosphate requirements, more efficient use of manure, better control of weeds, keeping machinery in repair, control of livestock diseases through sanitation and the keeping of farm accounts. To this list should be added the opportunity that many farmers will have to make much-needed repairs on their improvements and to "dress up" the general appearance of the farm.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVII Number 12

110,000 Mark Passed in Illinois Sign-Up On Corn-Hogs

Workers in the Illinois corn-hog sign-up entered the last two weeks of the campaign with incomplete results indicating that the 110,000 mark in completed contracts had been passed. Enough additional contracts are in sight so that a total of 125,000 or more is not improbable for Illinois by the time of the deadline at 6 o'clock, Saturday evening, March 31, it was announced by Prof. J. C. Spitler, state leader of farm advisers, who is representing the extension service of the College of Agriculture, University of Illinois in the corn-hog program.

Up to Tuesday noon, March 20, the state total actually recorded in reports from farm advisers stood at 108,979. However, there were 29 counties from which up-to-date reports had not been received at that time.

The 73 counties from which late check-ups had been received announced that they had a total of 81,825 completed contracts. This was an average of 1,120 for each county, a mark high enough to put the state total well over the 110,000 line if it holds for all the 102 counties of the state.

McLean county, the largest in the state in number of farms and in corn and hog production, took the state lead for the first time when the regular weekly reports brought a new total of 3,285 contracts from Farm Adviser R. J. Laible. One other county, Livingston, was past the 3,000 mark with a total of 3,167 contracts reported by Farm Adviser S. G. Turner, while nine other counties had between 2,000 and 3,000 contracts.

Iroquois had 2,973, LaSalle 2,800, Champaign 2,760, Vermilion 2,430, Bureau 2,320, Shelby 2,317, Henry 2,243, Sangamon 2,100 and Whiteside 2,000.

Totals for the other counties of the state were as follows:

Adams 1,782, Bond 751, Boone 330, Brown 714, Calhoun 450, Carroll 1,060, Cass 704, Christian 1,510, Clark 904, Clay 440, Clinton 253, Coles 1,636, Cook 52, Crawford 660, Cumberland 920, DeKalb 1,712, DeWitt, 1,204, Douglas 1,078, DuPage 354, Edgar 1,825, Edwards 475, Effingham 720, Fayette 1,116, Ford, 1350, Franklin 357, Fulton 1,500, Gallatin 613, Greene 1,242, Grundy 1,147, Hancock 1,711, Henderson 905, Jackson 400, Jasper 1,010, Jefferson 615, Jersey 864, JoDaviess 1,290, Johnson 238, Kane 464, Kankakee 1,153, Kendall 946, Knox 1,923, Lake 170.

Lawrence 465, Lee 1,678, Logan 1,528, Macon 1,604, Macoupin 1,922, Madison 1,196, Marion 380, Marshall-Putnam 1,506, Mason 810, Massac 345, McDonough 1,500, McHenry 402, Menard 742, Mercer 1,540, Monroe 342, Montgomery 1,394, Morgan 1,375, Moultrie 890, Ogle 1,717, Peoria 1,325, Perry 152, Piatt 1,118, Pike 1,625, Pope-Hardin 180, Pulaski-Alexander 225, Randolph 632, Richland 500, Rock Island 1,008, Saline 410, Schuyler 929, Scott 590, St. Clair 475, Stark 950, Stephenson 1,529, Tazewell 1,635, Union 156, Wabash 530, Warren 1,631, Washington 20, Wayne 570, White 677, Will 1,213, Williamson 118, Winnebago 820 and Woodford 1,580.

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director.*

Record Milk Cow Population Adding to Dairy Problems

The heaviest population of milk cows that Illinois and the United States have ever had is one of the basic facts that farm leaders and officials of the Agricultural Adjustment Administration are up against as they set about working out a solution of the dairy problem, it is pointed out by dairymen of the College of Agriculture, University of Illinois.

Tentative plans for milk production control will be presented by the AAA at a series of regional conferences to be held in the near future at central points in leading dairy producing sections of the country, according to official announcements received by the extension service of the agricultural college.

There are 1,165,000 milk cows on farms of Illinois and more than 26 million on farms of the nation this year, according to figures compiled by the college dairymen. For Illinois this is an increase of 15 per cent over the 987,000 reported for 1928 and an increase of more than 23 per cent over the 888,000 milk cows reported 34 years ago. For the United States as a whole the present population of milk cows is an increase of almost 18 per cent over the total of 21,219,000 reported for 1928.

Whatever plans are made for coping with this problem will figure prominently in Illinois farming operations, because this state is the fifth most important one in total milk production, it was pointed out by officials of the college. During the past four years the average annual cash income from the sale of dairy products off Illinois farms has been almost 71 million dollars, but problems of the industry have reduced that income to as low as 50 million dollars annually during the past year or two. In 1932 dairying ranked first as a source of cash to Illinois farmers, returning 25.7 per cent of their total cash income.

The percentage increase in milk cows has been much greater than the increase in human population during the same period, it was explained. Fewer and better cows producing higher quality products at more economical costs have long been urged upon Illinois farmers by the extension service of the College of Agriculture, University of Illinois. Many herd owners have profited by following this suggestion, but it appears that more drastic steps are necessary. Even though most of the milk and milk products have been finding their way to some market, the returns to farmers have been dangerously low.

The goal of the proposed production adjustment program would be to bring about better returns to producers of all dairy products by bringing production more nearly into line with effective demand. Such a program would be supported and supplemented by milk marketing agreements, drawn in accord with the recently adopted policy which places emphasis upon prices paid to producers.

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Brighter Outlook for Higher Quality Fruit This Year

With more money in circulation now than at any time in the past three years and prospects for short crops in certain areas, Illinois fruit growers anticipate larger premiums to be paid for high quality fruit in 1934, says R. S. Marsh, horticultural extension specialist at the College of Agriculture, University of Illinois. To obtain these premium prices, advises Marsh, orchard men who still have prospects for a crop should carefully plan and organize their spray programs so as to produce the highest quality fruit, especially from the remaining peach crop. Now is the time to see that all spray equipment is in first-class condition and that the latest recommended spray schedule is at hand. Growers may obtain the newly-revised spray schedule, Circular 388, which gives the latest facts for the control of disease and insect pests, from their county farm adviser or by writing the College of Agriculture, University of Illinois, Urbana.

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Discussion Leaders Trained To Aid In Rural Problems

Illinois farmers will be better prepared to cope with new economic and social trends affecting agriculture in the future, as a result of plans now being made to train community discussion leaders and to hold regular community discussion meetings, predicts D. E. Lindstrom, associate in rural sociology at the College of Agriculture, University of Illinois.

The value of community discussions has been demonstrated by the nearly 3,000 AAA corn-hog and wheat adjustment meetings held throughout the state in recent months, it is said.

Several Illinois counties are now training discussion leaders and organizing discussion teams in various types of community units. Training schools, attended by approximately 150 rural people from 32 different community units, have been conducted in Champaign, Ford and Sangamon counties for the purpose of developing discussion leaders. Similar schools will be held in other counties during 1934 so that farm and home bureau units, granges, community clubs and like organizations may provide their memberships with a better understanding of the new economic and social developments affecting farm life.

"The importance of discussion in rural community meetings was recognized by the Agricultural Adjustment Administration when launching both the wheat and corn-hog programs," points out Lindstrom. "A total of 752 community meetings attended by approximately 68,000 farm people were held in 69 Illinois counties by farm advisers and the extension service of the agricultural college in connection with the wheat adjustment campaign. Later there were 2,027 community meetings conducted in 102 counties to discuss the corn-hog program. The latter gatherings were attended by 191,867 of the 214,000 farmers of the state. Thus the corn-hog campaign reached more than 90 per cent of the farm operators in Illinois.

"By training leaders who can conduct discussions at rural community meetings, Illinois farmers will be better prepared to develop future cooperative activities related to their industry."

-M-

Spring Repair Of Farm Machinery Saves Money And Time

With an investment of more than $160,000,000 in farm implements and machinery, or an average of $748 on each farm, Illinois farmers can well afford to devote a certain amount of time in the early spring months to making minor repairs and adjustments that assure longer life and more efficient operation of their machines. This is the opinion of E. G. Johnson, agricultural engineering extension specialist of the College of Agriculture, University of Illinois, who points out that thousands of dollars are lost annually by farmers of the state who fail to make necessary machinery repairs before the rush of field work begins.

Lower operating costs and getting the job done on time are awards which the farmer receives who follows the practice of inspecting each machine, replacing badly worn parts, tightening bolts, making adjustments and applying paint when needed, it is explained. The farm machinery instruction book provided by the manufacturer with each machine is of valuable assistance, and the farmer who does not have such a booklet should request one from the nearest branch house.

To give additional assistance in this important problem, the agricultural engineering department of the College of Agriculture, University of Illinois, has published a booklet on "The Care, Operation and Adjustment of Farm Machinery." A copy of this circular, No. 309, may be secured upon request from the agricultural college at Urbana or from county farm advisers.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Illinois Dairymen Scan First Details Of AAA Plan

Farmers and dairymen of Illinois, fifth ranking dairy state, have before them for consideration and acceptance or modification the first official details of the proposed plan for a dairy production adjustment program under the Agricultural Adjustment Administration. Farm advisers, extension workers of the College of Agriculture, University of Illinois and others who will be more or less closely connected with the preliminary field work have just been given the tentative set-up of the plan as revealed in an official telegram and other communications which Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois received from headquarters at Washington.

Dairymen have from now until about the first of April to study the proposal and decide what they wish to do about it. Starting April 2 a series of regional conferences will be held to present more details of the proposed program to dairymen for discussion, acceptance or modification.

Just when and where the conference for the Illinois area will be held has not been announced, but officials of the College of Agriculture, University of Illinois are expecting word on this in the near future.

Illinois has a large stake in the program, for the state is the fifth ranking one in total milk production, and more than 25 per cent of all the cash income of Illinois farmers come from dairying. During the past four years the average cash income from the sale of dairy products off Illinois farms has been almost 71 million dollars, but during the past year or two this income has dropped to as low as 50 million dollars, a condition which the proposed program is designed to correct.

The aim in the plan to restore the purchasing power of dairy farmers will be to hold production at about the level of recent months. This will mean that cooperating dairymen will have to reduce their sales by from 10 to 20 per cent below the peak in 1932 and 1933.

In addition to the higher prices that might be expected to result from the adjusted production, benefit payments are to be paid to cooperating producers at the rate of about 40 cents for each pound of butterfat or about $1.50 for each surplus 100 pounds of fluid milk that the cooperator reduces.

The program is to be financed by a processing tax starting at one cent a pound on butterfat and advancing to five cents a pound as supply comes under control. The plan is a $165,000,000 one providing for extension to $300,000,000 in event of congressional action pending legislation.

Additional features of the program include the relief distribution of surplus milk to underfed children and the transfer of cows from surplus areas to needy farm families. There is also the provision for disease eradication measures.

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Rich Illinois Soil Adds Full Share To Erosion Toll

Even the soils of central Illinois, once thought to be of inexhaustible fertility, are contributing their share of good soil to the three billion tons of soil material which erosion is washing off the fields of the United States every year, according to F. A. Fisher, Illinois regional director for the soil erosion service of the U. S. Department of Interior.

The entire seven inches of richest top soil has been washed off of 47 per cent of the first two sections of land that were surveyed in the erosion control project which the Department of Interior is starting in McLean county, Fisher reported. This is all the more striking in view of the fact that the land has been farmed intensively for less than 100 years. The injury throughout the area is probably not as great as this, but the damage as a result of the erosion that has been going on all these years is severe, he pointed out.

It takes Nature about 400 years to build a single inch of productive top soil from raw sub-soil clay, indicating that it will take between 2,000 and 3,000 years to repair a wound like in the McLean county area, Fisher said.

Erosion is estimated to be causing the farmers of the United States $400,000,000 a year in destroyed land, loss of plant food and through other channels. The evidence of what soil erosion is doing in McLean county is proof that farmers in that section and in other parts of the state, are paying their full share of the toll, Fisher said. Approximately half the 30,000,000 acres in Illinois farms is subject to erosion of one kind or another.

Demonstrations are now being started in the McLean county project to show farmers how to hold their soils in place by means of gully dams and other mechanical devices, how to change their cropping systems to minimize soil washing and how to manage their fields so that the fertility can be built up instead of destroyed. Different departments of the College of Agriculture, University of Illinois are cooperating.

The McLean county project, spread out over an area of 140,000 acres, is one of 20 which the Department of Interior is undertaking in different parts of the country to cope with the menace of soil erosion. At least 36 million acres of formerly cultivated land, an area as large as the state of Illinois and much of it originally good land, have been practically destroyed by erosion. Another 100 million acres of crop land are in serious danger. More than 400 million tons of suspended solid matter and many more millions of tons of dissolved matter pass out of the mouth of the Mississippi river every year.

-M-

Illinois Second Among 20 States In Corn-Hog Sign-Up

Illinois ranks second among the 20 states that have signed up the first 800,000 contracts in the government's corn-hog adjustment program, according to reports which the extension service of the College of Agriculture, University of Illinois has received from Agricultural Adjustment Administration headquarters at Washington. The Illinois total is more than 110,000.

The sign-up to date is regarded by leaders of the campaign as encouraging evidence that a large proportion of the corn and hog production both of the state and the nation will be covered by AAA contracts when the sign-up is completed. This, of course, means definite progress in adjusting corn and hog production to effective demand and thereby rebuilding the farmer's purchasing power, it was pointed out. Iowa, conceded to be the largest producer of both commodities, is first with a count of 155,000 contract applications, according to the latest figures available.

-M-

Best Vegetable Varieties Listed For Illinois Gardens

Every season adds a few more new varieties of vegetables available to Illinois gardeners, and 1934 is no exception, says B. L. Weaver, of the horticultural department at the College of Agriculture, University of Illinois.

This ever-increasing list of varieties is often confusing to the market gardener, and even more so to the farmer or home gardener, unless it is realized that many of the new names mean only a slight change in size, shape, color, texture, flavor, season or productivity, points out Weaver.

After many tests under varying conditions, the experiment station at the College of Agriculture, University of Illinois has singled out a number of varieties found to be most applicable to Illinois conditions and which can be recommended to most growers. These varieties include:

Asparagus - Mary Washington.

Green snap bush beans - Stringless Green Pod and Bountiful.

Yellow bush beans - Pencil Pod Black Wax and Round Pod Kidney Wax.

Pole beans - Kentucky Wonder.

Bush lima beans - Henderson's, Fordhook and Burpee.

Beets - Early Wonder for early planting, Lutz Greenleaf for late, and Detroit Dark Red for canning.

Cabbage - Golden Acre and Copenhagan for early, if Fusarium wilt disease is not present in soil, and Jersey Queen, Marion Market and Wisconsin All-Seasons for later harvest.

Carrots - Nantes Coreless, Chantenay and Red Core Chantenay.

Sweet corn - Howling Mob for mid-season; Evergreen, Golden Cross Bantam and Top Cross Bantam for late. Early varieties are not recommended owing to prevalence of Stewart's disease.

Lettuce - Black-Seeded Simpson and Prizehead for leaf; New York and Mignonette for head varieties.

Muskmelons - Lake Champlain for early; Hale's Best, Bender's Surprise, Tip Top, Honey Rock and Hearts of Gold for main crop; Ohio Sugar for green flesh variety.

Radishes - Scarlet Globe and Saxa for early; Crimson Giant White Icicle and Cincinnati Market for late spring; White Strasburg for summer.

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Some 23 Common Crops Serve As Hosts For Chinch Bugs

Some 23 different grasses will aid the chinch bug in its destructive march across Illinois this spring and summer unless farmers take steps against what threatens to be one of the worst infestations in the past half century, says C. M. Woodworth, chief in plant genetics at the College of Agriculture, University of Illinois.

It has been found, however, that the chinch bug does not relish legumes such as alfalfa, sweet clover, soybeans and other clovers. Thus planting these crops so as to separate the fields of small grains, corn and grasses is suggested as one of several control measures.

So far as small grains are concerned, explains Woodworth, barley, spring wheat, winter wheat, rye and oats are preferred by the insect in early spring. The second brood, which comes along in June and July, feeds mainly on corn and the sorghums, including broomcorn, kafir corn and Sudan grass. Other crops on which the chinch bug can exist, in the absence of small grains and corn, are millet, timothy, barnyard grass, tickle grass, crabgrass, foxtail and other wild and cultivated grasses. Kentucky bluegrass does not seem to be attractive to the bugs, and only a few are usually found feeding on it.

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Illinois Dairymen Give Views On Adjustment Program

Views and suggestions of dairymen and agricultural leaders in Illinois, fifth leading dairy state, with regard to the proposed program of the Agricultural Adjustment Administration for the adjustment of the dairy industry are a matter of record, following a regional meeting at Indianapolis on April 2 and 3. Indiana, Ohio, Michigan and Kentucky, in addition to Illinois, were represented at the meeting.

No definite action for or against the program was taken at the meeting, the idea being merely to get the views and suggestions of farmers and dairy leaders. Sentiment of producers at 14 similar meetings to be held in different parts of the country will determine the administration's next step on the dairy problem. The meetings will not be concluded until the middle of the month.

The official Illinois representatives attending the Indianapolis meeting were Dean H. W. Mumford, of the College of Agriculture, University of Illinois; H. A. Ruehe, head of the dairy department; C. S. Rhode, dairy extension specialist; J. C. Spitler, state leader of farm advisers, and F. J. Keilholz, extension editor.

Details of the proposed plan were presented by A. H. Lauterbach, chief of the dairy section of the Agricultural Adjustment Administration; O. M. Reed, associate agricultural economist of the administration, and A. B. Nystrom, senior dairy husbandman of the U. S. Department of Agriculture.

Outstanding in the dairy industry problem as it was outlined at the Indianapolis meeting are these facts: a volume of milk production which increased by two billion pounds from 1930 to 1932; a cow population of more than 26 million, which is larger than it has ever been before; an average price index of 69 as compared with 140 in 1928, and a total cash income from milk sales which dropped from $1,847,000,000 in 1929 to $985,000,000 in 1932.

The proposed program would involve benefit payments totaling not less than 150 million dollars to dairy farmers who reduced their milk sales by between 10 and 20 per cent of their average annual sales for 1932 and 1933. Illinois dairymen would be eligible for a maximum of $7,155,000. The method of reduction would be left to the individual farmer. Furthermore, it would not be expected to reduce sales below the low winter level, but to cut down about 10 per cent from the high average volume of the 1932-33 base period.

The plan also includes allocation of additional funds for purchasing and distributing milk among underfed city children, for purchasing and distributing healthy cows to needy farmers to produce milk for their own families and for speeding up the eradication of bovine tuberculosis and Bang's disease.

Sound methods of cropping, cow feeding and herd management whereby individual dairymen who sign contracts could control their production were outlined at the Indianapolis session.

The proposed program would be financed by a processing tax starting at 1 cent a pound of butterfat and gradually advancing to 5 cents a pound as supply came under control. There would be a compensatory tax on oleomargarine sufficient to prevent shifts to this product as a substitute for butter.

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director*.

Erosion Damage On Illinois Soils Shown By Gullies

Eight hundred gully checks of different kinds which the soil erosion service of the U. S. Department of Interior has already built in McLean county stand out as monuments to the speed and certainty with which soil erosion already has cut into the fertile lands of Illinois, it is pointed out by F. A. Fisher, Illinois regional director of the service.

The 800 gully checks which have been built as part of the demonstration to show farmers how to cope with the menace of soil erosion range all the way from small 4-foot wire checks to the large 25-foot, multiple-post checks. Some of them are imposing looking, rock-dam structures.

Building of gully checks is a sort of last-line defense against the inroads of erosion. The checks are not built at the mouth of the gullies, because in many instances erosion has cut so deeply that it will take too long or be impraticable to try to fill in the gullies. Instead, the checks are built at the head of the gullies as a means of preventing them from eating back any farther into the farm. The gullies then are reclaimed by being seeded to permanent pasture crops or planted to trees.

While the gully checks are a striking feature of the demonstrational work that is being done in the McLean county area, they are only a part of what will be done to show farmers how to hold their land in place by means of mechanical devices of various kinds, by proper cropping systems and by sound farm management methods. Fisher, who has his offices at the College of Agriculture, University of Illinois and who has the cooperation of the college in his work, already has operations well under way in the McLean county demonstrational area.

Erosion, against which the demonstration is directed, is eating away in some form or other at approximately half the 30,000,000 acres of Illinois farm land, Fisher said. For the United States as a whole, the cost of erosion to farmers is estimated at $400,000,000 a year, and it is washing the soil off fields of the United States at the rate of three billion tons a year, he added.

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Illinois Farmer May Be Oldest Of Corn-Hog Signers

Joseph J. Ford, 102-year-old farmer of Crawford county, is believed to be the oldest producer in Illinois, if not the United States, to sign up in the AAA corn-hog adjustment program, according to the extension service of the College of Agriculture, University of Illinois.

Inasmuch as 115,000 farmers in Illinois have signed corn-hog contract applications, according to the latest reports, and more than 1,000,000 producers throughout the nation are cooperating in the AAA campaign, Ford's friends claim that he is "one man in a million."

Ford owns 156 acres of land near Flat Rock and recently signed a corn-hog contract application in which he agrees to reduce his 1934 corn acreage at least 20 per cent and his hog production 25 per cent, under the terms of the government's adjustment program.

He says that he expects to see the next corn crop harvested and has invited the members of the local corn-hog committee to his next birthday party.

Although Crawford is not considered a prominent corn and hog producing county, Farm Adviser Harold Allison reports that more than 660 farmers have joined with the county's oldest citizen in the corn-hog adjustment movement.

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Rotation Changes May Check Damage From Chinch Bugs

Threatened with the heaviest chinch bug infestation ever recorded in the history of the state, Illinois farmers should consider revising their rotations as a means of partially protecting their 1934 corn crop, warns A. L. Lang, assistant chief of soil experiment fields, College of Agriculture, University of Illinois.

By this is meant the location of legume crops in the rotation so as to isolate the small grain, corn and grass fields where the chinch bugs are prone to breed and feed. It has been proved that legumes are distasteful to this insect pest, and separating the bug's "favorite" crops with legumes is suggested as one of several control measures. Furthermore, the addition of one or more legumes will improve the fertility of the land on which they are grown.

"A five-year rotation supplying this dual purpose," explains Lang, "may consist of corn, oats, clover, corn and soybeans. In this case, not only is 60 per cent of the farm in legumes, but 80 per cent is in cash crops. One crop of corn is completely set off between two legumes, which in many cases will prevent serious damage from chinch bugs. The fact that the oats field will have a spring seeding of clover may deter rapid multiplication of the insects in this crop, if the clover gets a strong, early start.

"When wheat is grown with a maximum of corn, a rotation of corn, corn, soybeans, wheat and clover can be planned. An important feature of this combination is that the small grain crop, which is always the early breeding ground of the chinch bug, is isolated from the corn crops by a legume on either side. With a good, growthy spring seeding of clover in the wheat, this crop is not susceptible to the bugs.

"Where a four-year rotation of corn, oats, wheat and clover is followed, a protective revision would be to substitute soybeans for the oats. This would carry the isolation advantages of the previously mentioned wheat rotation and, with a good stand of clover in the wheat, would keep 75 per cent of the land in legumes throughout the growing season."

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AAA Dairy Plans Creating Interest In Herd Testing

Anticipating the coming of the government's dairy adjustment program, when definite milk and butterfat production records will be of added value, more and more Illinois farmers are forming dairy herd improvement associations so that the profitableness of their cows may be checked every month, says J. G. Cash, dairy extension specialist of the College of Agriculture, University of Illinois.

This rapid growth of interest in dairy testing work is revealed in the fact that within the past two months new associations have been organized in Lake, Lee and Iroquois counties, while several other associations have added new members. With these new additions, approximately 1,100 Illinois dairymen now belong to 55 associations in which some 20,000 cows are tested regularly.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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AAA Program Might Mean $158 To An Illinois Dairyman

Benefits of as much as $158 a year could be counted on by a typical north central Illinois dairyman if he signed up under the proposed dairy production adjustment program of the Agricultural Adjustment Administration, according to figures given by the extension service of the College of Agriculture, University of Illinois. The figures hold for conditions as they are now and do not take into account the effect of the proposed processing tax upon consumption, it was pointed out.

What is considered more important is the fact that by signing up, the dairyman would have joined with his neighbors in safeguarding the dairy industry against the effect of ruinously lower prices which threaten to come about as a result of the excessive potential producing possibilities of the country's dairy herds and the low buying power of the consuming public.

The dairymen in the typical case cited by the college keeps around 14 cows producing 7,600 pounds of milk a year. He feeds each cow approximately 2,234 pounds of grain a year, and 589 pounds of this feed must be bought.

Without signing up he would be producing 108,700 pounds of milk a year. Under the basic-surplus plan on which this dairyman and others like him now operate, 87,000 pounds of this milk would be sold as basic milk at $1.50 a hundred pounds, bringing a total of $1,305. The remaining 21,700 pounds would be sold as surplus at the rate of $1 a hundred pounds and would bring $217. The total income from the sale of milk would be $1,522. The 8,400 pounds of feed which this dairyman must buy costs him $1.50 a hundred pounds, or a total of $126. When this is subtracted from his sales receipts, it leaves him a net return of $1,396.

His net returns would be $158 more than this if he signed up to reduce 15 per cent and if there was a two-thirds sign-up of all dairy farmers with a 10 per cent reduction in dairy sales for the country as a whole.

By signing up to reduce 15 per cent, he would get benefit payments of $1.50 a hundredweight for the 16,300 pounds of milk that he cut off his sales. This would be a total of $245. He would still get $1.50 a hundred pounds or a total of $1,305 for his 87,000 pounds of basic milk. In addition he would still have 5,400 pounds of surplus milk for which he would get $1 a hundredweight or a total of $54. This would give him a total of $1,604 from sales and benefit payments.

He would make his required 15 per cent reduction in sales by buying and feeding 60 per cent less feed concentrates than he bought and fed before signing up. In other words, his bill for purchased feed would be only $50. This would leave him a net return of $1,554, or $158 more than he was getting before signing up.

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With final reports still to be received from 14 counties, the number of corn-hog contracts that have been signed up by Illinois farmers stood at 121,023 on Tuesday, April 10, it was announced by Prof. J. C. Spitler, state leader of farm advisers, who is representing the extension service of the College of Agriculture, University of Illinois in the AAA campaigns.

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U. I. Tests Suggest Pasture Mixtures for AAA Acres

More Illinois land will be seeded to grass during the next two years than ever before in the history of the state, prophesies H. P. Rusk, head of the animal husbandry department of the College of Agriculture, University of Illinois.

This "back-to-grass" movement is spreading throughout the state as a result of the government's corn-hog and wheat adjustment programs in which some 2,000,000 acres of land will be taken out of crop production by cooperating Illinois farmers.

"A large percentage of this former wheat and corn land," explains Rusk, "will be seeded to permanent or semi-permanent pastures for livestock, and many Illinois producers are wondering what grass seeds or mixtures of seeds should be used.

"For early livestock carrying capacity of permanent pastures, all records at the University of Illinois were broken by a heavy seeding consisting of 12.3 pounds of bluegrass, 2.5 of red clover, 2.5 pounds of sweet clover, 4.1 pounds of timothy, 1.6 pounds of alsike clover and .4 pounds of white clover. This mixture may be used for seeding contracted acres, without violation of the AAA corn-hog contract, provided it is in addition to the average acreage devoted to pasture in 1932 and 1933 and is not pastured in 1934.

"If it is desired to pasture this seeding lightly this fall, sweet clover must be replaced in the mixture. This can be done by increasing the amount of the other legume seeds, or by substituting 2 to 5 pounds of alfalfa. Furthermore, the mixture must be seeded without a nurse crop if it is to be pastured this fall.

"Several other factors, in addition to a good seed mixture, should be considered in developing a permanent pasture. They include the use of relatively clean land of high fertility; preparation of a good seed bed; heavy seeding of bluegrass and legumes; control of weeds by frequent clipping during the first season; allowing grass to get a good start in spring before cattle are turned on, and grazing heavily but not too long for any one period."

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Feeding Cows Yeast Will Enrich Milk With Vitamin D

Adults may not have to go to the sunny beaches nor children take their daily dose of fish oil to acquire their vitamin D in the future, according to J. M. Brannon, assistant chief of dairy bacteriology at the College of Agriculture, University of Illinois. "Old Bossy," when fed especially-treated yeast as a part of her daily ration, will supply this bone-building vitamin in her milk, it is said. Heretofore, the most common methods of securing vitamin D for the human system have been to expose the skin to direct sunlight or to ultra-violet ray machines or by consuming certain fish oils.

"Normal milk contains calcium and phosphorus in the proper ratio for the development of bone tissue in children, but it is low in vitamin D and does not have a large supply of the substance which is converted into vitamin D," explains Brannon. "Investigators, however, have found that certain types of yeast are high in the substance from which vitamin D is made, and if these strains of yeast are treated with ultra-violet rays of light, they become excellent sources of vitamin D. Likewise, if yeast so treated is fed to cows, their milk at the end of three weeks will contain sufficient vitamin D to insure the proper development of the bones of a child."

Production of this special bone-building milk entails additional costs. Dairymen selling it must secure a license costing a dollar a cow. There is also the extra expense of purchasing the treated yeast.

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"Importing" Chinch-Bug Corn May Not Be Safest Plan

Illinois farmers, casting about for a variety of seed corn that will be most resistant to chinch bug attack in 1934, will do well to select the variety that is the best adapted, most vigorous growing and highest yielding in their respective areas, rather than import a variety said to be resistant in another part of the state or in another state.

This is the opinion of G. H. Dungan, assistant chief of crop production at the College of Agriculture, University of Illinois, after reviewing experimental evidence and the experience of farmers relative to chinch bug resistant varieties of corn.

"There is evidence that some strains of corn are less favored by chinch bugs than others," explains Dungan, "but the particular quality which makes them less appetizing to the bugs is not known. It is believed, however, that the most important factor is the superior vigor which enables the plant to produce a good crop of corn in addition to supporting a goodly number of bugs. No plant during its vegetative growth can withstand an attack by an unlimited number of chinch bugs but the ability of a variety to remain green and continue growing until the normal maturity date, in spite of the insects, is a mark of resistance.

"In southern Illinois, where varieties have been tested at the college's Alhambra experiment field, Champion White Pearl, Black Hawk, Mohawk and Golden Beauty have proved to be the best adapted to the upland soils, and at the same time the most resistant to chinch bugs. Waddell Utility White Dent supplies a good type of grain for feeding and seems to be resistant to the bugs, although it does not stand up as well under a severe infestation as does Champion White Pearl.

"Experimental evidence is not available covering the most chinch-bug-resistant varieties of corn in central and northern Illinois and positive recommendations can not be made. However, farmers in the north-central section of the state last year reported that the corn known as Krug is markedly resistant. In the absence of thorough experimental tests on the resistance of varieties grown in northern and central portions of the state, it is suggested that the best adapted, most vigorous growing and highest-yielding varieties be grown in these sections during years of chinch bug outbreaks."

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Effingham Eggs Are Among First To Carry U. S. Seal

The first shipments of eggs from an Illinois egg-buying station, under official government grading, have been inaugurated in Effingham county, with the Farmers' Equity Union there adopting U. S. standards for packing and shipping to the New York market, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Through the cooperation of the U. S. Department of Agriculture and the Illinois Department of Agriculture, officers of the union have been able to secure the services of a licensed government grader and permission to use the government seals on various grades of egg packs. The grading is in line with work which the extension service of the agricultural college has been carrying on throughout the state to raise the quality and the value of the Illinois egg crop.

"During the four years from 1929 to 1932 the cash income of Illinois farmers from eggs has averaged $20,240,000 annually, but the opportunities to sell those eggs on a graded basis have been all too few," Alp said. "With the proper cooperation of the members and the right kind of management, such a program as that started in Effingham county should do much to raise the quality and price of eggs produced in that area."

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Record Alfalfa Seeding Forecast On Illinois Farms

A new all-time record for alfalfa growing is expected to be set in Illinois this year in spite of the fact that the 1933 crop of 337,000 acres was a record in itself, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois. At least part of the 1,866,200 acres of Illinois land that will be retired from commercial grain production under the various adjustment programs will be utilized as an ideal place for starting an alfalfa meadow while at the same time obtaining some income from the land in the form of benefit rental payments, he pointed out. Alfalfa may be seeded in May with or without a nurse crop, he said.

Use of contracted land for alfalfa and other crops is explained in a new circular, No. 420, "How Use Contracted Acres," which the college has just issued for free distribution to interested farmers. Hackleman is joint author with C. M. Linsley, soils extension specialist.

Record plantings of alfalfa are only one indication of the extent to which Illinois farmers are carrying out the college's long-time teaching for the growing of more legumes on Illinois farms, Hackelman said. This has been advocated for years not only as a means of adjusting production to demand but also of reducing production costs, of conserving land resources as a continuing source of wealth and of controlling insects and diseases.

As most of one growing season is needed to establish a good alfalfa field, there is no better place to start than on the contracted acres. However, alfalfa should be seeded only where the soil is known to be sweet enough to produce the crop and where soil tests indicate that there is sufficient available phosphorus to make production of the crop relatively safe.

If the alfalfa is to be seeded with a nurse crop, oats probably should be used in most parts of the state since this crop is far less attractive to chinch bugs than is barley. Barley near a cornfield would be a worse hazard to the corn than would oats. Oats used as a nurse crop for alfalfa should be clipped before they head out. If the oats grow too fast, they probably should be clipped twice so that no large amount of material will be left on the young alfalfa at any one time and thus endanger the stand.

Alfalfa may also be seeded alone in May, after a thorough preparation of the seed bed, if weeds have been kept under control for several years on the land. Such seeding will likely require two or three clippings during the year. The final clipping should be made about the middle of August.

No hay can be taken from alfalfa seeded on the contracted acres during 1934. The hay can, of course, be used in 1935 if the contracted acres have been released.

If summer seeding of alfalfa is preferred, the ground can be plowed and thoroughly prepared this spring. The seed bed should be worked at frequent intervals, thus insuring the killing of several crops of weeds. Seeding should be done in late July or early August so that the crop will be ready for use as hay in 1935. Any contracted wheat acreage so handled must be replaced by an equivalent contracted acreage in 1935.

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Chinch Bugs Going to Small Grains; Farmers Warned

Chinch bugs, worse than they have been for years, have started flying from their winter quarters to small grain fields, and the cheapest and most effective way for farmers to fight them from now on is through the use of crops that are immune to attack, it is pointed out by the College of Agriculture, University of Illinois in a new circular, "Fighting the Chinch Bug on Illinois Farms."

The bugs are even worse now than they were one year when farmers in 17 southwestern Illinois counties lost practically 6½ million dollars as a result of damage to corn, wheat and oats alone, not counting injury to other crops and secondary losses, the college says.

Especially this year, when farmers are reducing their corn acreages under the adjustment program, control of the bugs may mean the difference between a farmer's raising enough feed for his own needs and for sale or else having to buy practically all of his feed, it is pointed out.

Six direct and indirect methods of fighting the bugs are outlined in the new circular by W. P. Flint, chief entomologist of the Illinois Natural History Survey and of the agricultural experiment station; G. H. Dungan, associate chief in crop production at the agricultural college, and J. H. Bigger, assistant entomologist of the natural history survey.

Of all the methods, the cheapest and most effective is the use of chinch-bug proof crops, the circular says. These include such crops as alfalfa, red clover, sweet clover, alsike clover, lespedeza, cowpeas, soybeans, sunflowers, flax, sugar beets, artichokes, potatoes and rape.

During the rest of April and throughout May and June, the chinch bugs and their newly hatched young will be found in fields of small grain or tender, succulent grasses. The flight from winter quarters to the small grain fields takes place throughout this period. The real damage threatens to begin about the middle of June and afterward, when the bugs of the first brood migrate on foot from the small grain fields to corn. Once in the corn they soon acquire wings and scatter over the entire field.

Farmers desiring the help of the new circular in fighting chinch bugs on their farms can get copies from their county farm advisers or from the College of Agriculture, University of Illinois at Urbana.

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Export Trend Has Little To Cheer Illinois Farmers

Possibilities of restoring the income of Illinois farmers through a revival of foreign markets are none the brighter on the basis of export figures which the College of Agriculture, University of Illinois has just received from the bureau of agricultural economics, U. S. Department of Agriculture.

Showing a further decline, the index of the volume of farm products exports from the United States was 80 for February of this year as against 93 for January, 109 for December and 71 for February of last year. The index for February, 1932, was 117. The average of 1909-1914 is taken as 100 in the index figures.

The decline recorded in the figures brings home the importance of the state-wide agricultural adjustment program which the college started in 1928 under the direction of Dean Herbert W. Mumford and has been carrying on ever since, it was pointed out. More recently the loss of export markets and its attendant problems have been attacked in the AAA activities now being sponsored by the U. S. Department of Agriculture.

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Proper Rotation Of Crops Will Aid Chinch-Bug Fight

Proper rotation of the $182,000,000 worth of crops that they grow annually is one of a half dozen hopes for Illinois farmers, now that chinch bugs are on the move in what threatens to be the worst infestation of these destructive pests that the state has had for years, it is pointed out by the College of Agriculture, University of Illinois and Illinois Natural History Survey.

Crop rotation is a safeguard because a good way to hold the insect in check is to make its food scarce somewhere along the line, it was explained. Bugs of the first brood, which mature in the small grain during the late spring, depend for their food mainly on wheat, oats, barley and rye. The second brood, which matures in the corn during the summer, feeds almost exclusively on corn.

"This means that wheat-growing areas should cut down on their acreages of corn, substituting if possible some crop on which the chinch bug will not feed, so as to reduce damage from the first brood bugs that will come out of the wheat. Heavy corn-producing areas should reduce the acreage of small grains so that the first brood will be starved out, thereby reducing the size of the second brood.

"A rotation of corn, soybeans, wheat and clover will suffer as little loss as any rotation that contains both wheat and corn.

"In an area where wheat is the main money crop, a rotation of 25 per cent wheat, 25 per cent soybeans or cowpeas, 25 per cent wheat with some oats or rye and 25 per cent red or sweet clover will be satisfactory because it contains no crop on which the second brood of chinch bugs can feed.

"Where corn is the main money crop, a rotation of 40 per cent corn, 20 per cent soybeans, 20 per cent wheat or oats and 20 per cent red clover, sweet clover or alfalfa may be used.

"The essential point in arranging a rotation to prevent chinch bug injury is to grow as large an acreage as possible of the crops on which the insect does not feed. Where both small grains and corn are grown on the same or on adjoining farms, the fields of these two crops should preferably not adjoin."

Crop rotation and other methods of fighting the chinch bug are explained in a new circular, No. 419, which county farm advisers and the extension service of the College of Agriculture, University of Illinois have available for interested farmers.

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Times To Harvest Asparagus Shown By U. Of I. Tests

Asparagus, which ranks as one of the leading truck crops of Illinois with a total value of more than half a million dollars in 1930, should not be cut severely until the second year after the plantation is set, and in some cases not until the third year, according to a seven-year experiment conducted by the College of Agriculture, University of Illinois. The results are reported by E. P. Lewis, in a new bulletin, "Asparagus Yields as Affected by Severity of Cutting."

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Changing Rose And Carnation Soils Is Needless Work

Time and labor spent in changing greenhouse soil each year for the production of carnations and roses is neither necessary nor economical, if the old soil can be sterilized and kept in a high state of fertility, according to experiments conducted by F. F. Weinard, and S. W. Decker, of the College of Agriculture, University of Illinois. Their results are reported in a new bulletin, "Experiments in the Use of Old Soil in Growing Carnations and Roses."

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Proposed AAA Dairy Program Is Dropped For Present

A limited program of diseased cattle eradication and relief purchases of dairy products financed by funds made available by congress, coupled with the continued use of milk marketing agreements, will probably be the extent of any dairy program which is fostered by the Agricultural Adjustment Administration.

For the present at least no benefit payment dairy production control program will be undertaken.

This decision of AAA officials in Washington was announced in a telegram received by Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois, from C. W. Warburton, director of the extension service in the U. S. Department of Agriculture.

The decision followed a study of reports from the AAA regional dairy conferences and is in accord with the fixed policy of the administration not to attempt adjustment programs without the expressed support of a substantial majority of the producers concerned.

Although abandoning for the time being the plan of a benefit payment program, the AAA will continue its study of dairy problems and will be prepared to initiate a program which may seem sound if it appears that the dairy industry as a whole is agreed on such a program, the telegram to Dean Mumford said.

With the immediate future of the dairy program settled, representatives of every group concerned with the beef cattle industry met in Chicago on Thursday, April 26, to analyze their difficulties and to see what might be done under the Agricultural Adjustment Act for the benefit of beef producers.

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U. of I. Students Take Sweepstakes In Flower Show

A record of having won the sweepstakes trophy two years in succession in the collegiate exhibits classes of the National Flower and Garden Show is now held by floriculture students of the College of Agriculture, University of Illinois following the recent show in Rochester, N. Y.

Preparation of such exhibits is part of the training which the students are receiving for places in the floricultural industry, which in Illinois is producing products having an annual value of approximately seven million dollars, according to the last census.

Entries made by the Illinois students, competing with those from Cornell, Purdue, Michigan State College, Rutgers and Penn State, won seven first and eight second prizes, or more than any other school represented in the show. Purdue was second in total number of prizes and Cornell, third.

Seventeen of the 22 awards were won by the Illinois students at the St. Louis, Mo., show last year, when they took the sweepstakes prize.

More than 160 pots of floral plants and vases of cut flowers were entered this year from Illinois, all of which had been grown by students as part of their class and laboratory work beginning last September.

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Illinois Sign-Up On Corn-Hogs Nearing 123,000 Mark

With the last of the reports coming in, indications now are that the total sign-up of Illinois contracts in the government's corn-hog production adjustment campaign may reach 123,000, it is announced by Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois and chairman of the state advisory committee.

This does not represent the total number of farms that are under contract, because in some cases two or more farms are covered by one signature, it was explained. Farmers signing up have agreed to reduce their corn production 20 per cent and their hog farrowings and marketings 25 per cent in 1934.

How soon the 30 million dollars or thereabouts in benefit payments will start coming to farmers who are reducing will depend upon how soon the contracts are submitted to Washington. Farmers, themselves, members of county allotment committees and other workers in the campaign are now putting the finishing corrections and alterations on the contracts, preparatory to sending them to Washington.

The first agreements to reach the Washington AAA offices for approval and issuance of benefit payments came from Marion county, Ia. It is expected that the peak of agreements will come during May. Machinery and personnel for approving the agreements and issuing the benefit payment checks are being organized. The checks are expected to be written within about two weeks after the agreements start through the contract records section for approval and payment. The maximum daily capacity is about 45,000 checks a day.

In Illinois, the heaviest reductions will be made and the largest benefits collected in 15 counties with 2,000 or more contracts signed up. Heading the list is McLean county with 3,561 contracts, and then follows Iroquois with 3,325, Livingston 3,304, LaSalle 3,242, Champaign 3,141, Vermilion 2,624, Bureau 2,550, Shelby 2,430, Henry 2,425, Fulton 2,225, Knox 2,167, Macoupin 2,161, Whiteside 2,068, Sangamon 2,050 and Lee 2,042.

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Heavy Rainfall At Right Time Would Check Chinch Bugs

Only in the case of frequent, heavy rains during the latter part of May and June can the weather be counted upon to aid Illinois farmers in their battle against what threatens to be one of the worst invasions of chinch bugs in years, warns W. P. Flint, chief entomologist of the Illinois Natural History Survey and entomologist of the College of Agriculture, University of Illinois.

Unfortunately, the chances are three to one that May and June will be comparatively dry months, he said. He suggests, therefore, that farmers be prepared to use barriers and traps when chinch-bug migration from small grain to corn fields begins in June. Planting the most resistant varieties of crops and seeding legumes in as many fields as the rotation system will permit are other safeguards that can be used.

Heavy rains in the early spring may have little or no effect on the bugs, but frequent rains during the last half of May and June will reduce infestations. Even in the worst chinch bug years, such rains will keep down the insects to the point where no serious damage will occur.

"The rain beats the young bugs down into the ground and 'muds' them in so they die. Also dampness and high humidity are favorable to the spread of the white unguous disease which attacks the insects.

"Likewise, if a period of very wet weather occurs in August, starting about the first and continuing throughout the month, the second brood of chinch bugs will be greatly reduced. Usually this means no damage the following year."

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Best Not To Raise Hogs At All If Pastures Not Clean

If a farmer can not get his young pigs out on clean pasture and practice other sanitary measures, he will be better off by not raising any hogs, in the opinion of the division of animal pathology at the College of Agriculture, University of Illinois, when referring to the close relationship between health and profit in swine production.

"Necro" enteritis, sore mouth, lung worms, round worms, thorn-headed worms, whip worms and stomach worms, all of which are filth-borne diseases and parasites, are some of the major causes of runty, unthrifty and unprofitable pigs, it is pointed out. When pigs are raised in the same lots year after year the ground becomes saturated with the disease germs and eggs of the parasites passed out in the manure. The young pigs pick them up either directly or by eating bugs which have consumed the eggs, and in a short time are infected and infested, become unthrifty and perhaps die.

"Clean soil is also necessary in the prevention of anemia, for from the soil the pigs obtain certain elements needed for blood building," explains Dr. Thorp. "If the pigs can not be taken to the clean soil, then the soil should be brought to them."

If the pigs are not farrowed in brooder houses in clean, new pasture, they should be hauled (not driven) to one where no hogs have run for at least a year. Preferably this field should be one that has been cultivated since last used by hogs. Of course, the field should be well fenced so that the pigs can not get back into the barnyard of former hog lots where they may become infected and lose the benefit of having been taken to new pasture.

Experience has shown that pigs raised without access to contaminated lots or pastures until four months old are usually thrifty and can be marketed at an earlier age with a lower feed cost and at a higher price.

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Factors Indicate Brighter Outlook For Poultry Raisers

Four important factors indicate that Illinois poultrymen may find themselves in a more favorable position financially during the coming months than they were at the same time last year, says H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Egg prices have had the habit of going into the "doldrums" during the late spring and early summer during the last two years, explains Alp. "Whether this year they will reach the low of 1933 remains to be seen, but there are some indications that they will not.

"Storage holdings of shell eggs, generally considered to have a distinct bearing on the fresh egg market, contain a note of improvement. On March 24 of this year there were in storage in 26 cities a total of 478,000 cases of eggs as compared with 688,000 on the same date in 1933. This is a decrease of 30 percent and the movement of eggs into storage is reported to be slower than the five-year average.

"Last fall there were many flocks of pullets houses that were below normal in development and vigor. Consequently production has been unsteady and this has resulted in many hens being marketed. Thus there is some question as to whether the spring flush of production will reach its usual volume of past years.

"To date the prevailing egg prices have encouraged rather free selling which has resulted in a fairly good consumer demand being established. Eventually egg prices should reflect any general increase in factory wages, provided there is not too rapid an increase in prices of other things the wage earners must buy."

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Million Illinois Cattle Figure In Beef Adjustments

More than a million cattle marketed annually by Illinois farmers would be affected by whatever plans the proposed committee of 25 feeders and breeders works out for a national beef cattle adjustment program, according to the College of Agriculture, University of Illinois.

That such a committee be appointed by the Agricultural Adjustment Administration to investigate the possibilities of a beef adjustment program and make tentative plans to be submitted to farmers was recommended in action taken by representatives of the beef industry who attended the recent AAA meeting in Chicago. Approximately 700 cattlemen from 24 states attended the meeting, with Illinois being the most heavily represented.

The key to the beef cattle problem, as it is seen by AAA officials at Washington and as it was presented at the Chicago meeting, is the elimination of from six million to seven million cows and heifers on farms. As an initial effort, two million head of cows, in addition to usual marketings, might be removed in 1934 through eradication of diseased animals and through relief purchases. Contracts with individual producers might be required to assure that any removal program adopted would not be offset by further increases in breeding and feeding.

Beef cattle prices not only followed the decline in other farm prices during the depression, but continued to drop until in 1933 they were $2.05 a hundredweight less than the parity price. In March of this year they were $2.46 a hundredweight below parity.

"There may be a temporary improvement in beef cattle prices in 1934 partly because of smaller receipts in well finished, corn fed cattle, caused by the shortage in the 1933 corn crop, and partly because of the continued pick-up in consumer buying power," the AAA officials pointed out at the Chicago meeting. "However, maximum returns to cattlemen will depend upon sound and prompt adjustments in cattle numbers.

"From 1928 to 1934 numbers of all cattle--beef and dairy--in the United States increased from about 57,000,000 head to about 67,000,000 head. Milk cow numbers increased by about 22 per cent and beef cows by about the same percentage.

"Annual cattle slaughter may be expected to rise from about 21,000,000 head a year to about 24,000,000 head in the next several years, unless prompt action is taken, although the number of finished cattle coming to the market has not yet begun to reflect fully the increase in the number of breeding stock."

"During each of the past six years cattlemen have produced from 1,000,000 to 1,500,000 more cattle than they have marketed. That is, they have been adding to their herds faster than they have been selling off. Thus a new cattle production cycle has been under way for six years, and we still are definitely on the upward trend in numbers of cattle.

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Inferior Seed To Be Avoided In Increasing Soybeans

In order to plant an additional 114,000 acres of soybeans this year, Illinois farmers should not yield to the temptation of using cracked, old, or otherwise inferior seed, if they hope to secure satisfactory stands, warns C. A. Van Doren, assistant in crop production at the College of Agriculture, University of Illinois.

Last year Illinois farmers planted and harvested the smallest crop since 1929, and with an anticipated increase of 20 per cent in acreage this year, some growers may be tempted to be less critical of the quality of seed they plant, it is said.

Reports of planting intentions indicate that Illinois farmers will seed about 682,000 acres this spring as compared with 568,000 acres last year and 617,000 acres in 1932. The 1931 crop of 771,000 acres was the largest in the history of the state. Normally Illinois growers harvest more than half the soybeans produced in the United States.

Experiments at the U.I. College of Agriculture show that cracked soybean seed will produce only 55.4 per cent as heavy a stand as sound seed, although the difference in ultimate seed yields is not as pronounced.

The age of the seed should also be considered, if maximum production is to be attained, explains Van Doren. New, sound seed is always preferable, since one-year-old seed usually falls 2 per cent short in stand as compared with new seed that has been stored under average farm conditions. In some cases, however, the one-year-old seed may produce as large or a larger yield than the new seed, all other factors being comparable. It is seldom advisable to plant soybeans that are two years old or older, as both the stand and yield decline rapidly from the second year on.

"Good quality soybeans consist of seed that was well matured and in a dry condition when harvested, and has been stored under favorable conditions," points out Van Doren. "Seed harvested from frost-killed plants or from plants cut before completely matured, are likely to be inferior. Furthermore, changes in atmospheric humidity make the beans deteriorate in storage. If a farmer must purchase his seed, he should buy new, sound-appearing beans that will give a germination test of at least 90 per cent strong sprouts."

-M-

Nuts Are Suggested As Non-Surplus Crop For Illinois

High quality nuts constitute one of the few crops in which there is not a surplus, and many Illinois farmers could well afford to devote a small acreage to their production, declares R. S. Marsh, horticultural extension specialist of the College of Agriculture, University of Illinois. To assist farmers in doing this he is holding a series of nut propagation demonstrations in 14 Illinois counties within the next week or two.

At the nut propagation demonstrations, Marsh and L. E. Sawyer, extension forester of the Illinois Natural History Survey and of the U.I. College of Agriculture, will explain the latest method of top working walnut, pecan and hickory trees. Farmers attending will be given an opportunity to make a graft so that they will have a model to take home with them, together with complete printed instructions.

Local arrangements for the demonstrations are being made through the county farm advisers, with tentative dates scheduled as follows:

Union and Jackson counties, May 8; Pulaski-Alexander and Saline counties, May 9; Johnson and White counties, May 10; Williamson and Edwards counties, May 11; Schuyler county, May 14; Stark county, May 15; Bureau county, May 16; and Jo Daviess county, May 17.

-M-

Fruit Hurt Less In Illinois Than In Eastern States

Illinois peach growers fared better than those of the eastern states insofar as damage to orchards as a result of sub-zero weather during the past winter is concerned, it is reported by Dr. M. J. Dorsey, chief in pomology at the College of Agriculture, University of Illinois.

Although there was severe injury to the peach buds in this state, no damage was done to the trees. In fact in some of the more favored locations, sufficient buds survived to produce small crops of varying percentages. In the east, however, all fruit buds were killed by the freezing temperatures, and a great many trees were killed or damaged badly, it is said.

The Illinois peach crop has been estimated at about 800 carloads, as compared with approximately 8,000 cars in the bumper season of 1931. As was anticipated the apple crop is likely to be light in this state, owing to the defoliation and unfavorable weather during fruit bud formation last year. Red raspberries suffered considerably from winter kill, but the cherry and plum buds are believed to have survived comparatively well. Unfortunately in some parts of the state cold nights during the last week or ten days of April did considerable damage to certain fruit blossoms.

Differences in bud hardiness were illustrated strikingly this winter in Illinois, Dorsey points out. Such peach varieties as Greensboro, South Haven, Carmen and Bell came through the winter in a much better shape than the more popular Elbert and J. H. Hale. This would indicate that for home plantings it might be advisable to include more of the hardier varieties. These would give more assurance of a crop in some seasons when the other varieties have been winter damaged.

In orchards where the live buds are too few to be worth considering, Dorsey suggests that growers prune the trees back to the two or even three-year-old wood. In cases where there are sufficient live buds to give a crop, pruning should be delayed until the set is evident, after which the non-bearing branches can be thinned out.

Where the bud survival is still lighter, it is advisable to leave all possible bearing wood in the trees so that full advantage can be taken of the live buds. Here, too, an application of some form of quickly available nitrogen should be made in order to increase the set. This is particularly worthwhile, if applications were not made last year or if the growth conditions are at a low ebb.

-M-

Too Much Hulled Oats Will Handicap Fattening Pigs

In their efforts to grow and fatten fall pigs as cheaply as possible, Illinois farmers are sound in their practice of not including too large a proportion of hulled oats in the rations, it is revealed in a two-year feeding experiment just completed at the College of Agriculture, University of Illinois. Hogs fed in a dry lot on hulled oats as the only grain developed severe stiffness, became unthrifty and in one case died.

The addition of hulled oats, however, did improve the so-called standard ration of corn and protein supplement, according to W. E. Carroll and W. P. Garrigus, who conducted the tests. The most satisfactory ration was found to be one in which the pigs consumed two parts cracked corn, one part hulled oats, plus .76 pounds of protein supplement and .02 pounds of minerals daily. These pigs consumed 414 pounds of the ration for each 100 pounds of gain and increased in weight at the rate of 1.45 pounds daily. The protein supplement was made up of 2 parts tankage, 1 part soybean oil mean and 1 part alfalfa meal, while the mineral mixture consisted of equal parts of limestone, bonemeal and salt.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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2,000,000 Acres Of AAA Land Is Not Planting Puzzle

Leaving approximately two million acres out of commercial production, as Illinois farmers will do under terms of the government's various AAA programs, is not going to upset sound farming methods or bring about any radical changes in cropping systems, judging from reports coming to the farm management division of the College of Agriculture, University of Illinois. Quite the contrary, the contracted land is going to be used almost exclusively for legumes. This is directly in line with the long-continued teaching of the college and will pave the way for soil conservation, the reduction of production and marketing costs, better control of insects and diseases and other benefits.

How far Illinois farmers already have gone in this direction in the past 20 years is shown by the fact that during the five-year period of 1929-1933 the average annual acreage of such legumes as alfalfa, sweet clover, soybeans and cowpeas was 1,413,000 acres more than it was in the five-year period of 1910-1914. Furthermore the average annual acreage of such surplus crops as corn and wheat, together with oats, rye and buckwheat, was 1,461,000 acres less in Illinois during the 1929-1933 period than it was during the 1910-1914 period.

Extensive use which farmers in one section of the state will make of legumes on their contracted acreage is indicated in figures reported by J. B. Cunningham, field man for the farm bureau-farm management service, which the U. I. College of Agriculture sponsors in Grundy, LaSalle, Marshall and Putnam counties. The figures cover 88 farms on which 116 pieces of land have been contracted to the government.

Alfalfa or sweet clover will be used on 63 of the tracts; red, mammoth or alsike clover on 24 of them; timothy or orchard grass on 5 of them, and soybeans for plowing under on 4 of them. Thirteen of the tracts will be fallowed to kill weeds and on five others nothing will be planted and the weeds clipped. Owners of two pieces of the land are undecided how they will handle the contracted acres.

Forty-two farmers are leaving old clover, alfalfa or grass mixtures stand over as their contracted acres, thereby saving labor and expense this year. However, most farmers are not prepared to do this, for out of the 116 pieces of contracted land, 64 were in corn last year.

In seeding such corn land down as contracted acres, about 30 per cent of the farmers abandoned the usual practice of using a nurse crop, thereby eliminating a place for the chinch bugs to feed and also saving expense.

While the percentage of contracted land growing legumes on these farms is exceedingly high--perhaps much higher than on farms not in the farm management service --it would probably be still higher were it not for the large amount of sour soil, Cunningham reported. This is being partly corrected on ten of the farms where some of the agricultural adjustment benefit money is being used to buy limestone. The four farmers who plan to sow soybeans on their contracted acres are doing so because of sour soil. Others have sown mammoth clover, which stands a medium acid soil.

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Wheat Prospect Below Average; Carryover Also Lower

Although it is anticipated that the 1934 wheat crop in Illinois may be larger than the unusually small crop of last year, it is likely to be some 2,000,000 bushels less than the five-year average production of the state, according to available reports reviewed by R. C. Ross, assistant chief of farm management at the College of Agriculture, University of Illinois.

The total 1934 wheat yield in Illinois has been estimated at 29,601,000 bushels, as compared with 26,592,000 bushels in 1933 and 31,611,000 bushels as the average during the five years of 1927-1931. The increased wheat acreage planted last fall was probably the result of the large amount of corn land that remained idle last summer. Rather than lose the time and labor they had spent in preparing the ground for corn, farmers planted the fallow acres to wheat, in the opinion of Ross.

Wheat stocks on Illinois farms as of April 1 amounted to 3,839,000 bushels, or the smallest carryover since 1931. Last year at this time wheat stored on Illinois farms totalled 5,745,000 bushels.

Current reports on the world wheat prospects indicate the carryover of wheat on July 1 in the four principal exporting countries will be at least 100,000,000 bushels less than on July 1 of last year.

Like that of Illinois, the North American wheat crop is expected to be considerably larger this year than last, because of the exceptionally bad growing conditions of last year, but the European crop may be considerably smaller. Dry weather in the lower Danube basin has damaged late-sown grain, and early-sown fields may have yields reduced even though the moisture has been sufficient for a favorable early development of the crop.

The condition of winter wheat in the remainder of Europe is reported as being generally good except in Italy and Spain. However, the early-season condition of the crop in the more humid parts of Europe has not proved to be a good indication of subsequent yield. It is not likely that the high average yield of last year will be repeated in 1934.

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Increased Soybean Acreage Will Yield Many Benefits

Illinois farmers, who this year plan to plant approximately 682,000 acres of soybeans, will be in a position to reap many advantages from the crop, particularly in the case of producers who are cooperating in the government's wheat and corn-hog adjustment programs, in the opinion of E. E. DeTurk, chief of soil technology at the College of Agriculture, University of Illinois. At least six characteristics of the crop can be cited as advantages.

When plowed under, soybeans add nitrogen to the soil in much the same manner as other legume crops. Then too, this crop has the ability to absorb mineral plant food elements which are ordinarily not readily available, and when the soybeans are turned under, the minerals become easily available for the following crops.

Experiments have shown that the tops of soybeans, when plowed down help the development of bacteria, thereby making the soil more favorable for future crop growth. Furthermore, soybeans need less lime or limestone than the more commonly grown clovers. Although not the most ideal crop for soil erosion prevention, soybeans give quick results in producing a protective cover, and when broadcast or drilled around a slope will do much in holding the soil. Finally, soybeans are distasteful to chinch bugs, and if the contracted acres are located between the small grain and corn fields, this legume tends to discourage the bugs from migrating from the small grain to the corn field where they do the greatest damage.

Although soybeans fit in ideally as a green manure crop for contracted acres, they are not used as such in general farm operations, being less practical for soil improvement than certain other legumes.

-M-

Cutworms Threaten Damage If Spring Is Wet And Cold

If Illinois should have cold, wet weather soon after corn comes up, farmers may expect another cutworm invasion and should be prepared to control the insects with poisoned bait, says J. H. Bigger, assistant entomologist of the Illinois Natural History Survey in a report to the College of Agriculture, University of Illinois.

After the cutworms have become established in a field, the use of poisoned bran bait is the only control method available, points out Bigger. This should be used as soon as signs of cutworm feeding appear.

Enough poisoned bait for about three acres can be made with 25 pounds of low-grade bran, 1 pound of Paris green or sodium arsenite or white arsenic, 2 quarts of molasses and 3 gallons of water. For larger areas, proportionately larger amounts will be required.

The water, molasses and sodium arsenite are mixed together and then the solution is stirred into the bran so that every particle of the bran is moistened by it. Just enough of the solution should be used so that the mixture will hold together when squeezed tightly in the hand but will crumble when spread. A little experience will establish this point.

If Paris green is used instead of sodium arsenite or white arsenic, it should be mixed dry with the bran, and the water-molasses solution poured over this mixture until it is sufficiently wet.

The bait should be spread late in the afternoon so that it will remain moist all night. Broadcasting by hand or with an endgate seeder at the rate of 8 to 10 pounds to the acre gives sufficient dosage to clean up a heavy infestation.

In the case of black cutworms, often found abundant in wet seasons and particularly in wet areas, one application of the poisoned bait will not be enough. Repeated applications are suggested.

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Optimistic View Is Held By Growers Of Strawberries

Illinois strawberry growers, whose crop has averaged more than a half million dollars annually in recent years, are optimistic at present because of the smaller crop which is in prospect and more money in circulation, says R. S. Marsh, extension specialist in horticulture at the College of Agriculture, University of Illinois. Whether or not they get the maximum returns will depend partly upon how carefully they grade their berries and the extent to which they use shipping point inspection service, he said.

"What can be done through grading and shipping point inspection to get better prices for strawberries is shown in the results obtained last year by a new growers' cooperative organized in Edgar county. Its members averaged a higher net return than the members of any other organization either in Illinois or Indiana. Principles of grading, packing and marketing were taught to them in five demonstrations held by the extension service of the U. I. College of Agriculture with the cooperation of the State Division of Standardization and Markets.

"Better marketing methods also paid a premium for growers in Union county, where pan grading was introduced by the U. I. agricultural extension service. As a result of several demonstrations held by the farm adviser, the average price received throughout the season was $1 more a crate where pan grading was used than where no grading was done. The extra cost of pan grading, including the value of the cull berries thrown out and the expense of extra labor, amounted to 25 cents a crate. This, however, left an extra net profit of 75 cents for the growers who employed the pan-grading method.".

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Home Accounts Show Increased Buying By Farm Folks

That Illinois farm families are contributing their share to improved business and industrial conditions is revealed in a summary of 215 farm and small town home account records made by Mrs. Ruth C. Freeman, home economics extension specialist of the College of Agriculture, University of Illinois.

Comparing the 167 farm family records studied in 1933-34 with 159 summarized in 1932-33, it was found that the total average money value of living and savings was 5½ per cent higher during the past 12 months than in the 1932-33 period. The increase occurred in cash expenditures, probably resulting from increased incomes of the farmers in one form or another.

The total realized income of the 48 small town families, however, was 11 per cent lower in 1933-34 than during the previous 12 months.

Cash house expenditures by the farm families, including cash repairs, fire insurance and improvements on houses, nearly doubled in 1933-34 over 1932-33, points out Mrs. Freeman. They ranged from nothing to $388, or an average of $18 to the family.

Forty-four per cent of the 167 farm families purchased paint and varnish for decorating interior walls and floors in the past year, 28 per cent papered one or more rooms, and three farm houses were painted.

Expenditures for furnishings and equipment in 1933-34 were also nearly double that spent in 1932-33. Twenty large pieces of electrical equipment were bought in the past year, as well as 13 mattresses, 24 rugs and 8 complete suites of furniture. Small kitchen equipment, curtains and draperies, dishes, toweling, sheets and pillow cases, and oil cloth were among the most frequent purchases shown in the records.

Clothing expenditures in 1933-34 averaged $101 as compared to $91 in 1932-33, with from one-fifth to one-third of each person's clothing money going for shoes and hose.

Automobile expenditures of the 167 farm families also increased in 1933-34, although the difference was not large. Eight families traded in their old cars for new ones, and eight others traded for late model used cars. The 159 families in 1932-33 bought only three new cars.

Seventy per cent of the farm families attended the World's Fair in Chicago last summer, considering the trip both educational and recreational, and entering the expenses accordingly in their books.

Even with increased expenses, the farm families were able to save an average of $148 each, the major portion of which was in the form of life insurance premiums.

Further heartening signs are seen by home economics extension workers of the college in the recent almost record growth of county home bureaus and the livelier interest which farm women are showing in new ideas on home making and home management. A total of 1,469 new members have enrolled in Illinois home bureaus during the past five months, making the total membership now stand at 9,341. Twenty-six community home bureau units have been organized in the state since December 1, 1933.

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Cow Culling Sets Stage For State Efficiency Record

Elimination of thousands of low-producing and unprofitable cows by members of Illinois' 53 dairy herd improvement associations made it possible for their herds to set a new state record in efficiency of production during the past year, according to a report by Prof. C. S. Rhode, chief of dairy husbandry at the College of Agriculture, University of Illinois.

The 20,048 cows retained by the herd improvement association members averaged 321 pounds of butterfat each during the past year. This is the highest efficiency record ever attained by association members in Illinois and is 141 pounds better than the 180-pound butterfat average of all cows in the state. In 1932 the average butterfat production for cows in dairy herd improvement associations in this state was 317.6 pounds as compared with 310.1 pounds in 1930 and 282.3 pounds in 1925.

Members of herd improvement associations have realized more than ever during the past three years that the practice of keeping "fewer and better" cows is a sound method of adjusting their individual problems, as well as the problems of the industry as a whole, it was explained. Consequently during these three years, many Illinois association dairymen have practiced rigid culling, disposing of approximately 10,000 low-producing cows.

How efficiency of production actually affects the producer is shown by the estimated return of $26.78 above feed cost for the average cow in this state, while the average cow in dairy herd improvement work returned $64.91, or an increase of more than 142 per cent.

In point of individual production, a grade Holstein cow owned by the Moose-heart Home in Kane county led all others of the state with a record of 26,654 pounds of milk containing 1,030.3 pounds of butterfat. The highest-producing herd in the state in 1933 was owned by Timm and Ralston, of Boone county, with an average of 579 pounds of fat and 13,671 pounds of milk.

-M-

Chinese Cabbage May End State's Sauerkraut Problem

A new delicacy may be served up to the 45,879 inmates in Illinois' 27 charitable and penal institutions and a big problem in the diet and feeding of these people may be solved if experiments started by Lee A. Somers, vegetable gardening extension specialist of the College of Agriculture, University of Illinois, prove as successful as they promise to be.

The new delicacy is sauerkraut made from Chinese cabbage instead of the common cabbage, which sometimes fails under fall weather conditions in Illinois. A. L. Bowen, director of the Illinois State Department of Public Welfare, and other state officials already have sampled the new kind of sauerkraut. Some of them pronounced it superior to common cabbage sauerkraut, some said they could tell no difference and others did not like it as well. It has been more or less common opinion that sauerkraut could not be made from Chinese cabbage, or "celery cabbage," as it is sometimes incorrectly called.

Sauerkraut is a mainstay in the diets that are served at the state's 27 charitable and penal institutions. Unfortunately, however, the fall crop of cabbage which must be relied upon for the kraut is frequently a failure in this state. Chinese cabbage, being strictly a fall crop and much easier to grow than common cabbage, would overcome the danger of a crop failure, but the question was whether or not kraut could be made from it. Somers tried it out on a small scale last fall and successfully produced a satisfactory kraut. As a result of the success of the preliminary experiments, each of the state institutions will be asked to make a batch of Chinese cabbage kraut this fall.

-M-

Good Horses More Scarce Than Is Generally Realized

Although it has been known that the number of work animals on farms in the United States has been declining as much as 358,000 horses and mules in a single year, the scarcity of good work stock in Illinois is even more pronounced than generally realized, according to C. W. Crawford, associate in animal husbandry at the College of Agriculture, University of Illinois.

The number of horses, mules and colts on farms in this state as of January 1 of this year totalled approximately 849,000 as compared with 868,000 on the same date in 1933, or a decline of 19,000 head in the 12 months. The population of horses, mules and colts in Illinois in 1930 numbered 966,000, in 1925 it was 1,198,000 and in 1920 totalled 1,465,000.

Farmers have sold down to their minimum needs and will seldom price a horse for sale, says Crawford, following a trip through central Illinois at which time he made a survey of the available supply.

"There are a few teams of 3-year-olds which can be bought and a few big teams of rather plain order," he explains. "Of course, after the crops are in, there will be some horses which can be spared.

"Quite a few farmers are in need of more horses and are in the market for teams of mares. Of late, farmers' ideas have changed radically in respect to the age of horses. They now insist upon buying young animals, and there are indications of a return of greater pride in horses and better care given them.

"Stallion owners, as a rule, report all the business they can handle. Likewise, there are quite a few foals to be seen in the pastures. Yet when one considers that it takes four or five years to produce a work horse, as well as the high proportion of old horses on farms, there is little likelihood of too many being raised in the near future. The main difficulty will be in the scarcity of young mares and stallions."

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Improper Care After Eggs Leave Farm Lowers Quality

Complaints of consumers about the low quality of eggs sometimes offered for sale during summer months can often be traced to careless management on the part of people handling the eggs after they leave the farm, says H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Poor quality eggs tend to reduce purchases by housewives, and this in turn lowers the prices and profits received by both farmers and dealers. Thus with the approach of warm weather, greater care should be taken in handling eggs as a truly perishable product, it is said.

Too commonly, eggs are held in the back room of a store which also serves as storage space for various items, some of which should never be in the same room with eggs. This room during the summer months will frequently have a temperature high enough to start the incubation of fertile eggs. Another criticism in this connection is that often the small country buying stations do not have satisfactory places to hold a product as perishable as eggs.

In one instance last summer, when the prevailing temperature was about 90 degrees Fahrenheit, Alp reports visiting a produce house consisting of a large room covered by a sheet metal roof. In this room poultry was being fed and eggs stored until time for delivery to the next buyer. "Regardless of how good the quality of those eggs when originally received by this dealer, they would quickly deteriorate under such conditions," he explains.

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Drouth Makes Chinch-Bug Barriers Urgent Necessity

Favored by the continued dry weather, chinch bugs are becoming so serious that they will soon be making short work of thousands of acres of corn unless farmers take steps immediately to establish barriers around corn fields, according to a warning by W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

Hordes of the pests will soon be leaving fields of destroyed small grain to continue the destruction in corn, and only the prompt building of suitable barriers will prevent what threatens to be ruinous losses, if the weather stays dry, Flint said.

These barriers can be made by plowing a furrow around the field, throwing the dirt toward the corn and then smoothing this ridge, which should be 6 to 8 inches high. The furrow should be worked down with a plank drag so that it will have a smooth, dusty surface.

After this has been done, post holes 18 inches deep should be dug along the ridge side of the furrow about 15 feet apart. The tops of the holes should be flared and kept dusty so that the bugs will fall into them as they scramble along the side of the furrow seeking escape.

As soon as the chinch bugs begin migrating from the small grain to the corn fields, a liquid repellant should be poured along the top of the ridge. Crude creosote (not the expensive wood preservative type), naphthalene, naphthalene drain oil and to some extent pine tar oils are the most effective repellants because of their strong, disagreeable odor. Ordinary road oil and used crank case oil do not have sufficiently repellant odor and are not worth the labor of application.

A handy container for applying the crude creosote or other repellant material can be made by punching an 8-penny nail hole in the side of a metal bucket, about an inch from the bottom and directly below the point where the bail is attached. A stream of creosote or naphthalene oil flowing from such a hole will form a line on the barrier ridge wide enough to turn back the bugs.

The repellant material should be renewed between 1:30 and 2:00 o'clock each afternoon for the first several days, and then every other afternoon during the 14- to 18-day period when the bug migration is active. Bugs trapped in the post holes should be destroyed each afternoon about sundown by pouring one or two tablespoonfuls of kerosene into each hole, scattering it over the bugs. The kerosene should not be ignited.

Between 35 and 50 gallons of the repellant solution will be sufficient to maintain a quarter-mile barrier during the danger period, and the usual cost is about 15 cents a gallon. An acre of corn saved will usually more than pay for the maintenance of a barrier one-fourth mile long.

Plans are being made for demonstrations in approximately 60 infested counties to teach local leaders proper methods of constructing and maintaining chinch-bug barriers. These local leaders, in turn, will push the building of barriers in their own communities.

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Illinois Dairymen Look To Sires For Higher Returns

Illinois dairymen who are planning for the time when they may market less milk and butterfat but secure higher net returns through the care of "fewer and better" cows, are looking carefully to their herd sires, says C. S. Rhode, chief in dairy husbandry at the College of Agriculture, University of Illinois. During the past year alone at least 25 dairy bulls in different herds of the state have been "proved" on the basis of definite production records on their daughters, he reported.

That the herd sire of today has a definite influence on the dairy returns of tomorrow is shown by the fact that daughters of 12 of the 25 proved bulls showed an average increase in milk production over their dams, while 13 showed a decrease. The daughters of 14 of the sires produced more butterfat than their dams, but the daughters of 11 produced less.

Continued use of a sire whose daughters produced less than their dams will gradually destroy the profitableness of a herd, while the use of good proved bulls gradually increases the efficiency, Rhode explained. How this improvement actually takes place is illustrated in the case of the bull, Ona King Doede.

Ona King Doede was once mated to seven purebred Holstein cows whose average butterfat production totalled 403 pounds annually. From these matings seven daughters were dropped which eventually produced an average of 565 pounds of butterfat. Thus these daughters averaged 162 pounds of fat more than their dams, or an increase of 40 per cent in butterfat annually.

A study of the pedigree of this bull reveals that he should have transmitted this high production. His sire had 35 advance registry daughters with high average production, and his dam had a high record. She was sired by a proved bull and out of a high-producing cow. The dam of this bull also had three high-producing daughters, thus proving that she could transmit high production. Such pedigree records by which the value of a sire may be judged, however, are available only through regular testing in a dairy herd improvement association or advanced registry facilities.

Many Illinois dairymen have improved the production level of their herds through good feeding and close culling, and if further progress is to be made, much of it must come through the use of bulls capable of siring cows with higher levels of production, it is said.

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Past Records Set High Goal For 4-H Club Work In 1934

Illinois farm boys and girls now enrolling in 4-H clubs throughout the 102 counties of the state, preparatory to beginning their 1934 projects, have a high goal set for them in the achievements of those who took part in rural junior club work last year, according to figures released by the extension service of the College of Agriculture, University of Illinois.

A total of 25,192 farm youngsters, ranging in ages from 10 to 20 years, carried on definite projects under direction of the agricultural college and their county farm and home advisers. Assisted by 2,771 local club leaders, 87.4 per cent of the girls and 82.6 per cent of the boys completed their projects. Nearly 8,000 of the members enrolled last year had taken part in 4-H clubs in three or more previous years. Many were carrying on club work for their fifth and sixth consecutive year.

The value of the livestock produced and cared for by Illinois 4-H members last year amounted to approximately $500,000, while the crops they grew had a value of $75,937, reports E. I. Pilchard, extension specialist in boys' junior club work at the U. I. College of Agriculture. Enrollment in strictly feminine projects totalled 11,842 girls explains Mary A. McKee, extension specialist in girls' 4-H club work.

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Sowing Soybeans And Cowpeas May Help Meet Feed Need

Threatened with a serious feed shortage as a result of the dry weather and the chinch bug menace, Illinois livestock farmers still have a chance to meet the situation by planting additional land to soybeans or cowpeas for hay, according to the animal husbandry department, College of Agriculture, University of Illinois.

Dry weather since the early part of April has reduced the growth of pastures, meadows and small grains. At the same time the abnormally dry season has been particularly favorable for the reproduction of hordes of chinch bugs, the most destructive and widespread insect now present in the state. Unless heavy rains are general in a short time, these two factors may create a serious shortage of livestock feed, it was predicted.

Since chinch bugs do not feed on legumes, it is being suggested that Illinois farmers take immediate steps to increase their soybean and cowpea acreage for hay production. It may be advisable to plant some of the corn ground to these crops.

Both soybeans and cowpeas are excellent roughages for meat, dairy and work stock. When these hays are fed along with lower grade non-leguminous roughages, they greatly improve the productivity of the ration. Soybeans may be planted in the central and northern counties of the state and cowpeas in southern Illinois.

Soybeans are usually seeded soon after corn planting in a thoroughly prepared seedbed which should contain sufficient moisture to sprout the beans. Inoculation is, of course, recommended. When seeded solid with a grain drill, 6 to 7 pecks of beans will be required to the acre, or if planted in rows 28 to 32 inches apart, 35 to 45 pounds will suffice in the case of medium-sized seed.

Sudan grass has also given satisfactory results as a hot weather pasture and hay crop in Illinois. However, since sudan is one of the favorite foods of chinch bugs, it will be advisable to seed either soybeans or cowpeas as a companion crop to sudan grass this year. Using 1½ bushels of beans or peas and 15 pounds of sudan grass to the acre gives a practical seeding.

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Food Costs Total One-Fifth Of Rural Family Expenses

Although farmers in this state produce 68 per cent of the food served on their tables, the grocery bill is still the largest item in the family's cash expenditures, according to a summary of 167 home account records made by Mrs. Ruth C. Freeman, home economics extension specialist of the College of Agriculture, University of Illinois.

During the past year the Illinois farm families covered in the summary made total cash expenditures ranging from $350 to $1,778, or an average of $679 each, points out Mrs. Freeman. Of this amount, $147, or 21.5 per cent went for the purchase of food.

Cash operating expenses such as telephone, fuel, light and power, ice, servant hire, soap, matches and similar small supplies amounted to 15 per cent of all cash expenditures. Another 15 per cent, or approximately $101 for each family, was used in buying clothing.

Automobile charges accounted for the fourth largest item, involving 12 per cent of all cash expenditures, while recreation and education combined required 11 per cent, or an average of $77 for the average family during the year.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Small Grains Being Killed; Farmers Plan Substitutes

Widespread destruction by drouth and chinch bugs of Illinois' four principal small grain crops, valued at an average total of $57,485,200 annually, will mean that thousands of acres of winter wheat, spring wheat, oats and barley will have to be replanted with substitute crops if farmers are to get anything off this land and avert a feed shortage, according to J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois.

Legume crops such as soybeans and cowpeas will get the call in most cases because they are resistant to chinch-bug attack and can still be planted at these delayed dates, he said.

Chinch bugs already are well along with what threatens to be the most serious crop damage that they have ever caused in this state. Although the young bugs are just hatching, the old bugs are causing unprecedented damage to barley, spring wheat, winter wheat and oats. In previous chinch bug infestations the damage which the old bugs did in the small grain fields was relatively insignificant compared with the damage done by the new brood in July and August, but such is not the case this year.

Aiding the chinch bugs in their destruction of fields of small grain has been the continued drouth. Even where the crops will not be completely destroyed by the combined effects of the drouth and chinch bugs, the yields will be seriously reduced.

In answer to many farmers who have signed AAA reduction contracts, Hackleman explained that there are no restrictions in these contracts which prohibit farmers from replacing destroyed wheat, oats, barley or other feed crops with soybeans, cowpeas or any other pasture or hay crop. Under present conditions, however, it would be unwise to seed sudan grass and other grass crops alone for pasture or for hay, as they are too easy prey for chinch bugs.

"Any crop that is seeded for a replacement crop should first be considered from the standpoint of chinch-bug resistance. This means that leguminous crops such as soybeans and cowpeas will be the most popular for seeding as emergency crops.

"Unfortunately, where it is necessary to replace barley, oats or spring wheat, it probably will be impossible under continued drouth conditions to seed the soybeans or cowpeas deep enough to get sufficient moisture to bring up the young plants. The best that can be done is to get the seed and have it on hand ready to go into the ground just as soon as rain comes."

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Dairy herd improvement association members and other dairymen in approximately 30 Illinois counties are planning tours to the College of Agriculture, University of Illinois this summer for the purpose of studying approved methods of feeding, breeding and management as demonstrated in the agricultural college herds. Woodford county dairymen were the first to make the trip.

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Dry Spring Shows Value Of Garden Irrigation System

Ten years ago the idea of irrigating their gardens would have been scoffed at by Illinois farmers, but the unusually dry weather of this spring has brought home the possibilities of irrigation in a convincing way, says L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois. Not all Illinois farms, but a very large number of them might have irrigated gardens at small expense, he said.

During drouth seasons a simple, homemade watering system may mean the difference between a productive garden and a total loss. Likewise, having sufficient water at the proper time is particularly important to late-planted vegetables.

In a majority of cases the Illinois farmstead is built on a slight elevation with the garden laid out on a gentle slope a short distance from the source of water. Generally, too, there is a pump powered by a windmill or gasoline engine that is capable of supplying far more water than is needed for household and livestock consumption.

All that is necessary on these farms, explains Somers, is a line of pipe running from the livestock or storage tank to the upper edge of the garden, and a piece of hose that can be moved from row to row as needed. If the storage tank is below the upper level of the garden, the pipe may be attached directly to the pump and the water forced up to the higher level of the garden.

By using either a cultivator or hand hoe, rough furrows can be made between the rows of vegetables. The end of the garden hose can then be placed at the upper end of a furrow and the water allowed to make its way slowly to the lower end. As the furrow becomes soaked, the hose is moved from row to row across the garden. It will be necessary, of course, to keep the windmill or gasoline engine running to maintain the water supply, but in most cases the method is inexpensive and does not require constant attention.

Different farms will, naturally, require different adaptations of any type of watering system, for the problem is more or less an individual one. However, if Illinois farmers will look over their own situations, a great many will find it entirely possible and practical to irrigate the garden with but little expense and labor.

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Rival Teams Will Get Their Chance In Pulling Meets

Who owns the best pulling team of horses in Illinois? Will Willard Rhoads, of Springfield, be able to keep the state championship? What factors should be considered in the selection of good pullers?

These are some of the questions that are going to be decided in the annual series of horse-pulling contests to be conducted in different parts of the state by the College of Agriculture, University of Illinois. E. T. Robbins, livestock extension specialist, will be in charge.

Four contests have already been scheduled for this summer and fall, and others may be arranged before the season gets under way, it is said. The first is to take place at the Illinois State Fair, Springfield, on August 21 and 22. The first day teams weighing less than 3,000 pounds will compete, with the heavier teams testing their strength the following day.

Champaign county horsemen are planning to compete with each other at St. Joseph on August 28, while those of Warren county will stage their horse-pulling contest on August 31. The first contest scheduled this year for northern Illinois will be held at Sandwich, in DeKalb county, on September 5.

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Emergency Hay And Pasture Are Now Hope Of Farmers

Hay and pasture crops for the $140,415,000 worth of livestock on Illinois farms have been burned out to one of the lowest levels on record, and only emergency plantings will save the situation for many farmers, according to J. J. Pieper, associate chief of crop production at the College of Agriculture, University of Illinois. Experiments conducted for a number of years by the experiment station of the college stand farmers in good stead in showing how to produce sorely needed forage in times like these, he said.

Sudan grass, soybeans, cowpeas, millet and sorghum may yet be planted for the purpose of furnishing either pasture or hay during late summer and early fall. Under favorable weather conditions, they are usually ready for grazing within six weeks after seeding, and may be planted as late as the first part of August with reasonable assurance of a crop of hay or pasture before the first frost. Planting, however, should not be done until their is enough rain to insure germination of the seed after planting, it is said.

Because sudan grass is one of the favorite foods of chinch bugs, the crop should not be sown alone, except in the extreme northern and southern ends of the state. In most Illinois counties, sudan grass should be sown in combination with either soybeans or cowpeas which are distasteful to chinch bugs. Drilled at the rate of 10 pounds of sudan grass and 1 to 1½ bushels of soybeans or cowpeas, the combination may be expected to give satisfactory yields.

If the farmer desires, he may substitute either German or White Wonder millet in the place of sudan grass, but the yields will be lower and the hay of a less desirable quality in the case of millet. Since millet is also attractive to the chinch bugs, it should be planted in combination with either soybeans or cowpeas at practically the same rate as sudan grass.

Where the farmer has sweet or grain sorghum seed on hand, it may be seeded instead of the sudan grass or millet in combination with soybeans or cowpeas. However, if he must purchase seed, it will be more practical to buy sudan grass rather than millet or sorghum seed.

In pastures where sudan grass or surghum are seeded, the fields should not be grazed after the first frost owing to the danger of prussic acid poisoning the livestock. Although it is believed that prussic acid does not develop in pure sudan grass, so much of the seed available has been accidentally crossed with sorghum that grazing after frost may result in prussic acid poisoning.

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Carbondale To Be Site Of Guernsey Field Day, June 9

Celebrating the rapid growth in popularity of Guernsey cattle in this state, Guernsey breeders and their friends from southern Illinois will gather at Oak Grove farm, near Carbondale, June 9, for a special field day and picnic.

Between 400 and 500 dairymen and their families are expected to attend the event which is being sponsored by the Illinois Guernsey Breeders' Association. J. R. McNeil, of Tuscola, president, and H. C. Horneman, of Danville, secretary of the state organization, will be in charge of the field day.

At present there are more than 5,300 purebred Guernsey cattle on Illinois farms, or an increase of approximately 280 per cent since 1920.

C. S. Rhode, chief in dairy husbandry at the College of Agriculture, University of Illinois, will appear on the field day program to discuss dairy cattle breeding problems in Illinois, with special reference to the progress being made by Guernsey breeders.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Chinch Bugs Unharmed By Light Rains; Barriers Urged

Except where there have been heavy rains, the record hordes of chinch bugs have not been thinned out by recent rainfall, and barriers therefore are still the one hope of farmers in protecting their young corn against the first-brood bugs, according to W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

It is not too late to build barriers against the bugs even after they first get into the corn, Flint said. However, in such cases it is necessary to go out into the corn, beyond the line which the bugs have already reached, and build the barriers there with the idea of saving as much corn as possible. Corn back of the barrier, where the bugs are feeding, should then be destroyed to force the pests into the barriers.

There has been some question about the merit of barriers from farmers who have felt that the bugs were so thick and so far advanced that it was futile to attempt stopping them, Flint said.

Thousands of miles of barriers have been built as a result of demonstrations which have been staged by county farm advisers, the extension service of the College of Agriculture, University of Illinois and the Illinois State Natural History Survey, cooperating. Farm Adviser H. A. deWerff, of Woodford county, for instance, estimated that 100 miles of barriers were built to protect Woodford county corn fields last year and that an estimated 1,000 miles of barriers would be needed in that county alone this year. The 100 miles of barriers built last year took a cash outlay of $3,000 but they saved corn that was worth $90,000 at present prices, Farm Adviser deWerff pointed out.

Throwing up barriers will protect corn against the first-brood bugs marching from fields of destroyed barley, oats, wheat and rye to continue their destructive feeding in nearby corn fields. Later on the second-brood bugs may destroy corn of poor stand on weak ground, even though it is protected by barriers, but these second-brood bugs will not begin appearing until about the middle of July. Furthermore, if there are good rains in July and August, bugs of the second brood will be drowned out or "mudded" in, and the damage from them will be reduced.

Total damage from the pests undoubtedly will run into the millions, and anything that can be done to save some corn may be profitable, Flint pointed out. One year the bugs caused an estimated loss of 6½ million dollars to farmers in 17 southwestern counties alone, and this year they are worse than ever before and are scattered over 70 counties, he said. Aided by the drouth, the record number of bugs now present in the state are destroying fields of wheat, rye, oats and barley and are moving to corn fields in search of food a month earlier than usual.

"If the weather remains dry and it seems that the cost of a creosote barrier is not justified, a dust barrier, may be used. However, such barriers are effective only while the soil is dry and must be dragged several times each afternoon to remain effective."

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Planting Of Emergency Crops Pushed To Supply Feed

Thousands of acres of Illinois land where small grains, pastures and meadows have been ruined by drouth and chinch bugs are now being planted to soybeans and other substitute crops just as fast as sufficient rain comes to permit planting. Legumes like soybeans and cowpeas are being used most extensively because they are resistant to chinch-bug attack and can still be planted at these late dates. Crop specialists of the College of Agriculture, University of Illinois reported that most Illinois farmers had laid in their supplies of soybean seed and were only waiting for sufficient rain.

Seeding of a crop like soybeans is not considered safe until after enough rain has fallen to connect with the sub-soil moisture, crops specialists of the college pointed out.

While soybeans and cowpeas will be the most popular emergency crops, sudan grass, millet and sorghum will also be used by some farmers. However, these latter three crops are good prey for chinch bugs, and it therefore is recommended that they be seeded in combination with soybeans or cowpeas. The combination may be seeded at the rate of 10 pounds of sudan grass, millet or sorghum and 1 to 1½ bushels of soybeans or cowpeas.

Possibilities for Illinois farmers to produce at least part of their needed feed through the growing of emergency and substitute crops have been increased through the lifting of restrictions in the AAA corn-hog and wheat contracts. All the thousands of AAA contracted land in the state, as well as any and all non-contracted acreage, can now be turned to the production of certain hay, forage and pasture crops to offset the feed shortage resulting from the unprecedented drouth.

Farmers who have signed corn-hog and wheat contracts are now making the most of the new ruling which permits them to use their contracted acres for all hay, pasture or forage purposes, except the planting of fodder corn and grain sorghum.

Heretofore the use of contracted acres has been so limited that contract signers were only permitted to pasture additional permanent pasture that was seeded without a nurse crop.

The modification is particularly helpful to farmers who are now short of pasture or hay and who last spring seeded their contracted acreage to a forage crop with the intention of plowing it under for soil improvement. This crop may now be cut for hay or pastured as the contract signer desires.

The new ruling also helps farmers who set aside for their contracted acres old bluegrass or clover pastures which they intended to plow under in a soil improvement program. This acreage can now be pastured or used for hay.

Furthermore, the contracted acres can now be planted to soybeans, sudan grass or millet to be used as an emergency pasture or forage crop in late summer and early fall. Such crops, however, must not be cut for seed purposes but must be fed as forage. Farmers can, however, sell hay from these acres to a neighbor who has no hay.

In addition, the limitations have been modified to the extent that any and all non-contracted acres may be seeded to any crop for forage purposes, including fodder corn and grain sorghum. Heretofore, farmers were limited in their plantings of these crops even on non-contracted land, because their acreage of soybeans, cowpeas and all other harvested crops in 1934 could not be more than their harvested crop acreage for 1932 or 1933, whichever was the higher. However, even with the modifications, neither the fodder corn nor the sorghum can be planted prior to a date to be set by the Secretary of Agriculture. This date has not as yet been established for Illinois, but the decision is expected soon.

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Green Wheat May Furnish Emergency Feed In Illinois

Cutting green wheat and other small grain crops for hay instead of harvesting them for grain is one way that Illinois farmers can meet the present serious feed situation, it is suggested by the College of Agriculture, University of Illinois. With the continuation of extremely dry weather and the devastating inroads of the chinch bugs, many dairymen face the most serious forage shortage in decades, it is believed.

Wheat has a high feeding value, if cut for hay in the early dough stage when the plants are quite green, according to W. W. Yapp, chief of dairy cattle at the college. When cut at this time, it has more feeding value than oat hay cut under similar conditions and is comparable to mixed clover and timothy hay. Where the chinch bugs have been prevalent in the wheat field, it is easily possible that the largest amount of digestible nutrients and the greatest feeding value would be gained by mowing it for hay.

"It should be borne in mind," explains Yapp, "that wheat hay should be fed in combination with a roughage of higher protein content, such as alfalfa, or should be supplemented with a grain feed containing relatively large amounts of protein. Adding ground soybeans or cottonseed meal to the grain ration will overcome the deficiency in the wheat hay.

The question of whether dairymen should cut their small grain for hay or harvest it for grain can not be decided for all alike, it is pointed out. Much depends on the probable yield of the grain, the price of wheat in relation to the price of hay, the prevalence of chinch bugs in the grain and the individual farmer's need for hay or roughage. These factors must be weighed on each farm before the final decision can be made.

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Sunflowers May Be Utilized For Silage By Dairymen

Sunflowers may be grown by many Illinois farmers this year to make silage for their dairy cattle, as a result of damage to other crops by chinch bugs and drouth, according to Prof. C. S. Rhode, chief in dairy extension at the College of Agriculture, University of Illinois.

The fact that sunflowers are chinch-bug resistant makes them a possible silage crop this year. In past seasons when the bugs have been bad, Illinois dairymen have grown sunflowers and have found that the resulting silage was fairly palatable, Rhode said. Cows fed sunflower silage, however, do not generally produce as well as those given regular corn silage.

Where barley fields have been practically destroyed by the chinch bugs, Rhode suggested that farmers may seed a portion of this land to sunflowers. The crop may be seeded any time prior to the middle of June, and is usually drilled in rows 42 inches apart with the plants 10 inches apart in the rows.

Experiments conducted at the College of Agriculture, University of Illinois indicate that the best time to cut sunflowers for silage is when about one-fourth of the plants are in bloom. Silage made from sunflowers at this stage is more palatable and is superior for milk production to that made from more mature plants. The composition and flavor of the milk are not affected by sunflower silage, Rhode said.

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Record Creosote Distribution Aids Chinch-Bug Fight

Illinois claimed something of a state record in the distribution of government-purchased creosote for chinch-bug barriers during the week of June 10 to 16. That period saw farmers preparing to make a last stand to protect their corn crop, from which they have realized an average annual value of more than $120,000,000 even during the past five years and on which they can ill afford to take losses this year.

By June 13, shipments of 650,000 gallons of the creosote were moving into the 70 infested counties of Illinois, it was announced by Prof. W. P. Flint, chairman of the state chinch-bug control committee and chief entomologist of the College of Agriculture, University of Illinos and Illinois State Natural History Survey.

This record was accomplished in spite of the fact that it was not until 3 p.m., on June 8, that word was received about the passage of the federal bill appropriating $1,000,000 for the purchase of the barrier creosote in 11 states. Between that time and June 13, when the 650,000 gallons was on its way to delivery, the committee had to perfect plans for getting the material distributed, approve the requests from counties and get the orders to Minneapolis, Minn.

Prof. J. C. Spitler, state leader of farm advisers in the extension service of the College of Agriculture, University of Illinois, and W. W. McLaughlin, director of the Illinois State Department of Agriculture, were other members of the committee.

Arrangements also were completed on June 13 with federal officials for the utilization of as much as 40,000 gallons of creosote then available in a number of counties through an Illinois farm supply company. Having this local supply gained an important time advantage for some counties, inasmuch as most of the shipments of creosote on government orders theretofore had been made from the vicinity of Chicago.

Barrier material purchased on government order was in addition to a vast amount of creosote which farmers, themselves, had bought before the federal chinch bug bill was passed. Fortunately for Illinois farmers they have since last summer and fall been warned by the College of Agriculture, University of Illinois and the Illinois State Natural History Survey that a chinch bug plague was imminent this season. They were forearmed therefore in time to get their materials ordered, their barriers built and their cropping systems arranged to minimize damage.

The week ending June 16 saw farmers preparing to make what was the last stand against the march of the bugs. After that time it was believed that the pests would be so scattered in most counties of the state that it would be useless to try to protect corn. There may be some cases where barriers built after this week will still cut off damage from the bugs, but such cases will be few.

No slackening of the chinch-bug threat was indicated in reports which came in from farm advisers as the deadline for barrier building drew near. Christian county reported an infestation so thick that Farm Adviser T. H. Brock claimed the "chinch bug center of the world" for that county. Prof. Flint agreed. Formerly Macoupin was believed to have been the chinch-bug capitol, but developments this season have shifted the "honor," or more properly the horror, to Christian, it was said.

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Early Feeding Of Grain To Pullets Insures Egg Cash

Pushing pullets for extra early fall egg production may be a tempting way of trying to improve the farm's cash income this year, but such pullets may "fade" out as layers and as a steady source of income, says H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois. Eggs have brought Illinois farmers an average annual income of $20,000,000 during the past four years, and this source of cash probably will be relied on more than ever this year, he said.

Egg prices are generally at their highest in the fall months, and to take advantage of this market, poultrymen force their pullets into early production by continuing them on a mash higher in protein than is needed for good growth.

The all-mash system of feeding has proved quite satisfactory in many instances, points out Alp. However, when used incorrectly it is believed to be partially responsible for pullets "fading" out of production in the fall and winter, because of failure to secure good physical development during the growing period. Early maturity in pullets is desirable, but maturity at the expense of physical development is likely to prove unprofitable.

To help overcome erratic winter laying, it is suggested that growing pullets be fed for good physical development, such as may be obtained on many farms through the liberal feeding of grain. It is true that grain-fed birds may not come into production as quickly, but in the opinion of a number of practical poultrymen, they are likely to be more consistent in their winter laying.

A mixture of equal parts of cracked corn and wheat fed in a hopper, in conjunction with the regular mash, has given satisfactory economical results, Alp explains. As the birds become older, whole grain may be substituted for the cracked corn in the mixture.

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Franklin's Adage Verified Today By Illinois Farmers

Ben Franklin's old adage about "the best investment is a deposit of fertility in a soil bank" is being confirmed in 1934 by hundreds of Illinois farmers, says L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois.

Farmers who in past years applied limestone to their soils so that they might grow alfalfa, red and sweet clovers, have found the investment to pay good dividends, and particularly so this spring. Drouth in many Illinois counties dried up the bluegrass pastures, making them almost worthless by the middle of May, but legumes made possible by limestone applications have come to the rescue with both pasture and forage.

A typical example of such investments and timely dividends is found on the farm of Frank Hanley, in McLean county, Illinois, explains Miller. Back in 1915, Hanley applied limestone at the rate of 3½ tons to the acre on a 15-acre field. It was then conceded to be the thinnest soil on the farm and had not grown clover for years.

In the past 19 years, however, the field has produced several good stands of alfalfa and this spring exhibits an excellent growth of a red and sweet clover mixture. The field is being pastured and the owner has remarked that it "certainly has been a life saver this season with the bluegrass pasture of little or no value."

It is possible that the original 3½-ton limestone application made 19 years ago will continue to give good results for many more years, points out Miller. If, however, it is assumed that it is now exhausted or leached from the soil, the cost at present prices has been only 35 cents an acre each year.

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Chopping Hay May Have Added Merit In Year Like This

Illinois farmers will not harvest their usual crop of 3,000,000 tons of hay this year, but that may be only one more reason why it will pay many of them to use the newer practice of storing it in chopped form rather than as long hay, in the opinion of R. H. Reed, agricultural engineer at the College of Agriculture, University of Illinois.

Farmers who have been using chopped hay say that less is wasted by livestock, an important point when the hay crop is as short as it threatens to be this year, he said. As much as 20 to 30 per cent may be wasted when coarse soybean hay or hay of poor quality is fed long, it was said.

Other advantages in favor of storing hay in chopped rather than unchopped form are savings in time, labor and expense, Reed reported.

From a questionnaire sent to farmers in many parts of the United States, it was learned that those who are now chopping their hay with a hay chopper or ensilage cutter as it is put into the barn have found the practice so satisfactory that few, if any, would return to the use of long hay.

Among the many advantages noted in the use of chopped hay, explains Reed, is the elimination of work in the hot, dusty mow at harvest time. Where a chopper is used at the barn, it not only cuts the hay into short lengths but also elevates it and places the hay in any part of the mow desired. This benefit was listed by every farmer answering the questionnaire.

In addition, farmers noted that the hay could be put up faster and with fewer man-hours a ton, when it was chopped than when stored as long hay.

Many farmers also found that the saving in mow space through the chopping of hay permitted advantageous changes in their farming practices. Where the barn supports were strong enough, or could be reinforced, from 50 to 100 percent more hay could be stored in the same space or the extra space could be used for grain bins or other purposes.

Most of the farmers using chopped hay reported that less time and energy were required to throw the chopped hay down from the mow and feed it than had been required previously for long hay.

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Barnyard Kings Get Ax For Sake Of High-Quality Eggs

The open season for roosters is on in Illinois, and right now the life of the "King of the Barnyard," who plays the leading role in lowering the quality of summer eggs, is in a hazardous position, announces the poultry division of the College of Agriculture, University of Illinois.

Rooster days are being sponsored by farm advisers, chambers of commerce, newspapers and poultry companies in all parts of the state, with the result that male birds, young and old, are being corralled for market. Premium prices and prizes are offered to farmers who bring their roosters to town on special days.

Back of these rooster day celebrations is an almost statewide effort to produce higher quality eggs this summer and fall, it is explained. During the warm months fertile eggs are the first to deteriorate, but by removing the male birds from the flocks, farmers can take the first step toward insuring better keeping qualities in their market eggs. Approximately $5,000,000 is believed to have been lost by Illinois egg producers in one year as a result of marketing low quality and bad eggs, and to fertile eggs can be laid the blame for a large portion of this loss.

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Illinois Farmers Map Next Move Against Chinch Bugs

Illinois farmers have waged such an intensive fight against the chinch bugs threatening their corn crop that by June 18 there had been distributed in this state a total of 1,250,000 gallons of the creosote and coal tar which the government purchased and furnished free to farmers for barrier building, it was announced by Prof. W. P. Flint, chief entomologist of the College of Agriculture, University of Illinois and Illinois State Natural History Survey.

Any further check on the pests by the use of barriers is now practically impossible in all of the 70 infested counties. From now on the chief activities in the fight will center in the late planting of emergency crops to replace those destroyed by the pests and the drouth and in the possibilities of reducing damage from the second brood.

The amount of government-purchased oil used for barriers in Illinois reached the total of 1,250,000 gallons when the state was granted an additional 250,000 gallons on June 17. The state's original allotment was 800,000 gallons, but this had been increased by 200,000 gallons before the final additional grant of 250,000 gallons was made.

By June 19 the 11 states had used the entire quantity of barrier creosote and coal tar purchased by the government out of the special appropriation of $1,000,000 which was passed on June 7.

Distribution of the 1,250,000 gallons of oil was made in Illinois without the cost of a cent for salaries, wages or other overhead, with the exception of transportation costs. Members of the state chinch bug control committee in charge of the distribution were Prof. Flint, chairman; J. C. Spitler, state leader of farm advisers in the extension service of the College of Agriculture, University of Illinois, and Walter V. McLaughlin, director of the Illinois State Department of Agriculture.

Heavy rains in some parts of the state on June 17 caused no appreciable casualties in the hordes of chinch bugs. The pests continued to be just as serious a threat as ever to the corn crop, which farmers are now depending upon more heavily than ever as a result of the failure of many of their other crops.

Reports indicating that the rains did not lessen the dangers of chinch bug damage were received by Prof. Flint from a number of counties in the state. F. H. Shuman, farm adviser of Whiteside county, reported that bugs submerged for two hours after heavy rains of June 17 appeared to be as lively as ever after the water dried off.

With everything done that can be done to check the bugs by means of barriers, farmers now are thinking and planning of what to do next. Suggestions to help farmers repair the damage that already has been done to their crops and to avoid as much damage as possible during the remainder of the season are being worked out by the chinch bug committee of the U. I. College of Agriculture composed by Prof. Flint, chairman; George M. Dungan, of the agronomy department; J. W. Lloyd, olericulture; W. W. Yapp, dairy husbandry; J. L. Edmonds, horse husbandry, and James R. Holbert, of the U. S. Bureau of Plant Industry, Bloomington, who is cooperating with the college.

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Late Corn May Be Best Forage Crop On Illinois Farms

Despite probable damage by both chinch bugs and drouth, corn may yet prove to be the Illinois farmers' best bet as a forage crop this fall, in the opinion of G. H. Dungan, crop production specialist at the College of Agriculture, University of Illinois.

Corn is usually considered for its value as a grain crop, but in a forage shortage emergency such as may take place this year as a result of dry weather and chinch bug infestation, the plant may be called upon to exhibit its dual possibilities, it is said.

About the time the chinch bugs lay their eggs on the earlier planted corn, which usually occurs in Illinois about the last week in July, farmers may still plant corn that will develop a large amount of forage before the first killing frost, explains Dungan. Obviously such corn will not produce grain and it may not mature enough for silage, but it will prevent a forage shortage on many farms.

This corn should be drilled thickly at the rate of 1½ bushels of seed to the acre, in much the same manner as soybeans. Heavy seeding is advisable to prevent the plants from becoming too coarse for the best livestock feed. There is no particular choice as to the variety, for any well adapted seed will produce sufficient growth for forage purposes.

Sometime before the first killing frost, when the plants are tall enough the corn may be pastured or cut for hay as the farmer desires. The green corn plants, however, should not be pastured after the first killing frost because of the danger of prussic acid poisoning.

As a general recommendation, explains Dungan, soybeans, cowpeas, sudan grass, grain sorghum and millet are superior to corn for forage production. But this year reports indicate that most farmers have plenty of seed corn on hand, while the seed of other possible crops is becoming both scarce and expensive. Thus, in the absence of other seed and in light of threatening chinch bug damage, corn may prove the most practical emergency forage crop this fall.

-M-

Twenty Garden Crops Still Possibilities In Illinois

With the drouth being broken throughout most of the state, Illinois home gardeners still have time to produce considerable food for their families, if they plant the proper crops, says Lee A. Somers, horticultural extension specialist at the College of Agriculture, University of Illinois. Probably some 20 vegetables may yet be planted in most Illinois counties with reasonable assurance of success.

Gardeners can still get good, though late, crops of tomatoes, peppers, egg plant and sweet potatoes, if strong plants are used and growth is hastened as much as possible. Likewise, it is just the time of year to put out lima beans in northern and central Illinois, although a bit late for the southern part of the state. Furthermore, cucumbers, summer and winter squash and even an early variety of muskmelon such as Hale's Best may be planted, if no time is lost.

Sweet corn should be planted now and successively until as late as July 10, while string beans may be put out at regular intervals until late July. For those who like okra, a crop may still be had, if seeded promptly.

By dropping four or five seeds in each hill and later thinning out the plants until the most vigorous remain, Illinois growers may produce late cabbage and cauliflower crops. In the case of cabbage, however, only yellows-resistant varieties such as Wisconsin All-Head Select or Wisconsin Hollander No. 8 should be planted.

To supply summer greens, the season is not too late for Swiss chard, while other crops that may yet be planted include carrots, Detroit Red beets, Rural New Yorker or Carmen No. 3 potatoes, pop corn and dry beans.

-M-

Phosphorus Test Aiding Farmers In Placing AAA Acres

Perfected before AAA programs were started, the field phosphorus soil test developed at the College of Agriculture, University of Illinos has come to the rescue of Illinois farmers who are participating in the government's adjustment programs, according to reports by C. M. Linsley, soils extension specialist. More than 123,000 farmers in this state have signed corn-hog contracts and some 25,000 are cooperating in the wheat control campaign.

To take part in the adjustment programs, the farmers agreed to withhold from normal production at least 15 per cent of their former wheat acreage and 20 per cent of their usual corn ground. AAA regulations, however, permit the cooperators to use these contracted acres for certain purposes, one of which is the seeding of legumes for soil improvement and erosion prevention.

Desiring to grow certain legumes on the contracted acres, AAA contract signers must first know whether or not the contracted acres contain sufficient phosphorus to assure satisfactory growth. It was in such cases that the available phosphorus test proved its value in the government's adjustment programs. The soil acidity test recommended by the U. of I. College of Agriculture, Likewise, was of value in determining whether the proposed contracted acres contained enough lime to grow alfalfa, red and sweet clovers.

How the phosphorus and acidity tests actually aided farmers in avoiding serious mistakes is revealed in the personal experience of R. A. Congram of Ford county as reported by Farm Adviser W. F. Purnell. Congram has decided to seed his AAA acres to alfalfa and had located this plot where it would be most convenient for his tenant. However, before seeding time Congram attended a soil testing meeting conducted by Purnell in cooperation with the extension service of the college of agriculture. He took with him soil samples from the proposed contracted acres as well as from another field not so conveniently located but still available for the purpose.

When the tests were made at the meeting, Congram was surprised to learn that the first field was medium acid and low in available phosphorus, and therefore unsuitable for alfalfa without treatment. Field No. 2 proved to be sweet, with a fair supply of available phosphorus, and hence in good condition for alfalfa production.

Like many other farmers in various sections of Illinois who had similar experiences, Congram made arrangements to change the location of the contracted acres to the second field, thereby probably saving his alfalfa seeding.

-M-

Peach Thinning To Be Profitable Where There Is Crop

With prospects for good peach prices this year, southern Illinois growers can well afford to thin out the set to obtain the greatest possible yield of fruit of marketable size, says M. J. Dorsey, chief, and R. L. McMunn, of the division of pomology, College of Agriculture, University of Illinois.

Since the crop to the north of Illinois was frozen out this year, growers of this state seem to be in a strong position in the market. This alone will repay orchardists for bringing on a high quality crop, it was pointed out.

The buds that survived the low temperatures of the past winter are, for the most part, located at the base of the shoots, it is explained. This has resulted in so uneven distribution of the buds over the tree that a different type of thinning should be practiced. The usual attempt to space the fruit should be omitted this year in favor of thinning according to the total load of the tree.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Increased Industrial Activity Bolsters Farm Prices

Brighter days for Illinois farmers have been ushered in with the continued swell in factory payrolls, combined with increased industrial production, it is shown in a monthly review prepared by Dr. R. W. Bartlett, agricultural economist, U. of I. College of Agriculture. With grains registering the most marked advances, the index of Illinois farm prices prevailing in May was 10 per cent higher than a year ago, the review points out.

Business conditions in May remained about the same as they were in April, and up to that time the course of business activity in the United States had been definitely upward since November, 1933, Dr. Bartlett said.

About 12 million dollars more was received by Illinois factory workers in April, the most recent month for which figures are available, than they received in April, 1933. Nevertheless, the April payroll this year was only 47 per cent of the April average for the years 1925 to 1927.

The total April income for factory workers in the country as a whole was 789 million dollars, which was an increase of 338 million dollars, or 73 per cent, over what it was in April, 1933, the review reports. However, the April U. S. factory payrolls in April of this year were only 67.3 per cent of what they averaged during April of 1923 to 1925.

The demand for food and hence the prices for farm products are influenced by such changes in payrolls of industrial workers, Dr. Bartlett explained.

"Prices of all Illinois farm grains in May of this year jumped 30 per cent above what they were a year ago. Oats, barley, wheat and corn made marked advances, while hay prices in May were 98 per cent higher than those of a year earlier.

"The principal advances in hay and grain prices can be attributed to actual or probable reduction in supplies resulting from the drouth, chinch bugs and farm adjustment programs, going along with a continued improvement in demand.

"Illinois livestock prices in May registered an 8 per cent increase over the mark of a year ago. Prices of lambs, sheep, horses, beef cattle and veal calves were higher than they were a year ago. The only classes of livestock to register a decline were hogs and milk cows. The average price of hogs was $3.15 a hundredweight on May 15 compared with $3.56 on April 15 and with $4.30 on May 15 last year. The decline for the past month was partly seasonal and partly the result of a larger than usual increase in slaughter.

"Average farm prices of Illinois livestock products in May were 16.5 per cent higher than a year earlier, with wool prices showing the most marked gains. Farm prices for eggs were 13.5 per cent higher; for chickens, 9.4 per cent higher; for milk, 13 per cent higher, and for butterfat 2 per cent higher than last year. Wool prices were 45 per cent higher than those of a year ago.

"Indexes of Illinois farm prices of 20 products by months in 1934 compared with the same month of 1921-1929 were: January 52, February 56, March 56, April 56 and May 55. The Illinois farm price index for May, 1934, was 10 per cent higher than a year earlier."

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Lespedeza Straw Proves To Be Fair Dairy Roughage

Illinois dairymen faced with a shortage of forage for their cows as a result of the extreme drouth this spring will find threshed lespedeza straw a fair emergency roughage, suggests W. B. Nevens, associate chief in dairy cattle feeding at the College of Agriculture, University of Illinois.

Experiments just completed by the dairy husbandry department show that although lespedeza straw can not be expected to be as high in feeding value as well-cured lespedeza hay, it is nearly equal to early-cut, leafy, green soybean hay.

When 18 dairy cows were fed lespedeza straw, Nevens reports, they produced an average of 33.5 pounds of milk daily as compared to 35.5 pounds when fed soybean hay. The lespedeza straw in this case contained 7 per cent protein, while the soybean hay gave an analysis of 13 per cent protein.

Lespedeza is usually harvested for seed when the plants are well matured. At that stage the plants are lower in protein and are more woody than at an earlier stage when the best quality hay can be made. This probably accounts for the fact that the lespedeza straw was less palatable to the cows than the soybean hay. In spite of this difference, the cows consumed all but 10 per cent of the lespedeza straw, while they left 23 per cent of the soybean hay in the mangers in the form of coarse stems.

The lespedeza straw fed during these trials consisted of approximately 67 per cent leaves, 25 per cent stems and 8 per cent timothy stubble. This high percentage of leaves and the good results obtained are accounted for by the fact that the lespedeza was cut before complete maturity. All of the leaves were carefully saved, the straw was free from mold and in good feeding condition. The leaves of the soybean hay, which was harvested very early, formed about 64 per cent of roughage, the stems 31 per cent and the pods 5 per cent.

Thus, when handled in a manner that will conserve its feeding value, lespedeza straw may be depended upon to give fairly good results as a roughage for dairy cows, says Nevens.

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U. S. Inspections Speed Fruit And Vegetable Sales

Shipping point inspection service, now available in many parts of Illinois, is adding both speed and satisfaction to the sale of the state's $25,000,000 fruit and vegetable crops, says J. W. Lloyd, chief in fruit and vegetable marketing at the College of Agriculture, University of Illinois.

Illinois growers are finding that official certification of the grade and condition of their products is especially helpful in making sales on telegraph orders, since the information supplied by the inspection service is recognized as authentic in both the trade and the courts.

On a falling price market, explains Lloyd, a car of either fruits or vegetables with an inspection certificate is much less subject to rejection than a car without benefit of such service. This is a valuable advantage to the shipper. Likewise, on a rising market, the distant buyer is more certain of getting what he wants, if he buys only on the basis of official inspection. Thus more satisfactory dealing all around is made possible through the inspection.

This shipping point service is furnished by the Illinois State Department of Agriculture in cooperation with the U. S. Bureau of Agricultural Economics and may be obtained by grower, shipping agent or buyer in all localities where early apples, cabbages, peaches, tomatoes, and late apples are produced in sufficient commercial quantities.

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Small Grain This Year Is Suited To Good Combining

While 1934 brought drouth, chinch bugs and unusually short wheat and oats, it also supplies optimum conditions to combine-harvest Illinois small grain crops, says A. L. Young, agricultural engineer at the College of Agriculture, University of Illinois.

In most parts of the state this season, it is possible to let standing grain ripen thoroughly. There is little danger of lodging, and there are few weeds to increase in size as the grain dries. The fact that the grain is short will prove more of an advantage than a handicap to Illinois combine operators.

As a result of these favorable conditions, however, there will be a tendency on the part of operators to thresh unusually fast, throwing a heavy load of grain and chaff on the cleaning sieves and screens. This should be avoided, explains Young, for it is likely to cause difficulty in separating even the dry foreign material from the grain. If the sieve openings are kept small enough to separate heavy foreign matter, rapid threshing will cause heavy tailing, resulting in a fairly large loss of grain in chaff and straw. Furthermore, this may cause cracked kernels when excessive amounts of threshed grain are returned to the cylinder.

Short and very brittle straw to be found in most Illinois grain fields this year will tend to increase the amount of chaff that works down through the straw rack. This will increase the amount of chaff that must be handled by the cleaning sieves. On some combines the size of the openings in the rack or conveyor can be made smaller to care for this condition.

To reduce the amount of chaff, it is generally best to use fewer concave teeth and keep them up well. Lowering the concaves may let an excessive number of heads pass through unthreshed, particularly when the straw is short.

Windrow combining this year is likely to prove somewhat risky. In fields where there are both short grain and weeds, operators should bear in mind that windrows not supported by a fair amount of stubble dry out very slowly if soaked by a rain. Moreover, when windrows that consist mostly of heads are picked up, the amount of grain left on the ground will be high. Then too, windrowing short oats where the cornstalks have not been cut into short lengths is seldom advisable.

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Cultivating Orchards Being Stopped As Thing Of Past

Another of the older farm practices that is fast becoming a thing of the past in the 176,370 acres of Illinois orchards is clean cultivation, according to Dr. W. A. Ruth, chief in pomological physiology at the College of Agriculture, University of Illinois. Although it gave orchards a look of beauty and of well-being, clean cultivation is now known to do more harm than good, he said.

It is true that cultivation at certain times provides the best conditions for growth, points out Ruth, but it also paves the way for soil erosion which is always more serious than it appears. Furthermore, excessive orchard cultivation reduces the available water supply for the trees. By creating a dust mulch, which water penetrates only slowly, cultivation causes the rain to run off instead of soaking into the soil. Likewise, continuous cultivation destroys organic matter.

No definite rule for cultivation can be prescribed for all orchards, says Ruth. The age of the trees, the topography and physical condition of the soil must be considered for each individual orchard in light of the benefit or harm that may accrue as a result of certain cultivating practices.

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Late-Sown Crops Must Produce Emergency Stock Feeds

Emergency feed to help carry the ten million head of livestock on Illinois farms can be obtained by planting some crops as late as the middle of August, according to a new circular, "Late-Sown Emergency Feed Crops for Illinois," which has just been issued by the College of Agriculture, University of Illinois to help farmers cope with one of the most serious feed situations in history. Dr. L. H. Smith, of the department of agronomy, is the author of the new circular.

Soybeans, cowpeas, corn, sudan grass, rye, millet, sorghum, rape and buckwheat for emergency fodder purposes may be planted in July and some of them as late as mid-August, the circular points out. It is too much to expect normal yields from these late-sown crops, even if the weather is favorable from now on, but they will enable farmers to make the best of a bad situation.

A further development in the drouth and chinch bug shortages of livestock feed is the lifting of AAA restrictions to permit Illinois farmers to plant fodder corn and grain sorghums on any or all of the 1,500,000 acres of land which are being rented to the government under wheat, corn-hog and tobacco contracts.

For the most part, farmers have little choice between the different emergency crops because seed of most of them is scarce, it is pointed out in the college's new circular. It is being suggested that farmers use such seed as is at hand. If corn is available, as it usually is, planting it promptly where it is reasonably safe from chinch bugs will probably give better results than delaying to search for some other crop.

Sudan grass has given reasonably good results at the U. of I. College of Agriculture when it has been planted for emergency purposes as late as the middle of August. It is a fast grower and can be used for hay, pasture or silage. At the experiment station farm it has made pasture as early as four to six weeks after planting. One objection, of course, is that chinch bugs like it. Large seed dealers may be able to furnish seed. It may pay, particularly where large quantities are desired, to inquire in Kansas, Oklahoma and Texas where sudan grass is grown.

Millet is another of the crops that can be sown late in the season. It is not so highly regarded as sudan grass, but seed of it can sometimes be obtained after the sudan supply is gone. This is another of the crops that the chinch bugs like.

Sorghum will withstand very hot, dry weather, but it is subject to chinch bug attack. There are many kinds of sorghum, and the crop can be used for hay, forage, silage, seed or the preparation of sirup.

Rape, one of the chinch-bug-proof crops, is used for pasture, especially for sheep and hogs. It should not be fed to dairy cows because it gives an off-flavor to the milk.

Buckwheat, another chinch-bug-proof crop, may be sown until midsummer for a seed crop. It will thrive on poorer soil than will many other crops.

A mixture of sudan grass and soybeans has given good results on the experiment station farm of the agricultural college.

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Banner Illinois Year Predicted For Legumes And Lime

With approximately 1,500,000 acres of Illinois corn and wheat land retired from normal production as a result of the government's adjustment programs, 1934 may become the banner year since 1930 in the application of limestone and the seeding of alfalfa and other legumes in this state, says C. M. Linsley, soils extension specialist at the College of Agriculture, University of Illinois.

This is borne out by reports from county farm advisers in all parts of the state. In all these reports there is evidence of a new and livelier interest on the part of farmers in the college's long-time program for more legumes and better balanced cropping systems.

Two of the most noticeable effects of the AAA in Will county are the increased demand for alfalfa and sweet clover seed and the increased use of the soil testing service to protect these new legume seedings, according to L. W. Braham, farm adviser at Joliet. "Up to May 1," Braham explains, "the demand for alfalfa seed increased more than 250 per cent and sweet clover seed 300 per cent over the amount purchased during the first four months of 1933. As a protection for these increasod purchases, samples of soil representing more than 500 acres were tested and mapped during the month of April alone."

Thirty-two carloads of limestone were ordered by Peoria county farmers during April and May of this year, reports J. W. Whisenand, farm adviser there, while in Carroll county 15 crushers have been operated at local quarries to supply the limestone demands of farmers. "It looks like one of the high years for liming and sowing alfalfa," is the comment of M. P. Roske, Carroll county farm adviser.

Seedings of alfalfa in Stephenson county will be unusually heavy this year, if the number of soil tests and inquiries relative to the seeding of alfalfa can be taken as an indication, writes Farm Adviser V. J. Banter. In one month 407 acres of Stephenson county soils were tested for acidity and hundreds of inquiries received relative to legume production.

The corn-hog program has directed the attention of Douglas county farmers to the importance of crop yields, and as a result there is a growing interest in legumes this year, Farm Adviser Ward C. Cannon reports. A similar trend is noted in Edwards county where Farm Adviser W. D. Murphy reports gains in alfalfa acreage. Sales of alfalfa seed in DeWitt county have been several times higher than normal, in the opinion of Farm Adviser H. N. Myers, and E. S. Amrine, farm adviser in Wayne county, reports several hundred tons of limestone ordered for farmers in his county.

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Use Of Tractors Making Abnormal Gains In Illinois

An abnormal increase in the use of tractors is taking place on Illinois farms today as a result of the steady decrease in available work horses and the improvement in tractors and tractor equipment, says R. I. Shawl, assistant chief in agricultural engineering at the College of Agriculture, University of Illinois. The latest available census figures credit Illinois farmers with nearly 70,000 tractors, or an increase of almost 61 per cent over the 1925 tractor enumeration of 43,325.

This trend in the use of mechanical power has been stimulated in the last few years by a decided increase in the over-all efficiency of tractors, resulting from improvements in design, material and construction. Quality, dependability, adaptability and long life are now demanded by and available to tractor buyers.

Furthermore, in their efforts to reduce crop production costs, Illinois farmers who grow row crops have been attracted to the modern general-purpose type of tractor with its multiple-row cultivating and planting equipment, explains Shawl.

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Delayed Peach Spray Likely To Pay Well This Year

With prospects for higher prices this summer, Illinois peach growers who are fortunate enough to have a crop will save money and get better results if they delay applying the usual sulphur sprays or dusts until two or three weeks before harvest.

This is especially true this season because of the dry spring and the light infestation of curculio, advises H. W. Anderson, chief in pomological pathology at the College of Agriculture, University of Illinois.

Brown rot, the most serious fungous disease of peaches does not cause much damage until the peaches approach maturity, it is explained. In seasons of heavy, early-summer rainfall, some fruit rotting may occur four or five weeks before maturity, but this is rare under Illinois conditions.

Since sulphur sprays or dusts are good insurance against brown-rot damage, growers will make a serious mistake, if they neglect this practice and allow the disease to become established in their orchards. With a general scarcity of peaches and higher prices for quality fruit, the protective spray will pay good dividends on time and money expended.

The most effective spray schedule for brown rot is one application about two weeks before harvest and another as near harvest as possible. Wettable sulphurs which do not stain the fruit or lime-sulphur dusts should be used. Lead arsenate should not be added to the spray at this time, and lime may be omitted when the wettable sulphurs are applied.

Although some buyers are inclined to discriminate against fruit showing evidence of spray materials, neither the lime nor the sulphur is injurious. Furthermore, the presence of brown rot is likely to cause greater market loss than the appearance of a small amount of lime or sulphur on the peaches, it is said.

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Big Investments In Livestock Justifies Having Shade

An investment of more than $140,000,000 which Illinois farmers already have in livestock readily justifies the small amount of money and labor that might be spent in supplying shade for their animals during the extremely hot days of midsummer, says W. A. Foster, farm building specialist at the College of Agriculture, University of Illinois.

Sunlight in the winter is a tonic, giving warmth and comfort to all animal life, points out Foster. But in summer it becomes so intense and severe that livestock should have protection from its blistering rays in the middle of the day. Today many Illinois pastures are void of shade and the animals confined in them must suffer from both extreme heat and insect pests.

If trees are not available for shade, artificial protection can be erected with small cost and a little labor, Foster explains. A few posts and poles covered with brush or wire, then a thin layer of stalks, weeds or straw will give adequate shade. The rain will pass through this thin structure, thereby reducing the dust caused by the stock stamping at flies.

In line with the renewed interest in soil conservation and reforestation, setting out a few trees in each field and pasture will supply a shade in a few years that will pay large returns on a small investment. In carrying out such a plan, farmers should use care in selecting the trees, choosing healthy, quick-growing varieties that will become beautiful, hardy specimens. A protecting barrier should be built around the trunks of these trees so they will not be injured by the animals. This will not only provide shade for the livestock, but will add beauty to the farmstead.

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First Illinois Corn-Hog Contracts Now In Washington

Approximately 123,000 Illinois farmers who have signed corn-hog contracts are looking forward to the arrival of the first checks for close to $35,000,000 in benefit payments, following the announcement by officials of the College of Agriculture, University of Illinois that the first of the contracts from this state have been sent to Washington.

The first contracts--87 in number--were from Piatt county and were mailed to Washington Saturday night, July 7. As soon as the contracts are checked and accepted by the Secretary of Agriculture, the first checks for benefit payments to farmers in this state will be started back from Washington. All those in the first consignment were early payment contracts, that is, the farmers signing them agreed to accept changes in their contract figures without having the changes submitted for their approval.

Sixteen other counties made progress toward getting their checks when it was announced that they had adjusted the contracts of their farmers to meet the quotas of corn and hog production as set by the state board of review. Four other counties on Monday, July 9, had all but completed the adjustment of their contracts for final approval and five other counties will probably get the work finished this week, it was announced by A. J. Surratt, state agricultural statistician and chairman of the state board of review.

The 16 counties that have just met their quotas are Boone, DuPage, Lake, DeWitt, Piatt, Effingham, Fayette, Monroe, Williamson, Saline, Wabash, Washington, Clark, Clay, Cumberland, and Moultrie. Six counties that had completed the work earlier are Cook, Will, Bond, Calhoun, Lawrence and Gallatin.

The four counties next in line to meet their quotas are Scott, Ford, Massac and Edwards. The five which probably will get the work done this week are Cass, Christian, Greene, Madison and Crawford.

After the counties have met their quotas, all that remains to be done is to get the contracts typed in final form, signed for the second time by the producers and then sent to Washington, after the necessary clearance papers have been obtained from the state board of review.

With the payment of benefit checks to corn-hog farmers just getting started, more than seven million dollars had been distributed up to the first of July, according to word received by the U. of I. College of Agriculture from AAA headquarters at Washington. Nearly 65,000 farmers had shared in these first payments, most of which went to those who signed early payment contracts.

Once they are sent in to Washington by the county corn-hog production control associations, the contracts are handled at the rate of 40,000 a day. A rate would be even speedier than this and the checks could be sent back still sooner if the contracts were absolutely free of mistakes. When examiners find mistakes and inadequate information in the contracts, the AAA must write a letter to the county corn-hog production control association to get the correct facts. This takes time, but care of this kind must be exercised in dealing with more than a million cooperating corn-hog farmers throughout the United States, it was pointed out.

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Details Of AAA Wheat Program Remain Much The Same

Approximately 25,000 Illinois farmers who are cooperating in the government's AAA wheat program were assured three million dollars, or about that much, in crop insurance and benefit payments on their 1934 crop when Dean Herbert W. Mumford, of the College of Agriculture, University of Illinois, received official word from Washington relative to plans for the coming year's wheat program.

The required reduction on wheat seedings for harvest in 1935 is to be 15 per cent from the base period of 1930-1932, the same as was the case last year. However, the announcement stated that more details were being sent in amplification of this point.

Benefit payments for making this adjustment are to be paid to the cooperating farmers at the rate of 29 cents a bushel on 54 per cent of their average production during the base period of 1930-1932, the same as was the case last year. The purpose is to give cooperators a parity price on that portion of their wheat which goes into domestic consumption, and that portion is about 54 per cent.

Twenty of the 29 cents is to be paid this October and the remaining nine cents less local administrative costs, next June.

The total benefit payments for the state figure up close to three million dollars less the cost of local administration.

The processing tax of 30 cents a bushel is to be continued as a means of financing the wheat program, according to the word received by Dean Mumford.

Announcement of the AAA wheat plans for the coming year continues a wheat adjustment program which Illinois farmers have been carrying on for almost a score of years. Between 1919 and 1933 farmers of the state, guided by the teachings of the extension service, U. of I. College of Agriculture and their county farm advisers, cut their annual acreage of winter wheat 56 per cent, or more than one-half.

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Spreading Chinch Bug Fungus Fails To Check Insects

While some method of stamping out the chinch bugs now threatening Illinois corn fields would be welcomed, there is no hope that it can be done by spreading spores of the chinch bug white fungus disease or by putting out bugs that are infected with the disease, according to W. P. Flint, chief entomologist of the College of Agriculture, University of Illinois and Illinois State Natural History Survey.

If the weather should continue normally dry, the disease will not spread to other chinch bugs, and even the distribution of large quantities of the disease spores will have no effect on reducing the number of insects. If the Illinois corn belt should have an unusually wet summer, the disease will spread naturally without artificial propagation or spreading.

Fifty years ago, during the heavy chinch bug outbreak in 1883 to 1887 and for a number of years thereafter, experiments were carried on in Illinois by the late Dr. Stephen A. Forbes and Dr. Snow of Kansas in an attempt to kill the chinch bugs by spreading the disease among them. For a time it appeared that this method of control would prove successful. Continued studies, however, gave disappointing evidence.

The Natural History Survey from 1910 to 1915 developed a method of growing the disease on different types of media and was able to produce spores by the bushels. As long as the weather remained dry, it was found that putting out spores even by the peck in infested fields had no effect in killing the bugs. If the weather became wet for a considerable period, the disease always appeared naturally and there was no advantage in spreading diseased chinch bugs or disease spores.

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Silos Aid Illinois Farmers In Acute Forage Shortage

Silos are coming into such importance as a result of the critical feed situation that one farmer even wanted to know how he could move a concrete silo instead of building another, according to W. A. Foster, farm building specialist of the department of agricultural engineering, U. of I. College of Agriculture.

Extremely dry weather and the chinch bugs have combined to reduce the amount of hay and other forage that are normally stored for winter livestock consumption. But on farms with silos, this loss can be overcome at least partially by putting up additional silage. Corn planted or re-planted too late to mature for grain will make good silage. Furthermore, such chinch-bug resistant crops as sunflowers, soybeans and cowpeas may be made into silage. Where grain sorghum is grown, this too may serve as a substitute for the more common corn silage.

Directions for successfully moving a concrete silo, which at least one farmer wished to do, would be hard to give, but if a new silo of any kind is to be built, there are certain things that must be kept in mind, Foster pointed out. In the first place, the structure should be strong enough so that it will not burst under great pressure. It should be smooth on the inside so that the ensilage will settle freely, and leak-proof so that the juices will not seep away and air enter to cause spoilage. The silo should be economical, of ample capacity, storm and fire-proof and attractive. The latter feature may not be essential, but it will add to its value as a permanent improvement in the farm building group.

Whether or not a silo is necessary on most Illinois farms is, of course, debatable in some cases, says Foster. However, with the increased difficulty of earning a livelihood out of the soil because of keen competition, insect pests, drouth and floods, late freezes and early frosts, the silo is becoming increasingly important in Illinois farm operations.

Silo filling is hard work, but it is all done in a few days in late August and early September. Then the farmer has available, in a 100-ton silo, sufficient feed to carry a herd of 25 cows through the winter with enough silage left over for four to six weeks feed during the summer when pastures are short.

-M-

Close Inspections Cut Repair Costs On Farm Tractors

Some kind of a long-distance record is likely to be claimed by a ten-year-old tractor at the College of Agriculture, University of Illinois, and many of the 70,000 tractors now being operated by Illinois farmers would do as well if they were given the proper care, says R. I. Shawl, of the department of agricultural engineering.

For the past nine and a half years, the U. of I. department of agricultural engineering has supervised the operation of a tractor during which time it has completed nearly 6,000 hours of general farm work. The average yearly cost of repairs for this machine has been $59.37. The tractor is still good for several more years of work and need not be "junked" until the hourly cost of operation exceeds that of the newer and better tractors of present manufacture.

No matter how well a tractor is cared for, there will be some wear, breakage and need of repair, explains Shawl. These repair costs, however, can be reduced to a minimum by daily and yearly inspections and the use of high-grade oils, greases and fuels supplied from clean containers. Checking over a tractor each year locates all the loose bolts and nuts and the parts that need adjusting or replacing, thus preventing serious delays in the field. Taking care of every repair or adjustment as soon as it is found also adds to the life of a tractor and reduces maintenance costs.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Cattle Are Key Factors In Making Crop Adjustments

Retirement of some 1,500,000 acres of Illinois corn and wheat land from normal production under the AAA programs is likely to be successful only if livestock numbers are adjusted to the new levels of grain and forage production in the opinion of R. R. Snapp, associate chief in beef cattle husbandry at the College of Agriculture, University of Illinois.

Cattle constitute a "lock washer" which can be used to hold steady and give permanence to many adjustments which may be made in agricultural practices, he believes.

Farmers with cattle will quickly see the advantages to be gained by raising less grain and more forage and pasture, since this new supply of forage can be used effectively in beef production, explains Snapp. Consequently, changes made by such farmers in their cropping systems will be relatively permanent. On the other hand, farmers without cattle will find their hay and pasture crops even more difficult to dispose of at remunerative prices than were their former surpluses of corn and wheat.

Cattle contribute further to the success of the government's adjustment programs through the aid which they furnish in maintaining the fertility of high-grade land. If marginal and sub-marginal land is entirely removed from cultivation, it will be imperative that the land used for the growing of harvested crops be maintained in a high state of fertility. For this purpose, cattle manure has no equal.

Furthermore, beef cattle aid in the elimination of burdensome surpluses through their ability to convert a million bushels of corn into five million pounds of beef. The million bushels of corn in its natural state would supply the total cereal needs of 800,000 people for an entire year, while the five million pounds of beef will suffice only for 100,000 persons a year at the present scale of beef consumption.

Small fluctuations in the corn, barley and oat crops, amounting to a few million bushels either way, have but slight effect on the grain market so long as there are sufficient cattle in the country to permit the utilization of the surpluses, or to permit the release of sufficient grain to make good the deficit by the varying number of cattle given a grain feed. Without sufficient cattle to furnish this safety factor, relatively small fluctuations in the grain crops may have a great influence on market prices, points out Snapp.

-M-

Cattle Feeders' Day To Be Held at U. of I. August 3

The annual cattle feeders' day will be held Friday, August 3, at the College of Agriculture, University of Illinois, it is announced by Prof. H. P. Rusk, head of the department of animal husbandry. Despite the poor season, some of the gains made by the experimental cattle this year beat those that have been made by any cattle of similar age and weight fed at the college experiment station during the past 20 years, it was said. New results will be available on cattle fattening investigations, on grazing and feeding yearling heifers on pasture and on maintenance of the breeding herd.

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Lazy Pigs Haven't Paid A Profit For Thirteen Years

"Lazy" pigs will be no more profitable this year than they have been for the past 13 years, in spite of the fact that the country's spring pig crop is one of the lightest in years and the prospects for prices are improved accordingly.

This is pointed out by W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois, who calls all pigs "lazy" that are now being carried on light rations in the hope of making them utilize pasture fully and of fattening them on new corn.

Never in the past 13 years has new corn been enough cheaper than old corn to give hog producers even a gambling chance of profiting by delaying the fattening period, Carroll said. Slow feeding and late marketing of March pigs, rather than feeding them for a September market, figures a loss during every one of the past 13 years. This loss varied from 78 cents a head in 1921 to $8.36 in 1928, and last year the difference in favor of rapid gains was an even dollar a head. These computations consider the difference in prices of old and new corn, but do not take into account that light-fed pigs require much more pasture than full-fed ones.

"Lazy" pigs that are allowed to loaf along and make slow gains usually require more feed than those that make rapid gains, and under-fed pigs are more likely to become runty. The chief factor in profits, however, is that slow gains often bring pigs to market weight at a time when prices are unfavorable to profits.

That slow gains are usually expensive gains is revealed in the records of 147 pigs fed individually at the U. of I. College of Agriculture. Of these pigs, 70 head gained more rapidly than the average of all and 77 head more slowly. Of the 70 rapid-gaining pigs, 50 ate less feed in making a pound of gain than the average of the group, while of the 77 slow-gaining pigs 20 ate less than the average and 57 required more feed than the average to make a pound of gain.

Spring-farrowed pigs that are fed for rapid gains are ready for market before the usual fall price decline sets in, points out Carroll, but those that gain more slowly often reach market in the middle of a price slump. With fall-farrowed pigs the relationship is usually less pronounced, though it is often as important.

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Tomatoes From Cannery Crop Become A Market Factor

Production of cannery tomatoes is on the boom in Illinois, and truck gardeners are worrying about what may be done to their business by the extra tomatoes that may come on the market before the canneries open, it is reported by W. A. Huelsen, associate chief in olericulture at the College of Agriculture, University of Illinois.

Along the eastern seaboard, where canning and shipping areas frequently overlap, cannery tomatoes do not often demoralize the market because they are usually planted later and the canneries are generally ready to operate by the time the fruits begin to ripen. The situation in Illinois will most likely adjust itself as soon as those growers who are contracting tomatoes for the first time learn that their end of the business is just as specialized as growing for market, and that they do not necessarily blend well, Huelsen believes. The older growers have learned this through experience.

Production of cannery tomatoes is on the increase in Illinois because many canneries are resuming operations after a shut-down of several years, Huelsen reported. In addition many sections of northern Illinois are growing tomatoes for the first time this year on contract for a large eastern concern which is building a new factory in Chicago. In the peak year of 1925, some 7,650 acres were devoted to growing cannery tomatoes in this state.

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Eight Mistakes Limit Profit Possibilities Of Pullets

Eight common errors are largely responsible for the wormy, runty, non-laying pullets found among Illinois' 26 million farm chickens along about October of each year, says H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

During the summer months many farmers are not "egg conscious" and consequently neglect the care of the birds when they may need it the most. As a result of this neglect, the pullets are so stunted that they fail to produce the number of eggs that might ordinarily be expected of them. Pills and worm capsules administered as cure-alls seldom give satisfactory results in these cases, and the poultryman finds that efforts to remedy the mistakes are expensive, difficult and generally disappointing.

Among the common mistakes listed by Alp are: Empty feeders, empty water troughs, dirty brooder houses without roosts, lice and mites in the brooder house, old contaminated range, outdoor feeders seldom moved, no clean shade provided and sick birds allowed to remain in the flock.

Probably the greatest error in poultry management, as far as feeding is concerned, is failure to use the type of feeder most satisfactory for range conditions and growing pullets. The outdoor feeder should be larger than that used in the brooder house and so constructed that it will not only prevent waste and contamination of the feed, but will also keep the contents dry. For each brooder house there should be at least two good-sized feeders. Many poultrymen use one for the grain and the other for the mash.

Failure to move the feed hoppers is also a common error. Unless the feeder is placed on a wire platform, the ground around it will soon become badly contaminated with poultry manure, and the chances of chickens picking up disease and parasites are increased greatly.

Like the feed, the water should be protected from contamination. Cleanliness around the drinking trough is extremely important. A good plan is to place the trough on a low, wire platform so that the birds can not scratch in the mud caused by spilled water. Furthermore, the troughs should be filled often and regularly so that there is always plenty of water for the birds at all times.

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Chinese Cabbage In Fall Gardens Meets Salad Needs

Illinois gardeners whose spring plantings proved disappointing as a result of the severe drouth from mid-April to mid-June will find Chinese or celery cabbage a worthy addition to the fall garden for fresh salads, kraut and cooking, suggests H. L. Weaver, olericultural specialist at the College of Agriculture, University of Illinois.

Of the heading sorts, the narrow-headed types have been found to mature more rapidly, a higher percentage of plants head out under favorable conditions, they are fairly uniform as to size and shape and will pack well for shipment. Three of these varieties, the PeTsai, Special Narrow Head and Chihili, have been tested at the U. of I. College of Agriculture with good results.

For home use or local market, the Wong Bok and the Chee Hoo yield a much finer quality for salads or slaw than any narrow-headed types.

Seed of the main crop is usually sown in central Illinois about July 15, and August 1 plantings will mature if the fall season is favorable and freezing weather does not arrive too early. All plantings should be made where the crop can be irrigated, for poor results can be expected when water is not available.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Crop Prospects Indicate An Improved Price Situation

With reductions in both crop carry-overs and current production, Illinois farmers should enjoy a more favorable price situation this fall than they have in recent years, says R.C. Ross, assistant chief in farm management at the College of Agriculture, University of Illinois.

A summary of carry-overs as of July 1 shows that Illinois farmers had less than half as much corn and oats on hand as they did last year at this time and about two-thirds as much as in 1932. Wheat carry-over in this state is 12 per cent less than a year ago.

Excepting possible future damage by the chinch bugs, the 1934 corn crop may be about 81 per cent of normal this year. This will be 9 per cent larger than that of 1933 on a 16-per-cent smaller acreage. However, it is too early to fully estimate the probable chinch bug damage, points out Ross.

Illinois' winter wheat production this year has been estimated at 89 per cent of normal or slightly larger than last year, but the oats crop is likely to be only 68 per cent of the short crop last year and 39 per cent of the five-year average. Both drouth and chinch bug damage account for the exceedingly low oats production, while barley fared even worse, with only one-eighth of a normal crop but on a much reduced acreage.

The hay crop for the state is estimated at 57 per cent of normal with timothy and clovers being particularly short. Alfalfa, while reduced by the drouth, stood up much better this year than other hays. Soybeans have been increased 70 per cent over normal plantings and cowpeas acreages show a gain of some 20 per cent. This represents a marked expansion in these crops, a part of which is located on land rented to the government under the terms of the AAA corn-hog and wheat programs. A much larger proportion than usual of the soybean acreage will be used for hay to supplement the scant supply of other forage crops, it is believed.

Crop production for the country as a whole is also much below normal. Based on estimated acreages and yields in comparison with averages for a period of years, corn will be 82 per cent of normal, all wheat 55 per cent, oats 48 per cent and hay 74 per cent. The acreage of soybeans, however, has been increased 32 per cent above the five-year average.

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Weather Holds Key To Outcome Of Chinch Bug Plague

If the weather turns dry, chinch bugs may destroy between 30 and 40 per cent of the Illinois corn crop, according to estimates made by J. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois. However, wet weather during the next two or three weeks will hold the damage down to 15 or 20 per cent of the crop. Whether or not the insect will be abundant and destructive next year depends upon the weather between now and spring, Prof. Flint said.

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Illinois Farmers Making Record Use of Electricity

In spite of the fact that agriculture is just emerging from two years of record low prices, Illinois farmers are using more electricity today than ever before, it is revealed by a rural electrification survey recently completed under the supervision of the College of Agriculture, University of Illinois.

Farmers who recently have secured electrical service for the first time far outnumber those who discontinued the service as a result of the depression, the survey showed. Furthermore, in general those who have discontinued the service made little use of it when they had it.

The survey covered 12 representative Illinois counties and was made as part of a CWA project.

On the basis of findings made in the survey, 43,570 of the 214,495 farms in the state have electricity, while the remaining 170,927 would like to have it, according to E. W. Lehmann, head of the agricultural engineering department of the college. Although there are many farmers who are not financially able to have electric service, all of those interviewed said they would like to have it. Thus, if they had some satisfactory means of financing the building of lines, purchasing the equipment and buying energy, they would invest in this type of improvement as well as in automobiles and tractors, Lehmann believes.

Of the 43,570 Illinois farms which have electricity, 29,330 are on power lines while 14,240 have home plants. Likewise, the survey disclosed that 8,960 of the total number have electrically operated water systems, and 3,690 have electric stoves. There are 4,870 mechanical refrigerators, but since there was no distinction made between the various types of mechanical refrigerators, the survey does not indicate the number that are electric or gas operated.

There is a greater interest in the use of electricity for refrigeration than for cooking on Illinois farms. This is no doubt caused by the fact that fuel for cooking can be obtained easily on most farms and a reasonably satisfactory means of cooking is already available.

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Oats Sown With Alfalfa Lessen Damage From Erosion

Damage from dust storms which proved so devastating to young alfalfa seedings in sections of Illinois this spring, can be practically eliminated if oats is sown as a nurse crop with the new alfalfa seedings this fall, says C. H. Farnham, assistant in soil experiment fields at the College of Agriculture, University of Illinois.

Largely as a result of the poor stands of forage caused by the drouth this spring and the provisions of the AAA programs in which some 125,000 or more Illinois farmers are cooperating, it is anticipated that an exceptionally large acreage of alfalfa will be seeded throughout the state during the next six weeks. An appreciable amount of these seedings will be on sandy or light wind-blown soils which are subject to wind erosion capable of ruining seedings made during the latter part of the summer.

Tests at the Oquawka soil experiment field, maintained in Henderson county by the U. of I. College of Agriculture, show that this damage may be largely done away with by the use of oats as a combination nurse and cover crop for fall-seeded alfalfa on sandy land, points out Farnham. Observations made at the Oquawka field this spring disclosed no damage to alfalfa seeded last fall where surrounded by good oats growth. However, a few feet away where no oats had grown the alfalfa was either badly damaged or entirely killed by the wind-blown sand. In a larger unprotected area on the field, sand had drifted several inches deep, completely burying a strip of bluegrass.

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Washer Plans Aid Apple Men Meet New Residue Limits

Illinois commercial apple growers may not need to buy new washing machines, in spite of the more strict regulations placed on the amount of lead and arsenic residue permitted on apples for interstate and international shipment, in the opinion of R. H. Reed, agricultural engineer at the College of Agriculture, University of Illinois.

Remodelling the apple washing machines now in use so that the chemical washing solutions may be heated to a temperature of 90 to 110 degrees Fahrenheit will materially increase the amount of residue removed, and in many cases will eliminate the necessity of buying a new washer, says Reed. This heating can be accomplished with electric, hot water or steam heating systems as described in a mimeographed publication written by Reed.

Washing apples has come to be regarded as an accepted part of the production and marketing program of many Illinois fruit growers. In past years a few growers washed their apples to improve the appearance of the fruit, but since tolerance limits have been placed on the amount of spray residue that may be present on fruit to be shipped in interstate and international commerce, the washing practice has become more common.

Brushes, sprays and other mechanical means, as well as a variety of chemicals and wetting agents have been used to increase the percentage of residue removed. However, in seasons and areas where particularly heavy spray applications have been required to combat fruit diseases and insects, many of the washing machines in use will not remove enough of the lead and arsenic residues to meet present regulations. This problem brought about the development of the heating process.

Tests at the U. of I. College of Agriculture show that six times as much residue remains on apples washed in solutions at 65 degrees temperature as remains on those washed in the same type of machine at 110 degrees. Detailed information on installing the heating systems may be obtained by writing the department of agricultural engineering, College of Agriculture, University of Illinois, Urbana.

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Six Contests Scheduled To Settle Team Pulling Honor

Two out of Illinois' 727,000 horses will be acclaimed the champion pulling team of the state following six horse-pulling contests to be held during the months of August and September, it is announced by E. T. Robbins, livestock extension specialist at the College of Agriculture, University of Illinois.

The first of the contests will be staged during the state fair at Springfield on August 21 and 22. The next will be at St. Joseph in Champaign county on August 28, and the third at Roseville in Warren county on August 31. Augusta in Hancock county will be the site of the fourth contest on September 4, while the remaining two will be conducted at Sandwich in DeKalb county on September 5 and at Tuscola in Douglas on September 15. Teams from all of the surrounding and nearby counties are expected to be entered in the respective pulling contests.

A dynamometer owned by the U. of I. College of Agriculture and operated by members of the agricultural extension service staff will be used in determining the pulling power of the teams taking part in the contests. Competing teams will be divided into two classes, those with a combined weight of less than 3,000 pounds and teams weighing 3,000 pounds or more.

Last summer the 4,000-pound team owned by Willard Rhoads, of Springfield, set the state record in the class of heavy teams by exerting a pull of 3,225 pounds for 27½ feet. This was equivalent to pulling five 14-inch plows cutting furrows six inches deep in stubble ground.

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Trench Silo Means Of Conserving Shrinking Corn Crop

With Illinois' corn crop threatened by the prolonged drouth as well as the most serious chinch bug infestation in half a century, many farmers of the state may be able to save the maximum amount of their corn by constructing trench silos, suggests E. W. Lehmann, head of the agricultural engineering department at the College of Agriculture, University of Illinois.

Reports indicate that the corn stalks are beginning to dry up in some areas. If extreme heat and dry weather should continue, farmers will want to take immediate steps to conserve as much of their corn as possible in the form of silage. In such cases, mimeographed instructions on digging trench silos, published by the U. of I. College of Agriculture will be of considerable value.

A trench silo is merely a large ditch with the ends on an incline so that a team or tractor may be driven through it. Practically all construction may be done with a slip scraper and consequently the expense is extremely small. The slightly sloping sides are later smoothed off with a spade.

The size of the trench will, of course, depend upon the amount of livestock to be fed from it and the condition of the silage at the time of cutting. A good-size trench silo is about 8 feet deep, 8 feet wide across the bottom of the trench and 10 to 12 feet wide across the top. The length will depend on the amount of silage to be put up. If allowance is made for spoilage, 60 to 80 cubic feet will be required to store a ton of silage for feeding.

Selection of a site with good drainage is important in constructing a trench silo. A soil which is too sandy or one in which the water table is too high is not satisfactory. An objection against trench silos is the accumulation of water when there is a heavy rainfall. This can be overcome to a large extent by laying a drain under the trench, or perhaps the trench can be located so that the lower end opens onto a slope.

Because trench silos are not very deep, the silage does not pack much by its own weight, and thus should be tramped by men, animals or a tractor during and after filling. It keeps best if covered with straw and then several inches of dirt to make a rounded top to shed water.

An experimental trench silo built in another state was filled with 115 tons of silage, and a shrinkage of about 14 per cent, or one-seventh, was noted. About half of this was spoilage. Most of the spoilage occurred at the top, indicating that it is necessary to cover the silage well. When the silo is opened, the silage should be removed from one end and the silage taken from the entire end section each day so as to reduce the danger of spoilage.

More detailed information relative to the construction of trench silos may be obtained by writing the agricultural engineering department at the College of Agricultur University of Illinois, Urbana.

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Hail Damage To Corn Crop Not Always A Complete Loss

Corn struck by a hail storm such as visited several Illinois counties recently may not always turn out to be a complete loss, says G. H. Dungan, associate chief in crop production at the College of Agriculture, University of Illinois.

Much depends upon the severity of the storm and the stage of the corn at the time of the storm. Hail seldom removes all the blades, but more often splits and shreds the leaves to a greater or less degree. This type of injury is not so serious as complete blade removal.

Experiments conducted by the U. of I. College of Agriculture, in which the blades of corn plants were split as if hit by hail, showed only one-fourth the reduction in grain yields as compared to corn plants in which all the blades were removed, points out Dungan. This indicates that as long as a piece of green leaf is hanging on a plant, it is functioning in the direction of grain formation. For this reason, crop insurance adjustors usually like to wait as long as possible after a hail storm before appraising the damage. Time gives the corn plants an opportunity to recover to the maximum extent.

Furthermore, if the storm should strike before the plants are tasseled and if the growing points are not broken out, corn can recover to a surprising degree. The emerging tassel brings along with it two or three blades which because of their newness and excellent exposure to the sunlight are very efficient aids in grain formation. However, if the corn is fully tasseled at the time of the storm and the hail beats off the blades, there will be little or no growth of plant or ear thereafter, explains Dungan.

Plants like soybeans and tomatoes which can send out new growth from buds that have been dormant heretofore can often show a marked improvement two or three weeks after a hail storm. Artificial hailing experiments with corn, however, show that it has much less capacity to survive a hail storm.

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Utility Instead Of Faddish Sires Best Profit Makers

Prize-winning livestock fashions may come and go like feminine styles, but Illinois producers who strive to obtain the maximum returns from their meat animals should select their breeding stock more along utility lines, says E. T. Robbins, livestock extension specialist at the College of Agriculture, University of Illinois. Only farmers who raise the type and size of animals demanded by consumers can expect to sell their livestock for the highest prices, regardless of the latest mode at the livestock shows, he says.

At present many cattle raisers are finding that the fashionable little bulls beget calves that grow too slowly, points out Robbins. When ready for market these yearlings will weigh only 800 pounds, while somewhat coarser stock will tip the scales at half a ton. It is the larger yearlings that are making the most money because they more nearly fit the needs and desires of the market. Larger sires will aid many cattlemen in producing the larger, more desirable yearlings.

Likewise, early lamb producers are coming to realize that they need rams of considerable size, if they are to get the largest possible market returns. For this reason, many farmers are changing to the larger breeds of sheep. In the case of hogs, however, boars weighing considerably less than 1,000 pounds are more likely to fit the needs of most producers, rather than the excessively huge sires seen at fairs and livestock expositions.

Some breeds of livestock need more stretch while others need more compactness to supply sires for most farm herds and flocks. Thus the breeder who develops his stock along utility standards will render a practical service for the livestock industry, says Robbins.

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New Steps Taken To Raise Quality Of Illinois Wheat

A new drive to further improve the quality of Illinois' wheat crop valued at an average of more than 21 million dollars annually is on, it is announced by J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

As part of the work, 10,000 bushels of seed wheat already have been signed up for a new cleaning service that has just been started in five soft winter wheat counties of southeastern Illinois. It is estimated that as much as 40,000 bushels of seed wheat in those five counties may be cleaned before seeding time. The 10,000 bushels already signed will seed approximately 8,000 acres.

Approximately 375 soft red winter wheat growers attended meetings which the extension service of the agricultural college recently held to launch the wheat improvement program in Gallatin, White, Edwards, Wabash and Lawrence counties.

This territory was once recognized as producing some of the best quality soft winter wheat in the entire winter wheat belt. In recent years, however, the increasing amount of garlic, cockle, cheat and other weed seeds in the grain has lowered the quality and taxed growers with a heavy penalty in the form of price discount of from one to five cents a bushel.

It was also disclosed during the recent meetings that much of the soft winter wheat in southeastern Illinois is now infected with the serious disease, bunt, or stinking smut. In some cases it is so serious that buyers are not making bids on the grain but are merely taking samples and offering to try to sell the wheat for the owning farmer for what it will bring.

Farmers are being urged to have their seed wheat run through a fan mill under a heavy blast of air and then treated with one of chemical dust treatments as a means of combatting the smut.

The 10,000 bushels of seed wheat that already has been signed up for the cleaning service and any that comes in later will be run through special high powered fan mills equipped to take out practically all the cockle and cheat seeds, shrunken wheat kernels and from 95 to 98 per cent of the garlic and wild onion bulbs.

As a further step in the wheat improvement program, growers in the five counties will be encouraged to raise improved varieties with seed obtained from neighboring farmers having superior stocks.

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Short Peach Crop Does Not Eliminate Cover Crop Need

Although Illinois will market only about 800 cars of peaches this year as compared with a normal crop of some 8,000 cars, growers should not neglect the practice of supplying a cover crop this fall for soil improvement and erosion prevention purposes, says M. J. Dorsey, chief in pomology at the College of Agriculture, University of Illinois.

Where the soil has been cultivated around the trees, the fertility of the orchard is likely to suffer from soil erosion whether the present crop is large or small. Likewise, adding humus to the soil in the form of green manure is always a good way to improve the future productivity of the trees, points out Dorsey.

It is often surprising the amount of cover crop growth that can be produced between older trees during favorable seasons when the lower branches are not too close to the ground. The success of the cover crop will depend, of course, on the amount of rainfall following the seeding. However, where the seeding can be done as soon as the ground can be worked after a rain, cowpeas will make as promising a late season crop as any.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Position Of Soybeans Strengthened By U. of I. Tests

Experiments which the College of Agriculture, University of Illinois has conducted during the past year on the lower cost production of higher quality beef were concluded at the recent annual cattle feeders' meeting, with the best lot of steers returning 90 cents a bushel profit for the corn that was used. Approximately 700 farmers from Illinois and neighboring states attended the meeting to hear the results which Prof. H. P. Rusk, head of the department of animal husbandry, and Prof. R. R. Snapp, his associate, had obtained in a series of eight experiments with 200 Texas Panhandle steers.

Outstanding in the results was the demonstrated merit of soybean oil, an Illinois-grown protein supplement, in comparison with the more common cottonseed meal for fattening beef cattle. Pasture studies which the college started several years ago also yielded striking results at a time when farmers are putting more land back into pasture and grass than ever before.

Poor results which cattle feeders had obtained last year and in previous seasons had given rise to the fear that soybean oil meal was to blame, but the experiments this year, coupled with those of previous seasons, indicate that the Illinois-grown supplement is equal to cottonseed meal for producing quality beef at low cost. The results further fortify the position of soybeans, which are now being grown on an increasing acreage as a result of the AAA programs and other crop shifts. Illinois is the leading soybean producing state.

The three best lots of cattle in the experiment were steers that had been fed soybean oil meal as the protein supplement to their rations. The top lot of steers, which paid returns at the rate of 90 cents a bushel for the corn that was eaten, was so outstanding that the appraisal committee of packer buyers and commission men called it "as good a lot of yearlings as you will see."

These steers were carried on bluegrass pasture from December 22 until April 13 and then moved to dry lots to finish out the feeding period of 220 days. During the entire feeding period their average daily feed consumption was 12.4 pounds of shelled corn, 1.8 pounds of soybean oil meal, 5 pounds of corn silage and 1.5 pounds of alfalfa hay a head. They were valued at $8.50 a hundredweight in the lot on the college farm or $9.25 on the Chicago market. They gained an average of 2.38 pounds a head a day for the 220 days on feed.

To date the outstanding mixture in the pasture studies which the college started several years ago has been one including 15 pounds of brome grass an acre, 10 pounds of bluegrass, 7½ pounds of red top, and 5 pounds of white clover. Some volunteer sweet clover came up in the field. A test plot that was harvested in this pasture yielded at the rate of 5,120 pounds of feed reduced to a 15 per cent moisture basis, or more than 2½ tons an acre. Fifteen beef heifers pastured on the 10 acres for 56 days this spring averaged 2.48 pounds a head daily gain.

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Strong Soil Will Save Wheat Crop From Chinch Bugs

Wheat production, which has returned Illinois farmers as much as 20 to 30 million dollars in recent, more normal years, need not be abandoned because of the heavy chinch bug infestation this year and the threat of damage in 1935, in the opinion of the State Natural History Survey and the agronomy department at the College of Agriculture, University of Illinois.

If wheat that is seeded this fall is put on the more productive soils and the season is favorable, it will yield fair to good crops even under heavy infestations, it is said. This is borne out by observations made at many points during chinch bug outbreaks in the past and from a check on many Illinois farms in recent weeks. Care should be taken, however, to have a well-prepared seed bed, to seed a variety adapted to the locality and to plant late enough to avoid the Hessian fly.

If winter wheat, spring wheat, rye and barley were entirely discontinued next year in any area of the state and all the small grain acreage planted to oats, the latter crop would be heavily infested. Should weather conditions prove favorable, the chinch bugs would destroy the oats. In many sections of Illinois this year the oats were just as heavily infested as the wheat fields.

For the coming season, however, it would seem a poor practice to sow winter wheat except on strong land. On worn soils the crop is almost sure to be heavily infested and more or less damaged by the chinch bugs. Furthermore, if the chinch bug threat continues, it would be inadvisable to sow spring wheat or barley in areas where there is a heavy infestation, since these crops are especially susceptible to chinch bug attack.

In the northeastern part of the state, including Will, Kendall, Grundy, LaSalle and adjoining counties, the winter wheat during the past season was largely killed by the over-wintering bugs. This would not have occurred in a normal year with anything like an average spring rainfall. On the whole, in all other sections of the state the farmer planting winter wheat on strong ground has had far better returns from this acreage than from other small grains.

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Drouth Reveals Terraces As Conservers Of Moisture

Record-breaking drouth such as has extended over a large portion of Illinois this summer has demonstrated a new benefit of terracing sloping farm land--that of conserving the limited amount of rainfall, points out E. W. Lehmann, head of the agricultural engineering department at the College of Agriculture, University of Illinois.

Observations made in Bond county, Illinois, in former years of deficient rainfall have revealed that terracing and contour farming improved corn yields as much as 15 bushels to the acre. Like investigations in other areas and states have also disclosed the water conservation value of terracing. Heretofore, many Illinois farmers have thought of terracing mainly as a method of preventing soil erosion, especially in seasons of heavy rainfall. Now, however, they are beginning to realize that these same terraces have a value equally as great in years when there is only a small amount of rain.

Where terraces are constructed or where planting is done on the contour, a large part of the rain is held where it falls. The water soaks into the ground where it builds up reserve supplies that help carry crops through periods of long dry spells. Then too, the terraces catch and hold water as it runs off higher ground.

Reports from other states readily confirm the terrace observations made in Illinois. In some areas terraced land has held back and absorbed from 3 to 200 per cent more rain water than unterraced slopes.

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Spreading Waste Straw Increases Corn Crop Returns

Whatever straw they have this year probably will be prized by most farmers, ut any that might otherwise go to waste can be made to pay handsome returns by spread- ng it over land where sweet clover green manure crops are to be plowed down, it is re- orted by A. L. Lang, associate chief in soil experiment fields at the College of griculture, University of Illinois. If it were not for the drouth and chinch bugs, here probably would be thousands of tons of straw go to waste this year. Experiments ave now proved that it has a high potential value if used on Illinois' million acres f sweet clover for soil improvement.

At the Dixon experiment field in Lee county operated by the U. of I. College f Agriculture, straw when applied to sweet clover ground improved the following corn ields from 73 to 82 bushels an acre, or a gain of nine bushels as an average for the ast three years, explains Lang. Likewise at the Clayton field in Adams county, the rowth of corn was improved when straw was spread over sweet clover, although no definite heck on yields has been secured as yet.

Other studies at the Clayton test plots point to the fact that burning straw nd stubble after the small grain crop has been harvested with a combine will completely estroy any young clover. Then too, it is found that burning straw on sweet clover land ends to reduce the returns from the succeeding corn crop.

The improved returns from spreading straw over fields carrying a green manure rop may be accounted for by three physical and chemical reactions, says Lang. In the irst place, the straw itself furnishes organic matter for the soil--a necessary ingre- ient to give the proper balance of moisture, temperature and plant food elements.

Furthermore, a heavy growth of green manure legume material when plowed down lone often releases an excess of nitrogen for the succeeding crop. Straw as a highly arbonacious material extends the period over which the nitrogen may become available nd thus prevents excess loss by leaching. This makes a better balance between soil upply and plant demands.

It is also believed that the straw may furnish the necessary available potash hat often becomes deficient during the rapid-growing season of the corn plant, espe- ially on high lime soils and on ground being heavily cropped with sweet clover. This s particularly true on the lighter-colored soils.

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Illinois Elms Are Not Attacked By Dutch Elm Disease

Illinois elm trees are not dying this year because of the Dutch elm disease, otwithstanding widespread and alarming reports to the contrary, according to a state- ent issued at the College of Agriculture, University of Illinois, by L. R. Tehon, otanist of the State Natural History Survey. Dr. Tehon, who has been directing an nvestigation of elm diseases in Illinois for the past four years, says that to date ot a single case of Dutch elm disease has been located in the state.

Root and trunk infections by fungi such as Xylaria or the lack of sufficient ater are probably responsible for the apparently dying condition of many elm trees in llinois this summer. The prolonged drouth and the series of dry years have tended to emove moisture from the upper soil and to lower the water table beyond reach of the oot systems. This condition is noted by the browning of foliage over the entire tree.

Sudden wilting and death of elms in the central states is usually the result f attacks by one or the other of two fungi, Verticillium or Cephalosporium, both of hich are relatively common parasites of the elm, explains Tehon. They produce symptoms ich like those of the Dutch elm disease.

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COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Illinois May Face Serious Field Seed Shortage

Illinois farmers, who during the years of 1931 to 1933 used approximately 12 million bushels of corn and oats and 60 million pounds of tame hay seed to plant their crops, may soon face the most severe seed shortage in the history of the state, in the opinion of crop production authorities at the College of Agriculture, University of Illinois.

Consequently, producers should now anticipate their future seed needs, and if they do not have sufficient stocks on hand they should take immediate steps to acquire their needs. The shortages are likely to include oats, clover, alfalfa, timothy, rye, winter wheat and barley seeds, and in some areas seed corn.

The seriousness of the seed situation in Illinois became apparent following the completion of a survey of the seed stocks and probable needs in 37 counties in the northern two-thirds of the state made by the crops extension division of the U. of I. College of Agriculture.

As a result of the drouth, the supply of seed oats is extremely short in many counties, reports J. C. Hackleman, chief in crops extension at the college. There are thousands of acres from which no crop was harvested this year, and in many cases the oats stands were so short that they could not be cut even with a mower for hay. Numerous farms in the northern half of the state have no reserve seed oats on hand at the present time and supplies may have to be shipped in from other areas. The condition is equally true of barley and forage seeds, particularly clovers. Furthermore, several counties will not harvest enough corn this fall to plant their acreage next spring.

The most critical conditions are noted in the western and northeastern sections of the state, but in practically all counties in northern Illinois it is apparent that rains and favorable weather conditions have been spotted. In some areas a few farmers were favored with showers at the crucial time and as a result harvested fairly satisfactory yields of oats, while on other farms in the dame neighborhood the crop was a complete failure. Where these spotted conditions exist, it is suggested that farmers who know of producers having grain of seed quality, get in touch with their more fortunate neighbors immediately.

As an outgrowth of the survey, efforts are being made to locate reserve stocks of seed and to aid Illinois farmers in securing seed for their 1935 spring plantings. It is also hoped that a surplus of seed may be found in certain areas of the state which can be used to supply other states less fortunate than Illinois.

Any farmer who does not have enough seed for his needs and does not know of a possible source, should see his county farm adviser. Likewise, farmers who have a surplus of good seed from either 1933 or 1934 crops should list this seed with the county farm adviser or the College of Agriculture, University of Illinois, Urbana.

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Silos Save Corn Damaged By Heat And Chinch Bugs

In spite of the damage from chinch bugs and drouth this summer, Illinois farmers will be able to save much of their corn crop by making it into silage, says W. B. Nevens, associate chief of dairy cattle feeding at the College of Agriculture, University of Illinois.

Immature corn that is drying up because of the lack of moisture and chinch bug injury will make a fair grade of silage, although its feeding value will not be quite equal to that made from more mature corn. Furthermore, chinch bugs do not seriously affect the palatability of silage.

To insure success in making silage from corn that is drying up, explains Nevens, the plant must have a moisture content of at least 65 percent, and best results are obtained when the corn contains 70 per cent moisture. If it is less than 65 per cent, water must be added.

To determine the moisture content of the corn, six or eight representative stalks should be cut into 1 to 1½-inch lengths. A three or four pound sample is then weighed out accurately and heated in an oven until it ceases to lose weight. This will usually require three to five hours at a temperature below that which will char paper. After the moisture has been driven out of the corn sample, it is reweighed.

The loss in weight of the sample, divided by the original weight before being heated and multiplied by 100 will give the percentage of moisture in the cornstalks. If the moisture is higher than 65 per cent the corn will keep in the silo, provided other conditions are good. If the moisture content is 60 per cent, 80 gallons, or 666 pounds, of water should be added to each ton of corn put in the silo. If the moisture content is 55 per cent, then 120 gallons of water should be added to the silage. For each drop of 5 per cent in the moisture of the corn being ensiled, an extra 40 gallons of water is added to each ton.

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New Bulletin Is Aid To Illinois Farm Adjustments

With some 125,000 Illinois farmers adjusting their operations this year as cooperators in the government's AAA corn-hog and wheat programs, an interesting bulletin just issued by the College of Agriculture, University of Illinois, should prove unusually timely and helpful in making these changes.

Originally written in 1929 under the title of "Organizing the Corn Belt Farm for Profitable Production," the publication was revised this summer by H. C. M. Case, chief of the college's farm management division, and R. H. Wilcox, associate chief, to bring it up to date in every respect. The practices, yields and incomes and expenses of hundreds of Illinois farms have been analyzed in determining the most profitable factors in farm management.

For example, a study of 67 farms in Woodford, McLean, Tazewell and Livingston counties revealed that during the five years of 1928 to 1932, the farm with the highest earnings made an average of 6.98 per cent a year on an average investment of $49,247. This income was the result of years of definite effort by the operator to put the farm on an efficient production basis.

The least profitable farm in the group, however, lacked $563, or 1.28 per cent, of making any return on the investment after operating expenses were paid. This difference in the two farms amounts to 8.26 per cent, or $4,442 a year on an investment of $53,781, which was the average investment of all the farms in the study.

That better earnings are realized year after year by some farms in a community than other farms operated under the same natural and economic conditions, is a matter of common observation, point out the authors. But the causes for these differences in net incomes are not so generally understood, and it was for this reason that the studies were made and the bulletin published. Copies of Bulletin 329, "Organizing the Corn Belt Farm for Profitable Production," may be obtained from county farm advisers or by writing direct to the College of Agriculture, University of Illinois, Urbana.

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U. of I. State Fair Booth Aids Seed Survey

Thousands of farmers attending the Illinois State Fair this year took part in the beginning of a survey of the farm seed stocks of Illinois in an effort to aid producers in the drouth-stricken areas who have been unable to harvest enough crops to supply seed for their 1935 plantings.

The survey is a part of the emergency program of the newly-appointed State Seed Conservation Committee and inaugurates the first steps to locate all available supplies of field seeds and to ascertain the probable future seed needs of farmers in drouth areas, explains R. R. Hudelson, assistant dean of the College of Agriculture, University of Illinois.

As farmers stopped at the U. of I. booth and agricultural exhibit under the grandstand at the fair, they were asked to fill in cards stating whether or not they will have surplus oats, barley, rye, winter wheat and tame hay seeds for sale in the coming months. The cards were received by L. H. Smith, of the college's agronomy department, who was in charge of the booth. Later the information is to be compiled and made available to farmers who will be in the market for field seed.

It is estimated that before planting time next spring, Illinois farmers will need approximately 11 million bushels of oats and a million bushels of corn to plant their 1935 crops. In addition, they will need some 2,250,000 bushels of seed for their annual legume plantings plus a million bushels of soybeans and cowpeas to be seeded for the production of grain. Other tame hay seed needs will be 12 million pounds of clover and timothy, 10 million pounds of sweet clover and 1 million pounds of alfalfa seed.

Many Illinois counties, particularly in the western and northern parts of the state, are threatened with the most serious feed and seed shortage in their history, explains Hudelson. The oats and barley crops in 1934 were the smallest on record, while the situation is almost as bad in the case of tame hay seeds, particularly clovers. Furthermore, in some sections there is danger of a dire shortage in good seed corn.

There are counties in the state, however, that were favored with fair to good yields this year. Even in some of the more drouth-stricken sections, there are small areas that received rain at the crucial time and consequently were able to harvest fair crops. These fortunate farmers will have some seed to sell, and it is the purpose of the survey to locate these supplies for the benefit of less fortunate producers.

The state committee, it is pointed out, will not buy or sell the seed. Acting in cooperation with local and county farm groups, it will be a medium of information between farmers who have seed to sell and those who wish to buy it, thereby tending to conserve available supplies. Later, farmers who do not have enough seed for their needs and do not know of possible sources, will be asked to register their wants with county farm advisers, who in turn will notify the state committee.

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Can Sow Alfalfa, Red Clover Now For 1935 Crop

With most of the 1934 seedings of tame hay killed out by the drouth, Illinois farmers who have not already taken steps to replace this loss by summer seedings of alfalfa or red clover, should do so immediately, suggests J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois.

Experiments have shown that for best results alfalfa should be seeded during the latter part of July or early August, but this year it was too dry over much of the state to get a good stand at that time, However, where recent rains have supplied sufficient moisture and if favored by a comparatively late fall, there is still a good chance for alfalfa sown immediately to come through the winter and make a crop next summer.

That alfalfa deserves its title as the premier hay plant in Illinois is attested by the way it came through the hot, dry weather in much of the state the last two years. Although it represents only 16 per cent of the tame hay acreage of the state, it will produce approximately 42 per cent of all hay harvested in Illinois in 1934.

However, when seeding alfalfa for 1935 harvest, Illinois farmers should bear in mind certain fundamental principles in the production of this legume, points out Hackleman.

First, the soil on which it is to be grown should be relatively sweet; it should test medium to strong in available phosphorus, and should be well drained.

Likewise, the seed bed should be well pulverized on the surface and compact in the subsurface. A loose, cloddy soil makes a poor seed bed for any hay seeding.

As another consideration, if possible, the grower should use a strain of seed that is comparatively winter hardy. Northern and northwestern grown seed is usually considered more hardy than that produced in the west and southwest. But if unable to obtain these hardy types, that from the central west is generally hardy enough to withstand at least two or three winters. Of course, if the field has not produced a good crop of alfalfa or sweet clover in the past, the seed should be inoculated.

If these same precautions are taken, August-seeded red clover should also come through the winter and make a good hay crop next summer, it is said.

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Silage Loss Often Saved By Early Repairs

Repair parts for ensilage cutters that will fill Illinois' 80,000 silos may be more difficult to obtain this fall, particularly for the older models that are being dug out of fence corners for the first time in several seasons, says R. H. Reed, agricultural engineer at the College of Agriculture, University of Illinois.

Manufacturers will, of course, make every effort to supply prompt repair service for any machine in use, but farmers should not run a needless risk by waiting until the last minute to order a part that may have to be made at the factory.

The poor condition of the corn as a result of the extreme drouth and heavy chinch bug infestation, together with the fact that many fields may suffer additional damage if left too long, makes it more important than ever to have the silo-filling equipment ready on time.

An experience of an Illinois farmer several years ago might prove disastrous, if repeated this fall. He failed to examine his cutter until the night before the crew was to fill his silo. Several broken parts were discovered and it was two weeks before the machine was repaired and filling could be started.

The cost of the parts required for the machine and the labor involved in making the repairs were the same as if the work had been completed a month earlier, yet the delay caused a material decrease in the value of each ton of silage made.

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Illinois Produces Most of World's Redtop Seed

While most people think of bluegrass as the major component of all lawns and pastures, the annual production and consumption of redtop seed in the United States has been nearly equal to that of the famed Kentucky product.

Furthermore, practically 85 per cent of the world's supply of redtop seed and 95 per cent of the total redtop seed in this country is produced in a dozen counties in southern Illinois.

These and other interesting facts are disclosed in bulletin just issued by the College of Agriculture, University of Illinois, under the title of "Production and Marketing of Redtop." Four specialists cooperated in preparing this attractive publication, the authors being W. L. Burlison, head of the department of agronomy; C. L. Stewart and R. C. Ross, of the department of agricultural economics, and O. L. Whalin, formerly in the department of agricultural economics.

The concentration of redtop seed production in Marion, Wayne, Clay, Richland, Edwards, Jasper, Fayette, Clinton, Jefferson, White, Wabash and Lawrence counties--all in southern Illinois--has been due to a combination of economic factors, favorable climate and soils not so well adapted to other crops.

During the 12-year period of 1922-1933 approximately 204,000 acres of redtop were harvested annually for seed, with average yields of 54 pounds to the acre. In the past three years, however, the threshing of redtop has declined largely due to the loss in market value. Prices of redtop seed fell to the low of 3.4 cents a pound in 1932 as compared to the high market of 22 cents a pound in 1925 and 1926, and the average of 12.9 cents during 1923-1932.

Copies of Bulletin 404, "Production and Marketing of Redtop," may be obtained from county farm advisers or by writing direct to the College of Agriculture, University of Illinois, Urbana.

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One Good Cow Is As Profitable As 423 Culls

Many Illinois dairymen are, figuratively, milking 423 cows of low producing ability when one good producer would give them the same profit above feed costs, if records of individual cows on test in the Ogle County Dairy Herd Improvement Association can be considered as typical, says J. G. Cash, dairy extension specialist at the College of Agriculture, University of Illinois.

This is revealed in a summary of production figures kept by Ogle county dairymen which shows that there were 20 cows in the association last year that averaged only 167 pounds of butterfat and returned an average of only 18 cents a head above their feed costs. Such fat production is equivalent to the average for all cows in the United States. On the other hand, there were 19 cows on test that produced an average of 570.3 pounds of fat during the year and returned $76.14 a head above feed costs. Thus it would have taken 423 cows like those in the low-producing group to return as much profit above feed costs as one cow in the high-producing group.

Furthermore, the low-producing cows, and there are thousands of them on farms in Illinois, are daily adding to the burdensome milk surplus. They are steadily breaking down the market prices of both milk and butterfat without paying their owners even for the labor and feed they require.

Examples like this one, points out Cash, illustrate the value of cow-testing work to the dairy industry. Only by being members of a dairy herd improvement association can farmers discover which of their cows are returning only a few cents a year above feed costs and which ones may be netting as much as $76.14 a head.

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Mad-Dog Days and Rabies Not Confined To August

Although most people think of August as the month of "mad-dog" days, dog madness caused by rabies is a year-around threat against the life of men, women and particularly children wherever simple preventative measures are not taken, says Dr. Robert Grayam, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

In fact, statistics show that practically as many cases of rabies occur during the months of January and February as in July and August, and only by constant, wholehearted cooperation between dog owners, veterinarians, health officers and the public in general can this highly fatal disease be eliminated. This cooperation consists of voluntary quarantine of dogs, voluntary annual vaccination of dogs and the humane destruction of stray, ownerless dogs.

That such measures will eliminate the disease has been demonstrated. In 1928, Chicago public health officers stamped out a rabies epidemic by the destruction of 50,000 stray dogs. As a result of stringent measures, no case of rabies has been reported in England, Ireland and Sweden for years. In two states adjoining Illinois, where an efficient program in the suppression of rabies has been carried on, the disease has not appeared for one and three years respectively.

In the past 1½ years, the heads of nearly 1,000 rabid suspects, including dogs, cats, horses, cattle, swine and sheep, have been examined at the U. of I. pathology laboratory in Urbana, and the number of specimens sent in for tests each year has been gradually increasing.

Rabies is transmitted by the saliva of an affected animal, coincident with a bite which allows the virus to enter through an abrasion in the skin, and rarely by the rabid animal licking the hand of a person. It is not necessary that the wound be deep, although such wounds are considered more dangerous than superficial ones. The time required for the disease to develop after exposure varies somewhat in the different species, ranging from two weeks to three months. Some cases have been reported, however, in which as much as one year elapsed between the exposure and the development of symptoms.

Since control of rabies is almost exclusively a matter of prevention, Dr. Graham suggests five measures which, if followed constantly, will go a long way in preventing the many fatalities from this disease. His recommendations are:

Avoid strange dogs or dogs showing symptoms of illness.

Eliminate all ownerless and stray dogs, but do not kill rabid suspects until definite diagnosis has been made.

Place rabid dog suspects under the observation of a local veterinarian as quickly as possible and consult the local health officer.

If bitten by a dog, see a physician immediately. The Pasteur treatment is an effective prophylactic.

Vaccinate all dogs annually to prevent the development of rabies virus.

If these preventative measures were followed by all people, Illinois would not experience the fatal rabies epidemics that occur all too often in this state, says Dr. Graham.

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One Acre Of Rye Will Solve Spring Pig Troubles

An acre of rye sown between the first and twentieth of September will solve the major troubles Illinois farmers have in raising early spring pigs, in the opinion of W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois.

The chief difficulty that many producers have in handling early pigs comes from the fact that no quarters away from the barnlot and other animals are available for the pigs soon after they arrive in February or early March. As a result parasites and filth-borne infections such as necrotic enteritis attack the pigs so early that they have little chance of making rapid, profitable growth.

If a clean pasture is provided in a field where hogs have not been grazed in recent years, the sow and her litter can be hauled to this "new" ground where the pigs can grow without the handicap of worms and disease germs.

On the University of Illinois farm near Urbana, rye seeded in early fall will usually develop satisfactorily and be ready to graze by the first of the following March. The fall growth provides for early grazing, while the early spring growth will be ready to supply forage after the old growth has been eaten. Handled in this manner, an acre of rye has provided forage for more than 100 head of pigs and their mothers from the time the pigs begin to eat until they are weaned.

It is customary at the university farm to stock the rye at the rate of 12 sows and litters to the acre at first, but by the last of March the rye will support 16 to 18 sows and litters to the acre.

The rye can be depended on to provide forage until the middle or last of April, at which time the alfalfa or clover pasture is usually ready for hog grazing. If moisture conditions are right, the acre devoted to rye can then be prepared and planted to corn, or in an unfavorable season it can usually be put in shape in time to plant to soybeans or silage corn.

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Cattle Not Injured By Chinch Bug Infested Silage

Prevalent as chinch bugs have been this summer in some 70 to 80 Illinois counties, the insects will not affect the quality of the silage made from infested corn, according to W. P. Flint, chief entomologist of the State Natural History Survey and the College of Agriculture, University of Illinois.

Silage made from heavily-infested cornstalks may carry a strong chinch-bug odor for three or four weeks, but this will eventually disappear, it is said.

During former chinch bug attacks, particularly the outbreak in southwestern Illinois in 1910-1915, a large number of silos were filled with corn infested with the insects. In many cases the corn was so covered with bugs that the silage had the disagreeable chinch-bug odor, making it almost impossible to remain in the silos for more than a short time while they were being filled. After the silage had settled for three or four weeks, practically all of the chinch-bug odor passed away, the remaining odor being the same as ordinary silage.

There was no question but what this silage had a lower nutritive value than silage made from corn that had not been injured by chinch bugs, but it was readily eaten by the cattle during the following winter with no reported injurious effects.

"So far as our observations go," says Flint, "there is no danger of feeding such silage and so far as we have been able to learn, no injurious effects have occurred from feeding such material to either dairy or beef cattle. It is, of course, possible that some injury might occur, but this seems improbable in light of the past experiences of many Illinois farmers."

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Machine Cutting Both Silage And Hay Most Useful

There never has been a year when it has been more essential that Illinois farmers make the best use of every bit of feed on their farms, and for this reason thousands of producers are turning to both upright and trench silos as a means of conserving their drouth and chinch-bug damaged corn crop this fall.

This increased use of silos is likely to bring about greater demand for silage cutters than in many years in all parts of the state, according to R. H. Reed, agricultural engineer at the College of Agriculture, University of Illinois.

While most farmers, who are planning to harvest at least a part of their corn in the form of silage, hope to use their own old silage cutters, or to hire cutters from their neighbors, many may be forced to purchase new machines this fall, it is believed. To such farmers, Reed suggests that they consider the purchase of a machine that will cut and elevate hay as well as silage.

Ordinary silage cutters will not cut and elevate hay very satisfactorily, but most hay choppers will cut and elevate silage. By purchasing a dual-purpose cutter, the farmer will hold down his machinery investment and reduce the unit cost required in operating two machines. In fact, one of the principal objections to farm machines in the past has been that many of them could be used for only one operation and their usefulness was thereby limited to a few days or a few weeks each year. The newer cutters that will make silage as well as cut and elevate hay into the barn tend to eliminate this criticism. Returns on a recent questionnaire sent to farmers in Illinois and other states indicate the growing popularity of storing hay in the chopped form.

Having in mind that at some future time the farmer may wish to chop his hay before mowing it away, it would be more practical and economical to purchase a machine that will serve both in hay-making and silo-filling seasons, points out Reed.

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Best Wheat For Chinch Bug Years Shown By Tests

With the possibility of another chinch bug infestation in 1935 and the ever-present danger of winter killing, Illinois farmers should plant only those varieties of wheat this fall that have proved the best in their respective parts of the state, says G. H. Dungan, associate chief in crop production at the College of Agriculture, University of Illinois.

Where adapted varieties are planted on strong ground, observations indicate that fair wheat yields can be attained in spite of chinch bug attacks.

In the central part of the state, points out Dungan, Illinois Progeny 2 this year again demonstrated its ability to yield well. This variety is a soft wheat with considerable winter hardiness, superior grain quality and high yielding capacity on fertile soils. Wheats of the Turkey type have long been considered best adapted to central Illinois and a variety that can compete with them has to be a good one. Illinois Progeny 2 has done this for eight years in tests in central Illinois.

At the experiment field near DeKalb in northern Illinois, five wheat varieties stand out in front with better average yields during the past three or more years. They include Ioturk, Illinois Selection 131, Minturki, Purkof and Wisconsin Pedigree 2. These are all selections from Turkey or a hybrid in which Turkey was one of the parents.

On the Alhambra experiment field in southwestern Illinois, the soft red winter wheats are the best adapted, and here the leading varieties include Fulcaster, Nabob, Illinois Selection 131, Michigan Amber, Red Sea and Fulhio. Of these, Illinois Selection 131 is the only variety not in the soft wheat class.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Corn-Hog Checks To Illinois Pass $1,000,000 Mark

Buying power of Illinois farmers has been increased by more than a million dollars in the past 30 days as a result of AAA corn-hog benefit payments, it is estimated by the College of Agriculture, University of Illinois. Furthermore, within the next few weeks the total in benefit checks to the 124,000 corn-hog contract signers in this state should reach nearly $17,850,000.

The first checks to be received by Illinois farmers cooperating in the government's corn-hog adjustment program began to arrive the last of July and by the middle of August the benefit payments aggregated $657,712. Since then checks have been distributed so rapidly that an up-to-date total cannot be determined. It is believed, however, that the total amount received by Illinois farmers prior to September 1 was well over the million dollar mark.

Present receipts, it is pointed out, represent only about 6 per cent of the nearly $17,850,000 to be received as the first benefit payments to corn-hog contract signers in Illinois, most of which will be paid by early October. Approximately $13,523,000 will also be received by Illinois participants after November 15, when the second benefit checks became payable. A third and final payment totalling around $8,671,500, less local administrative expenses, will be made to cooperators in this state after February 15, 1935.

According to the latest available figures, Ford county leads the list in benefit payments received prior to August 17 with a total of $83,777. Henderson county ranks second with checks aggregating $43,912, while other counties that have received more than $20,000 include: Greene, $36,007; Fayette, $35,015; DeWitt, $30,236; Will, $30,049; Logan, $27,633; Clark, $25,106; Boone, $24,390; Macon, $22,884, and Cook, $22,530.

Corn-hog checks are being mailed out of Washington at the rate of nearly two million dollars a day to contract signers in all of the 48 states, it is said. By August 24, total disbursements by the AAA corn-hog section approximated $45,550,000, or about a third of the total first installments of some $133,000,000 to be distributed to signers of the 1934 adjustment contract.

By mid-August Iowa farmers had received $8,143,490 to head the list of states in total benefit money so far, while payments to other mid-western states included: Missouri, $4,847,567; Ohio, $4,940,270; Nebraska, $3,796,950; Minnesota, $2,775,426; Indiana, $2,742,038, and Wisconsin, $1,005,820.

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Smut In Wheat Reduced By Either Of Two Processes

In their efforts to protect their 1935 wheat crop from serious injury by stinking smut, or bunt disease, Illinois farmers have a choice of two effective chemical seed treatments--copper carbonate or Ceresan--either of which will be a profitable precaution this fall, says Benjamin Koehler, crop pathologist at the College of Agriculture, University of Illinois.

The copper carbonate may be purchased in either full strength or diluted forms, but for Illinois conditions the latter containing 18 to 20 per cent copper has been found satisfactory. If the grain is not discolored and does not have an odor, two ounces of copper carbonate to each bushel of seed is recommended. However, if the wheat is discolored and has a foul, smutty odor, then 2½ to 3 ounces should be used.

If Ceresan is used, the directions accompanying the compound should be followed. The materials and seed are mixed together in a tight mixing machine, similar to that used in treating seed corn, until all kernels have been covered by the powdered chemical.

When comparing copper carbonate and Ceresan, it is found that each has certain advantages over the other. In the matter of dosage, there is no danger of damaging the grain by an overdose of copper carbonate, but using more than one-half ounce of Ceresan to the bushel is injurious. Furthermore, wheat treated with copper carbonate may be stored in a dry place indefinitely without deterioration, while Ceresan causes noticeable damage to the wheat germ after a week's time.

Ceresan, however, has the advantage of not clogging the cylinders of the wheat drill as often happens when wheat treated with copper carbonate is allowed to remain in the drill overnight in damp weather. Then too, Ceresan does not require as thorough an application as copper carbonate because it acts to some extent as a gas as well as a contact disinfectant.

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Cow Families Responsible For Best Dairy Herds

One or two foundation cows are often responsible for many of the most outstanding of the 1,026 herds in Illinois dairy improvement associations at the present time, according to C. S. Rhode, chief in dairy husbandry extension at the College of Agriculture, University of Illinois.

These cows, orginally selected for their efficient milk and butterfat production, have become the dams of what are known as "cow families." Their daughters, granddaughters and great-granddaughters have proved as efficient producers as the foundation cows and have been retained in the herds from generation to generation until now they make up the major portion of the better dairy herds of the state. Gradually they are spreading the highly desirable influence of the original foundation cows.

Too much cannot be said regarding the importance of the herd sire, points out Rhode, but at the same time it should be recognized that the dam contributes as much to the offspring as does the sire. The bull, if he has the ability to transmit high productivity to his daughters, will steadily increase the efficiency of the herd. However, if high-producing dams are also used in the breeding program, the progress is much more rapid. The wise selection of both sires and dams of heifers for herd replacement offers a great opportunity for advancement for the average dairyman.

An example of an outstanding cow family is found in a herd in Kane county dairy improvement association No. 2. Pearl Burke DeKol Beets is the foundation cow and during five consecutive lactation periods she produced an average of 615.9 pounds of butterfat annually. Of her daughters, one produced 562.8 pounds of fat in a year's time, while two others have equivalent records. One granddaughter produced 829.7 pounds of fat as a five-year-old, and another 524.2 pounds. Three great-granddaughters have records that are equally as good, all of which contribute to the success of the herd.

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Now Is Time To Begin Controlling Poultry Pests

Before Illinois farmers begin housing their more than 20 million chickens for fall and winter production, it will be decidedly profitable to thoroughly clean and treat the poultry buildings for lice, mites and other parasitic insects, suggests M. D. Farrar, entomologist of the State Natural History Survey.

Unless effective control measures are taken at this time, flocks often become so heavily infested with these insect pests that they become unthrifty, egg production declines and thousands of dollars in poultry profits are lost by producers.

Some of the more economical and effective oils to control mites, bed bugs and fleas in the poultry house are creosote, kerosene and wasted crank case oil, applied with a brush or emulsified with soap and water and sprayed on the inside of the building. Dormant tree spray emulsions mixed at the rate of four or five gallons in 100 gallons of water are also efficient poultry insect destroyers, points out Farrar in a report to the College of Agriculture, University of Illinois.

Poultry lice spend their entire lives on the birds and thus must be controlled by treating the fowls. For this a good grade of sodium fluoride is economical. Each bird is dusted individually by applying a pinch of sodium fluoride under each wing and around the vent, roughing the feathers to allow the powder to sift into the plumage, or the birds may be dipped in a solution of one ounce of sodium fluoride in one gallon of water.

Where it is impractical to handle each bird, painting the roosts with 40-per-cent nicotine sulphate is recommended. A line of the disinfectant about one-fourth inch wide is applied along the roosts just before the birds retire. The nicotine fumes filter through the birds' feathers, killing the lice. This treatment should be repeated in 10 to 14 days as it does not kill the eggs. All lime or whitewash should be removed from the roosts before the nicotine sulphate is applied.

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New Circular To Aid Farmers Cut Tractor Expense

Whether the owners of approximately 70,000 tractors on Illinois farms derive the maximum service from their machines depends largely on the care exercised in their operation and maintenance, points out R. I. Shawl, author of a circular on "Tractor Repair and Maintenance", just issued by the College of Agriculture, University of Illinois.

As a result of proper care and maintenance, a general-purpose tractor at the College of Agriculture recently completed nine and a half years of service at an average repair cost of only $59.37 a year. During that time it completed nearly 6,000 hours of general farm work, and it was not until after the first five and a half years that any major repairs were necessary. The tractor is still good for several years of work and will not need to be junked until the hour-cost of operation exceeds that of the newer and better tractors now being made.

It is to aid Illinois tractor owners in holding down maintenance costs and to help them do some of their own repair work that the new circular has been prepared. The publication includes 48 pages of instructions dealing with common tractor troubles and their remedy, such as the grinding of valves, adjusting the carburetor, checking the ignition parts, repair of the cooling system, power transmission problems, lubrication suggestions and a discussion of types of tractor fuels. Well illustrated and thoroughly indexed, the circular provides a practical handbook for tractor owners. Copies of Circular 425, "Tractor Repair and Maintenance", may be obtained from county farm advisers or by writing direct to the College of Agriculture, University of Illinois.

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Illinois Farmers Can Have Their Own Shelterbelts

Shelterbelts for certain sections of Illinois would be just as beneficial to individual landowners and to the state as the newly-approved 100-mile-wide federal shelterbelt will be to the country as a whole, says L. E. Sawyer, extension forester of the College of Agriculture, University of Illinois.

In the national project, the belt of trees will extend from the Canadian border down through North Dakota, South Dakota, Nebraska, Kansas and into the Texas panhandle and Oklahoma. But the things it will do for the entire middle west could be done on a smaller scale on individual farms throughout Illinois, and the beneficial results would be felt throughout the entire state.

A shelterbelt around the farm home, if not around the entire farmstead, points out Sawyer, will make it a much more desirable place in which to live, as the presence of the belt of trees will break the velocity of the wind both in winter and summer. In the warm months, checking of the velocity of the wind will have a cooling effect on the surrounding territory. The presence of the trees will increase the humidity and, in many instances, the trees can be planted so as to aid in the control of soil erosion.

In the wintertime, the line or lines of trees will supply a number of benefits. The velocity of the bitter, cold winds will be decreased, the home will be easier to heat and at less expense, and the barn and other buildings will be more liveable for the livestock.

Establishing a shelterbelt is neither a difficult nor an expensive task, when undertaken on the scale that would be required for the average Illinois farm, Sawyer explains. Neither does such a shelterbelt require a large area of land that could possibly be used to better advantage for other purposes. The land that is required and the necessary expense involved would be more than offset by the added value to the farm and the improvement in the living conditions.

Much of the middle west has suffered acutely from the prolonged drouth this summer and the economic and social consequences are serious, it is pointed out. The dust storm which blanketed the country from the Dakotas to the Atlantic seaboard was an ominous reminder of the incipient desert conditions of the Great Plains.

Man cannot change all the forces of weather, but he can modify his own surroundings. He can improve the effects of the weather. If the surface velocity of the wind over a wide area can be broken and decreased even slightly, soil will be held in place, the moisture of the soil will be conserved, and havens of shelter will be created for man, beast and bird.

The development of shelterbelts both on large and small scales is not entirely a new or untried activity, it is explained. On the contrary it is based upon the long-time experience of several European countries, particularly Italy, Hungary and Russia. In those countries where shelterbelts have been used over a period of years and on an extensive scale, farming enterprises have been stabilized and have succeeded even in the worst seasons when farmers in other areas have suffered serious losses to their crops through adverse weather conditions, says federal authorities.

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New U. of I. Circular Pictures Dairy Cattle Types

Dairymen of this state who own more than 1,111,000 milk cows and heifers and who buy, sell and trade thousands of head annually, will find considerable assistance for their transactions in a new circular, "Selecting Dairy Cattle," just published by the College of Agriculture, University of Illinois.

Many thousands of cattle are bought and sold every year for dairy purposes merely upon the evidence which their external appearance gives of their ability to produce milk, points out the circular. In such dealings, the buyer who knows the characteristics of a good dairy cow has a distinct advantage, while the untrained buyer may be sadly disappointed in his purchase, once he has had an opportunity to test the animal's productive ability.

It is to assist in lessening the number of these disappointments and to aid in raising the standard of dairy cows in this state that the new publication has been prepared by W. B. Nevens and A. F. Kuhlman, of the U. of I. dairy department. The circular contains some 60 photographs and drawings which portray many of the desirable and undesirable characteristics to be looked for in dairy cattle. Jerseys, Holsteins, Guernseys, Ayrshires and Brown Swiss are among the breeds pictured in the booklet, with separate sections devoted to the selection of bulls, heifers and mature cows. The publication makes a practical handbook for teachers and students in vocational agriculture classes as well as for leaders and members of 4-H dairy clubs.

"Knowledge of the characteristics of good type in dairy cattle is important, not only to the buyer of new female stock, but also to herd owners who wish to raise heifers from their own best cows to replace cows no longer useful or profitable," explain the authors. "If the quality of the herd is to be constantly improved, ability to judge good type is essential." Copies of Circular 422, "Selecting Dairy Cattle," may be obtained from a county farm adviser or by writing direct to the College of Agriculture, University of Illinois, Urbana.

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Local Sales Cut Costs In Year Of Light Apple Crop

With one of the smallest Illinois apple crops in the past 22 years, growers who are fortunate enough to have trees bearing this fall will have an excellent opportunity to dispose of their apples through local markets at a minimum expense, according to J. W. Lloyd, chief in fruit and vegetable marketing at the College of Agriculture, University of Illinois.

The state's 1934 apple crop has been estimated at approximately 2,624,000 bushels or less than a third of the average annual production during the past 10 years. Only in 1921 and in 1932 were the apple crops less than is estimated for this year. For the United States, however, it is believed that the total apple crop will amount to about two-thirds of the average for the past decade.

In seasons of a light crop like the present, the local demand for apples may well be given first attention by orchardists. From the standpoint of the grower, marketing locally has several advantages, Lloyd explains. The cost for packages and packing is much reduced, since the local purchaser usually brings his own packages and no facing is necessary. There are no freight bills nor brokerage charges to be deducted from the selling price, because the local buyer provides the transportation and business is transacted directly between producer and consumer. Handled in this way, a short apple crop is likely to net the grower a greater return than if the fruit were shipped to the large city markets.

To market apples successfully by this method, it is necessary for the orchardist to let the people of his vicinity know that he has apples and when they will be available. Reading notices in local papers usually serve this purpose adequately.

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Cleaning Hints For Rugs And Furniture Explained

With fall house cleaning time just around the corner, homemakers everywhere are worrying about how they can brighten up the appearance of the living room rug or remove that ugly spot on the upholstered mohair or velour davenport.

To make this part of house cleaning as easy and as effective as possible, Miss Isabelle Hitchcock, home furnishings specialist at the College of Agriculture, University of Illinois, makes several timely suggestions.

For cleaning rugs or cloth upholstered furniture that are not badly soiled, mild soap flakes should be dissolved in warm water and stirred with an egg beater until there is a thick, dry lather, explains Miss Hitchcock. The suds should then be tested on an inconspicuous place to make sure that the fabric will not fade. A stiff bristle brush should be used, applying the lather only to a small section of the rug or furniture covering at a time and always working a rotary motion until the lather is soiled. The soap should then be wiped up with a clean cloth or sponge wrung dry from lukewarm water. A generous application of suds will prevent uneven cleaning, but care must be taken to use only the dry lather so that the stuffing in the furniture will not become damp. Soiled furniture coverings such as tapestry, denim, rep or frieze which are fast in color may be freshened in the same manner.

Grease spots or oil stains may be removed from upholstered furniture and rugs by using naptha, chloroform, carbon tetrachloride or a detergent. When using naptha or chloroform, the furniture should be moved into the open air. Either of the liquids can then be applied to the stain, working from the outer edge to the center and allowing it to soak in well. A piece of blotting paper is then placed over the stain and pressed with a slightly warm iron. If carbon tetrachloride is used, the spot should be sponged thoroughly with a cloth saturated in the solution, using another clean cloth to absorb the soiled cleaning fluid before it evaporates. All rubbing should be done with the nap.

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Fuel Expenses Can Be Saved By Small Home Repairs

Illinois farm families who wish to save money on the annual coal bill and at the same time enjoy warm comfort during the cold winter months should begin now to make certain needed repairs about the home, suggests W. A. Foster, rural architecture specialist at the College of Agriculture, University of Illinois.

Loose-fitting doors, rattling windows, cracks under the baseboard, in floors and plaster produce drafts that reduce the comfort of the home, cause grief to the occupants and add money to the coal man's purse. All of these are little things which should be fixed before winter comes and, fortunately, require very little material or expense. In most cases, a small amount of time and labor are the chief requirements, points out Foster.

Twenty feet of bronze weather stripping and 30 minutes time will make the door fit like new. A check of the sash and refitting of stops will improve the windows and stop the leaks there. Plaster repairs not only keep the cold air out of the house but improve the appearance of the home. Resetting of the carpet strip or shoe mold will eliminate many floor drafts, while gun caulking may be purchased from the building materials dealer and applied with a putty knife or the screw-type grease gun.

All of these minor repairs may be done by the handy man in leisure time at a surprising low cost. The saving in fuel alone will pay for the materials several times over each year, while the extra comfort and saving in health give added incentive to make the repairs. Count the cost of wasted fuel and compare it with the actual cost of repairs, and then you will wonder why the little tasks were not done long ago, says Foster.

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Call Regional Meetings Of County Corn-Hog Delegates

First steps toward presenting the facts on the present economic situation to all Illinois corn-hog producers and for taking a referendum among them on the question of a 1935 adjustment program will be made at a series of regional conferences of official delegates to be held September 24, 25 and 26.

Farm advisers and members of county allotment committees have been called to attend the conferences, which will be held under direction of the extension service, College of Agriculture, University of Illinois.

The schedule of the meetings, by crop reporting districts, is: Northeast, September 24 at Geneva; northwest, September 25 at Dixon; west, September 26 at Macomb; east, September 24 at Paxton; central, September 25 at Bloomington; west southwest, September 26 at Carlinville; southwest, September 24 at Pinckneyville; southeast, September 25 at Harrisburg, and east southeast, September 26 at Effingham.

Calling of the regional conferences in Illinois is in line with recommendations made at a recent regional meeting which the AAA held at Indianapolis, Ind., and which was attended by delegates from Illinois, Indiana, Michigan, Ohio, Kentucky and Tennessee. Attending as the official Illinois delegates were Dean Herbert W. Mumford, of the U. I. College of Agriculture; Prof. J. C. Spitler, state leader of farm advisers, and F. J. Keilholz, extension editor.

Three members of the state corn-hog production control committee also attended, including E. A. Eckert, Mascoutah, master of the Illinois State Grange; J. R. Fulkerson, Jerseyville, and Ray Miller, of the Illinois Livestock Marketing Association.

After the 1934 corn-hog contract terminates this fall, there will be no control program in effect either on feed grains or on livestock unless some new plan is developed.

The time has come, AAA officials believe, for corn-hog producers to get the facts about the present economic situation with regard to feed and livestock and to express their opinion as to whether or not they wish an adjustment program in 1935 and what kind of a program that shall be.

The regional conferences will be in the nature of training schools for the county delegates. After their return they will assist in holding county meetings to which all community chairmen of the corn-hog production control association will be called and at which they will be trained.

One or more teams will then be organized for holding a series of community meetings throughout each county with the idea of reaching all corn-hog producers. This series of meetings will be concluded in time for the Illinois vote to be sent to Washington before October 10.

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No Shortage Of Seed Corn Likely In Illinois In 1935

Unlike less fortunate farmers in some other states, Illinois corn growers should have plenty of seed available from the state's 1934 crop for planting a normal crop of around eight million acres next season, in the opinion of J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois.

Hard hit as it is, the state's 1934 corn crop will measure up to the seed needs for next year if farmers pick enough of the right kind of seed at the proper time and store it safely during the winter, Hackleman said.

In areas where sufficient good new corn will not be available for seed, 1933 cribbed corn can be used, but it is less desirable for seed purposes than good quality 1934 corn, it is said.

Following a trip through 27 northern and central Illinois counties, Hackleman reported that whole counties in some sections and favored parts of the other counties of the state may have an excess of corn for seed this fall. Farmers in other counties and areas where the drouth was most severe may have to import from 2,500 to 6,000 bushels each of seed corn from the more fortunate counties.

A shortage of seed from 1934 corn can be prevented to a large extent, if farmers in the more favored areas will select plenty of seed this fall so that it may be made available to growers in the less fortunate areas, it is believed. It is recognized that the situation is so serious that it will be necessary for thousands of farmers to use old corn, but the number of such cases can be reduced materially if Illinois farmers who have good quality corn will accept their responsibility and select and store a surplus of seed this fall, Hackleman said.

When selecting seed corn, it is best to pick only those ears that are located on plants that are well anchored by the roots and are standing erect. The stalk and parts of the leaves should be green while the husks have turned a straw color. Furthermore, the plant from which seed corn is selected should be free of smut and the ear should be supported by a sturdy, unbroken shank. The husks should cover the ear well and the ear itself should not be unusually large in circumference as such ears dry slowly. Ears showing mold or insect injury should be discarded.

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Farm Account Round-Up To Be Held In Ottawa, Sept. 27

M. L. Wilson, assistant secretary of the United States Department of Agriculture, is scheduled to be the headline speaker when farmers from some 40 northern Illinois counties gather for the farm bureau-farm management service round-up to be held at Ottawa, September 27, it has been announced by the College of Agriculture, University of Illinois. The meeting will be held in the Ottawa High School starting at 9:45 a.m.

How farmers who are keeping records in the service have improved their returns and put their business on a better basis in the face of conditions prevailing during the past several years will be discussed by representatives of the farm management division of the agricultural college. Approximately 150 farmers in Grundy, LaSalle, Marshall and Putnam counties are cooperating with the college and their county farm advisers in keeping records in the service.

The round-up is a tri-annual event, the first having been held at Normal in 1928 and the second at Bloomington in 1931. All farm advisers and farmers in northern Illinois who have been cooperating in record-keeping projects as well as others interested in farm management records have been invited to attend the meeting.

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Feed Crisis Puts Premium On Shrewd Buying Of Cattle

Illinois farmers, who have been buying an average of more than 316,000 stocker and feeder cattle annually during the past several years, will have to be unusually shrewd in their buying this fall if they are to avoid disappointing results, in the opinion of Prof. R. R. Snapp, associate chief in beef cattle husbandry at the College of Agriculture, University of Illinois.

The critical feed situation will make it necessary to buy feeders on a different basis than has been the case for the past several years if the venture is to be a success, he pointed out. Only farmers with plenty of corn will be in a position to feed calves successfully, while farmers with limited supplies of grain will be wise to confine their purchases to yearlings and two-year-old cattle, he believes.

It seldom pays, and certainly not this year, to buy cattle because they "look like a bargain," with little or no thought as to whether or not they are adapted to the feed supplies and shelter equipment available for them at their new homes, it was pointed out.

Because of the shortage of grain and the low quality of available roughage, most farmers are not in a position to feed calves successfully. However, the comparatively few farmers who are fortunate enough to have an adequate amount of choice feeds on hand will make relatively good profits from feeding calves, Snapp believes. This seems likely because of a probable scarcity of choice, lightweight slaughter steers next summer and fall.

Farmers with limited supplies of grain will do better to confine their purchases to yearlings and two-year-olds, since animals of these ages are well suited to utilize coarse feeds such as shock corn, soybean hay and corn silage. Furthermore, current market prices for both slaughter and feeder steers are favorable to the purchase of older and heavier cattle.

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Subsoil First To Lose Plant Food, U. I. Tests Show

Contrary to popular opinion, the subsoils of Illinois farms lose their fertility first and more rapidly from continued cropping than do the surface soils, it is revealed by recent studies made at the College of Agriculture, University of Illinois.

Heretofore, it has been generally believed that the top seven inches of soil was the main feeding area of most farm crops and, where no effort was made to replace the consumed plant food, that the loss in fertility occurred from the top downward. This has been found not to be true, says R. H. Bray, soil analyst of the U. of I. agronomy department.

In light of this new knowledge, explains Bray, it would seem more practical and economical for farmers to begin replacing plant food either through manures or commercial fertilizers before the subsoil has been mined. To allow both the surface and subsoils to decline in fertility before treatment is started means that building up the productivity of the land will be slow, since it takes a longer time to increase the fertility of the subsoil than the surface soil. Experiments show that after the first initial increase in productivity resulting from surface treatment, a gradual increase in productivity occurs which is accompanied by an improvement in subsoil fertility.

When a soil improvement program is being planned, tests should be made of the subsoil at 10 to 12 inches and at 20 inches deep as well as of the surface soil, it is said. This is especially important where it is likely that the soils are low in phosphorus and highly acid, for such subsoils should be given special consideration in the treatment program.

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Forage Conservation Plans Under Way In 61 Counties

Farmers in 61 counties are in the midst of rounding up 255,000 tons of corn fodder and stover as Illinois' quota in the AAA forage conservation program for the relief of feed shortages in western states. A total of a million tons of forage is being sought at the present time in Illinois, Indiana, Ohio, Minnesota and other mid-western states having available supplies.

Farmers who are interested in selling fodder or stover under the program make application for contracts by signing up in the farm adviser's office, it was announced. The official contracts have not yet arrived from Washington, but as soon as they do, preference will be given in the order in which farmers signed applications for contracts.

An acre of good corn will yield about a ton and a half of corn stover, so that the state quota of 255,000 tons will provide an outlet for the product of about 170,000 acres of corn. Aside from relieving the feed shortages of farmers in less fortunate states, the program means cash returns of from one and three quarter million to two and a quarter million dollars for Illinois farmers. Established prices for the corn fodder and stover range from $7 to $9 a ton.

Fodder and stover which Illinois farmers contract to sell will not be bought outright by the AAA, it was explained by Prof. J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois, who is assisting in the forage conservation movement in Illinois. The government will act only as intermediary agent between sellers and buyers. Farmers who contract to sell fodder or stover will be brought together with buyers through a federal feed agency to be established in Kansas City, Mo.

In cases where contracts are not completed by April 1 of next year, the government will either buy the material or make satisfactory settlement, provided the forage at that time grades No. 2 or better.

All corn fodder and stover will be contracted at definite grades and established prices. Grade No. 1 of fodder or stover shall have all or nearly all of the leaves attached and shall be green to greenish yellow in color, sound and sweet, well cured and shall not contain more than a trace of foreign material. Grade No. 2 shall have the majority of the leaves attached, may be yellow to yellowish brown in color, shall be well cured and may include not to exceed 10 per cent foreign material. All grades of fodder and stover must be cut and cured in the shock before being husked.

Tentative prices established for the different grades are: No. 1 corn fodder—whole, $8 a ton; shredded or threshed, $9; No. 2 corn fodder—whole, $7.50; shredded or threshed, $8.50; No. 1 corn stover or sweet corn stover—whole, $7.50; shredded or threshed, $8.50; No. 2 corn stover or sweet corn stover—whole, $7; shredded or threshed $8.

These prices are F.O.B., the farmer's shipping point for baled stover or fodder. The secretary of agriculture will appoint inspectors who will inspect the fodder or stover before it is loaded at the point of shipment.

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Illinois Farmers Sifting Outlook On Feed And Stock

Production of both grain and livestock threatens to get out of hand again within a few years, thereby leaving farmers in another cycle of ruinously low prices unless producers plan accordingly.

This summary of the feed and livestock outlook, which is based on evidence collected by the Bureau of Agricultural Economics, U. S. Department of Agriculture, has just been presented to official county representatives in a series of nine regional meetings held by the extension service of the College of Agriculture, University of Illinois.

These regional conferences were the first step toward a series of state-wide community meetings at which every corn-hog farmer will have a chance to get the facts on the present economic situation and to cast his vote on the question of a AAA program for 1935. After the 1934 corn-hog contract terminates on November 30, there will by no control program in effect either on feed grains or livestock unless further plans are made.

Plans for the community meetings in the 102 counties of the state were started as soon as county farm advisers and members of the county corn-hog allotment committees returned from the regional meetings. Preceding the community meetings, a county meeting will be held in each county for all community committeemen of the corn-hog control association so that they can assist with the meetings in their respective neighborhoods. These community meetings will be open to all corn-hog producers, whether or not they are participating in the present corn-hog program.

The economic situation that grain and livestock farmers will face in 1935 will be almost the opposite of conditions that existed at this time last year, it was pointed out in the regional meetings. Feed supplies have been cut into so heavily that they are now on the short side. Livestock supplies, too, have been cut very sharply, but the shrinkage in feed has been so severe that feed prices are climbing faster than livestock prices.

This has put a premium on feed supplies. On the basis of past experience this threatens to stimulate an immediate and large increase in corn acreage. This in turn would bring ruinously low feed prices and lead to an overproduction in livestock raising. Livestock prices would then collapse, and corn-hog producers might be right back in another of the disastrous cycles such as ended with the present season's adjustment campaign.

The series of community meetings is being planned so as to get the results of the Illinois poll to Washington before October 10 where it will be considered along with the outcome of the vote in other states.

-M-

Seed Oats Now Being Fed Would Bring Premium In Spring

Hard pressed as they are for feed to maintain their eight or nine million head of livestock, Illinois farmers can hardly afford to continue feeding oats of good seed quality and adapted varieties, it is reported by J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois. Oats of this kind now threaten to be so scarce that it will command a premium as seed next spring, he said. One county, Champaign, is conserving its supply by sealing oats, as well as wheat and soybeans, under a plan similar to that used for the corn loans. Loans on the sealed oats, soybeans and wheat will be advanced at the rate of 65 per cent of market quotation.

-M-

Repetition Of "Lean" 1934 Crop Season Is Unlikely

A repetition of the disastrous crop season of 1934 is not likely in the immediate future, and therein lies hope for the farmer who is planning ahead, in the opinion of Dr. L. J. Norton, of the agricultural economics department, College of Agriculture, University of Illinois.

For the farmer who is looking quite a ways ahead, the decreased numbers of hogs, cattle and sheep on account of the short feed supplies means that the balance between livestock and feed prices is likely to be more favorable to livestock after the 1935 crops are harvested than is the case at the present time, he said.

In view of this prospect, it will be profitable to maintain good foundation breeding herds wherever it is possible to do so in any way, even in areas where feed supplies are very short.

Reasonably favorable prices for feedstuffs and for fat livestock are in prospect for this fall and winter as a result of the short crops of feed grains and the prospect of short supplies of fat stock.

The balance will likely be in favor of feedstuffs, but they will not be so high in price or in relation to livestock prices as they would have been if production had not been so drastically curtailed.

"The 1934 crop of feed grains in the United States will yield about 56 pounds for every 100 pounds produced as the annual average from 1927 to 1931. The 1934 crop of hay will yield about 67 pounds for every 100 pounds raised in the 1927-1931 period.

"Although the Illinois corn crop is short, it is good in comparison with those in states where the midsummer heat and drouth practically destroyed the crop. In Illinois, for example, the crop is estimated at 60 percent of the five-year average, while in the five states of South Dakota, Nebraska, Kansas, Oklahoma and Missouri, the crop is only 13 per cent as large as the five-year average.

"In spite of the very short corn crop there is a better balance between hog numbers and feed supplies than would have been the case if there had been no AAA corn-hog adjustment program. The 1934 spring pig crop in the United States was estimated at about 70 per cent of the average of the past three years and the number of sows to farrow in the summer and fall of 1934 was forecast to be slightly more than 60 per cent of the average for 1931-1933.

"Usually curtailment in hog numbers follows short corn crops. The fact that hog numbers already have been greatly reduced will lessen the necessity for the drastic liquidation in hogs which usually occurs after short corn crops and will maintain a better balance between corn and hog prices during this winter than would have been possible if the control plan had not been in operation.

"Reports to the U. S. Department of Agriculture indicate that 30 per cent fewer cattle will be purchased for feeding this year than in 1934."

-M-

High Feed Prices Fix Doom Of Poor Types Of Animals

Mounting premiums on feed spell the doom of all the poorer animals among the eight or nine million head of livestock on Illinois farms, and getting rid of such stock is the first step in conserving short feed supplies.

This is the recommendation of members of the dairy and animal husbandry departments of the College of Agriculture, University of Illinois in a special leaflet which they have just prepared. It is designed to answer the many inquiries of farmers who are hard put to make their available feed maintain the livestock on their farms.

Feed not only will be too scarce but also too high priced to waste on low-producing or inferior animals, the leaflet points out. Not only low-producing dairy cows but also inferior animals of all kinds and ages should be disposed of as soon as possible, it was recommended.

-M-

The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Better-Managed Farms Netted $1,873 More In 1931-33

Superior management alone made a difference of $1,873 a year over a three-year period between the average net income of the 30 best farms and the income of the 30 poorest farms out of a group of 160 on which farm accounts have just been summarized for 1931, 1932 and 1933. The accounts were kept by farmers in LaSalle, Grundy, Marshall and Putnam counties who are enrolled in the farm bureau-farm management project of the College of Agriculture, University of Illinois.

Approximately 1,000 farmers turned out to study the results of the records at a recent "round-up" meeting of the account keepers held at Ottawa. By keeping the U. of I. farm accounts hundreds of farmers in the state are learning how their operations compare with that of other farmers in their neighborhood, they are locating the strong and weak points of their business and they are learning the practices followed by successful farmers, it was pointed out by M. L. Mosher, of the department of agricultural economics.

M. L. Wilson, assistant secretary of the U. S. Department of Agriculture, who appeared as the principal speaker at the meeting, declared that the emphasis in farming must continue to be placed upon efficient production regardless of whatever necessity there was for adjusted production.

"The rewards for efficiency of production are just as great as they ever were, and we have every reason to believe that they should be greater as time goes on. For one thing, the efficient farmer will be preparing himself for the time when he can again produce without restraint for the world markets which he once had," Assistant Secretary Wilson said.

The 30 most profitable farms in the group of 160 enrolled in the farm bureau-farm management project realized an average annual net income of $1,384 during the three years of 1931, 1932 and 1933. In contrast the 30 poorest farms lost an average of $489 a year, making the difference between their earnings and those of the most profitable farms total $1,873.

Greater returns for feed fed to livestock, better crop yields, lower cost of man labor, lower cost of power and machinery, better selection of crops, better prices for grains and lower miscellaneous expenses, including taxes, accounted for most of the difference in earnings between the two groups of farms.

Farms that were above average on six or all seven of these more important factors had an average net income of $1,041 a year, while farms that were below average in six or all seven of the factors lost an average of $132 a year.

The importance of efficient production was reflected in the fact that the 30 farms with the highest crop yields each averaged $850 more net income a farm a year than did the 30 farms with the lowest crop yields. The high yielding farms raised 22.4 bushels more corn to the acre, 19.4 bushels more oats, 8.4 bushels more winter wheat, 2.2 bushels more barley, 11.7 bushels more soybeans, almost a half ton more of clover hay and better than a half ton more of alfalfa hay an acre.

-M-

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Silage Is Prized In 1934-1935 Lamb-Feeding Outlook

Shrewd feeders, and especially those who have plenty of silage available, will be the ones most likely to cash in on the favorable outlook for lambs during the coming winter, according to W. G. Kammlade, assistant chief in sheep husbandry at the College of Agriculture, University of Illinois.

Feed costs will be high and profits will be eaten up unless the lambs are fed to gain fast, he pointed out. Rapid gains generally are cheap gains, as they mean good use of feed and a quick improvement in the condition of the lambs.

"Feed costs will be a much more important item in the expense and returns of lamb feeding this season than was the case a year ago. Roughages, especially hays, will cost at least twice as much, and all grains have advanced so that it will not be so easy to get a margin over feed costs.

"Silage is a relatively cheap feed and may be used as the only roughage for fattening lambs, if it is properly supplemented to make up for the lack of protein and mineral. When legume hay is not fed in addition to the silage, it is essential that a protein concentrate such as soybean oil meal, cottonseed meal or linseed meal be included in the ration. Likewise, some simple mineral supplement should be spread over the silage. About one-fourth pound of the protein supplement daily for each lamb is usually enough.

"In a test last year at the U. of I. College of Agriculture, a mixture of equal parts of salt and finely ground limestone fed on the silage at a daily rate of one pound for each 16 lambs, seemed to provide ample mineral for the 90-day period. The average daily ration in this case was about 1 to 1.25 pounds of corn, .25 pound of soybean oil meal, 2.50 to 2.75 pounds of silage and .06 pound of salt and limestone.

"Recent rains which have improved fall pastures have also added to the feeder's chances of making a profit. Grass is an inexpensive feed and lambs can't be beaten in utilizing it efficiently."

-M-

Soybean Seed Crop Being Threatened By Blight Disease

Welcome as the rains have been in recent weeks, continued damp weather this fall may play havoc with the estimated crop of 6,369,000 bushels of soybean seed which Illinois farmers will harvest this fall, in the opinion of Benjamin Koehler, crop pathologist of the College of Agriculture, University of Illinois.

Exceptional moisture in late summer and early fall is particularly favorable to the development of what is known as "pod and stem" blight, and already reports have been received by Koehler indicating that the disease has broken out in soybean fields in several parts of the state.

The only practical remedy known at the present time, explains Koehler, is to take special care to see that the beans are as dry as possible when stored in bins. If there is considerable moisture in the stored beans, the disease fungus spreads rapidly and multiplies the damage.

Symptoms of the disease are easily overlooked in the vines, but the real damage will be readily observed when the bean seeds fail to germinate next spring. In 1926, when a severe infection of "pod and stem" blight occurred in Illinois, many of the seed lots germinated less than 50 per cent upon being tested at the U. of I. College of Agriculture. Consequently if the damp weather that prevailed over a large area of the state in September should continue, the blight will undoubtedly cause considerable damage this year.

-M-

Drouth-Damaged Corn Not Likely To Hurt Farm Stock

There is little danger of poisoning livestock by feeding drouth-damaged cornstalks this fall, if samples tested at the College of Agriculture, University of Illinois are typical of corn throughout the state, says Dr. Robert Graham, chief in animal pathology and hygiene.

Innumerable inquiries recently have been received by the U. of I. pathology laboratory relative to the possible poisonous properties of drouth corn, as well as sudan grass, and apparently many stockmen are afraid to feed either of these roughages.

Of the many samples of suspicious drouth corn that have been tested in the laboratory, to date not a single specimen has proved to be poisonous, Dr. Graham said. Although it is known that sorghum plants can develop fatal amounts of hydrocyanic acid under arrested growth, the danger in the case of corn seems to be rather doubtful.

The poisonous properties of sudan grass have also been recognized during certain stages of growth, but here again bona fide evidence of injury when fed to livestock was not obtained in one instance. An experimental horse was fed the grass for a period of three weeks without showing any ill effects.

Illness which may be mistaken for food poisoning is sometimes caused by too sudden change in rations, Dr. Graham points out. This is particularly true in cases where the animals have been on short pasture and are in a rundown condition. Recent rains have improved the pastures and as a result cases of laminits have been observed in horses that had nothing to eat but bluegrass. This ailment always accompanies an intestinal disturbance, the cause usually being a sudden change in diet or overfeeding animals in poor condition.

-M-

Home Fires Spread Heavy Damage Each Fall In Illinois

Nearly $20,000,000 in property is destroyed and many lives are lost each year in the United States, with Illinois one of the heaviest losers, because people fail to examine their chimneys, flues and other heating equipment before starting fires in the fall, says Miss Gladys J. Ward, home management specialist at the College of Agriculture, University of Illinois.

Commenting on the national observance of Fire Prevention Week, October 7 to 13, Miss Ward points out that fire caused the death of 1,615 persons in the United States in one year, almost 19 per cent of whom were residents of Illinois. In the past 10 years, approximately 4,000 people have burned to death in this state, a third of them being children under 10 years of age.

House fires which average nearly 1,000 daily in this country have caused property damage amounting to $160,000,000 annually, while the total loss from all types of fires aggregated more than $300,000,000 in 1933.

Before lighting home fires in the early fall is the time to inspect, repair and clean out defective chimneys, flues and fireplaces, if this work was not done during the regular spring house cleaning, suggests Miss Ward. Much of the loss of life and property also could be prevented, if a fire extinguisher were a part of the equipment of every home. Kept within easy access for quick use and inspected and refilled regularly, a hand extinguisher would quench a large majority of the common home fires before a great deal of damage were done. A wool blanket and a small box of salt or sand near at hand are also excellent aids in putting out small fires that often occur in the kitchen, while many of the fires caused by spontaneous combustion in the home could be prevented by keeping oily cleaning clothes in tightly covered metal cans, it is said.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Increase In "Ag" Students Is Seen As Favorable Sign

Signs that things are looking up in agriculture are seen in the fact that the total enrollment of 893 students in the College of Agriculture, University of Illinois is the largest since the fall of 1921, it is announced by R. R. Hudelson, assistant dean. The total enrollment this fall represents a gain of 173 students over last year.

Although resident teaching is only one of the three main functions of the agricultural college, the enrollment of students is considered a fair barometer of the trend in the financial condition of farm families. The other two functions of the college are its research work on farm and home problems and its extension activities through which new teachings are carried to farmers and homemakers throughout the state.

The increase in the agricultural college enrollment this year is a gain of 24 per cent over last year, Dean Hudelson reported. There is a 24 per cent gain in agricultural students alone and a 24.1 per cent gain in home economics students.

The freshman class in agriculture this year is the largest since 1930, exclusive of landscape architecture students who have been transferred to the College of Fine and Applied Arts since 1930. The freshman class in agriculture this year numbers 251.

Not only the freshman class, but also all others in the college show an increase over last year, indicating that students are not being forced to drop out of school at the rate they formerly were. The junior class shows the largest increase of any, with 68 more students than last year.

All but five of the 102 counties of the state are represented among those who are enrolled in agriculture and home economics, while 18 other states besides Illinois and five foreign countries also have students studying at the college.

The enrollment for the entire university, as of October 1, was 10,616 students, an increase of 678 over the previous year, or a gain of 6.82 per cent. Almost one-fourth of the gain in the entire university was recorded in the agricultural college.

-M-

AAA Feed-Saving Plan Extended To Take In Hay Crops

Feed shortages in the drouth-stricken areas are so critical that Illinois farmers who have surplus hay may now contract to sell it, as well as corn fodder and stover, under the AAA forage conservation program. Announcement of this has just been made by J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

The AAA corn fodder and stover program to raise a quota of 255,000 tons in Illinois is still underway, but the feed situation in the states farther west has become so serious that a call has now gone out for hay, too. Regional inspectors appointed by the AAA, as well as county farm advisers, have been asked to take listings of all available surplus supplies of alfalfa, red clover, soybean, cowpea, lespedeza and all non-legume hays. In some cases farmers who have corn fodder and stover may be able to keep it for wintering their own stock, thus releasing hay that might be sold for more than the corn fodder and stover would bring.

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Illinois Farmers Organize To Fight 1935 Chinch Bugs

Corn growers in Illinois are already arming themselves in defense against a probable chinch bug attack in 1935, with farmers in southern Iroquois and Vermilion counties leading the way, according to W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois. Farmers in that section are campaigning to eliminate all small grains during the coming year.

At the present time the chinch bugs, which have destroyed millions of dollars worth of crops this year, are flying into winter quarters. Next spring, however, the pests will come out of hibernation and begin feeding on small grains, particularly wheat and barley. It is at this stage that a large group of corn growers in east-central Illinois expect to defeat the bugs, for there will be no small grains for them to feed on, if present plans are successful.

Authorities at the U. of I. College of Agriculture do not recommend this particular method of combatting chinch bugs for the entire state, but the movement illustrates one way of fighting the destructive pests where farmers will organize in a concerted drive.

Early in September a group of farm leaders in the two counties met to consider what could be done to protect their 1935 corn crop from the chinch bugs. Sweet corn is an important cash crop in this area, and almost any method that will assure a minimum of insect damage is justifiable. Representatives of the U. of I. College of Agriculture and the Natural History Survey were called in to suggest ways and means of combatting the pest.

As a result of this and subsequent meetings, special agreement forms were printed, township chairmen were elected to lead the movement and approximately 90 per cent of the farmers in the area are believed to have pledged themselves not to grow wheat, barley, rye, oats or other small grains in 1935. The acreage formerly devoted to these crops will be planted to clovers, soybeans and other legumes that are not eaten by the chinch bugs, as well as some additional sweet corn acreage. Furthermore, the corn will be planted later than usual. Thus, when the insects come out of winter quarters next spring there will be a minimum of their favorite foods on which the first brood of bugs normally develops.

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Illinois Farmers Aided By 35-Year-Old Liming Tests

Illinois farmers who had reasonably good stands of alfalfa and sweet clover this summer, while non-leguminous hay and pasture crops were withered by the drouth, reaped the benefits of 33 years of experiments in this state dealing with the value of limestone in crop production, it is revealed in a recent bulletin published by the College of Agriculture, University of Illinois.

Alfalfa and sweet clover, because of their deep-rooting characteristics will grow well in spite of prolonged dry weather, provided the soil is not in an acid condition. But in many fields the acidity of the soil must be neutralized by limestone before a good stand of legumes can be grown. Thus many farmers who have followed the liming tests conducted by the U. of I. College of Agriculture had hay and pasture this summer regardless of the drouth.

It was back in 1901 that the first of hundreds of field tests dealing with soil acidity were begun, explains F. C. Bauer, chief in soil experiment fields and author of the new bulletin entitled, "Response of Illinois Soils to Limestone." During the next 17 years more than 40 similar experiment fields were developed in different parts of the state, 21 of which are still in operation as a source of new facts relating to soil management problems.

-M-

Corn Picker Must Work Efficiently To Pay This Fall

Although Illinois' 1934 corn crop, estimated at some 178 million bushels, did not suffer as badly from the drouth as corn in other states, farmers who use mechanical corn pickers this fall will need to give special attention to the efficient operation of the machines, in the opinion of A. L. Young, agricultural engineer at the College of Agriculture, University of Illinois.

Low corn yields always tend to make higher harvesting costs for each bushel picked. With many of the stalks badly lodged there is added danger of greater loss through corn left in the field this fall. This loss usually consists of corn shelled at the snapping rolls and ears that the machine fails to gather as it is pulled across the field.

Tests made by the agricultural engineering department of the U. of I. College of Agriculture show that the amount of corn left in machine- picked fields averages about five bushels an acre, ranging from 1.2 to 19.3 bushels according to the efficiency of the corn picker. If the exceptionally high losses could have been avoided in a few fields, the average loss in machine-picked fields would have compared more favorably with the $2\frac{1}{2}$ bushel loss in hand-picked fields.

With modern pickers, shelled corn can be lost only at the snapping rolls. When the distance between these rolls is kept adjusted properly, this loss is usually not serious. Adjusting the rolls too closely when the stalks are brittle may increase the loss of ears, while leaving the rolls too far apart may cause them to shell an excessive amount of corn.

Ear losses are usually greater when the stalks and shanks are dry and brittle, especially if the corn is broken down as it is this year. In such cases it may be practical to restrict machine operations to periods when the stalks have been toughened by dew or rain.

Other causes of leaving ears in the field are: Failure to keep the picker on the row, traveling too fast through the field and not keeping the points of the gatherers close enough to the ground, especially when the corn is badly lodged.

-M-

"Forgotten Sires" Will Block Future Dairy Progress

The "forgotten man" has his champions, but too little has been said and done about the "forgotten sires" of dairy herds, in the opinion of W. W. Yapp, chief in dairy cattle at the College of Agriculture, University of Illinois.

By the "forgotten sires" Yapp refers to that large group of young Illinois dairy bulls whose breeding ability is still an unknown quality but whose progeny will wield a potent influence on dairy returns in years to come. These progeny will produce more than 90 percent of all milk and dairy products consumed in the five years from 1937 to 1941 inclusive.

Most progressive dairymen would rather use a "proved" sire, as determined by the number of pounds of milk and butterfat the bull's daughters will produce in a year's time, Yapp explained. This is as it should be. However, under the present system of proving dairy bulls, only one in fifty is likely to become a proved sire, and all those not in this select group are "forgotten."

More attention needs to be given to the physical appearance of these bulls and to the performance of their dams and sires if the future of the dairy industry is to be safeguarded, Yapp believes. The physical characteristics of the young bull should, of course, be considered carefully, if he is to sire the future producers of the herd. In addition the dairyman should investigate the characteristics of the bull's sire and dam.

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New Farm Year To Front At Farm Advisers' Conferences

With a history-making year nearing a close, farming interests in Illinois will take a look ahead and map out steps for future advancement in three district conferences of county farm advisers which the extension service of the College of Agriculture, University of Illinois will hold this month.

Dean Herbert W. Mumford, director of the agricultural college extension service; Prof. J. C. Spitler, state leader of farm advisers, and other officials of the extension service will be in charge of the program.

Only county farm advisers and members of the extension service staff will attend the conferences, which are scheduled for LaSalle, October 23 and 24, Springfield, October 25 and 26, and Mt. Vernon, October 30 and 31.

Whatever the next year may bring, the crop year just closing has been one in which, despite the worst drouth in history, the U. S. farmers' cash income, including rental and benefit payments to AAA cooperators, is estimated to be close to a billion dollars more than that of the previous year.

Widening the margin between farm income and farm expense will be one of the prime objectives of the 1934-35 extension service program which will be discussed at the farm advisers' district conferences. Gains of this kind will be sought through extension service activities which reduce production and marketing costs. Raising the quality of farm production as a means of overcoming the handicap of sluggish markets and low consumer demand also will figure in the discussions of the advisers.

As in former years the extension service program which will be planned at the conferences will stress adjustment of production to demand, expansion of market outlets for farm products and, in general, a more satisfying rural life.

These objectives will be sought through 4-H club work, farm accounting, dairy herd improvement association work, dairy herd feeding schools, adjustment of crop rotations to AAA regulations and drouth conditions and other extension service projects.

Following the conferences, farm advisers will outline the year's program of work in counsel with farm leaders of their respective counties.

-M-

Recent Changes In Advisers Affect Several Counties

W. F. Purnell, former farm adviser of Ford county, who will resign October 22 to accept a similar position in Mercer county, is the most recent addition to the list of advisers involved in changes in a number of Illinois counties, it is announced by Prof. J. C. Spitler, state leader of farm advisers, of the College of Agriculture, University of Illinois.

R. H. Clanahan, former farm adviser in Greene county, began work October 12 as the new adviser in White county, succeeding C. W. Simpson, who is now manager of a cooperative creamery at Olney. E. H. Walworth, former emergency adviser in Fayette county, is now farm adviser in Warren county succeeding A. A. Olsen.

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Beef Cattle Conditions Now Foreshow Higher Markets

Conditions which will result in reduced supplies and make for higher cattle markets are reviewed in a beef cattle outlook statement prepared by a special committee of staff members of the College of Agriculture, University of Illinois. First, there is the great decrease in the cattle population of the country as a combined result of the drouth, short feed supplies and the federal cattle buying program, and second, there is the smaller number of cattle likely to be fed this winter on account of the reduced corn crop.

Numbers of cattle began to increase in the United States in 1928, but the number of cattle marketed did not increase until 1933. This follows the usual tendency for changes in number of cattle marketed to lag behind an increase in numbers in breeding herds. This lag was lengthened out in this cycle by low prices for cattle which caused owners to hold them back. Once the period of increased marketings sets in, it has usually run for several years, during which cattle prices, after a sharp period of readjustment, have tended to drag along at a fairly stable level.

The drouth of this summer together with the cattle purchase program of the federal government has concentrated into 1935 a reduction in numbers which would normally have required several years. Through September 22, about six million head had been purchased by the government. The latest reports indicate total purchases will be from 7½ to 8 million head. Although part of these will be shipped to southern and eastern pastures, the larger proportion have or will be slaughtered for relief purposes. This will reduce cattle numbers in the country by very substantial amounts. A period of restocking is likely to follow. More favorable price levels for cattle may be expected after this liquidation is passed.

Information collected by the U. S. Department of Agriculture about August 1 indicated a decrease of 30 percent or more in cattle feeding this fall and winter compared with a year earlier. Since that date, however, shipments of stockers and feeders from the four principal markets have been unusually heavy, the total movement for the three months, July 1 to September 30, being 56 percent more than that of a year ago but approximately the same as in 1931 and 1932. In all probability these shipments include a considerable number of cattle which have been bought principally to utilize fall pastures and coarse roughages. Consequently these shipments will contribute much less to the beef supply when marketed next spring and summer than their numbers might indicate. Following the short corn crops of 1901 and 1924, the supplies of finished steers coming onto the market the following years were greatly reduced in comparison to receipts of "warmed up" and "short fed" cattle, creating a wide range between the prices of the upper and lower grades. Reports indicate that a larger percentage of yearlings and a smaller proportion of calves will be fed, reflecting, no doubt, farmers' adjustments to shortage of grain feeds.

A factor of uncertainty in the markets for all farm products is the outlook for business and consumer incomes. A marked improvement in these would reinforce the effect of shorter supplies on cattle prices. On the other hand, if there is little or no improvement in business conditions, the advances in price will be much less marked. In spite of the setback which has taken place in business activity in the last three months, the general trend in activity is probably upward.

Over a period of time changes in beef cattle and dairy cow prices show strikingly close fluctuations and higher beef cattle prices will tend to increase prices of dairy cows. Moreover, the inspected slaughter of dairy cows and heifers in the first part of 1934 indicates that marketings were thirty percent larger than in the same period in 1933. These conditions point to higher prices for dairy cows.

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Roofs Rate First Attention In FHA Repair Activities

Better roofs and fresh paint are the two greatest needs of the $780,949,079 worth of buildings on Illinois farms, and now with Federal Housing Administration funds becoming available is the time to take care of at least the roofs, says W. A. Foster, rural architecture specialist at the College of Agriculture, University of Illinois.

Replacing old worn-out roofs now before winter sets in will stop the damage to the building and its contents, will improve the appearance of the structure and add to its value, Foster pointed out.

The new roof should be selected on the basis of permanence, fire resistance, appearance and appropriateness, as well as on cost, points out Foster. It is false economy to lay a poor roof that may become a liability in a few years, while a good one will need no attention for 15 years or longer.

If the roof is to be made of wood shingles, only those with heavy butts and cut from straight-grain cedar or cypress should be used. When a metal roof is preferred, the material selected should be a type on which the seal of quality is stamped on each piece. In the case of composition roofs, heavy felt embedded with a mineral or tough hide-like plain materials usually give the greatest satisfaction. If composition slate is to be used for the roof, medium-sized units, rather than large pieces should be selected. A little investigation will be helpful in chosing the roof best adapted to the particular needs. It should, of course, be laid according to the recommendations of the manufacturer.

Better roofs on the farm buildings of the state would stop more than one waste in returns and expenses, Foster pointed out.

The leaky roof menance often destroys more grain, forage and stored articles than it would cost to make the repairs. Mold and fungus make grain unfit for sale or use. Dampness causes rust to implements and alternate shrinkage and swelling to articles made of wood. Moisture also destroys the finish to woodwork, rots out rafters, damages plaster and brings early decay to fabrics.

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Horses Pull High Records Show They're Not Through

Horses are far from through as a source of farm power judging from the way they came to the front in horse-pulling contests which the College of Agriculture, University of Illinois held throughout the state this summer and fall. More Illinois teams made good records than at any time in the past eight years, it is reported by E. T. Robbins, livestock extension specialist, who was in charge of the contests.

Although the state records established last year remained unbroken, three Illinois teams during the season just closed lifted 3,000 pounds the full distance of 27½ feet, or the equivalent of pulling six 14-inch plows turning furrows six inches deep in stubble ground. One of these teams was a 3,800-pound pair owned by Charles Lett, of Sandwich; the second team, weighing 3,930 pounds, was owned by Homer Crawford, of Pontiac, while the third team to pull the full distance was a pair weighing 3,100 pounds owned by Gordon Warters, of Allerton. This team lifted 97 percent of its own weight. Few teams have set as good a record, it is said.

The all-time records were set in 1933 by two teams owned by Willard Rhoads, of Springfield. In the light class a Rhoads' team weighing less than 3,000 pounds pulled a lift of 2,825 pounds, while in the heavy class their stallmates set a record of 3,225 pounds.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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AAA Corn And Hog Plans For 1935 To Be Announced Soon

There will be an AAA corn-hog program in 1935, and officials hope to announce the features of the plan about the first of November and to have the contract itself ready for sign-up meetings before the Christmas holidays, according to word which the extension service of the College of Agriculture, University of Illinois has received from Washington. The 1934 program expires on November 30.

Plans for the 1935 program were started as soon as the early returns from the AAA referendum in 41 states favored a continuation of an agricultural adjustment program on corn and hogs. Although the final count on the outcome of the balloting is not yet complete, preliminary reports from the principal corn and hog states show 345,310 producers favoring the development of a 1935 program and 153,181 casting dissenting votes.

"The referendum results seem to indicate rather clearly that corn-hog producers want a follow-up program," said A. G. Black, chief of the AAA corn-hog section. "In view of this indication, it has been decided to offer a definite plan as soon as the necessary provisions can be worked out. As it was stated during the referendum, such a plan probably will follow the general outline of the 1934 contract, involving control requirements and benefit payments with respect to both corn and hogs.

"We are particularly interested in simplifying the administrative procedure in order to eliminate unnecessary delays and to plug up holes that developed in working out the operations of the 1934 program."

As soon as the preliminary results of the referendum indicated the sentiment of producers, a group of corn-hog committeemen and extension workers from 18 states was called to Washington to advise with administration officials relative to the new program. Illinois was represented at the conference by J. R. Fulkerson, of Jerseyville: J. Bumgarner, of McNabb, and P. E. Johnston, of the farm management division of the U. of I. College of Agriculture.

A new corn-hog adjustment program to follow the 1934 contract is deemed advisable to prevent an excessive increase in corn acreage and production and in hog numbers during the next two years. Indications are that the present relatively high prices, resulting from the disastrous effects of the drouth on supplies, will stimulate heavy planting next spring. Against this is the marked reduction in livestock numbers and hence in corn requirements, since a year ago. A return to the 1932-33 average of 105,500,000 planted acres and normal yields following severe drouths would result in a corn crop at least 300,000,000 bushels in excess of anticipated requirements, it is believed. Assuming normal or near normal yields, a total corn acreage equal to the area planted in 1934 would meet requirements and would leave a substantial volume of corn for rebuilding reserves.

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Final Count Of Illinois Ballots Favors AAA Programs

Almost 50,000 Illinois farmers voting in the government's nation-wide AAA corn-hog referendum favored an adjustment program dealing with corn and hogs in 1935 by a count of 35,801 to 13,570 and approved the idea of a simplified, one-contract-per-farm program dealing with grains and livestock to become effective in 1936 by a poll of 30,821 to 15,554.

These are practically the final results of the referendum as conducted throughout the state by officials of county corn-hog production control associations.

The sentiment among the 44,655 corn-hog signers who voted was three to one in favor of the first question of an adjustment program dealing with corn and hogs in 1935. A total of 33,545 voted favorably, while only 11,110 were opposed. Counting the votes of farmers who do not have 1934 corn-hog contracts, as well as of signers, the vote on this question was 35,801 favorable to 13,570 opposed.

Contract signers voted stronger than two to one in favor of the second question of a simplified, one-contract-per-farm adjustment program dealing with grains and livestock to become effective in 1936. A total of 28,995 signers favored this question, while only 13,304 opposed it. The total vote, including both signers and non-signers, was favorable by a count of 30,821 to 15,554.

In not a single one of the 102 Illinois counties did the contract signers vote down the first question, while the second was defeated only in three counties on the basis of the contract signers' votes. The second question lost 132 to 121 in the Boone county vote of AAA cooperators, was defeated 176 to 135 by Kane county cooperators and went down, 375 to 324, in the Winnebago county poll of signers.

These three counties also defeated the second question when the votes of contract and non-contract signers were added together. The margin was 172 to 130 in Boone county, 190 to 141 in Kane and 441 to 342 in Winnebago.

Three other counties, Grundy, Hancock and Schuyler, voted down the second question when the ballots of non-signers were added to those of signers. The margin was 256 to 219 in Grundy county, 622 to 558 in Hancock and 168 to 165 in Schuyler. However, these three counties were in favor of the second question on the basis of the vote of AAA cooperators alone.

Even when the vote of non-signers was added to that of the signers, the first question was defeated only in one of the 102 Illinois counties and then by a narrow margin. That was in Grundy where the total count was 248 opposed to the first question as compared to 238 against it. Among the contract signers, alone, the first question carried even in Grundy county by a count of 235 to 191.

In staging the referendum, corn-hog production control associations held a total of 1,176 community meetings which were attended by a total of 52,039 farmers.

Before voting on the two questions, farmers heard an explanation of outlook information from the bureau of agricultural economics, U. S. Department of Agriculture, showing that the production both of grains and livestock threatens to get out of hand again unless farmers plan accordingly. Action was held to be necessary at this time, because after the 1934 corn-hog contract terminates on November 30, there will be no adjustment program in effect either on feed grains or on livestock

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Good Seed Curing Adds Millions To Corn Crop Income

Providing good curing and storage conditions for their seed corn this winter, rather than poor or even average conditions, will be worth $10,000,000 on next year's Illinois corn crop, should 1935 be a normal year and corn prices remain at 60 cents a bushel.

This is revealed in eight years of records kept by central Illinois farmers enrolled in the farm management service conducted by the College of Agriculture, University of Illinois, in cooperation with county farm bureaus. In these records, involving the growing of approximately 70,000 acres of corn, the difference between good and poor seed corn curing and storage amounted to 2.3 bushels an acre in the resulting crop. Even average curing and storing conditions cut the resulting crop two bushels an acre below what it was from good curing and storage of the seed. Two bushels an acre on the average annual Illinois crop of 9 million acres, with corn worth 60 cents a bushel, would amount to more than $10,000,000 in corn returns.

By good curing and storage is meant that the seed corn is dried rapidly and protected from freezing until the excess moisture has been removed, explains R. H. Reed, agricultural engineer at the U. of I. College of Agriculture. These conditions are not met where the corn is hung on the back porch or in the driveway of the corn-crib as is practiced on many Illinois farms.

Rapid drying of seed corn requires the use of some artificial heat, unless the weather is unusually favorable. For small quantities, the ears can be hung in the kitchen, or in an upstairs room around the chimney, or over an open hot air register. Large quantities of seed corn may be dried in the farm shop, garage or other buildings where a fire can be maintained. Care, however, should be taken to see that none of the ears is exposed to a temperature above 120 degrees Fahrenheit.

Ventilation is also an important factor in obtaining high quality seed corn, points out Reed. Unless the air immediately around the ears is constantly changed, the atmosphere becomes ladened with moisture, the drying will be much slower and an ideal condition is established for the development of molds.

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State Vegetable Growers Will Meet November 20 To 22

Protecting Illinois' 12-million dollar vegetable growing industry from "counterfeit" certified potato seed will be among the important problems to be considered at the fourth annual meeting of the Illinois Vegetable Growers' Association to be held at Rockford, November 20 to 22, according to L. A. Somers, vegetable extension specialist at the College of Agriculture, University of Illinois. The organization with its membership of more than 1,600 vegetable growers is expected to take a vigorous stand against the distribution of potato seed in bags bearing the word "certified" as an imitation of the official seal of genuine certification, it is said.

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Nut Interest To Center In New Haven Show On Nov. 15

Other towns and cities may have their world's fair expositions and their world's series baseball games, but little New Haven, famous as the center of the pecan growing industry of Illinois, will have a distinctive event of its own when the Tri-State Nut Show is held there November 15. Aimed to further the already extensive nut-growing industry of Gallatin county, the show was started three years ago by H. C. Neville, county farm adviser, cooperating with the extension service of the College of Agriculture, University of Illinois. He has just announced plans for the 1935 show, which is expected to draw entries from southern Illinois, southwestern Indiana and southwestern Kentucky.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Lack Of Demand Prevents Greater Rise In Farm Prices

Only a lack of demand has prevented an even greater rise than has recently been made in the prices of farm products, according to an analysis of farm price changes by Dr. L. J. Norton, of the department of agricultural economics, College of Agriculture, University of Illinois.

Fortunately, there are a number of factors in the current situation which point toward further recovery in business activity and demand over a longer period of time, although the immediate outlook is not for marked improvement, he pointed out.

Among the favorable factors in the longer time outlook are the higher prices for certain basic staple products, huge and more or less idle bank reserves and the long period of sub-normal activity which has created accumulated shortages of goods in many directions, it was explained.

With all their recent sensational rises, prices of Illinois farm products were lower, on a relative basis, than the prices of things farmers must buy, Dr. Norton said. The index number of farm prices was 77 last month as compared to 82 for prices of things farmers must buy. In these comparisons, the averages for 1921-1929 are taken as 100, both for the prices farmers get and for the prices they pay.

That present price relationships are not more unfavorable to the farmer is attributable to the fact that the jump in prices of Illinois farm products from the low point early in 1933 has been about four times the increases in prices paid by farmers for the things they buy, it was pointed out.

"Prices of Illinois farm products have averaged about 40 per cent higher during the two months just preceding the present one than they did during the same two months a year ago. Only four out of a list of 19 representative Illinois farm products were cheaper than a year ago.

"These were: (1) potatoes, reflecting a larger crop; (2) wool, reflecting a much slower demand than a year earlier when the textile industries were experiencing a boom; (3) sheep, reflecting lower wool prices, and (4) milk cows, reflecting the tendency to liquidate as a result of feed shortages and high prices for feeds."

Hay led Illinois farm products in the August-September price advances when it averaged 98 per cent more than it did during the same two months a year ago. There was a 71 per cent advance in the price of barley over a year ago, 54 per cent in oats, 69 per cent in corn, 45 in eggs, 44 in hogs, 35 in butterfat, 34 in chickens, 15 in horses, 21 in beef cattle and 11 in apples. So far as many farmers are concerned these higher prices are more than offset by reduced crops. Hence, income may even be reduced.

Barley, oats, hay and horses were the only four out of the 19 representative Illinois farm products which had an August-September price better than the 1921-1929 average. Under existing demand conditions prices comparable with those received in 1921-1929 can be expected only in the case of commodities where near-famine conditions exist, Dr. Norton declared.

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Old Cribs Unfit For Storing Higher-Priced New Corn

Hundreds of Illinois cribs which may have been good enough to hold 15-cent corn two years ago will not provide adequate storage this fall with corn prices more than four times their former level, in the opinion of W. A. Foster, rural architectural specialist at the College of Agriculture, University of Illinois.

Shrinkage, weather damage and losses from rodents caused by poor storage facilities did not amount to much in dollars and cents when corn was cheap. But today with a ready market and favorable prices, every bushel saved adds materially to the 1934 corn crop returns. Thus many producers throughout the state will find it practical to make extensive repairs on their cribs so that the new corn may be held in the best possible condition.

To furnish adequate storage, a corncrib should have a firm foundation, a tight floor, strong side walls and a non-leaking roof, explains Foster. It may be built in any one of a number of different shapes and sizes, but the most common cribs in Illinois range from 8 to 10 feet wide and from 8 to 16 feet high, depending on whether a power elevator or the back-breaking scoop shovel is to be the unloading device on the farm. The length of the crib will depend upon the amount of corn normally raised and stored on the farm each year. In this state double cribs with a covered driveway between are popular because they also provide shelter space for wagons and other farm implements.

Since many cribs of 1933 corn will be resealed for government loans this fall, many farmers will be tempted to store the new corn in old, unfit cribs or makeshift new ones, Foster believes. Rather than follow such a wasteful practice, it is suggested that since the old corn is now dry and does not need crib storage, it may be more practical to shell out the 1933 crop and store it in a bin so that the best crib space may be available for the new crop.

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Export Slump Affects Farmers' Plans For Next Season

Any changes which Illinois farmers are considering in their 1935 production plans will have to take into account that the total volume of agricultural exports is still shrinking, according to reports which the College of Agriculture, University of Illinois has received from the bureau of agricultural economics, U. S. Department of Agriculture.

In total volume agricultural exports from the United States in the year ending June 30, 1934, were actually less than the previous year although some important products showed a substantial increase. The volume index of exports of 44 leading farm products in the past year stands at 83 as compared with 85 in 1932-1933, when the pre-war period of 1909-1914 is used as a base average of 100. This index of the volume of agricultural exports in 1933-1934 was the lowest since 1909-1910.

In spite of the decrease in the volume of exports, the value of the agricultural products shipped out of this country last year, exclusive of forest products, was greater than in 1932-1933, or $787,000,000 in 1933-1934 as compared with $590,000,000 the year before, the federal bureau explains. This increase in the total value of the exports was brought about by the gradual rise in commodity prices.

Although the volume of exports of many farm products declined, there was an increase in the exports of several other products of which the United States regularly produces an exportable surplus. Notable among these were tobacco, fresh pork, canned pork, bacon, oranges, prunes and certain other dried fruits.

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Shrewd Choice Of Beef Cuts Safeguards Family Budget

Stretching the food budget so that it will cover the family's meat needs is not so difficult, in spite of rising prices, if Illinois homemakers buy the cuts of beef that supply the greatest food value for the least cost, says Sleeter Bull, meats specialist at the College of Agriculture, University of Illinois.

Porterhouse and sirloin steaks and rib roasts, owing to their limited proportions, are always more expensive. There are, however, many other cuts of beef at more moderate prices. In most cases these are just as nutritious as the more aristocratic steaks and roasts. Furthermore, when properly cooked, they are quite palatable.

Many families prefer a rump to a rib roast, not only because it sells for about three-fourths as much as the rib cut, but because there is less waste, explains Bull. Rumps from old, thin cattle, however, should be pot-roasted rather than roasted. For the same reasons, chuck ribs and chuck arms are often bought by shrewd homemakers instead of the better-known rib cuts. Being less tender, chuck pieces should also be pot-roasted.

Round steak, which is usually priced at two-thirds the cost of porterhouse and about four-fifths as much as sirloin, makes another economical buy. If the steak is cut thin, it should be fried, but if a thick cut has been selected, it should be prepared as a swiss steak, thereby overcoming its less tender characteristics.

Savings as great as 50 per cent can sometimes be made in buying stewing meats. Neck, plate and brisket are quite satisfactory for this purpose and are economical as well as palatable.

Hamburger or ground beef is always a practical meat selection. If especially high quality hamburger is desired, the housewife can buy round steak and have it ground, but more meat of equal quality can be had for the same money by having the butcher grind a piece of shoulder arm or chuck. The offal cuts such as liver, heart and tongue are likewise less expensive than other more popular pieces and at the same time lend variety to the diet.

An economical feature of meat, points out Bull, is the fact that it does not require the addition of butter, cream or mushrooms to make it palatable. Meat is one of the most savory foods and supplies gravies and soups which add materially to the palatability of other less tasty foods.

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Home, Itself, Holds Record For Accidents To Children

While parents may feel that their children are safest at home, more accidents to youngsters occur there than anywhere else, according to Miss Gladys J. Ward, home management specialist of the College of Agriculture, University of Illinois. Furthermore, accidents cause more deaths among children of the United States between the ages of 5 and 14 years than any one of the dreaded diseases, she said.

There are three possibilities for lessening the serious hazards confronting children in the home, Miss Ward said. First, parents might well give greater care and thought to making home fixtures, fittings and equipment safe for children. Second, as the youngsters become old enough they should be taught the proper use of matches, sharp knives, heating equipment, electrical devices and firearms. It is better to explain how and when dangerous articles may be handled rather than allow the child to learn untaught experimentation. Third, parents may develop safety habits in their children by setting a proper example.

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Illinois Corn In Strong Position To Retain Honors

Although the smallest in 61 years, the Illinois corn crop is better than that in many other sections and consequently corn growers of this state have one of the best chances that they have ever had to win national and international honors, according to J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois.

Entries for the Hay and Grain Show of the International Livestock Exposition, where these honors will be decided, close November 20 and the corn must be in Chicago by November 28.

The state will make a strong bid to repeat its feat of last year when it took the "corn king" crown of the world on a ten-ear sample of yellow utility type shown by C. Worth Holmes, of Joy, Mercer county, Hackleman said. It was the first time in 15 years' history of the hay and grain show that the utility type had won the world title, although it has only been within recent years that such corn has been recognized with special classes of its own at the show. Development of utility corn followed years of research work by the U. of I. College of Agriculture to control corn diseases and produce higher quality grain.

This year, although the state's corn crop is the shortest in more than half a century, it is of fairly good quality, especially in some sections of the state, Hackleman reported. On the other hand, Iowa, Nebraska, Missouri and some of the states farther west which have suffered more than Illinois from the drouth will be hard pressed to put up their usual strong competition at this year's hay and grain show, it was predicted.

Illinois' strongest competition is expected to come from northern Iowa and from Ohio. Growers in the latter state, especially, are out after Illinois' laurels in the utility corn classes and also after the grand championship of the show.

The region around Mercer county, where Holmes, the present "corn king" of the world lives, is one of those which has a corn crop of promising quality this year, Hackleman reported. Other counties in that area with corn crops of fair quality are Warren, Knox, Henry, Whiteside and the eastern part of Henderson county and western Bureau county.

Some strong samples also are expected to come out of an irregular shaped area in central Illinois including parts of McLean, Macon, Menard, Logan, Tazewell, DeWitt, Woodford and Mason counties.

The whole of southern Illinois has a crop of fair to fine quality corn, Hackleman reported.

Whether Illinois corn growers plan to enter the hay and grain show or not, it will pay them to save all the seed they can this fall, in the opinion of Hackleman. With the likelihood that seed corn from the 1934 crop will be in heavy demand next spring, farmers will have a profitable outlet for all the good corn they can save this fall, he pointed out. Some farmers, when their corn is going into the crib, plan to pick out all ears that could possibly be used for seed and store them in a separate section of the crib.

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Contour Plowing Prevents Erosion On Sloping Fields

Pride in straight rows will cost Illinois farmers inestimable losses this fall and winter in the form of soil erosion on sloping fields that have been plowed up and down the slope, says Ralph C. Hay, of the agricultural engineering department, College of Agriculture, University of Illinois. Contour plowing and cultivating will stop most of this loss, it is claimed.

Plowing and cultivating up and down the slope makes for straight rows of corn and other crops, but it also speeds up the flow of run-off water and may start serious gullying, he said.

Contour plowing and cultivating, while it is a radical departure from straight-row farming, slows up the flow of run-off water and helps prevent gullying on sloping land. In all there are 12 million acres in Illinois that are subject to destructive or harmful erosion.

Coupled with contour plowing and cultivation in a good soil erosion plan there must be terracing, the application of limestone and the growing of legumes.

Contour cultivation is so called because it parallels the terraces in long, winding furrows. The corn must be drilled instead of planted in check rows, but this is quite advantageous because more soil and soil moisture are conserved as a result of the run-off water being retarded by each corn row. Farmers who practice contour cultivation report that it increases crop yields and but little more time is required than by farming in straight rows. Working the curved rows which are longer than the field compensates for the cultivation of the few pointed rows between the terraces.

Drilling corn has proved satisfactory where tried in Illinois, particularly if a rotary hoe is used for the first cultivation, and less time and trouble are required than for check-rowed corn. Furthermore, farm work done on rows running practically level requires less power to pull the machinery than where the implements must be drawn up and down the slopes when going straight up and down a field.

Farming in straight rows over terraces, especially on steep slopes, is also objectionable. There may be trouble in getting the machinery over the ridges and furthermore the ridges may be torn down so that considerable work has to be done to keep the terraces from breaking over during heavy rains, explains Hay.

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16 Of 5,000 4-H Pig Club Members On 1934 Honor Roll

The equivalent of 73 years of producing pork by the most approved methods has been put in by 15 boys and one girl who have just been named for the 1934 Illinois honor roll of 4-H pig club members by officials of the extension service of the College of Agriculture, University of Illinois.

Ten of the boys have been given special recognition by being named as 1934 state champions in pig club work. These ten and the other six on the honor roll were picked as the most outstanding among the 5,000 farm boys and girls of the state who have carried on projects in improved methods of pork production under direction of their county farm advisers and the extension service of the agricultural college.

The ten state champions are Jake Krider, 20 years old, Lewistown; Virgil Wittler, 20, Quincy; Charles Norton, 16, Neponset; John Edward Harber, 16, Streator; Duane Kuntz, 17, Princeville; Burdell T. Gardner, 19, Chatsworth; Duane Brett, 16, Maroa; Calvin Coles, 17, Eldorado; Eileen Cadwalader, 17, Canton; and James Nelmes, 16, Cuba.

The six others whose work won a place for them on the state honor roll are Max Summers, Curran; Frederic Hoppin, Pawnee; Lawrence Bickerman, Magnolia; Paul Engel, Washburn; Rudolph Wagner, Dwight, and Leland Roff, Jacksonville.

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New Varieties Of Apples Ready For Illinois Orchards

Something new in apples will be offered consumers in a few years to come as a result of new varieties which are available to home and commercial fruit growers for planting between now and spring, according to R. L. McMunn, associate pomologist of the College of Agriculture, University of Illinois. Some of these new varieties undoubtedly will be put out by growers who are replacing trees that died during the summer or who are putting out new plantings this year, he said.

Nurserymen and experiment station plant breeders have made noteworthy progress in the last few years, not only in developing new varieties, but in selecting bud sports from some of the older and more common varieties of apples. These new propagations are being tested by the experiment station of the U. of I. College of Agriculture and by other investigators and can now be offered to orchardists with reasonable assurance of satisfaction.

Development of the new varieties marks another step in improving the quality and increasing the market demand for the state's apple crop, which brought farmers an average cash income of $2,377,000 during the three years 1931-1933, McMunn said.

Of these new varieties, many are color bud sports of such well-known standard varieties as Delicious, Stayman, Jonathan, McIntosh, Rome and Duchess. Most of them produce fruit of a much deeper red color than the varieties from which they originated, and the color develops on the apples much earlier than in the case of the standard varieties. These new characteristics are a distinct advantage to the commercial grower, because he can harvest the crop somewhat earlier and yet have fruit that will color up to U. S. No. 1 standard.

All of these sports are well adapted to the regions in which the parent varieties can be grown successfully, points out McMunn, and are worthy of trial in a small way either for commercial or home plantings.

Several new apple varieties that are not bud sports are also available to growers. A few of these include Early McIntosh, Tioga, Lodi, Newfane, Orleans, Melba and Red Bird. For the most part these new varieties originated in the northern part of the United States, are adapted to reasonably cold winters and can be expected to produce good crops in Illinois.

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Poultry Outlook Encourages Use Of Superior Rations

With the seasonal increase in egg prices and the encouraging outlook for the egg market this fall and winter, renewed interest is being taken in laying rations by Illinois poultrymen, whose flocks normally produce some two billion eggs annually, according to H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

There are, of course, several good laying rations, but one that has given good results at the U. of I. College of Agriculture consists of both mash and grain mixtures. The mash is usually made up in 500-pound lots by mixing together 155 pounds of ground yellow corn, 100 pounds of wheat middlings, 55 pounds of meat scrap, 100 pounds of wheat bran, 20 pounds of dried milk, 25 pounds of soybean oil meal, 40 pounds of alfalfa leaf meal and 5 pounds of salt. For winter feeding, one pint of cod-liver oil is added to each 100 pounds of mash. This is kept before the birds in feed hoppers at all times.

The grain mixture, when made up in 100-pound batches, consists of 40 pounds of corn, 30 pounds of wheat and 30 pounds of oats. This is hand fed, the chickens being given 12 to 14 pounds for each 100 birds twice daily. Oyster shell, grit and any succulent green feed that may be available are given the birds free choice.

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Seed Corn Buyers To Watch Illinois At International

With farmers in drouth-stricken areas looking to this state for next year's seed corn, Illinois will have a rare chance at the International Hay and Grain Show to let the world see what the home state of the international "corn king" has produced this year, says J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois. He will be one of the judges. The show will be held as a part of the International Livestock Exposition at Chicago the first week in December. All applications for entries must be made on or before November 20 and the corn must be in Chicago by November 28.

The first Illinois entry has been made by E. W. Doubet, of Peoria county, who was state "corn king" a number of years ago when he won the sweepstakes in the annual Illinois Seed Grain and Utility Corn Show held in connection with Farm and Home Week at the College of Agriculture, University of Illinois.

Although this year's Illinois corn crop is the shortest in more than half a century, it is of fairly good quality, especially in certain sections of the state, Hackleman said. Already prospective buyers from both eastern and western states have asked the extension service of the U. of I. College of Agriculture to aid them in getting good seed corn. These purchasers say they are primarily interested in 1934 corn that is true to variety name and of good enough quality to be approved by the Illinois Crop Improvement Association. These and other probable buyers will undoubtedly be watching the exhibits at the International as indicating possible sources of good seed corn, it is believed.

The fact that other corn-growing sections have been badly damaged by the drouth also gives Illinois exhibitors one of the best chances they have ever had to win national and international honors and to retain the "corn king" crown of the world which was won last December by C. Worth Holmes, of Mercer county, on his 10-ear sample of yellow utility type corn.

Being unusually favored by weather conditions this past summer, southern and southeastern Illinois growers are expected to make their first try for honors at the International this year. Entries are looked for from Edwards, Gallatin, Richland, Saline, Wabash, Wayne and other counties in that area. Strong samples are also expected from counties in northwestern part of the state where the corn crop is of fair quality. These include Warren, Knox, Henry, Whiteside and parts of Henderson and Bureau counties, while central Illinois may be represented by entries from McLean, Macon, Menard, Logan, Tazewell, DeWitt, Marshall, Putnam, Woodford and Mason counties.

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Triplett Succeeds Purnell As Adviser In Ford County

H. D. Triplett started work November 1 as the new farm adviser of Ford county, succeeding W. F. Purnell, who resigned to accept the position in Mercer county, it is announced by J. C. Spitler, state leader of farm advisers.

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Better Handling Of Horses Would Help Their Comeback

Horses are staging a comeback in Illinois, but some of their value as a source of economical farm power will be lost unless they are handled efficiently, it is pointed out by E. L. Sauer, farm management specialist at the College of Agriculture, University of Illinois.

Next to man labor, the cost of keeping work horses is one of the largest items of expense on many farms in this state. This is often not realized because horses are usually fed on farm-grown grains and roughages and no cash outlay is necessary for their feed.

How widely the worth and expenses of horses may vary depending upon their management is shown in a study of cost account records kept by 33 Champaign and Piatt county farmers in cooperation with the farm management division of the U. of I. College of Agriculture. The net cost of keeping a work horse for the year varied from $24.23 to $76.98, or an average of $46.58.

The number of hours of work performed by the horses ranged from 309 to 1,244 each, the average being 705 hours. The cost for each hour of horse labor averaged 6.6 cents. This varied from 3.6 cents on the lowest-cost farm to 18.4 cents an hour on the farm with the highest horse-power cost. The cost for each hour's work was closely correlated with the number of hours worked by each horse, although the total cost of keeping a horse varied widely on farms where the horses worked an equal number of hours.

Feed accounted for 59 per cent of the average total cost of maintaining the horses, man labor required to care for and harness the horses accounted for another 14 per cent, shelter 9 per cent, interest on investment 7 per cent, depreciation 5 per cent, harness 4 per cent and veterinary, shoeing and incidental costs 2 per cent.

From these figures it is evident that the cost for each unit of horse power on farms can be reduced by cutting down the maintenance expenses and by increasing the hours of productive work done by each horse. The feed given the animals and the labor spent in caring for them must be governed by the work done, if horse power is to be economical. Depreciation costs may be reduced and an appreciation in the horse account effected by raising colts for replacement purposes, points out Sauer.

The hours of work done by each horse can be increased by adjusting the number of horses in relation to the amount of horse power required on the farm, by planning field and other work in advance, by using the horses during slack periods for such work as fall plowing, by using big team hitches, by having fields properly arranged and by keeping the horses in good physical condition so that they are able to stand up under peak loads when necessary.

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Home Insulation And Repairs Cut Down Heating Costs

Between 30 and 40 per cent of the average coal bill for many of the 1,405,127 homes of Illinois could be eliminated this winter by using FHA funds to insulate and make minor repairs about the house, it is estimated by W. A. Foster, rural architecture specialist at the College of Agriculture, University of Illinois. The saving in fuel alone would go a long way in paying off the government loan.

Next to renewing and repairing roofs, the greatest need of most farm dwellings and other homes in this state is to build out the cold, points out Foster. Poor, loose construction and uninsulated walls and roofs are extravagant heat wasters. Often weather-stripping a door or window will stop heavy heat losses. The replacement of a broken glass in a sash or new putty will likewise check bad leaks.

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No Winter Is Kind To Small Fruits Left Unprotected

Nobody knows what kind of a winter it is going to be, but the safest thing for Illinois small fruit growers to do is to mulch their plants right away before the first hard freeze comes, according to A. S. Colby, chief in small fruits at the College of Agriculture, University of Illinois. The state has been producing 1½ million dollars worth of small fruits during the past several years, but the crop next year and the years after depends upon how well the plants are protected for the winter, he said.

"Mulching also may be helpful in preventing too early growth if the spring should be abnormally early. Weeds also are kept down and the necessary moisture is conserved for the plants. Then too, the fruits are usually cleaner than they otherwise would be.

"It is especially important that strawberries be mulched after the plants have become dormant and before the first heavy freeze. Temperatures no lower than 20 degrees above zero cause severe injury to unmulched strawberry crowns and roots. The thin stand of plants in many sections this fall makes them especially susceptible to injury. Raspberries, blackberries and bush fruits also are benefitted by a mulch applied late in the fall.

"Straw, wild or marsh hay, leaves, shredded corn stalks, sweet clover and soybean hay all can be used for mulching material. Leaves must be used with care, as they pack. Mulching material should be as free from weeds seeds as possible, as they will foul the patch next spring. Old straw is preferable, especially if it has been left exposed for a few months and moved occasionally so that the grain in it has germinated.

"For strawberries the mulching material should be spread about two inches thick over the patch. Most other small fruits may be mulched in the rows, leaving the middles to be cultivated during the growing season.

"Some growers have tried a mulch crop of oats sown between the strawberry rows in the fall and allowed to mat down as it is killed by frost. This is not recommended because the oats usually make too heavy a growth, the mulch is not uniform and it rots during the winter, making conditions less satisfactory for picking the following season."

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Money Spent For Poultry Leucosis Cures Only Wasted

Buying so-called remedies to rid their flocks of leucosis disease, which includes such ailments as range paralysis, big liver disease, white eye, neuritis and leucemia, is likely to prove a waste of money for Illinois poultrymen, in the opinion of Dr. Frank Thorp, Jr., associate in animal pathology at the College of Agriculture, University of Illinois. As yet there is no known cure for the malady.

Although comparatively new in this state, leucosis is apparently spreading throughout many flocks and threatens to become a serious poultry problem, points out Dr. Thorp. It affects both sexes alike and usually occurs between the ages of 3 and 12 months.

In spite of the fact that birds contracting leucosis can not be cured, research investigations indicate that the disease can be controlled if poultrymen will carry out five more or less preventive measures, it is said. These include rigid culling to detect leucosis in the early stages of the disease, disposing of all diseased birds by killing and burning, buying hatching eggs, new breeding stock or baby chicks only from disease-free flocks and by following strict hygiene and sanitary practices. Should a poultryman believe that his flock may be infected with leucosis, immediate diagnosis can be made by a local veterinarian.

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COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Popular Simplifications Made In 1935 Corn-Hog Plan

Lifting of the restrictions on all other crops except corn and the dropping of the "contracted acres" will be the most popular changes with Illinois farmers of all those that have been made in the new 1935 corn-hog contract announced Monday, November 19, by the AAA in Washington, in the opinion of officials at the College of Agriculture, University of Illinois.

The new contract also requires that farmers adjust their corn and hog production only 10 per cent below the average of the 1932-33 base years instead of 20 per cent in corn and 25 per cent in hogs, as was the requirement in the 1934 contract. In the case of corn, farmers may adjust anywhere from 10 to 30 per cent below the two-year base average and receive corn benefit payments in proportion.

If Illinois farmers participate in the new program about like they did in the 1934 plan, it will mean that they will get between 19 and 21 million dollars in benefit payments as a further addition toward having their purchasing power restored, officials of the agricultural college estimated.

At least four representatives from Illinois who were connected with the administration of the 1934 corn-hog program also contributed in an official way to the mass of recommendations upon which the new 1935 contract is based. They are J. R. Fulkerson, Jerseyville, a member of the state corn-hog committee; J. S. Bumgarner, McNabb, president of the Marshall-Putnam County Corn-Hog Production Control Association; E. A. Eckert, Mascoutah, a member of the state committee, and P. E. Johnston, of the farm management department, U. of I. College of Agriculture and a member of the state board of review. All four were called to Washington when the 1935 program was being worked out.

Dropping of the "contracted acres," one of the most bothersome features of the 1934 contract, means that the land withheld from corn production can be used for growing any other crop for any purpose, officials of the college explained. Furthermore, there is no limitation on the total area devoted to cultivated crops nor on the total acreage of any particular crop, excepting corn.

The "contracted acres" feature was omitted from the 1935 contract partly to simplify compliance and partly to permit the greater flexibility in farming operations that will be essential in 1935 on account of the shortage of farm seeds and because of the destruction of many hay and pasture stands by the drouth.

Funds for the benefit payments under the 1935 contract will be raised by means of a processing tax beginning November 5, 1935, and continuing through one marketing year at approximately the current rate of $2.25 a hundredweight on hogs and 5 cents a bushel on corn. The 1933-34 emergency programs and the 1934 production adjustment program require the collection of processing taxes through two marketing years, ending November 4, 1935.

Dean H. W. Mumford, of the College of Agriculture, University of Illinois; J. C. Spitler, state leader of farm advisers, and F. J. Keilholz, extension editor, will be Illinois' official delegates to a regional conference to be held in Indianapolis soon after Thanksgiving, at which time the new contract and administrative rulings will be presented. Immediately following this conference, the program will be launched throughout the state, through county corn-hog production control associations.

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Pasturing Horses In Stalk Fields Will Be Hazardous

Heavy death losses among horses and mules threaten the farmer who tries to save feed this winter by turning work stock out on cornstalk fields, according to a warning by Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

It is true that feed supplies are the shortest on record. Unfortunately, however, it will be especially dangerous this year to try to get horses and mules through the winter by pasturing them on stalk fields. Some of the worst corn-ear-worm damage that the state has ever had, coupled with heavy rains, has caused much rotting and molding of the ears.

Already reports are reaching the U. of I. animal pathology laboratory of the widespread occurrence of a disease resembling the old-fashioned cornstalk disease so prevalent about 15 years ago. The malady, however, is not caused by eating the cornstalks but by consuming the low-quality corn. Cattle also seem to be susceptible to the disease, although not so much so as horses and mules. Even horses pulling husking wagons have been known to develop the malady, points out Dr. Graham. Thus, Illinois farmers might well play safe by using nose baskets on the horses while they are being used in cornfields this fall.

If cornstalks are used for feed, as they must be on many farms this year, hogs and cattle can be pastured in stalk fields with less danger than any other farm animals, it is said. Even then, the cattle should be pastured only a part of each day and thoroughly inspected each night for possible symptoms of the disease. When feeding this year's low-quality corn, farmers should hand-select the ears for horses, mules and cattle.

The first symptoms of the disease are likely to be nervousness, sluggishness, or sleepiness on the part of the horses, although the symptoms are not easily detected without careful observation. When these mild symptoms do appear, however, a veterinarian should be called immediately, for only by prompt treatment in the early stages of the disease can the affected animals be saved. As the disease develops, the horses begin to walk in circles, stagger and press against their mangers or fences. These symptoms indicate a brain disturbance that is much easier to prevent than to cure.

This disease should not be confused with hydrocyanic acid poisoning which some farmers feared might develop from feeding drouth-damaged cornstalks this fall, or from feeding frosted millet, sorghum or sudan grass.

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Rockford Host To State Vegetable Growers' Meeting

Although Illinois is usually considered as a corn-hog producing state, the annual meeting of the Illinois Vegetable Growers' Association to be held at Rockford, November 20 to 22, will be one of the outstanding farm conventions of the fall season, says L. A. Somers, vegetable extension specialist at the College of Agriculture, University of Illinois.

Out-of-state speakers will include J. G. Milward, who is in charge of seed potato certification work at the University of Wisconsin; I. C. Hoffman, widely recognized authority on greenhouse vegetable production from the Ohio State University experiment station at Wooster; Walter A. Marion, of Columbus, Ohio, past president of the Vegetable Growers' Association of America, and Harm Drewes, of Detroit, Mich., one of the leading plant geneticists of the United States.

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Too Heavy Cut In Dairy Rations Lowers Herd Profits

Feed prices may be advancing faster than the market value of milk and butterfat, but Illinois dairymen who attempt to reduce expenses by skimping too much on the grain fed their 1,111,000 cows may find that they have also lowered their profits, says C. S. Rhode, chief in dairy husbandry extension at the College of Agriculture, University of Illinois.

Some revision in the amount of grain fed should be made on a number of farms to meet changing price ratios, but where the economy is carried to excess the results are likely to prove disappointing, it is said.

This has been revealed in experiments conducted at the U. of I. College of Agriculture in which three groups of cows were fed different rations for a year. One group received only alfalfa hay and silage. Another group was fed hay and silage plus one pound of grain for each 4.2 pounds of milk produced. The third group was fed rather heavily on grain, receiving one pound for each 2.2 pounds of milk produced, but was given only a limited amount of hay and silage.

At the end of the year, it was found that the cows getting only roughage produced an average of 22.3 pounds of milk daily, those on limited grain feed gave 28.3 pounds of milk and the cows getting a heavy grain ration returned 29.2 pounds.

When the value of the milk produced was computed at $1.20 a hundredweight, the cows receiving a limited grain ration returned the most profit above feed cost, those fed only roughage stood second in profitableness, and the group getting the heavy grain combination netted the least profit over the cost of feed.

When the value of the milk was raised the order of profitableness of the three groups was changed somewhat. When the milk was figured at $1.50 a hundredweight, the limited grain cows continued to return the most profit, or $48.31 each above the cost of feed. The heavy grain group ranked second with a profit over feed expense of $45.79, while those fed only roughage netted but $40.23 in excess of the cost of feed.

The grain was figured at $28 a ton, hay at $20 and silage at $5. Thus the average cost of feed for the roughage cows amounted to $81.53 each, the limited grain animals $106.21 and the group receiving liberal amounts of grain $113.64 each.

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Illinois Growers Finishing 25,000 Quality Turkeys

Illinois housewives will not have to depend entirely upon Texas range-fed turkeys to grace their Thanksgiving Day dinners this fall, for Illinois growers are now finishing off some 25,000 gobblers and hens that have been raised in confinement to produce exceptionally high quality meat, says H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Illinois has been producing about 91,000 turkeys annually, according to the most recent census, but most of the turkeys sold to Illinois consumers have been shipped into the state from western range areas. During the past year, however, Illinois turkey growers have been cooperating with the U. of I. poultry extension service in an effort to produce birds of superior quality to those brought into the state. Furthermore, they have organized themselves into a state association to educate Illinois consumers on the better quality of turkeys grown in this state. As a result of these efforts, fully 25 per cent of the turkeys produced in Illinois in 1934 have been raised in confinement under the best of conditions. Housewives who wish to be sure that their Thanksgiving Day meat will be tender and well finished should ask for an Illinois-grown turkey when making their purchases, says Alp.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Chinch-Bug-Resistant Corn Given Real Test in 1934

As the worst chinch-bug year in the history of the state, 1934 has gone farther than any other season on record in establishing the resistance of different varieties of corn to this destructive insect pest, according to W. J. Mumm, plant breeding specialist at the College of Agriculture, University of Illinois.

Certain varieties of corn grown in areas where chinch bugs have been prevalent in the past again lived up to their reputation of producing good corn in spite of the bugs. Even better yields were harvested in the case of a number of hybrid strains tested this year. On the other hand, varieties and strains developed in parts of Illinois and in other states where chinch bugs have not been a problem in the past, suffered badly this summer. By resistance to chinch bugs, explains Mumm, is meant resistance to the ravages of second-brood bugs. No corn has been able to persist under a heavy early attack of the first brood.

Anticipating a heavy chinch bug outbreak this year, the U. of I. agronomy department and federal research workers cooperated in making variety and hybrid corn tests in various parts of the state. Of 11 strains planted on the F. V. Wilson farm in Effingham county, the highest-yielding one was a hybrid. Champion White Pearl, which was used as a standard of comparison, was one of the outstanding varieties, closely followed by Blackhawk, Golden Beauty, Pride of Saline and Moore Yellow Dent.

The hybrid which produced the highest yield was a cross between Moore Yellow Dent and Inbred 4211, an inbred produced at the U. of I. experiment station. Moore Yellow Dent itself produced about 5 per cent less than Champion White Pearl, while the cross yielded about 15 per cent more than Champion White Pearl. There was a fair proportion of barren stalks in the case of the latter variety, whereas the hybrid produced a good ear on nearly every stalk.

Practically all of the U. of I. corn experimental crosses were made this year with the view of producing strains that will do well under chinch-bug conditions. Dr. J. R. Holbert's Hy X R4 proved particularly good this fall, as well as the Illinois station cross 5120 X 4211.

At Urbana the chinch-bug outbreak was severe and susceptible corn was hard hit, both in the breeding blocks and in the yield tests. Crosses in which part of the parentage was made up of inbreds from the Two-Ear variety were all susceptible. The same thing was true of several other inbreds from other sources that had been used quite extensively in hybrid combinations in the past. The susceptible plants developed molds on the stalks where chinch bugs had punctured them, and soon after that the stalks broke over. The ears on such plants were worthless because they spoiled during the wet weather in early September. Several hybrids and inbred lines from Ohio were very susceptible to chinch bug injury. This was attributed to the fact that they had not been developed under chinch-bug conditions.

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Immunizing Baby Pigs For Cholera Cuts Hog Expense

Forty-two per cent of the cost of serum and virus used to protect hogs from the ravages of cholera can be saved by Illinois farmers, if they have their pigs vaccinated at an early age rather than waiting until after weaning time, says Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

Immunization of hogs against cholera has long been recognized as good insurance, but producers generally have waited until the pigs weighed 40 to 50 pounds or more before having them treated. At this weight more serum is required than if the pigs had been vaccinated when a month old, and consequently the expense is greater. Likewise, more labor and difficulty is involved with older pigs.

To immunize 60 pigs at an average age of one month requires about 15 cubic centimeters of anti-cholera serum and 3 cubic centimeters of virus for each pig, explains Dr. Graham. With the serum costing one-half cent and the virus two cents a cubic centimeter, the total expense of the materials would amount only to $8.10. This is a saving of $6, or 42 per cent, over the cost of treating the pigs after they had become a month old.

That early immunization is practical economy has been demonstrated in scientific tests as well as in the practical experience of progressive farmers and veterinarians. Over a six year period at the U. of I. College of Agriculture, 3,190 pigs between the ages of one and nine weeks were vaccinated with potent anti-cholera serum and virus. Upon reaching market age 1,789 of the pigs were exposed to cholera either by pen exposure or injections of virus.

Some of the pigs so treated during the six-year period proved to be susceptible to cholera, but so far as could be determined the age of the pigs at the time of vaccination had no influence upon the length of immunity. Instead, it is believed that the susceptibility to cholera in early vaccinated pigs may have been caused by the presence of acute respiratory infections, intestinal parasites and pig typhoid, which break down the immunity of the hogs. With the aid of competent veterinary service to diagnose swine diseases and by the use of anti-hog cholera serum and virus at the proper time, baby pigs can be immunized at less cost than when they are older, Dr. Graham believes.

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Mice Moving In; Old Exterminators Will Still Work

This is moving time for mice. They are now swarming back into houses, barns and other buildings to collect their share of the $200,000,000 toll of damage which mice and rats cause annually in this country, according to G. C. Oderkirk, rodent specialist of the U. S. Biological survey. Fortunately, householders don't have to wait for some new scheme of exterminating these pests, he said. The old reliable method of using traps and poisoned bait will do it.

If used in a thorough way, common spring traps or poisoned rolled oats furnish two of the best means of destroying these pests, explains Oderkirk, who is cooperating with the State Natural History Survey and the College of Agriculture, University of Illinois, in the control of rodents in this state. Where poisoned bait can be used safely, one-eighth ounce of powdered strychnine may be stirred thoroughly into one quart of dry rolled oats. Pinches of this poisoned rolled oat bait placed at intervals along walls or put in small flat containers where mice will easily find them will give effective control. Caution should be observed, however, for the bait is equally poisonous to children or animal pets.

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Terraces Are Key To Saving Of Soil On Sloping Land

Whatever attempts are made to conserve soil resources on some 12 million acres of rolling land used for the production of cultivated crops in Illinois will fail unless terracing is made the first step, according to Ralph C. Hay, agricultural engineer at the College of Agriculture, University of Illinois.

This fact, which figures in the present wave of sentiment for soil conservation, has nowhere been demonstrated more strikingly than on the farm of Theodore Reuss, Belleville, St. Clair county, Hay said.

Terraces carefully laid out and properly built are always good insurance for the successful start of a lime and legume program on sloping, erosive land, it was pointed out. They remove the danger of having expensive limestone, fertilizer and seed washed away by the fall and spring rains before crops can get started. If a terraced field is immediately planted to legumes, the terraces become well settled and established so that they will hold the soil from serious erosion when corn and small grains are later planted.

Nine years ago Reuss had a badly eroded field in a low state of fertility as a result of sheet erosion. It was so cut up by several gullies that crossing the land with farm machinery was difficult. Manure, lime and legume seeds washed down the slopes when attempts were made to build up the productivity of the soil.

Acting upon the suggestion of the U. of I. extension agricultural engineer, Reuss built five terraces across this field in 1925 to prevent soil washing, seeded it to alfalfa and secured a good stand. When this land was later planted to wheat, the yield from the field was twice what it had been before terracing.

In the beginning, this St. Clair county farmer had some trouble with his terraces, but he now considers them well worth all the effort required in construction and maintenance. At the gullies the terraces broke through several times and had to be rebuilt with a slip scraper. Today the gullies are filled so that the entire field may be farmed as one unit. There was also serious washing in the outlet ditch, but properly built brush dams soon controlled this trouble. By cultivating this field on the contour and by back-furrowing to the ridges each time he plows, Reuss now has no difficulty in maintaining the terraces in good condition.

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Hot School Lunch Minimizes Colds In Rural Children

Illinois' 447,000 rural school children would have fewer colds and make better grades this winter, if all of them could have at least one hot dish with their noon-day lunches, in the opinion of Miss Glenna A. Henderson, foods specialist at the College of Agriculture, University of Illinois.

Only comparatively few of the rural schools in the state serve hot lunches in spite of all that has been done and said for this practice, she reported. In recent years some rural teachers and parents in various parts of the state have been cooperating with the U. of I. home economics department in developing plans for providing hot school lunches with the minimum amount of time, work and expense.

Studies made in these schools show that the hot lunches fully repaid the teacher, the parents and the pupils in many ways for the small amount of extra work required. Fewer colds, improved work and better dispositions on the part of both pupils and teachers have been noted. Teachers also reported better attendance, increased interest in school activities and higher scholastic records. The hot lunches have also offered a practical means for teaching good standards of nutrition and food habits, especially when the children assume much of the responsibility of food preparation and service.

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Investment Made in '30 Still Pays This Farmer

Four years ago, just when other investments were shaky, Carl Bormet, a Cook county farmer, put some money into an investment which he says has turned out to be the best one that he has ever made.

He invested in limestone and rock phosphate, just as hundreds of other farmers have done who have followed the teachings of the College of Agriculture, University of Illinois on the testing of soils, the spreading of limestone and phosphate and the growing of more legumes.

This year in spite of the severe drouth, his 120-acre farm produced plenty of home-grown feed for his 40 head of dairy cows. Twenty-five acres that were limed four years ago produced about two and a half loads of alfalfa hay to the acre for two cuttings this year, which will be enough to carry his cows through the winter.

Like hundreds of other farmers who have applied limestone to acid soil in order to grow alfalfa and sweet clover, Bormet is reaping the advantages of a very practical kind of drouth insurance, it is pointed out by C. M. Linsley, soils extension specialist of the U. of I. College of Agriculture. Less fortunate farmers in the state were compelled to buy feed even during the late spring and summer because they had no alfalfa or sweet clover pasture and many will have to continue to buy hay during the winter. The limestone and rock phosphate program carried on in Cook county in past years, however, has meant the difference between having hay to sell and having to buy hay in the case of many farmers, reports Farm Adviser O. G. Barrett.

The testing of Bormet's soil for acidity and available phosphorus by M. E. Tascher, assistant farm adviser, was a money-saving guide in planning the alfalfa crop. One 11-acre field produced a good stand of alfalfa with limestone alone. Soil tests made in this field showed that there already was a good supply of phosphorus there.

An adjoining field, however, lacked both lime and phosphorus. In time all but three acres were limed and in addition half of the field was treated with 1,000 pounds of rock phosphate to the acre. In 1933 that portion of the field which had received phosphate yielded five tons of alfalfa to the acre, while that which got only lime produced three tons. On the three acres where neither limestone nor phosphate had been applied the alfalfa was a failure. This year the phosphated land made a ton an acre more of alfalfa than the rest of the field.

The limestone and phosphate continued to return dividends this year even though it had paid for itself the first year. Approximately $5 worth of limestone produced three tons of alfalfa the first year worth at least $36. The 1,000 pounds of rock phosphate, costing $8, used in addition to limestone, produced an additional two tons of alfalfa worth $24.

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Fruit Growers To Meet At Urbana, December 12-14

Compliance with federal regulations and codes as they affect fruit growers of this state is to be the keynote of a number of discussions, when members of the Illinois State Horticultural Society hold their 77th annual winter meeting at Urbana, December 12, 13 and 14, according to word received by the College of Agriculture, University of Illinois.

For several years increased government restrictions on the amount of spray residue that may be left on apples packed for interstate shipment have been a problem with Illinois growers. To assist the society's members in coping with this difficulty, W. A. Ruth, chief in pomological physiology at the U. of I. College of Agriculture, will appear on the program to tell of the experimental work done in residue removal. In addition, Albert Weber, of the New Jersey Agricultural Experiment Station, will discuss the services furnished growers in his state in helping them meet the federal regulations.

Progress of the federal apple marketing code authority and its possible future influence on Illinois growers will be reviewed by F. H. Simpson, of Flora, past president of the International Apple Shippers' Association and a member of the code authority.

Among other speakers on the three-day program will be K. J. Kadow, U. of I. assistant pathologist; W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the U. of I. College of Agriculture; H. M. Newell, superintendent of the state division of standardization and markets, and Fred Heaton, prominent apple grower of New Burnside.

Officers of the state association who will be in charge of the convention include: George Shoff, Peoria, president; G. L. Smith, Moline, first vice president; Fred Heaton, New Burnside, second vice president; Arthur Holt, Springfield, secretary, and W. S. Perrine, Centralia, treasurer.

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Empty Stall In Dairy Barn May Protect Profits

Empty cow stalls that have been emptied by culling out the lower producing cows have never been as profitable for Illinois dairymen as they will be this winter, says Prof. C. S. Rhode, chief in dairy husbandry extension at the College of Agriculture, University of Illinois.

With the price of feeds continuing to rise faster than the market value of dairy products, only the better producing cows will be profitable enough to rate a stall, Prof. Rhode said.

Some Illinois dairymen are even making more money now than they did a year ago because they have checked up on the production records of their cows, have culled out the low producers and left their stalls empty, it was reported.

This is true in the case of at least one member of the JoDaviess County Dairy Herd Improvement Association. He milked an average of 18 cows with a butterfat average of 271 pounds during 1933. This year he culled the low producers and milked an average of 12 cows with an average of 306 pounds of butterfat. As a result of emptying six of the stalls in his barn, this dairyman has netted $66.89 more above feed costs from the 12 cows in 1934 than from the 18 animals in 1933.

It is not the number of stalls that are filled but the kind of cows that are in them that determines the dairy income, Rhode pointed out. At present the relative price of dairy products as compared to grain is not as favorable as last year. Moreover, in some sections dairymen are faced with a serious shortage of feed, and if grain or roughage must be shipped in, it is bound to be high priced. Under these conditions, it is practically impossible to make a profit from low-producing cows.

--M--

Christmas Often Day Of Accidents As Well As Joy

Christmas is usually the happiest day of the year, but at the same time it is a day in which many serious home accidents are likely to occur, unless certain precautions are taken, says Miss Gladys J. Ward, home management extension specialist at the College of Agriculture, University of Illinois.

In fact three times as many fatalities caused by conflagrations occur in December than in the month of July when the nation celebrates with firecrackers, Roman candles and the like. About twice as many people die from burns, scalds and explosions, excepting conflagrations, during the last month of the year as compared with July, and there are twice as many firearm fatalities in the homes this month as there are in July.

Small lighted candles may add beauty to the Christmas tree, but they also add one of the most serious fire hazards of the holiday season, points out Miss Ward. Light-weight materials, tree decorations or even "Santa Claus" himself may catch fire from the candles.

Candles burning in windows with loose curtains are equally dangerous as fire hazards.

The growing popularity of toys to be operated by connecting them with electric floor and wall sockets has also added to the danger of burns and fatalities in the home.

Falls from icy steps and walks, especially when they are covered with snow, are among the most common accidents of the yuletide season. Although it may give an unattractive appearance, scattering ashes or sand over the ice may prevent a broken arm or leg.

Sharp and bulky toys left on the floor, stairs or in a doorway frequently cause injuries to those stepping on them when the room is dark. Some mothers have eliminated this danger by having a regular toy box in which the children place their playthings before going to bed each night.

Highly-polished, waxed floors and icy shoes form a combination that increases the danger from falls.

Fatigue from keeping late hours during the holiday season and the hurry associated with Christmas preparations are likewise conducive to home accidents.

-M-

Box Elder Bugs Best Killed By Nicotine Spray

Although box elder bugs entering Illinois homes each fall do no damage to foods or fabrics, they are a nuisance that can be eliminated best by the use of nicotine sulphate spray, according to a report made to the College of Agriculture, University of Illinois, by W. P. Flint, chief entomologist of the State Natural History Survey.

These little red and black insects are usually most numerous and annoying in a dry season. More frequently than any other common insect, they attempt to crawl into houses to find shelter from the approaching winter weather. They only wish to obtain suitable protection until next spring when, in the normal course of events, they will leave the house and return to the box elder trees to mate and lay eggs for the 1935 season's brood.

The fact that the bugs do not feed upon materials in the house makes them all the more difficult to eradicate, explains Flint. Only by hitting their bodies with a contact spray can they be killed in any large numbers. The best spray for this purpose, because it kills all the bugs hit by it, is made by mixing one tablespoonful of 40-per-cent nicotine sulphate in two quarts of soft water in which has been previously dissolved one-half ounce of any good laundry soap. The spray should be thoroughly mixed and applied immediately to get the best results. A strong nicotine dust is also effective and is sometimes easier used, says Flint.

-M-

The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Revival In Industry Likely To Continue Into 1935

Although it is hazardous to make predictions, it seems probable that the revival which has taken place in industry during recent months will be continued into the early part of 1935, in the opinion of Dr. R. W. Bartlett, of the department of agricultural economics, College of Agriculture, University of Illinois. Substantial gains which have recently been made in purchasing power show a fundamental improvement in the business situation, he said.

Incomes of Illinois factory workers in the three months of July, August and September of this year were 58 per cent higher than in the same period in 1932, while their living costs advanced only 4 per cent in the corresponding quarters, Dr. Bartlet said.

The $155,400,000 income received by Illinois factory employees during the third quarter of 1934 was $23,200,000, 17.5 per cent, higher than in the same months last year. These figures clearly indicate that at least a larger portion of the consumers of the state are now enjoying greater returns, along with the improvement in farm incomes, it is pointed out.

When the purchasing power of Illinois factory payrolls was determined by making corrections for the changes in the cost of living, it was found to be 56 per cent higher in July, August and September of this year as compared with the same months in 1932. The Illinois payroll index in October, 1934 was 50 per cent of the 1925-1927 average, or half of the base period.

In living costs, the prices of clothing have advanced the most, or 20 per cent higher this year, when the third quarters of 1934 and 1932 are compared. Food prices were 12 per cent higher than two years ago, while fuel and light costs were only 1½ per cent higher. Rent, or the cost of housing, was actually 8 per cent lower. This reduction is largely responsible for the fact that living costs in general were only 4 per cent higher.

When Dr. Bartlett summarized corresponding figures for the entire country during the third quarter of 1934 as compared with the same months in 1932, it was revealed that the incomes of factory workers was 48.4 per cent higher and purchasing power 46 per cent higher. The index of consumer purchasing power in the United States in October, 1934 was 59.2, or slightly less than three-fifths of that for the base period of 1925-1927.

In eight Illinois cities factory payrolls in October, 1934, were higher than the state average. Factory payrolls in Peoria in October were the highest of any city in the United States for which payroll data were available, being 12 per cent higher than those of the base period of December, 1928. High payrolls in Peoria can be attributed primarily to the development of industries resulting from repeal of the prohibition amendment. The seven other cities above the state average were: Bloomington, East St. Louis, Quincy, Springfield, Danville, Sterling-Rock Falls and Decatur.

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Depression Was Prosperous Era For Stored Grain Pests

Although most people think of recent years as the "depression era," to insects that feed on stored grain and seeds they have been prosperous times that may continue into 1935, unless Illinois farmers take measures to protect their stored crops from further pest damage, says M. D. Farrar, entomologist of the State Natural History Survey.

Large quantities of grains have been held on farms for one, two and even three years with the hope of gaining better prices. These long-filled bins and cribs have provided ideal breeding places for all insects attacking such products, and as a result unusually large numbers of these pests are found in all sections of the state. Thus extra precautions will be needed this winter to prevent heavy damage to next year's seed crop, points out Farrar in a report to the College of Agriculture, University of Illinois.

When seeds are being stored away they should be carefully examined to determine if insects are present. To neglect this simple precaution may result in severe damage to stored beans, corn, wheat, oats, barley and some garden seeds, it is said. If the seeds are free of insect infestation and have been properly dried, they can be stored in a cold room where little or no injury may be expected from the pests. At temperatures below 50 degrees Fahrenheit, insect life progresses very slowly.

Where ear seed corn must be stored in a place where it may be subject to insect damage, it can be protected over long periods by dipping the ears in a 10-per-cent solution of white oil emulsions.

Small quantities of peas, beans and similar seeds infested with weevil can be cleaned by fumigation with carbon bisulphide in a tight container such as a well-covered barrel or tub. By this method the liquid may be poured directly onto the seeds at the rate of one-half ounce or 3 teaspoons of carbon bisulphide for each cubic foot of seed in the container. There will be no danger of damaging the seed, but the treatment should not be done near a fire as the chemical is highly inflammable.

Where large bins of grain are infested with insect life, they may be cleaned by proper fumigation with carbon disulphide. Complete directions for this method may be obtained from a county farm adviser or by writing direct to the College of Agriculture, University of Illinois.

-M-

Different Cheeses Will Add Touch To Holiday Dinners

Novelty, color and a cheap form of food proteins can be added to Christmas dinners in Illinois homes this month by housewives who take advantage of the score or more of different kinds of cheese available on the market, suggests H. A. Ruehe, head of the dairy husbandry department at the College of Agriculture, University of Illinois.

Americans have never taken full advantage of the opportunity to improve their diet by the use of cheese, averaging only about 4¼ pounds annually for each person in this country, points out Ruehe. In Switzerland the average individual yearly consumption of cheese is approximately 26 pounds, while in other European countries it will vary from 8 to 14 pounds.

There are at least ten more common cheeses in the list of those that may be purchased during the holiday season, Dr. Ruehe said. These are cheddar or American, Swiss or emmenthal, edam, bergquara, pineapple, limberger, brick, roquefort, stilton and isigny. In addition there are many kinds of processed cheese sold under various trade names. Most of these are made by grinding ripened cheese, adding a small amount of moisture and pasteurizing to produce a smooth, plastic mass.

-M-

Wet Spring Will Bring Loss From Neglected Drainage

Should the spring of 1935 bring an unusual amount of rainfall, farming districts in many parts of Illinois where drainage systems have been neglected in recent years are likely to suffer serious losses, in the opinion of E. W. Lehmann, head of the agricultural engineering department at the College of Agriculture, University of Illinois.

Because of the severe economic depression and a series of dry seasons, little has been done in the way of maintaining efficient channels in some of the drainage districts in the best farming areas of the state, says Lehmann. In a number of instances the drainage ditches are in a poor state of repair, but the seriousness of their condition will not be realized fully until one or more wet seasons result in large crop losses. In a few districts no systematic and effective method of maintaining outlet drains has ever been followed.

In view of the possible crop risks, individual farmers might well afford to take the time and trouble to inspect their drain tile outlets to see if they are working effectively, it is suggested. If the ditch has filled in to the extent that the tile does not discharge freely, it should be cleaned out. In some communities considerable drainage channel improvement was done during the past year by hand by relief workers. Such repairs will be of inestimable value to the farmers in those districts. However, where the work must be paid for by the farmers in the territory, the use of dynamite or modern ditching machinery is usually less expensive.

The continued successful cropping of drained land requires not only proper maintenance of the larger drainage ditches, but also individual farm drainage improvements. Where farm drains and outlets are not kept up adequately, the adjacent land gradually becomes less productive and farming becomes more hazardous. The lack of maintenance of open ditches usually results in the tile outlets from individual farms becoming filled and sometimes completely submerged, thereby impairing the degree of drainage.

-M-

Buying By Label Will Insure Quality Christmas Gifts

Longer use and greater enjoyment will be gained from Christmas gifts this year, if Illinois shoppers will look for the manufacturer's quality label instead of merely the appearance of articles they buy, says Mrs. Kathryn V. Burns, state leader in home economics extension at the College of Agriculture, University of Illinois.

The label is the buyer's protection against paying a high price for cheap merchandise made up attractively. It should tell what the article is made of, whether the colors are fast and if the material has been pre-shrunk--all of which are important in determining the wearing quality of the article.

Blankets, for instance, are often sold under the general description of "part wool," explains Mrs. Burns. This term has been known to mean only one wool thread in the selvage, but the label should state whether the blanket includes 10 per cent, 20 per cent or all wool.

Labels on such Christmas gifts as underwear, neckties and even dresses and dress goods may bear the insignia of the silk guild as a guarantee that the article is made of pure silk. Down-filled and wool-filled comforts may be misleading unless the maker's label specifically describes the kind and quantity of materials used in the bed cover.

All manufacturers do not label their goods, but if women shoppers will insist upon knowing the quality of the things they buy and will show an interest in accurate, descriptive labels, they are more likely to get their money's worth, it is said.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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Legumes Repair Nitrogen Losses Of Millions In Corn

Although Illinois' corn crop this year was the smallest in 61 years, it removed so much nitrogen from the soil that it would take more than 21 million dollars' worth of nitrate of soda to replace it, according to F. H. Crane, assistant chief in soil fertility at the College of Agriculture, University of Illinois. For every 75 bushels of corn that are taken off the land, a quarter of a ton of nitrate of soda costing around $10 would be needed to put back the nitrogen that had been removed. This year's corn crop is estimated at 160,816,000 bushels.

Fortunately, farmers do not have to buy this 21 million dollars' worth of nitrate of soda, for they can replace the lost nitrogen cheaply through the use of legumes for soil improvement or for feed crops, provided the manure is taken care of in the latter case, Crane pointed out.

In fact, the economic solution of many problems of soil management depends almost wholly on making full and proper use of the assistance plants can give, he explained.

Legumes are a means of restoring lost nitrogen. Likewise, there is no feasible commercial source of organic matter for the general farm. Yet this organic matter, which is valuable in many ways as a soil conditioner and in keeping a soil in good working tilth, can be easily added by the roots and tops of plants. When cornstalks or any other plant materials are plowed under, 95 per cent or more of the weight represents an addition of new material to the soil. On the other hand, if the cornstalks from a 75-bushel crop are burned, the loss of nitrogen from the soil is increased 50 per cent, in addition to the loss of organic matter.

It is fortunate that man can not remove the roots, explains Crane, for this part of the plant is the only practical means of getting organic matter into the soil below plow depth. Likewise, the binding power of these roots is an important factor in preventing soil erosion and in reclaiming areas already eroded. The loss of plant food in the drainage water is partially controllable by having living plants covering the soil as much of the time as is possible to take up the fertilizing elements.

-M-

Most Hog Rations Deficient Only In Salt And Calcium

Contrary to a widespread belief, most rations fed to the more than 4,000,000 head of hogs found on Illinois farms at this time of year contain all the minerals necessary for profitable growth, except salt and calcium, says W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois. Too many producers have felt that so long as they feed a mineral supplement they can safely neglect other fundamentals of good production, explains Carroll. There is no substitute for sanitation, balanced rations, good breeding and efficient management, he points out. Minerals are essential, but with the exception of common salt and calcium they are found in ample portions in most hog rations.

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U. Of I. Develops New Greenhouse Tomato Varieties

New and improved varieties of greenhouse tomatoes will soon be ready for discriminating Illinois consumers as a result of plant breeding work carried on at the College of Agriculture, University of Illinois, it is announced by W. A. Huelsen, associate chief in olericulture.

In spite of the large quantity of southern-grown tomatoes shipped into this state, those produced in Illinois greenhouses during the winter and early spring are in greater demand than ever. The new varieties soon to be introduced to the public are expected to add to the popularity of those grown under glass, it is said. Greenhouse tomatoes have a flavor all their own in contrast to the rather tasteless southern product, a difference which consumers soon discover.

In developing the new varieties, American types were crossed with tomatoes from China, Palestine, Australia and New Zealand. Besides producing well, they are resistant to Fusarium, a serious greenhouse disease to which many types of tomatoes are susceptible.

Years ago greenhouse operators confined their efforts to such ordinary field varieties of tomatoes as seemed to be best adapted to indoor conditions. Bonny Best and Globe were the most popular for this purpose at that time, but their fall and early winter crops were rather scant.

To assist producers with this problem, the U. of I. horticultural department crossed a prolific, small-fruited forcing variety with several well-known field varieties. The Blair Forcing and the Lloyd Forcing are the results of 14 generations of selections out of these crosses. Both of these varieties are producing at the rate of 1.5 pounds of fruit to the square foot of greenhouse space between December 1 and February 1, which is more than twice the yield obtained from ordinary varieties planted in the same house. The tomatoes average a little better than three ounces each in weight. In the spring the fruits are larger, averaging four ounces each, and the yields to the square foot are doubled to three pounds.

The success of this early breeding work stimulated further efforts at the U. of I. college, resulting in the new varieties soon to be available to the public.

-M-

Orchards Hit By Scale Doubled In Course Of A Year

San Jose scale, always a constant threat to the profits of Illinois fruit growers, has increased so alarmingly during recent seasons that nine times as many orchards now have moderate to severe infestations as compared to conditions two years ago. The number of orchards moderately to severely infested is twice as great as it was last year. This was discovered in surveys which S. C. Chandler, assistant entomologist of the Illinois State Natural History Survey, has just completed in cooperation with the College of Agriculture, University of Illinois.

Only thorough applications of oil or lime-sulphur sprays this winter will prevent the insect from taking a heavy toll in the state's 1935 fruit crop, it was said.

Forty-two per cent of the apple and 71 per cent of the peach orchards which were surveyed showed a moderate to severe infestation of San Jose scale. This was an average of 56 per cent of orchards infested, or nearly twice as many as were found in the 1933 fall survey and nine times as many as in 1932. The increase is believed to be the result of the moderate winter in 1933-34, to too much economy in spraying during the past year and to a long, mild breeding season this fall.

-M-

Brain Is Worth Four Times Brawn In Net Farm Income

A farmer's head may easily be worth four times as much as the rest of his body, when it comes to producing a net profit for his labor, according to P. E. Johnston, of the farm management division, College of Agriculture, University of Illinois.

Farmers who wish to prove this for themselves can do so by enrolling during this month and next to keep simple farm accounts during the coming year, he said. Schools to help beginning farm account keepers get started will be held in all parts of the state by the farm management division of the agricultural college. Farmers can enroll through their local farm advisers.

Good farm hands can be hired for around $500 each a year, which represents the value of the physical labor that a farm operator can perform, Johnston pointed out. However, when this same amount of labor is combined in the same person with good managing ability, the farm may produce an annual net income of $2,500 or more.

This has been established by the results of farm accounts which 1,800 farmers in 89 counties of the state completed last year in cooperation with the college and their county farm advisers. In one central Illinois county, for instance, records on 36 farms indicated that there were 12 farms which had an average net income of $2,986 a farm as contrasted with 12 similar farms with an average net profit of only $313 each. At least $2,000 of this difference was the result of superior management, thus demonstrating that a farmer's head may be worth at least four times as much as the rest of his body.

After a farmer has kept a record of his operations for one year, his account book is checked, summarized and analysed by a representative of the U. of I. College of Agriculture. The book is then returned to him so that he can note which phases of his farming operations have been the most profitable, which may have been losing propositions during the year and how improvements can be made. Reports are also prepared for various areas in the state which show each farmer how his business compares with the average of all cooperators in the area.

-M-

Farmers Warned of S. A. Red Oats For Seed Purposes

When Illinois farmers start their search for oats seed for their 1935 crop it will be well for them to remember the warning of federal authorities that South American red oats are not dependable for seed purposes in this country, says J. C. Hackleman, chief in crops extension at the College of Agriculture, University of Illinois.

Because of the dry weather last spring, the 1934 Illinois oats crop was the smallest in 58 years. Consequently many farmers did not harvest enough oats to furnish seed for planting this coming spring and are forced to buy seed oats grown in other localities.

Although the South American red oats looks very much like the well-known Red Rustproof oats produced in this country, the U. S. Department of Agriculture reports that it is actually Red Algerian seed which has been tested at experiment stations and found unsatisfactory. It lacks the vigor and productiveness of the native Red Rustproof variety. The imported oats, however, can be fed to livestock in place of domestic oats.

Red oats imported from South America is said to be selling at ports for about 55 to 60 cents a bushel and at interior points for enough more to pay the freight.

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Business Activity May Continue Upward In Near Future

One of the cheering signs for Illinois farmers is that the trend in business activity and demand is likely to continue upward in a moderate degree during the near future, in the opinion of Dr. L. J. Norton, of the department of agricultural economics, College of Agriculture, University of Illinois.

If the total volume of consumer income had been higher during the closing months of 1934, the shorter supplies of certain meats and dairy products would have had far more effect on farm prices than they did have, he explained.

Even as it was, prices of Illinois farm products in October and November averaged about 40 per cent higher than for the same months of the previous year, according to an analysis which he has made.

Wool and potatoes were the only two of 19 selected products which were cheaper. Subsidence of the 1933 boom in textiles explained why wool was lower, while the larger crop of potatoes accounted for their slump, Dr. Norton said.

Corn and hay led in price advances registered during October and November, the analysis shows. In general the biggest increases were made by crops which were reduced by the drouth and to a lesser extent by the AAA adjustment programs.

Hay and corn were a little more than twice as high in price in October and November as they were during the same two months in the previous year, while oats and barley were 75 and 81 per cent higher, respectively.

Wheat, on the other hand, was only 25 per cent higher in spite of the short crop. Hogs, beef cattle, horses and butterfat were 20 to 25 per cent higher. Chicken prices were up nearly 50 per cent. Smaller increases were registered by other products.

Shorter crops and either actual or prospective shorter supplies of livestock were the principal factors operating to cause the rise, Dr. Norton said. Also contributing to the increase was a slightly cheaper dollar and slightly higher consumer incomes. Factory payrolls averaged 57.5 per cent of 1923-1925 in October-November, 1933, and 60.7 per cent in October, 1934, or about 6 per cent higher than a year earlier.

Compared with those of the two previous months, prices of nine of the 19 products were lower in October and November after allowance was made for seasonal variations. Eight were higher and two were the same.

Real improvement in consumer income, which has a strong bearing on farm prices, must wait upon genuine revival in the construction industries, Dr. Norton predicted. As yet these have shown only very moderate signs of reviving. The high level of construction costs probably acts as a brake here, he said.

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Baffling Stalk Disease Is Not Tied Up With Botulism

Contrary to the suspicions of some farmers and veterinarians, the so-called "cornstalk disease," which has been killing hundreds of horses in Illinois this fall, is not botulism, or food poisoning.

This has been established beyond reasonable doubt in laboratory investigations made by the College of Agriculture, University of Illinois, it is announced by Dr. Robert Graham, chief in animal pathology and hygiene.

Although the exact nature of the disease has not yet been determined, it has become so serious that 58 Illinois veterinarians recently reported they had treated 1,004 cases of it with an average mortality of 60 per cent. Botulinis antitoxin has been used in some cases in the hope of checking the disease.

However, laboratory examinations of 27 horse brains and 10 different samples of moldy corn and fodder, together with cultures of five different samples of horse blood, failed to yield any evidence to suggest that the disease is in any way related to botulism, Dr. Graham reported.

"If these findings are confirmed in subsequent examinations, there is no scientific basis for using polyvalent botulinus antitoxin in the prevention or treatment of the disease," he added.

"In the meantime, the safest way for farmers to prevent losses from the disease is to keep horses and mules out of cornstalk fields. If cornstalks are used for feed, as they must be on many farms this year, hogs and cattle can be pastured in stalk fields with less danger than any other farm animals. Even then the cattle should be pastured only a part of each day and thoroughly inspected each night for possible symptoms of the disease. When feeding this year's low-quality corn to horses, mules and cattle, farmers should hand select the ears. Even then the disease may still develop."

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Feeders Balancing Cheap Roughages With Soybean Hay

As beef prices lag behind the rapidly-rising prices of grain and forage, Illinois cattle feeders are balancing their cheap roughage with the more plentiful soybean hay to hold costs down as much as possible this winter, says E. T. Robbins, livestock extension specialist at the College of Agriculture, University of Illinois.

As a result of the past summer's drouth, clover and hay crops were almost complete failures on many farms, while late-planted soybeans produced reasonably good yields. Northern Illinois has more soybean hay than ever before, and many cattlemen are feeding it for the first time, reports Robbins.

Rather than feeding the bean hay alone, many feeders are "stringing" it along as a supplement to silage, corn fodder, straw and other roughages of that class that may be available. Being high in protein, the bean hay helps balance the ration when other poorer roughages are fed.

Robbins tells of the practical method followed by John Snyder, of Kane county, who turned 60 range calves into his stalk fields to get them accustomed to their new surroundings. Each night they are given a good feeding of soybean hay. Later they will get corn, cottonseed meal, silage and soybean hay as the fattening ration.

George Dauberman, prominent Kane county farmer, is feeding a large number of heifers only silage and soybean hay. They appear to be doing quite well, but are not getting as fat as they would with grain in the ration. Dauberman, however, believes the silage and bean hay make a good combination of balanced, nutritious roughage at a minimum cost, explains Robbins.

-M-

U. of I. Pruning Plan Adds Years To Apple-Tree Life

It may seem like a long time before some 1,500,000 young apple trees in Illinois come into bearing, but the cash returns which growers receive in 1937 to 1940 will depend in part at least upon how well these young trees are pruned between now and early spring, says V. W. Kelley, horticultural extension specialist at the College of Agriculture, University of Illinois.

Apple profits are partially governed by the number of years a tree will live. Furthermore, the length of life of a tree is in turn dependent upon the pruning it gets the first two or three years after planting. Large crops, snow and ice place great weight on the branches of apple trees, and only those which have been pruned to develop a strong framework can survive to produce future crops. Branches forming narrow angles from the trunk of the tree should be eliminated, and the number of main framework branches should be limited.

To increase the length of life of young apple trees, horticulturists at the U. of I. College of Agriculture have designed a pruning system known as "disbudding to groups of buds." It consists of planting long, one-year-old whips without heading back. Groups of three or four buds are left at intervals of eight inches where framework branches are desired. All other buds are cut off with a sharp knife and the whip is allowed to grow undisturbed for one year.

Before growth starts the second season, a selection of laterals for framework branches is made at each point where groups of buds were left the previous year. One lateral which is considered best for the framework branch, from the standpoint of size, angle and direction, is chosen at each location. All other vigorous laterals are removed. Slow-growing horizontal laterals are left because they do not compete with the selected framework and their leaf surface will aid in nourishing the young tree.

By this method, four or five well-spaced and properly-directed branches may be secured the first year after planting, providing a strong, permanent framework which will be an important factor in determining the length of the tree's life.

-M-

Depression Puts Sweet Clover To The Fore As A Soil Crop

Once considered a weed, sweet clover has had to bear the brunt of protecting fertility levels on thousands of acres of Illinois farm lands during the depression period when farmers have not had the cash for mineral fertilizers, it is pointed out by L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois.

Untill 1929 the use both of commercial fertilizers and of sweet clover was on the increase in Illinois. That year some 38,834 tons of factory-processed fertilizer were applied in the state. The sweet clover acreage then was something less than 800,000 acres.

Since the depression set in, however, the applications of commercial fertilizers have declined to a fourth of the peak year, while sweet clover acreages have continued to increase. By 1931 a total of 856,000 acres in Illinois were devoted to growing sweet clover, largely for soil improvement purposes. With the coming of the government's adjustment programs in 1933 and 1934, wherein AAA contracted land could be sown to legumes and at the same time get benefit payments, sweet clover acreage is believed to have reached the million mark.

Inoculated sweet clover provides an efficient fertilizer factory on any farm having sweet soil and a fair supply of the major mineral plant foods. Besides its value as a green manure, the legume is well known for its ability to provide abundant pasture, or it may be harvested for seed.

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Agricultural Outlook For 1935 Seems More Promising

The outlook for Illinois agriculture in 1935 is more favorable than it has been for the past few years, but there are still a number of dark spots in the prospects, according to the annual state outlook report released today by the College of Agriculture, University of Illinois.

There promises to be some increase in prices of livestock and livestock products in 1935, the report says. Grain prices should be fairly well maintained until the new crops are available. Consumers' incomes probably will show further improvement, and this will contribute to better prices for farmers. Burdensome surpluses have been eliminated by the drouth and by the adjustment programs, the report adds.

On the other hand, unemployment is still at a high level, and improvement in the construction industries, where unemployment is greatest, will apparently be slow, the report predicts.

A brief summary of the essential features of the outlook report follows:

Farm family living—More money available for replacement of much-needed supplies and equipment. No great changes anticipated in prices of goods for family use.

Feed crops--Production expected to increase materially. Feed available, a head, is now much below average. Acreages of chinch-bug resistant crops, such as soybeans, likely to be increased. Spring grains should be seeded early.

Corn—Some acreage increase anticipated. With average yields and fewer livestock, corn prices may be expected to decline with the new crop.

Oats and barley—Production of these, particularly barley, precarious, because of chinch bugs.

Wheat—Average yields will create an exportable surplus. This may drop prices to the world level, and large quantities probably would be fed.

Soybeans—Some increase in 1935 acreage is to be expected. Increased production and larger supplies of feedstuffs, which will be available if growing conditions are normal, will tend to lower prices on the 1935 soybean crop.

Dairy products--Long-time outlook is for a gradual increase in prices of dairy products as consumer incomes increase. Marketing of dairy cows is now tending to reduce size of herds.

Poultry and eggs—Poultrymen in position to stay in business should profit from the reduction in flocks that may occur as a result of high feed costs.

Hay and pasture—Retention of old meadows and pastures of fair stands is suggested on account of failure of 1934 seedings.

Forage seeds—Supplies of grass and clover seeds are about 50 per cent smaller than in the five-year period of 1928-1932. Timothy, millet, Sudan grass, alsike clover, red clover and sweet clover seem to be the most seriously reduced.

Hogs—Numbers of hogs for slaughter in 1935 will be the smallest in 20 years. With average yields for the 1935 corn crop, the hog-corn ratio should be favorable to hog feeding in the last few months of 1935 and in 1936.

(Continued on Page 2)

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Beef cattle--Numbers reduced to approximately the low point in the last production cycle. Low supplies of feed will prevent the usual amount of feeding and will result in higher prices for well finished beef in 1935. Maintenance of established breeding herds that can be carried on home-grown feeds and roughages is desirable.

Sheep and wool--Some increase in prices is expected during 1935 compared with the last half of 1934. Sheep numbers have been reduced by drouth conditions.

Horses and mules--Prices for good horses and mules have continued to advance. The rate of decline in numbers is being checked. A good demand for chunks and light draft horses is likely for several years.

-M-

Illinois Dairymen Juggling Feeds To Lower Expenses

With grain and hay supplies both scarce and high priced, Illinois dairymen may have to juggle their available feeds into unusual combinations to keep their 1,111,000 cows in economical milk production this winter, says W. B. Nevens, associate chief in dairy cattle feeding at the College of Agriculture, University of Illinois.

In sections where the supply of good legumes is limited, better results will be obtained if farmers will feed small amounts of it each day during the winter, rather than give liberal amounts at the beginning and end of the season, points out Nevens.

When silage is plentiful and hay is scarce, the silage may be used to replace much of the hay. Likewise, if the hay is ample and the silage limited, the hay may be used as the sole roughage.

When larger than common quantities of silage and stover are fed with some legume hay, the grain ration should contain about 15 per cent total protein. When good quality alfalfa or clover is available, the grain mixture need not carry more than 12 to 14 per cent total protein. If the cattle receive only a low-grade, non-legume hay and stover or straw, the concentrates should contain from 16 to 20 per cent total protein.

Feeding tests at the U. of I. College of Agriculture indicate that cattle do not utilize ground roughage any better than they do the unground.

If plenty of corn is available but the supply of good legume hay is limited, the grain problem is largely one of selecting the high-protein feeds. Cottonseed meal and soybean oil meal are about one-fifth more valuable than linseed meal as sources of protein, while ground soybeans are practically equal to linseed meal. Thus the price of each will be the factor determining the choice. However, it may be well to add some other feed such as wheat bran or middlings, says Nevens.

When grain must be purchased, dairymen should bear in mind that corn and wheat are of equal value, pound for pound, in dairy cattle feeding. Oats, by weight, has about five-sixths as much value as corn. Wheat bran is the best substitute for oats and may be cheaper in price.

Farmers who are able to buy wet brewers' grains should consider the fact that they contain considerable water and usually about one-fourth the nutrients contained in the dried grains.

-M-

Preventing Falls Would Make 1935 Happier New Year

A New Year's resolution every Illinois homemaker might well put at the head of her list would be to help prevent falls in the home, which in one year have killed as many as 13,700 people, it is suggested by Miss Gladys J. Ward, home management specialist at the College of Agriculture, University of Illinois. Many falls in homes which in one year killed 13,700 people might have been prevented, Miss Ward believes.

-M-

Supply Of Forage Seeds Only Half Of Five-Year Average

Only about half as much grass and clover seed as in the five-year period 1928-1932 will be available to farmers in Illinois and other states when the spring planting season opens, according to J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois.

About 297 million pounds of such seeds are used annually in the United States, 35 million pounds being sown in Illinois. The 1934 production plus the carryover from the old crop, however, totals less than 132 million pounds, or about 44 per cent of normal needs, it was reported.

Timothy, millet, sudan grass, alsike clover, red clover and sweet clover, in the order named, seem to be the most seriously reduced.

The outlook for the supply of grass and clover seeds as summarized in the annual state outlook report just released by the agricultural college follows:

Alfalfa--Supplies of seed will probably meet normal planting needs, despite a 1934 production well below average and an unusually small carryover. An unprecedented heavy seeding of alfalfa was made in the late summer of 1934, with the probable result that a somewhat smaller than normal seeding will be made during the coming spring. If spring seedings are normal there will be a deficit of about 3 million pounds of native seed.

Red clover--Available supply lacks 20 million pounds of meeting the average annual consumption in this country. The 1934 production amounted to 36 million pounds as compared with 59 million in 1933 and 79 million in 1932.

Alsike clover--An unusually small carryover and a short 1934 crop have made the supply of this seed extremely small. Prices are likely to hold fairly high.

Sweet clover--Although stocks are the smallest since the crop began to be grown extensively, the available supply is considered about equal to the average annual consumption. Prices will remain strong, but not so high relatively as either alfalfa or red clover seed.

Lespedeza--Seed production in 1934 is estimated to be one-third less than in 1933. Seedings last spring were much larger than in previous years, but the increased acreage was used largely for hay and pasture and less seed was harvested.

Timothy--It is estimated that approximately 8 million pounds of this seed were harvested in this country in 1934 as compared with the four-year average production of something less than 69 million pounds. The available supply is some 36 million pounds short of normal annual seed needs.

Kentucky bluegrass--Seed supplies seem to be sufficient to meet normal sowing requirements. The 1933 carryover was large enough to overcome the small 1934 crop.

Redtop--Seed is ample to meet all normal sowing demands.

Millet and sudan grass--Supplies for 1935 seedings are among the smallest on record. Available sudan grass seed is around 13 million pounds or about 55 per cent of average annual consumption.

The outlook report suggests the retention of old meadows and pastures where stands are fair and the conservative use of short seed supplies. There probably will be a deficiency of hay produced in 1935, owing to drouth and close grazing of meadows in 1934 and shortages of seed with which to make new seedings. Forage resources will be further depleted by probable early grazing of pastures next spring, the report points out.

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COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Wet May And June The Only Hope Against Chinch Bugs

Chinch bugs, which took an estimated toll of more than 31 million dollars in the 1934 Illinois corn crop alone, threaten to be worse over most of the state in 1935 unless May and June are cold and wet enough to kill them off, according to officials of the College of Agriculture, University of Illinois.

W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the agricultural college, has outlined three lines of attack which farmers can be preparing to follow in combatting the bugs.

The first step, he says, is to plant the maximum acreage of crops on which the chinch bugs do not feed, such as soybeans, alfalfa, clover, cowpeas, buckwheat, rape and other non-grass crops.

Second, crops on which the bugs do feed should be so arranged as to avoid insofar as possible small grains and corn in adjoining fields. This will reduce to a minimum the number of rods of barriers that will be needed between small grain and corn fields when the small grains are harvested.

Third, Flint says, legumes not only should be planted by themselves wherever possible but also should be planted in corn.

The 1933 chinch bug infestation, the worst on record, not only destroyed 42 million bushels of the Illinois corn crop but also played havoc with wheat, barley, rye and oats.

Up to the present time there has been no natural development to materially reduce the numbers of chinch bugs in the state, Flint reported. Furthermore, there is little likelihood that the weather of the winter will kill the insects in their hibernating quarters. There has never been a case where more than 10 per cent of the bugs were killed by winter weather, he said.

With one exception the bugs are still very abundant in nearly all of the area infested in the summer of 1934. The exception is a small area in the western Illinois primary drought section comprising parts of the counties of Calhoun, Jersey, Greene, Pike, Adams and Schuyler.

There is also a very small area in the extreme northeast part of the state in JoDaviess and Stephenson counties where it is not likely that any serious damage will occur, Flint said.

Over the rest of the state, from Randolph, Perry, Jefferson, White and Lawrence counties on the south up to the Wisconsin line the bugs are more abundant than they were last year. In many places from two to three times as many bugs are now in hibernation as was the case on the same date in the fall of 1933.

The bugs are now generally scattered through protecting shelters. Many more of them than is usually the case are found in bluegrass.

There is very little hope of doing any effective burning before the first of March, and it is doubtful if the best burning that could be done would destroy as much as 10 per cent of the bugs over an area as large as a township or county, it was said. With the numbers now known to be in winter quarters, a 10 per cent reduction will not make any appreciable decrease in crop damage this coming year, the authorities say.

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Lespedeza Sown In Grains Makes Good Emergency Hay

Faced with the problem of providing an emergency hay or pasture crop in 1935, because of the drouth last summer, Illinois farmers may find the solution by seeding Korean lespedeza on winter wheat or with oats early this spring, suggests J. J. Pieper, associate chief in crop production at the College of Agriculture, University of Illinois. Although the production of lespedeza seed in 1934 was about a third less than in 1933, there is probably enough to supply all demands in 1935, it is believed.

More than 100,000 acres of lespedeza were grown in Illinois in 1934, or approximately 300 per cent more than in the preceding year, it is estimated. Thus with such a large acreage increase in the state, this comparatively new legume has become one of Illinois' rapidly growing crops.

Korean lespedeza may also be sown alone on land that is not too weedy. This is especially true on the light-colored soils of southern Illinois where weeds are not serious. In this case the crop is seeded on disked cowpea stubble. Where lespedeza has not been grown before, the seed should be inoculated.

To make a hay crop the first season, lespedeza should be sown at the rate of 25 pounds to the acre, either with or without a companion crop. This may be done in early March on winter grain or at the time spring grain is planted. When seeded in small grain about one-half ton of hay may be expected the first summer, while if sown alone the hay yield may total two tons or more.

When Korean lespedeza is seeded on winter wheat or with oats, the grain may be cut as hay or allowed to ripen. If he needs it, the producer will have two emergency hay crops, the wheat or oats in May or June and the lespedeza in late summer or fall.

Where lespedeza was grown in 1934 and a good volunteer stand is probable this year, the field may be disked and planted to oats, wheat or other small grain this spring. Tests at the U. of I. College of Agriculture have proved that the disking will increase the yield of lespedeza materially, while the companion crop may be planted and harvested as usual. Thus the farmer may produce two crops on the same land in 1935 with but little preparation and expense other than the cost of the grain seed.

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Garden Failures Often Caused By Lack Of Planning

Lack of planning is the indirect cause of all too many failures of Illinois gardens, which if properly managed might easily be the most profitable area on the farm, says L. A. Somers, vegetable garden extension specialist at the College of Agriculture, University of Illinois.

Detailed plans made well in advance of planting time make it possible to take advantage of favorable weather conditions, give more efficient use of the garden area and often reduce the labor required, all of which add to the profitableness of the garden.

Proper planning can best be done when the January seed catalogs begin to arrive. A pleasant evening or two can be spent in selecting the varieties desired and in making out the seed order. Then when April comes, the gardener is ready to take advantage of the first good planting days.

In January a drawing can be made of the plot, showing the location of the different vegetables as they are grouped according to their climatic and cultural requirements. The succession of greens, salads and boiling vegetables can be determined as well as the needed quantity of each. The garden can also be planned in view of the crops to be canned, those to be stored and those to be used fresh.

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Stopping Insect Damage Softens Rise In Food Costs

Any increase in the cost of food which the future may bring can be partially offset by stopping the waste now being caused by insect damage to dried food products in homes, stores and other heated buildings, says M. D. Farrar, research entomologist of the Illinois State Natural History Survey.

Contrary to the belief held by many people, under certain conditions the damage done by insects to stored beans, peas, rice, breakfast foods, peanuts and all dried fruits may be just as great in winter as summer. In fact it is difficult to find a home, grocery, warehouse or factory that does not have at least a small infestation of insects feeding upon dried food products at some time of the year, Farrar pointed out in a report to the College of Agriculture, University of Illinois.

A forgotten candy bar, a cake of chocolate, a bag of peanuts or a slice of dry bread will furnish ideal breeding material for several of the most troublesome household pests. Examining a food package to make sure that it is free of insects before placing it in a cupboard is a good precaution. Sealed packages may contain insects, but this is less common than in the case of bulk goods. Insects in any food product can be destroyed by heating the material in an oven for three hours at a temperature of 125 degrees Fahrenheit.

When possible, large quantities of food products should be stored in tight containers in unheated rooms or buildings. Low temperatures prevailing throughout the colder months of the year will reduce the activities of most insects.

Beans and peas to be used for seed can be protected against weevil damage by mixing the seed with hydrated lime at the rate of 10 pounds of lime with each bushel of seed. When large quantities are stored in tight bins, mixing a heavy deposit of lime into the upper six inches of the beans will protect them from insect damage. The lime does not affect the germination and may be washed off of the peas or beans before they are used for human food.

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Winter Pasture An Aid In Utilizing Poor Roughages

In spite of the fact that fall and winter pastures in Illinois have exceeded all expectations, livestock producers will do well to conserve them as supplementary feed to cheap roughages that may be available on the farm, according to E. T. Robbins, livestock extension specialist at the College of Agriculture, University of Illinois.

After the arrival of generous rains in late August, pastures made unusually heavy growth during the fall, and when not covered with snow will still supply considerable winter feed. Furthermore, livestock getting pasture can use poor roughages to greater advantage than when given the low-quality feed alone, points out Robbins. Cattle will graze stalk fields more closely and do better on them, if the animals have the run of an old pasture at the same time.

Farmers are warned, however, that too much dependence on winter pasture might prove to be false economy. There will probably be a deficiency of hay produced in 1935, as a result of the drouth, too close grazing during the summer and the shortage of seed with which to make new seedings. Thus conservation of old meadows and pastures is an important consideration this winter. Many pastures were grazed too closely in 1934, and too heavy grazing during the coming spring months might add further to the destruction of forage resources.

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Dairy Signs Show Practices Needed In Coming Months

Although the dairy outlook for the coming year in Illinois may not be highly optimistic, better times undoubtedly lie ahead for producers who plan their 1935 operations to include some half dozen good management practices, in the opinion of W. W. Yapp, chief in dairy cattle at the College of Agriculture, University of Illinois.

On the basis of the present outlook, it is highly desirable for dairymen to cull out of their herds, on the basis of production, all milk cows and other animals of doubtful value. Furthermore, only those heifers should be raised that are from good cows and sires and which may be expected to raise the average production of the herd.

The future months will also be a good time to cull out all diseased animals. Ten years of tests at the U. of I. College of Agriculture show that herds reacting to contagious abortion yield at least 17 per cent less milk and butterfat than non-reacting or clean herds.

Good cows should be fed liberally and according to production, for even the better animals must be fed adequately to return a profit. Dairymen short on perennial meadows will need to plant enough soybeans and cowpeas to supply their roughage needs. Then too, large pastures should be divided into smaller areas so that some areas may rest while others are being pastured. Whenever possible, bluegrass should be manured this winter.

These recommendations are suggested by four "sign posts" which indicate something of the road ahead, Dr. Yapp said. They include reduced supplies of dairy products in storage at the close of 1934; a marked tendency to reduce the number of dairy cattle since last June; a decidedly diminishing feed supply for the first six months of 1935, and an unfavorable relation between the price of feed and the prices of milk and other dairy products.

As the year advances there will likely be a gradual though not large increase in the prices of dairy products, explains Dr. Yapp. Likewise, the relation between the price of grain and the price of milk will gradually become more favorable. After proper cow culling the price of the remaining dairy cattle should gradually rise, and the margin of difference between the price of grades and good purebreds will become somewhat wider.

-M-

Brighter Outlook Encourages Farm Building Repairing

With a brighter outlook for 1935, Illinois farmers feel encouraged to adopt one of two policies in improving their buildings once valued at more than $780,000,000 says W. A. Foster, rural architectural specialist at the College of Agriculture, University of Illinois.

Many farm owners will probably take the longer, conservative, more expensive course of "paying as they go." They will make the more pressing repairs first while other improvements will be made as cash becomes available. Others will select the cheaper, progressive method of doing the repair work now with funds from the Federal Housing Administration which can be paid back over a period of years.

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Alfalfa Gains New Popularity Through Drouth Record

Alfalfa, sometimes called the "queen" of forage crops, will be even more popular in Illinois during the coming season as a result of its performance in the 1934 drouth, according to L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois. Last summer's dry weather kept the state's total crop production down to the smallest in more than 30 years, but it seems to have been a tonic for Illinois alfalfa fields, he said.

Despite the drouth, alfalfa was practically normal, with some fields actually yielding more than the average for the past two decades. It is estimated that there were more than 375,000 acres of alfalfa in the state last year, and on many farms it proved to be a life-saver for dairy herds.

Records at the Mt. Morris soil experiment field in Ogle county, operated by the U. of I. College of Agriculture, reveal that in a rotation in which alfalfa is continued for four consecutive years, the average yield for the past 20 years has been 3.81 tons to the acre a year. The 1934 alfalfa yield was 3.89 tons. These results were secured on land which had been limed and manured.

Under similar soil conditions at the Mt. Morris field, the long-time average for red clover has been 2.82 tons to the acre each year. In 1934 the red clover harvest fell to 1.61 tons. This was an unusually good red clover yield under the drouth conditions of northern Illinois last summer, where few fields produced more than a ton to the acre. Even the higher yield at the Mt. Morris field was only 58 per cent of the long-time average for red clover, while the alfalfa crop turned out to be better than the 20-year average.

An excellent producer in normal seasons, alfalfa was so outstanding in 1934 as compared with most other crops that many farmers who never before paid much attention to this legume became enthusiastic boosters. Success with alfalfa, however, requires a well-drained soil that is sweet and amply supplied with available phosphorus, Miller pointed out.

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Plant Houses Are Replacing Outmoded Manure Hotbeds

Plant houses are rapidly replacing old, inefficient hotbeds as Illinois gardeners prepare to start their seedlings for the 1935 growing season, according to L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois.

For many gardeners an 18-by-10-foot house has been found to be a satisfactory size. It requires six standard sash on each side of the roof and three placed lengthwise to form each side wall. The houses are located to receive all sunlight possible, and usually run from north to south. The north end is often constructed entirely of boards, while the south end is nearly all glass, with the exception of the door.

Heat is supplied by an inexpensive stove set up at the north end of the house. The pipe rises straight to the ridge roof and then runs the length of the house to emerge at the south end. Houses longer than 18 feet are ordinarily heated with electricity, if the available current is not too costly. Otherwise, a small hot water system or two stoves are used. Being 10 feet wide, the house furnishes room for two benches 4 by 18 feet each, except as adjustments must be made at the north end for the stove. This amount of bench space may be supplemented by wall shelves set on brackets during the germination period. Soils, flats, pots and other equipment are stored under the benches.

-M-

Early Marketing To Yield Highest 1935 Lamb Prices

Lamb prices may be some higher this coming spring than in 1934, but Illinois producers who want to be sure of obtaining top returns will feed and manage their flocks so as to get their early lambs on the market just as quickly as possible, says W. G. Kammlade, assistant chief in sheep husbandry at the College of Agriculture, University of Illinois.

In view of the decrease in lamb feeding this winter, the advance in fed-lamb prices may be expected to continue through late winter and early spring, it is said. Further improvement, however, will depend in part on changes in consumer buying power.

Sheep raisers who have their lambs dropped in January and February stand the best chance of getting higher prices, if they are able to market the lambs before summer, points out Kammlade. Early lamb production is generally more expensive, but the lambs usually bring higher prices. On the other hand, profits may dwindle if marketing is delayed until after July 1. At that time or shortly before, there is a seasonal decline in lamb prices which often lasts until winter.

To raise early lambs successfully, the flock owner must have ewes of good size that are well fed, Kammlade explains. Milk is the most important food in securing rapid growth, but the ewes can not do their best in developing their lambs unless they come to the close of the pregnancy period in good condition and well fed. To be well fed they must be given good roughages and grain. Grain feeding may not be so necessary before lambing, but it is particularly important afterwards.

The lambs must also be well fed, for if thin they are severely discounted on all markets. They should be given feeds in addition to their mothers' milk, when they are about two weeks old. Lambs are especially fond of a mixture of whole or rolled oats, cracked corn, wheat bran and linseed oil meal. Such a mixture, together with some choice legume roughage and silage will keep them doing well until they are ready for market or until pastures make a different system of feeding possible.

-M-

Higher-Quality Carrots Are Key To Larger Returns

Illinois now ranks fifth in total carlot shipments of carrots in the United States, but gardeners in this state might get an even larger share of the market returns if they could overcome the prejudice against the stored carrots which they produce and sell, in the opinion of J. W. Lloyd, chief in fruit and vegetable marketing at the College of Agriculture, University of Illinois.

The winter demand in northern markets is supplied partly by fresh bunched carrots shipped in from the south and west and partly by stored carrots produced principally by local growers. Many consumers in the cities show a preference for the fresh, young carrots over the stored product, even though the latter may be sold for one-half the price of the former.

This prejudice against stored carrots may be overcome in local markets by offering a high-quality product put up in an attractive manner, Lloyd believes. He suggests using a high-quality variety, planting it so late that the roots will be young and tender when harvested for storage in the autumn, growing the crop on a sandy or muck soil so that the roots will be smooth and symmetrical and using irrigation to promote rapid growth if the weather is dry.

The roots should be stored under favorable conditions so that they will remain firm and crisp. When the carrots are prepared for market, all overgrown, blemished or misshapen specimens should be discarded and only medium-sized, attractive ones packed. The roots should be washed thoroughly and neatly packed in clean containers.

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Corn Supplement In Pig Feeding Pays Higher Premium

With corn hovering around a dollar a bushel, there will be an added premium this winter and spring in using a good protein supplement with any corn that is fed to fattening hogs, says W . E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois. Skillful use of a good protein supplement is still the hog feeder's greatest chance to save corn, he said.

One hundred pounds of a good protein supplement like tankage, which would cost about $2.75, will save 11.5 bushels of corn in the dry-lot fattening of pigs weighing around 60 pounds each at the beginning of the feeding period, according to results of tests conducted by the agricultural colleges. Starting with 130-pound pigs, 100 pounds of tankage saved 6.7 bushels of corn in an 84-day feeding period. Tankage for young pigs also prevents unthriftiness and runts.

In some years it is practical to let the pigs have all the tankage they want from self-feeders, explains Carroll. However, when the corn is of poor quality, as it is in some sections this year, there is danger that the pigs will eat more tankage than they actually need for economical gains. Under such conditions it is better to limit the amount of supplement by mixing the correct proportions of tankage with the corn, by mixing some unpalatable feed such as oats with the tankage, or by hand-feeding the tankage alone.

For most farmers hand-feeding of the supplement will be the most economical method, but there should be ample trough space for all pigs to eat at one time so that all will have an equal chance. Likewise, it is advisable to feed the pigs in groups according to sizes, for the lighter ones need a higher proportion of supplement in their ration than do the larger pigs.

When tankage is hand-fed, pigs weighing 50 pounds or less should get from 10 to 12 pounds for each bushel of corn consumed by them. Hogs weighing from 50 to 100 pounds should be fed 8 to 10 pounds of tankage, 100- to 150-pound hogs 6 to 8 pounds of tankage, and 150- to 200-pound hogs from 3 to 4 pounds of tankage for each bushel of corn.

At present prices a supplement composed of 3 parts tankage and 1 part alfalfa meal by weight will probably be the most economical, according to Dr. Carroll. Certainly the high price of all the oil meals must be figured in choosing a protein supplement to feed this winter. Their contribution to the value of a mixed supplement is not great enough to warrant including them when they cost as much as tankage.

If the mixture of 3 parts tankage and 1 part alfalfa meal by weight is used as the protein supplement, it should be fed at the rate of 18 to 19 pounds for each bushel of corn for pigs weighing up to 50 pounds. Those weighing 50 to 100 pounds should get 13 to 15 pounds of the supplement for each bushel of corn, 100- to 150-pound pigs should get from 8 to 9 pounds of the supplement for each bushel of corn and those weighing 150 to 200 pounds should get 4 to 5 pounds.

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New Experiments May Help Revive Red Clover Growing

What was once the principal and about the only legume crop in Illinois may be headed for a comeback as a result of new experiments being conducted by plant breeders of the College of Agriculture, University of Illinois. Red clover is the crop. The plant breeders are uncovering new possibilities for improving it so that it can withstan the hazards which have slowly been killing it out.

Illinois was once one of the greatest states in the production of red clover, but plant diseases, insects and adverse weather have cut production so severely that the state hardly ever has even enough seed to meet its own needs. Red clover failures also have brought on feed shortages with subsequent losses to dairymen and stockmen.

Preliminary work by plant breeders at the U. of I. College of Agriculture has revealed that there are extreme differences among red clover plants in characters that are important from the standpoint of successful production of the crop. Hardly any two plants have been found to be alike. Also the difficulties in red clover improvement work have been more clearly recognized. However, it is believed that plants can be selected and new strains built up that will be superior and useful in overcoming present hazards, it is reported by Dr. C. M. Woodworth, chief in plant genetics at the college.

In the past plant breeders have avoided the red clover crop because it is so hard to propagate under conditions of controlled pollination. The plants are almost entirely self-sterile, insects being depended upon for pollination under field conditions. Hand pollination can be done on a small scale, however.

Evidence of neglect of this crop by plant breeders is seen in the few distinct strains now existing. Red clover seed is a conglomerate mixture as to color and will produce all types of plants. When the plants are spaced so that their distinguishing characters can be observed, they are seen to differ in leaf markings, flower color, growth habits, winter hardiness, resistance to disease and persistency.

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Ordering Garden Seed Early Cuts Production Expenses

Always a good practice under normal conditions, ordering garden seed early takes on greater importance this year in view of the possibility of a scarcity of a number of vegetable seeds, says B. L. Weaver, olericultural specialist at the College of Agriculture, University of Illinois. Weather conditions were none too favorable for garden seed production last summer. This not only will make it advisable to order early but also to check up on any holdover seed that may be on hand from previous seasons. Such seed sometimes gives a higher germination test than new seed.

It is impossible to predict the hazards of the coming season, but if the vitality of the seed is known, it will be possible to get an adequate stand at less expense than would otherwise be possible. Higher germinating seed may be sown thinner, thus making a material saving in the cost of seed as well as in the expense of thinning out the rows later on. Ordering early allows plenty of time for testing and adjusting in case the seed is of low quality.

Gardeners have likewise found that keeping a seed inventory is helpful in determining the seed needs each spring. When seeds are purchased the date is written on the packet, and in an inventory book is entered the name of the variety, amount of seed bought, the cost, the name of seedsman and the date of purchase. A glance at this list in January reveals information that will assist in making up the present year's seed order.

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Leaf Curl Spray Will Protect Peach Crop Prospects

Bloom buds on Illinois peach trees this winter give prospects for the largest harvest since 1931, and growers can protect their chances for a crop by spraying orchards now to ward off possible leaf curl damage this spring, says Dr. H. W. Anderson, chief in pomological pathology at the College of Agriculture, University of Illinois. The 1931 crop totalled 4,300,000 bushels valued at $2,150,000.

Early spraying is essential because the fungus which causes leaf curl lives over the winter on the bud scales and may start infection during warm days in February before the buds are completely open, Dr. Anderson pointed out. The spray can be applied at any time when the temperature is above freezing and there is no danger of a cold wave. Some freezing at night will do no damage. A lime-sulphur spray at the rate of one gallon of the liquid concentrate to eight gallons of water may be used, but an oil spray in Bordeaux mixture is preferable.

When 100 gallons of the oil emulsion-Bordeaux spray is prepared at home, the tank should be partially filled and eight pounds of powdered copper sulphate added while the agitator is running. Eight pounds of hydrated lime is then mixed with a little water in a pail until it forms a thin paste, after which it is stirred into the tank. In another container three gallons of stock oil emulsion is mixed with an equal amount of water and poured into the tank. Enough water is then added to make up 100 gallons. Following a few minutes agitation, the spray is ready to use. Every twig on the trees should be covered with the spray to insure complete control.

If spraying is neglected and the weather turns favorable for the development of peach leaf curl, the bright outlook for 1935 peach returns might easily be turned into complete failure. If it is cold and rainy as the buds expand this spring, the infection is likely to be severe, while if dry, warm weather prevails for a week or so, no great damage will be done. Since it is not possible to predict the weather accurately, it is never safe to omit leaf curl spray. This year it is especially important to apply a dormant spray, for San Jose scale is abundant in many Illinois orchards and the same application may be used for both scale and leaf curl.

-M-

Forest Expansion for Illinois Would Relieve Jobless

Non-competitive work could be furnished for thousands of Illinois people now on relief roles, if much of the state's potential woodland was converted into well-managed federal, state, municipal or privately-owned forests, in the opinion of L. E. Sawyer, forestry extension specialist of the College of Agriculture, University of Illinois and the Illinois State Natural History Survey.

Illinois has more than nine million acres of submarginal land that is better adapted to the production of trees of commercial value than it is to growing strictly agricultural crops. If properly managed as forest land, this acreage would in time not only pay satisfactory returns on the investment but also would relieve the unemployment situation in certain areas of the state, Sawyer said.

On federally-owned national forest purchase units in southern Illinois, more than 1,000 men are being kept at work improving roads, keeping down fires, erecting fire towers, constructing telephone lines and improving the composition of existing stands of timber. If the remainder of Illinois' potential forest land could be equally as well administered by the state, by counties, by municipalities or by private owners, thousands of men now out of work could be given permanent employment in the forests.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Evidence Found That Local Markets Hurt Hog Prices

Despite reports to the contrary, there is ample evidence that the much-discussed local livestock markets, with their attendant "direct marketing," have weakened the general level of hog prices, according to reports of studies which have just been published in a new bulletin by the experiment station of the College of Agriculture, University of Illinois.

The size of the Illinois farmers' stake in the question is indicated by the fact that in 1932, the year when most of the field work was done in the study, the receipts of Illinois farmers from hog sales totalled $47,894,000. These receipts have averaged as much as $130,836,000 annually in a more normal period such as 1924 to 1928.

R. C. Ashby, associate chief in livestock marketing at the college, who conducted the studies, is author of the new bulletin. It is titled, "Local Livestock Markets in Relation to Corn-Belt Hog Marketing."

Too few stockmen realize how fast livestock marketing has been decentralized during the ten years that local markets have been developing, Ashby points out. As the situation stands today, stockmen are supporting and maintaining two sets of markets--local and terminal--the latter steadily giving way to the former, he adds.

Local markets have weakened the general level of hog prices because they have reduced hog receipts at terminal markets and sent a larger and larger proportion of hogs direct to the packers, they have lowered the quality of hogs received at the terminal markets and they have reduced buying competition at the terminals, Ashby concluded after his studies. There has been a further price-weakening tendency in the fact that interior packers, enjoying favorable freight rates on fresh meats, can undersell packers operating elsewhere, he found.

Along with the tendency to weaken hog prices, other major disadvantages of local markets are less assurance of accurate weights under non-competitive sorting and grading, no guarantee of payment, often no facilities for the disposal of cattle, calves or sheep and failure to pass on to stockmen their full share of the savings made through local marketing operation.

Advantages of local markets, as found by Ashby, include convenience, prompt returns, some apparent saving in marketing expense and the avoidance of risk of price change while the hogs are on their way to market.

Stockmen and stockmen's organizations occupy a minor position in the operation and control of local livestock markets, Ashby found.

"Stockmen could solve their livestock marketing problems if they were sufficiently well organized and agreed on a marketing program. Unfortunately they are not so organized.

"Terminal marketing costs could be reduced in two ways: (1) by concentrating livestock consignments in the hands of a much smaller number of commission firms, enabling the remaining ones to operate both more economically and more efficiently, and (2) by persuading stockyards companies to reorganize their businesses, using only the amount of facilities required by present-day livestock receipts and releasing the remainder for other uses.

(Continued on page 2)

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"Local marketing costs can be reduced by decreasing the number of local markets. With present-day road and truck facilities it is sheer waste to maintain as many local markets as the livestock industry is now supporting.

"Railroads could aid in the solution of the local market problems by granting terminal markets in-transit rates with privilege of change of ownership. It is improbable, however, that such action will be taken.

"Packers could probably correct inequalities in hog prices were it not for conflicts of interest between important packer groups. Moreover, from the standpoint of the stockmen, it is desirable that the problem be solved by other means.

"Finally, the U. S. Department of Agriculture, under provisions of the Agricultural Adjustment Act, could doubtless initiate such measures as might be necessary to deal with existing unsatisfactory conditions. There is no prospect of early remedy from other sources."

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Soybean Oddities Drawing Attention As Crop Expands

Illinois' rapid rise to the national leadership in soybean production and the prospects for a still further increase in acreage during the coming year are drawing attention of farmers and plant breeders to marked differences between varieties of this crop, according to Dr. C. M. Woodworth, chief in plant breeding at the College of Agriculture, University of Illinois.

The record crop of nine and a half million bushels in Illinois in 1934 was valued at more than eight million dollars and represented 54 per cent of the national production.

Soybean varieties have been found to vary not only in seed color but also in many other characters affecting their commercial production, Dr. Woodworth said. These differences will become increasingly important as the production of the crop expands, he pointed out.

"One of the important characters in which varieties differ is in the number of seeds a pod. There are some pods with only one seed, some with two seeds, others with three and still others with four. Usually there are very few one-seeded and four-seeded pods in a given variety. Varieties also differ in the proportion of the different-sized pods. The Ito San, for instance, is predominantly a two-seeded type and the Illini, a three-seeded type.

"In experiments on breeding soybeans a type was found with a very high percentage of one-seeded pods. Two or three newly introduced varieties from the U. S. Department of Agriculture show a higher proportion of four-seeded pods than any commercial varieties now being grown. Tests prove that these varieties breed true for the particular proportions found, indicating that the character is inherited.

"Contrary to what might be expected, the varieties having a high proportion of four-sseded pods are not as good yielders as many varieties with a majority of two-seeded pods. The four-seeded types usually produce small plants bearing a much smaller number of pods than the taller-growing, higher-yielding two-seeded varieties.

"Furthermore, it is difficult to combine the four-seeded character of a variety with the good characters of another variety. This is only one of the complications in improving soybeans for a still more important place in American agriculture."

-M-

Home-Butchered Pork Is Seldom Cut Up In Best Form

Farmers in Illinois have been butchering as much as 15 million dollars' worth of their own pork annually during recent years, but the knack of cutting up a hog carcass to the best advantage is still a mystery to many of them, says Sleeter Bull, associate chief in meats at the College of Agriculture, University of Illinois.

"Many farmers still spoil the best cut of pork, the loin, by splitting the carcass down both sides of the back bone with an ax or cleaver. The better way is to split down the center of the backbone with a meat saw while the carcass is still warm.

"The carcass should then be allowed to cool out thoroughly for at least 24 hours before it is cut. This is best done in a cool place where the meat will not freeze. The head is first cut off by making a square cut through the atlas joint where the head joins the neck. The jowl is cut from the cheek bone, flattened out by being pounded with the flat side of a cleaver or with a board and then squared up with the knife for bacon or for bean pork.

"The half carcass is then laid skin down on a table and the feet cut off just above the knee and the hock. The shoulder is cut off with a square cut between the third and fourth ribs. The neck bones and the ribs are then taken out. The upper part of the shoulder, or the 'Boston,' is cut off two fingers above where the shoulder blade shows on the rear edge of the shoulder.

"The 'clear plate,' a layer of fat on top, may be cut off and used for lard or cured for bean pork. If it is to be cured, some of the lean should be taken off with it. The Boston may be cooked fresh as a roast or chops, it may be cured or it may be boned and used for sausage. The lower part, or 'picnic,' may be boned for sausage or cured. The entire shoulder may be cured without division, but the results will be better if it is separated into Boston, clear plate and picnic.

"The ham is cut off about three fingers in front of the pelvic, or the H-bone, the saw being held perpendicular to the line of the hind leg. The ham is then trimmed so that there are no loose, thin, ragged shreds of meat on it. The tail and flank also are trimmed off. If the ham is very fat, the skin and some of the fat may be removed from it. However, about one-half inch of fat should be left over the lean. Hams are usually cured.

"The leaf fat is then stripped out of the carcass for lard. The back, including both the loin and the fat back, is cut from the belly by sawing across the ribs from the point just below the back bone where the shoulder was removed to the point just below the large muscle where the ham was removed.

"The 'fat back' is removed from the loin with a sharp knife, a thin layer being left over the back muscle. The fat back is used for lard. The loin may be used for roasts or cut up into chops. In thin hogs the fat back may be left on the loin, the back bones and ribs removed and the boneless back cured as Canadian style bacon.

"The spare ribs are cut from the belly and used fresh. The belly is then trimmed so that all corners are square, all edges are straight and all ragged meat is removed. Enough meat is trimmed off the lower edge to remove the nipples. The front or brisket, the flank and the upper part of the belly piece are often cut off and used for sausage and lard. The trimmed bellies are cured for bacon. All fat trimmings should be used for lard and all lean trimmings for sausage. No bloody trimmings should be used."

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Secret Of Butter Flavor Simplified In U. I. Tests

The secret of enhancing the flavor and aroma of butter, a practice which has been in use for almost 50 years, has been worked out in the laboratories of the College of Agriculture, University of Illinois, it is announced by Dr. H. A. Ruehe, head of the dairy department. The principle can now be applied in a more direct and more effective method than has heretofore been possible, he said.

Believed to have "great possibilities," the method eventually may profoundly affect the billion and a half pounds of creamery butter manufactured annually in the United States. Plans are being made to patent the method and give it to the dairy industry for whatever benefits it may bring producers and consumers in the way of a higher quality and more desirable product, Dr. Ruehe said.

Working with him in the discovery of the new method was R. J. Ramsey, a member of the college dairy manufactures division. The process involves the distillation of the ordinary "starters" used in butter-making. Concentrated quantities of the volatile flavoring principles which impart the desirable aroma or bouquet to butter are obtained in the distillate.

Their finding is another and the latest improvement in the use of cultures, or "starters," in cream, a practice which has been employed for many years to develop flavor and aroma in butter. The Danish bacteriologist, Storch, who began his work in 1884, was the first to investigate butter cultures. Four years later the use of such cultures in cream "ripening" became a part of the commercial butter-making process.

Subsequently other investigators established the fact that two other organisms beside the one commonly present in starters were necessary for successful results. Still later it was proved that these organisms changed the citric acid of milk into acetylmethyl carbinol. This in turn was converted into the volatile chemical compounds which produce the aroma and flavor.

However, attempts to intensify the flavor of butter by the addition of synthetic compounds of this chemical have been branded an adulteration and therefore an illegal practice.

The method developed by Ruehe and Ramsey not only makes it possible to isolate the flavoring principles from a starter but also to increase the content of them in that starter.

When the distillate obtained in the process is added to cream, the flavor and aroma are greatly intensified without increasing the acidity, or citric acid content, of the cream. Sweet cream treated in this manner produced a butter that had the high aroma and flavor of that made from ripened cream, yet had low acidity. The distillate can be added directly to the butter to obtain similar results.

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Early Searchers May Find Needed Oats Seed Supplies

Finding 10 million bushels of oats with which to seed an average acreage of this crop in Illinois this spring may not be a hopeless search after all, if farmers do not delay too long in starting the hunt, says J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

The 1934 crop was the shortest in 60 years and totalled only 33,319,000 bushels. Seed will be scarce enough, but more than 800,000 bushels have been located in the hands of Illinois farmers and local county elevators, Hackleman reported.

Farmers in most counties who are still without seed oats will be able to find good local varieties for all their needs, he believes. Furthermore, the federal seed stocks committee has tentatively assigned 500,000 bushels of seed oats to Illinois and will hold it until about the middle of February. This seed will be sold mostly in northern Illinois counties where local stocks can not be found.

"Every farmer who does not have his seed oats or know where he can get it should immediately contact his county farm adviser. These men are now compiling the final listing of their needs which must be turned in soon to Walter Miller, assistant director for Illinois AAA drouth service, 1319 South Michigan Avenue, Chicago.

"Buying seed oats from neighbors near at hand as a rule will be better than getting it from local elevators or from farmers in another state or section of the country. Seed from elevator bins may be badly mixed with all varieties commonly grown in the community, while that from more distant points may be unadapted, of inferior quality and may even contain noxious weeds.

"Local supplies which will be available in different Illinois counties will give farmers the choice of a half dozen or so of the better varieties. These will include Gopher, Iowar and Iowa 103 for northern and central Illinois and Kanota, Columbia and Burt for central and southern."

Illinois has averaged almost 4,000,000 acres of oats during the past five years. There may be some cut this year owing to the threat of chinch-bug damage, but the crop will still be one of the most important small grains in the state because of its place in crop rotation systems and its utility as feed. A more saving rate of seeding probably will be practiced this year because of the scarcity, but even so the total requirement will be in the neighborhood of 10 million bushels.

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Seed Catalogues At Times May Be "Forbidden" Books

If the reading of new seed catalogues were outlawed until after a suitable drawing had been made of the garden area, there would be more good gardens in Illinois during the coming year, in the opinion of J. W. Lloyd, chief in vegetable gardening at the College of Agriculture, University of Illinois.

Without such a drawing of a garden plan suited to the area available, all the enthusiastic reading of seed catalogues and the early ordering of seeds may go for nothing, Dr. Lloyd pointed out. Of course, he added, once a good plan has been laid out, the sooner the catalogues are read and the seeds ordered, the better it is.

"No matter how tempting the seed catalogue may be, there is no economy in buying more seeds than there is room to plant, and this is where a good plan protects the grower. Furthermore, good, reliable varieties known to be adapted to the locality should make up the major part of the seed order. A few new kinds, of course, may well be grown each year to add spice to the gardening operations."

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Neither Luck Nor Moon Are Factors In Curing Meat

Although some people are still superstitious, neither the stage of the moon nor luck have anything to do with success in the home-curing of the 150 million pounds or more of pork which Illinois farmers butcher annually, according to Professor Sleeter Bull, associate chief in meats at the College of Agriculture, University of Illinois. Much does depend, however, upon the method which is used, he said.

The ideal temperature for curing meat is several degrees above freezing. Usually a cold room in the basement is the best place. The cuts most often cured are the hams, shoulders or picnics and bellies or bacon. Other cuts which may be cured are jowls, or bacon squares, clear plates, Bostons and boneless loins or backs.

A standard recipe for sweet pickle is 12 pounds of salt, 3 pounds of either granulated or brown sugar, 5 ounces of saltpeter and 6 gallons of water for each 100 pounds of meat. The salt, sugar and saltpeter are mixed together and a coating rubbed all over the meat, after which it is allowed to lie in a cool place over night. The remainder of the salt mixture is then added to the 6 gallons of water, boiled and the materials allowed to dissolve. After the solution has cooled, the scum is skimmed off.

The meat is packed as compactly as possible, skin side down, in a clean, scalded stone jar or hardwood barrel. The top layer of meat should be placed skin side up. Hardwood sticks are then placed across the meat and weights put on. The brine is then poured on, care being taken to see that the meat is completely covered.

Hams and shoulders should remain in the brine three days or a little longer for each pound they weigh. A 15-pound ham will be nicely cured in 50 days. Smaller cuts, such as bacon, picnics and Bostons, should be given a milder cure by being removed after two days has been allowed for each pound. The meat should be overhauled and repacked at the end of the first week and again at the end of the second week, the same brine being used each time for the repacking.

As soon as it is removed from the cure, all meat should be soaked two to three hours and thoroughly scrubbed to remove the excess salt. This is important. The meat should then be smoked, strung in the smoke house and allowed to dry over night.

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Too Many Skinny Cows Soaking Up Profit In Dairying

About three-fourths of the dairy cows in the United States are too thin to produce milk and butterfat at the most economical and profitable rate under present feed prices, according to observations made by Professor W. J. Fraser, professor of dairy farming at the College of Agriculture, University of Illinois. In some sections as high as 90 per cent of the cows are too thin, he said.

With feed as scarce as it is now, dairymen should do just the opposite of what many of them have been doing during the hard times, he recommended. Instead of milking more cows in an effort to bolster a scant income, dairymen should get rid of all but their better cows, he said.

"If the cows that are naturally poor producers were sent to the butcher and the feed thus saved were given to the underfed good cows, they would produce so much better that the herd profits frequently would be doubled and trebled. Yet many farmers continue to feed their good and their poor cows alike even with feed as scarce and as high-priced as it is now."

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Legume Crops Drain Heavily Upon Minerals In Soils

The record corn crop, which is usually anticipated on a field that has produced high yields of alfalfa or other legumes previously, is sometimes disappointing. On the Lebanon experiment field, a yield of clover-alfalfa hay of 1.5 tons in 1931 on the manure plot was followed by a 76-bushel corn yield in 1932, but the manure-limestone plot which produced 3 tons of hay in 1931, produced 71 bushels of corn in 1932. In many cases such results are no doubt the result of a deficiency of moisture for the corn on the highest-yielding legume plots, if the seasons concerned are dry. On the other hand, legumes are heavy feeders on the mineral plant foods, lime, phosphorus and potash. No one recognizes this more than the livestock man, who appreciates the value of legumes as a source of minerals for his stock.

The heavy withdrawals of these minerals by large crops of legumes may deplete the supply of available minerals for the following grain crops, which do not have the strong foraging abilities of legumes with their deep, extensive root systems. Four tons of alfalfa removes calcium equivalent to nearly 400 pounds of limestone, phosphorus equivalent to 300 pounds superphosphate and as much potash as there is in more than 200 pounds of muriate of potash. The removals by other legumes are similar. The continued removal of large yields of legume crops from a field for several years increases the need for mineral fertilizers on many soils not only to maintain the legume yields but also the yields of subsequent grain crops.—F. H. Crane, assistant in soil fertility, College of Agriculture, University of Illinois.

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Farm Exports Little More Than Half Of Pre-War Total

American exports of farm products at this time a year ago were running in the aggregate slightly above pre-war. Since then, the exports of some products have approached a vanishing point, and the total is little more than half the pre-war volume, according to reports which the College of Agriculture, University of Illinois, has received from the U. S. Department of Agriculture.

The bureau of agricultural economics reports that exports of cotton in December were the smallest for that month since 1917, that exports of wheat including flour were about one-sixth the pre-war level, that exports of fruits were the smallest in more than a decade, and that exports of hams and bacon were only 15 per cent of pre-war.

The index of volume exports of forty-four farm products in December was 62 compared with 109 in December a year ago, and with 116 in December, 1932. The 1909-1914 five-year period equals 100.

The index of exports of grain and products was 16 in December compared with 63 a year ago; of animal products, 35 compared with 72 a year ago; dairy products and eggs, 74 compared with 74; fruit, 191 compared with 329; cotton fiber, including linters, 74 compared with 120; wheat, including flour, 17 compared with 76; unmanufactured tobacco, 97 compared with 191; hams and bacon, 15 compared with 23, and lard 41 compared with 139.

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Soybeans Meeting Emergency In Wintering Farm Horses

Many thousands of Illinois horses have had their first taste of soybean hay this winter. They are on farms where soybeans were grown last summer for the first time. These horses have thrived on soybean hay just as other thousands of Illinois horses have kept sleek and healthy upon it in the past. A few Illinois farms have used soybean hay almost exclusively for the horses during the past 20 years. Results have been uniformly good. The only precaution is to feed only a moderate amount of this rich hay, so that the horses eat all but the coarsest stems.

Soybean hay has helped greatly to maintain horses this winter. In some cases the horses have had plenty of this hay and have come through the winter in very good condition. This year's cornstalk fields appear to be very dangerous horse pasture, and the college has repeatedly warned against their use for horses this season. In normal seasons horses which have had the run of stalk fields did better where soybeans had been planted in the corn. It is noticeable, too, that horses which are getting stalk field picking, straw or dried grass which is still left in the fields thrive much better if they can have a small feed each night of soybean hay or other legume roughage.

One of the difficulties this winter is the thin condition of many farm horses because of the scarcity of good feed. The use of soybean hay or other legume hay from now on through the season will help these thin horses to improve. Also by March 1 it will help the horses very much if they are stabled at night and fed a little grain. If they get no soybean hay it will help them to feed a small amount of threshed soybeans during March. The night stabling at that time and the feeding of soybean hay or beans helps the horses to shed their long hair earlier and to be in better condition for spring work. By getting the horses accustomed to some grain a short time before hard work begins horses will have more strength, more endurance, more flesh, and stand the spring work better.--E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

-M-

Superior Varieties Now Boon To Small-Fruit Growing

Now is the time for those who have an interest in small fruit growing to establish a plantation. Probably never before in horticultural history has there been such a number of high-class small fruit varieties available. For a number of years small fruit breeders have been at work, and their results are now becoming available. Exceptionally hardy and vigorous and productive varieties bearing high-quality fruit and adapted to particular purposes may be secured and planted and, if given good cultural care, may yield both pleasure and profit.

Some of the new varieties of promise include: Alfred blackberry; Red Lake currant; Poorman gooseberry; Fredonia (early black), Portland (early white), Caco (mid-season red), and Sheridan (late black) grapes; Chief, Latham, and Newburgh red raspberries; Logan and Quillen black raspberries; Potomac purple raspberry; Blakemore, Dorsett, Fairfax, and Rockhill (fall bearing) strawberries.

Several of these varieties are rather high in price at present because the supply of nursery stock is low. However, a few might be purchased and more propagated at home for an extensive planting. It is advisable to start with a small planting, gradually increasing the acreage if soil and climatic conditions are found to be favorable and a discriminating market demand built up.--A. S. Colby, chief small fruit culture, College of Agriculture, University of Illinois.

-M-

Repairing Hotbed Sash Now Will Lighten Spring Rush

It is unfortunately a common occurrence to see vegetable gardeners working feverishly in March to repair hotbed sash which were broken during the previous season. Often after failing to get the sash repaired, some gardeners put them on the hotbeds with shingles or cardboard covering the broken places. This is both a dangerous and a costly thing to do.

Use the pleasanter days of January for this work. Have the glass, brads, nails and putty on hand and ready for use. Then when a pleasant day comes, bring up the sash systematically one after another. Replace all broken glass and secure it with brads and putty. Next look over the frame to see if any repairs are needed. Use nails of the proper size for each piece of work. Finally, give the sash a thorough washing so all the sun's heat will be admitted. A dirty sash will admit only a small fraction of it.

The life of a sash depends almost entirely upon the care given it. Cyrus Plotts, of Balcam, has sash that have been in continuous service for more than forty years. Many others have sash completely worn out after ten years' use.

February is the time of repair and preparation. See that the hotbed frames are in working order. Repair and adjust the tools and machinery. Oil and repair the harnesses. See that the pumps and water supply are in good shape. Test all seed on hand for germination and vitality.--Lee A. Somers, vegetable gardening extension specialist, College of Agriculture, University of Illinois.

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Carryover Of Wheat May Be Only Half Of Total In 1934

The carryover of wheat in the United States on July 1, 1935 is expected to total 145,000,000 bushels or less, as compared with 289,000,000 bushels on July 1, 1934, according to reports which the College of Agriculture, University of Illinois, have received from the bureau of agricultural economics, U. S. Department of Agriculture.

Net exports of wheat from January 1 to July 1 last year totaled 17,000,000, and there was a domestic disappearance of 253,000,000 bushels. Feeding of wheat is likely to be much heavier this year than last. The report says that "after making allowance for a small total of exports and a considerable total of imports (mostly feed wheat) it seems likely that total utilization of domestic wheat and of wheat already imported may amount, during the period January through June, this year, to about 275,000,000 bushels."

The bureau says that present estimates indicate the surplus of wheat available for export or carryover in the principal exporting countries, together with port stocks and quantities afloat, was about 220,000,000 bushels less this January 1 than last. Wheat for export or carryover in the Danube Basin on January 1 was about 15,000,000 bushels less than on January 1, 1934.

The Continental European deficit of wheat for the 1934-35 year is now estimated by the bureau at around 400,000,000 bushels. The report says that since "most of the import countries having refrained as much as possible from importing during the early part of the season in order to use up wheat from the domestic crop and carryover, it seems likely there will be a heavier import movement in the second half of the year and that this factor will exert its influence towards improving the world wheat market condition."

Preliminary reports of winter wheat sowings in 11 countries which last year represented nearly 40 percent of the Northern Hemisphere wheat area, excluding Russia and China, indicate an increase of 5 percent in acreage over sowings last year, says the bureau. Reports for Europe indicate an increase of 4 percent.

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Hybrids Promise New Advances In Production Of Corn

New possibilities for growing higher quality corn at cheaper costs through the use of hybrids are foretold in the latest bulletin just released by the experiment station of the College of Agriculture, University of Illinois. During the past five years the state's corn crop has had an average annual value of approximately 100 million dollars. Results such as those reported in the bulletin open the way to the widening of the margin of net profit on the crop.

"Illinois Corn Performance Tests--Results for 1934," is the title of the new bulletin. The authors and the specialists who were in charge of the tests are G. H. Dungan, associate chief in crop production at the college; J. R. Holbert, senior agronomist, U. S. Department of Agriculture; W. J. Munn, associate in plant breeding at the college; J. H. Bigger, field entomologist, Illinois State Natural History Survey, and A. L. Lang, assistant chief of the college's soil experiment fields.

Leading varieties of the ordinary open-pollinated types of corn were far behind the best commercial hybrids in the tests. What was considered more important from the standpoint of future corn improvement was that the best commercial hybrids failed to measure up to the better experimental hybrids.

For the first time in the official history of corn improvement efforts, the varieties of corn were tested and rated not on yield alone but on the basis of four different factors entering into the profitableness of the crop. The four "yardsticks" were: (1) lodging resistance, (2) general quality of the grain, (3) total yield and (4) sound grain. The average score on these four points was taken as the "performance rating" of the variety in question.

Of the 177 different kinds of corn included in the 13 field tests in 12 different parts of the state, 45 were open-pollinated varieties and 132 were hybrids.

On the ten fields where comparisons were possible, the five best experimental hybrids had a "performance rating" of 96.5, the five best commercial hybrids 86 and the five best open-pollinated varieties a rating of 71.7

The average yield of sound corn from the experimental hybrids was 46.3 bushels an acre, from the commercial hybrids 39 bushels and from the open-pollinated varieties 33.4 bushels. Many of the hybrids stood up outstandingly well against the heat, drouth and chinch bugs of the 1934 season.

The search for corn of better quality--corn better suited to the uses to which it is to be put, whether for feeding on the farm or for commercial purposes--may be expected to lead eventually to a more intensive study of the chemical composition both of grain and stover, the authors of the bulletin predict. The tests reported in the new publication are a part of the coordinated corn improvement program being conducted cooperatively by the College of Agriculture, University of Illinois, the U. S. Department of Agriculture and the Illinois State Natural History Survey.

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Oats Loss Best Made Up By Using Superior Varieties

About the quickest way for Illinois farmers to recoup their oats crop losses of the past year will be to start out this spring with improved and superior varieties, in the opinion of George H. Dungan, associate chief in crop production at the College of Agriculture, University of Illinois. The 1934 Illinois crop of 33,319,000 bushels was the smallest since 1874 and was valued at only $15,993,000 as compared to a high of $134,550,000 in a year like 1917.

Good quality seed oats will be scarce this spring, but whenever additional seed is bought, it will pay the farmer to make an extra search for an improved variety adapted to his locality, Dungan pointed out.

"Furthermore, with seed scarce and many farmers having to buy their supply, there will be a tendency to sow oats thinly to make the same outlay of cash go farther. This will be hazardous in the face of the chinch bug threat. The pests are much worse on thin crops than they are on thick ones. The danger of thin seeding may be avoided to a great extent by preparing the seed bed extra well and seeding on fertile soil which will favor free stooling of the plants. Seed also can be saved by sowing with a drill. Two bushels an acre seeded with a drill are equivalent to three bushels sown broadcast.

"The best varieties for the different sections of the state are being singled out in tests which the college is conducting at DeKalb in northern Illinois, at Urbana in central Illinois and at Alhambra in southwestern Illinois.

"In northern Illinois Iowar, Columbia and Gopher are leading varieties. Columbia is an early, stiff-strawed oat, suitable for growing as a feed crop. Iowar and Gopher are white oats suitable either for feed or market use.

"Leading varieties in central Illinois are Columbia, Gopher, Burt (Nebraska 293) and Illinois 140. Burt (Nebraska 293) is an early, high-yielding oat, but it is not as stiff-strawed as either Columbia or Gopher. Illinois 140 is a new variety developed as a selection from Sixty Day. There will be a small amount of seed of this oat for distribution to a few farmers a year from this spring.

"Varieties at the top on the Alhambra field are Brunker, Columbia, Franklin, Burt (Nebraska 293) and Illinois 140. Brunker is a red oat which was developed for dry-land conditions in Colorado. While it is a good yielding variety, it has a weak straw and for that reason may not be a better choice than the Columbia. Franklin is also a red oat. It is later maturing than Columbia and Brunker."

-M-

Fewer Livestock May Check Evils Of Over-Pasturing

With almost a fourth less livestock on Illinois farms than a year ago, this will be a good season for farmers to break away from the evils of overstocking their pastures, says R. R. Snapp, associate chief in beef cattle at the College of Agriculture, University of Illinois.

In the past corn belt farmers have been guilty of greatly overcrowding pasture, he said. Even distinctly superior pasture should carry only one cow or work horse for each 1½ acres, while bluegrass pasture that is poorer than average should carry only one cow or horse for each two acres, he recommended.

"At this rate of stocking, few farmers will have enough permanent pasture to meet their needs. The solution is to set aside enough legumes for temporary or emergency pasture. Here again, however, overstocking must be guarded against."

-M-

Seed Diseases Of Corn Threatening Heavier Damages

Farmers who hope to cash in on any 1935 increase in the price of corn are getting ready now to protect their crop against threatened heavy damage by corn diseases, says Benjamin Koehler, associate chief in crop pathology at the College of Agriculture, University of Illinois. Seed corn not only will be scarce this spring but also will be more seriously infected with destructive diseases, he reported.

During the past 61 years the annual value of the state's corn crop has ranged from a high of $444,400,000 in 1917 to a low of $58,056,000 in 1932. This year corn diseases will play a more important role than ever before in determining the fate of the crop, Dr. Koehler said.

"Seed infections known as dipoldia and fusarium were both unusually prevalent in the state last season. While these fungi cause rots and kernel discoloration, there are many infected seed ears which show no signs of infection until a germination test is made.

"Certainly when seed ears are shelled this spring, it will be more important than ever to inspect the shelled grain from each ear to make sure there are no discolored kernels. Eliminating such grain will solve part of the disease problem.

"The best means of control will be to cull the seed ears closely, make a germination test of every selected ear so that those which show poor vigor or disease infection can be eliminated and then treat the seed with a good disinfectant especially prepared for this purpose. Farmers who are not equipped to make a germination test and do not wish to go to the expense of having it made will still profit by carrying out the other two measures, that is culling and seed treatment. These may be done at home.

"Corn seed infections do most damage in early-planted corn when germination is slow. As corn is a long-season crop it must be planted in the first half of May in most parts of Illinois in order to make the best yields and the best quality of grain. If for some reason planting must be delayed until later, then seed treatment may or may not prove of value, depending upon the season."

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Neglected Grape Vines Will Repay Careful Handling

The grape is believed to be the first fruit in history to have been cultivated, but nowadays neglect and improper pruning too often cut down the possibilities of the crop in a state like Illinois, according to Dr. A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois. This is the time of the year to start restoring this fruit to its rightful place, he said.

Many long neglected or improperly pruned grape vines will respond satisfactorily to heavy pruning and may be made profitable producers if the root system is healthy and vigorous and care is used in building the new top, Dr. Colby pointed out.

"Grape seeds have been found with mummies in Egyptian tombs at least 3,000 years old. Perhaps the long period over which the fruit has been cultivated and developed accounts for the fact it will respond wonderfully to proper pruning and training. Furthermore, the grape is so highly developed that it will make little growth and bear only a small crop of poor quality if neglected.

"Many neglected vines may be rejuvenated even though they are tangled masses of old canes, poorly placed with unwieldy tops and a few good fruit buds."

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Swine Growers To Have Meeting At U. Of I. April 12

Rising hog prices and the more favorable market outlook are expected to swell the attendance of farmers at a special swine growers' day to be held April 12 at the College of Agriculture, University of Illinois.

Unlike most other swine growers' meetings, this one will feature the sow and litter phase of the hog business instead of the finished product -- the fat market pig, according to Dr. W. E. Carroll, chief in swine husbandry.

Studies made by the college show that there is a wider variation in the cost of producing pork up to the time the pigs are weaned than there is after they are weaned. In other words, farmers seem to be more expert with pigs after they get them past the weaning stage than they are before that time.

Since the cost of bringing a pig up to the weaning stage represents one-third of the total cost of raising him, the methods which the farmer follows in the early stage have an important bearing on his final returns.

At the time of the meeting new facts on the feeding of sows and litters will be available from five different experiments which the college has conducted on this problem. Visitors will have an opportunity to inspect the results first-hand at the college swine plant. Farmers also will have an opportunity to inspect rye and alfalfa pastures by means of which the college has extended the hog pasturing season one and a half months. Improved methods of feeding and handling sows and litters in the farrowing pens will be explained. An approved type of farrowing crate also will be on display.

Following lunch at the stock pavilion farmers will hear Prof. H. P. Rusk, head of the animal husbandry department, in an address of welcome. W. P. Garrigus, a member of the swine division, will report results of experiments on feeding sows during gestation, and Dr. Carroll will explain results of experiments on feeding sows and litters.

The future of the hog market will be discussed by R. C. Ashby, associate chief in livestock marketing.

-M-

Disease And Bugs Threatening Damage To Tomato Crop

Now that the tomato has become the second most valuable truck and garden crop in Illinois, diseases and insects attacking it can run up a heavier toll than ever before if they are not controlled. These facts are brought out in a new circular just issued by the College of Agriculture, University of Illinois. It is entitled, "Tomato Diseases and Insect Pests: Identification and Control."

Disease-free seed, clean soil, soil sterilization and crop rotation are important factors in keeping diseases out of the plot, and are discussed as general control measures.

Twelve of the most serious diseases are dealt with in the section on diseases prepared by K. J. Kadow, of the department of horticulture.

Control of nine different insects is explained by L. H. Shropshire, field entomologist for the Illinois State Natural History Survey.

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Heavier Hatching Is Big Factor In Poultry Outlook

Future returns from Illinois poultry flocks will have to be figured on the prospect that there will be a big increase in the number of chicks hatched in the United States this spring as compared with the number hatched a year ago. This is shown in reports which the College of Agriculture, University of Illinois has received from the U. S. Department of Agriculture.

The prospect of increased chick hatchings is based on the January report from the big commercial hatcheries of the country. This January report is said to be a good guide as to what the hatchery and poultry industries are planning to do.

Thirty-three per cent more, or about a third more, baby chicks were hatched in January this year by 397 big commercial hatcheries than was the case last year, according to the report. Advance bookings in January were nearly 48 per cent higher than they were a year ago. At least some of the increased bookings are the result of the fact that under the NRA code, hatcheries are now encouraging chick buyers to place more of their orders in advance.

Increased hatchings are the result of several factors, according to the authorities. First there were the advancing egg prices in December, January and early February. Second, farmers have had the prospect of higher egg prices this spring than they had last year. In the third place heavy marketings both of young and old chickens as a result of last summer's drouth and later as a result of feed shortages reduced the number of chickens on farms to the lowest figure since the U. S. Department of Agriculture started keeping records 10 years ago. Farmers have started out to rebuild their flocks in the hope that feed supplies will be something like normal by next fall. That will be the time that early-hatched chicks will begin to lay.

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Fewer Cows And Poor Pastures Help Hold Milk Prices

An estimated decrease of 3 to 4 per cent in the number of milk cows on farms coupled with the poor condition of many Illinois pastures this spring may shorten the annual spring drop in butterfat prices.

However, this annual decline in butterfat prices is only one of the spring worries of the cream producer. Others are the lowering of cream tests, a decrease in the quality of cream and the appearance of objectional flavors in the milk because of certain weeds which the cows eat, according to Dr. H. A. Ruehe, head of the dairy department at the College of Agriculture, University of Illinois.

Despite the damage to pasture in 1934, the return of spring pastures will bring an increased flow of milk and a probable decrease in butterfat prices, he explained.

The quality of cream can be maintained in the spring to a large extent by more careful handling, Dr. Ruehe believes. He emphasizes cooling the cream promptly to a temperature of 65 degrees fahrenheit and marketing at least three times a week. By observing these and other precautions, dairymen will be able to market quality cream which will command good prices.

Wild onions, abundant in many Illinois pastures in the spring, impart an objectional flavor to cream, causing it to be graded down. The infested area should be fenced off or, in the case of bad infestation, the pasture should be abandoned until later in the spring when the onions have died.

Cream tests usually decrease in the spring owing to growth of pastures and freshening of cows. However, the increased volume of milk will usually more than compensate for the decreased test, Dr. Ruehe says.

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Apple Men Speeding Winter Cleanup Of Codling Moths

Whether or not the codling moth collects its annual toll of about a million dollars from the 1935 Illinois apple crop hinges largely on how thoroughly growers wind up the winter cleanup of this pest. This is the opinion of two different authorities, S. C. Chandler, field entomologist of the Illinois State Natural History Survey, and V. W. Kelley, horticultural extension specialist of the College of Agriculture, University of Illinois.

So serious was the pest in 1934 that an estimated one-tenth of all the apples produced in the state were infested with codling moth worms. The average annual value of the state's apple crop has been about 2½ million dollars, and one of the most costly limits to this value has been the codling moth.

A thorough winter cleanup is one of the most telling ways of combatting the pest, the authorities pointed out. At the present time the insects are in the overwintering cocoon stage. Each pair of moths emerging from winter quarters and producing 50 eggs might yield 1,250 worms by the second brood and 31,250 by the third brood. This would be enough to enter 156 bushels of apples. If the attack upon the pest is delayed until the end of the second brood, the destruction of a pair of moths at that stage means preventing only enough worms to infest about one peck of apples.

Cleanup work should start in the packing shed, especially if the grower raises fall and winter varieties. If it is possible the entire shed should be screened and kept closed until the moths have emerged and died. One grower who screened his shed with brown canton cotton prevented the escape of 300,000 moths into his orchard at a cost of only $21 a year.

If screening is impracticable, the next best thing is to place all orchard crates and old used baskets and equipment in a closed room which is moth-tight. Crates and baskets can be dipped in kerosene or in boiling water until all parts are penetrated.

In the orchard itself the trees should be scraped during the winter preparatory to putting on the codling moth bands during the following summer. The rough bark which is scraped off should be burned. Pruning out punky wood, split branch ends and partially rotted knots destroys the codling moth in one of its favorite hiding places. Burning the prunings is important. Pruning so as to open up the centers of the trees will make it possible to get the codling moth sprays into the inner branches.

From 7 to 10 per cent of the worms in an orchard are found in or on various objects on the ground under the trees. Consequently the cleanup is not complete until every piece of old basket crate, fertilizer sack and all other trash is burned.

-M-

Chick Sexing No Mystery But It May Prove Expensive

"Sexing" baby chicks, the latest innovation in modern poultry raising, is no longer a fad or a mystery, but it may be of limited value to the general run of farm flock owners, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois. Interest in the question is at the peak now with the baby chick season at its height, he pointed out.

Buying sexed chicks so as to get only pullets and no cockerels may be justified in certain instances, Alp said. On the other hand the flock owner should weigh the increased initial cost of the chicks, the heavier losses from mortality as a result of the higher cost of the chicks and the loss of income from the sale of cockerels.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Tariff Cut Would Help Farmers At No Risk To Workers

Lowering tariffs as one means of reviving international trade and restoring lost markets for Illinois farmers holds little if any threat to the welfare of wage earners. This fact, which refutes the claims sometimes made in many quarters, is borne out in a report just received by the College of Agriculture, University of Illinois from the Agricultural Adjustment Administration.

Briefly stated, present high tariffs are held to be a barrier to the revival of foreign markets because they make it impossible for foreign countries to trade their goods for U. S. farm products.

As far as the wage earners in this country are concerned, only a small part of them have their employment protected by these tariffs, it is shown in the report. In 1929, for instance, there were nearly 50 million gainfully employed workers. More than half of these were employed in non-manufacturing industries with which imports can not under any circumstances compete. That is, they were engaged in such industries as internal transportation, gas and electricity, banking and insurance, building, public service and others.

Of the remaining half, a considerable number were employed in industries for which profitable outlets exist in export markets. Another important group was employed in industries which could not substantially be affected by imports. These include various purely domestic industries, such as most printing and publishing industries producing bulky materials which are largely protected against foreign countries by high freight costs and industries using methods of mass production in which foreign competition can not undersell the efficient American producer.

It is estimated that not more than one American wage earner in six is competing directly with a foreign wage earner. In making tariff adjustments the problem of what is to become of the workers whose industry depends to some extent on tariff protection must obviously be considered carefully.

On the other hand, while some industries might contract their production if tariff reductions permitted an increase in international trade, others would expand under the new opportunities. Jobs in those industries would consequently become available.

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Vocational Association Plans April Meet At U. of I.

Approximately 550 high schools of the state are expected to have 1,000 teachers and other representatives at the University of Illinois for the annual spring convention of the Illinois Vocational Association on April 19 and 20, it is announced by Prof. A. B. Mays, a member of the association board of directors and professor of industrial education at the university.

Marking a new advance in the field of vocational education, the convention, for the first time, will bring together the Illinois Association of Vocational Agriculture teachers and the Illinois Industrial Education Association. The new set-up will be known as the Illinois Vocational Association. Vocational education interests represented in the new group will include art, commercial work, agriculture, trade and industrial education, part-time education, home economics and guidance.

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Pastures Holding Fate Of Illinois Dairy Returns

Few things will have as much bearing on the returns from Illinois' 1,178,000 dairy cows this season as the solution of the pasture problem resulting from last summer's hot, dry weather, says Prof. C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois.

There are at least three mixtures that are suitable for replanting permanent or rotation pastures, he said. Mixture No. 1 contains 4 pounds of bluegrass, 4 pounds of orchard or brome grass, 3 pounds of timothy, 2 pounds of redtop and 2 pounds each of alsike, red, sweet and white clover. Mixture No. 2 is the same with the exception that no redtop is used, the timothy is reduced to 2 pounds and 3 pounds of lespedeza are included.

A third mixture contains 3 pounds of red clover, 3 pounds of sweet clover, 2 pounds of alsike and 4 pounds of timothy. Amounts included in each mixture are sufficient to seed one acre of land. If the soil is acid, sweet clover should not be used in any of the above mixtures.

These mixtures may be seeded early in the spring along with two bushels of oats to the acre. The oats serves as a nurse crop and also furnishes some early pasture. The ground should be disced before and after the oats are planted. The grass seed is sown after the ground has been firmed with a corrugated roller. The rolling operation should be repeated after seeding has been completed.

Oats also make a good early emergency pasture. Two bushels of oats to one and one-half bushels of Canadian field peas make a good emergency pasture after the early oats are gone.

Another good emergency pasture mixture is 2 bushels of oats and eight pounds of sweet clover or alfalfa or a legume mixture including red and alsike clover. For pasture during the hot, dry season, 10 pounds of sudan grass and 1½ bushels of soybeans are usually satisfactory. This mixture should not be sown until after corn-planting time and may even be planted in the middle of the summer.

-M-

Slump In Exports Shows Wisdom Of Balancing Output

Steps which Illinois farmers are taking to adjust their production appear more sound than ever in view of the further slump in farm exports from the United States. The most recent available figures show, for instance, that in January the smallest volume of farm products in more than 20 years was shipped out of the United States, according to a report just received by the College of Agriculture, University of Illinois from the U. S. Bureau of Agricultural Economics. The January, 1935, index for farm exports was 57 as compared with 62 in December and with 93 in January a year ago.

All products except fruits were exported in less than pre-war volume in January. The index figure, as compared with 100 for pre-war, were: grains and products 17, animal products 33, dairy products and eggs 69, fruit 189, wheat and flour 14, tobacco 97, hams and bacon 18 and lard 45.

Exports of wheat and flour, including flour milled from Canadian wheat, were 1,310,000 bushels in January, one of the smallest monthly exports on record. Total exports of wheat and flour from July 1 to January 31 were 14,830,000 bushels compared with 18,607,000 bushels during the corresponding period of 1933-34.

Index of cotton exports in January was 68 compared with 109 in January last year. Exports this January were 486,000 bales against 782,000 bales a year ago. Total exports for seven months ended January 31 were 3,325,000 bales compared with 5,929,000 bales during the corresponding period of 1933-34.

-M-

Better Days Are Seen For Production Of Small Fruits

Handicapped and neglected for 20 years or more, small fruit growing is now having its day, according to Dr. A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois. This is a good time for those who have an interest in such crops to establish a plantation, he said.

One thing which has stimulated interest in small fruit growing and hastened the new day for such crops is the present trend toward adjusting and balancing farm production, Dr. Colby explained. Then too, both local and distant markets for quality fruit are expanding rapidly. Hazards from insects and diseases are being overcome through research. Probably never before in history has there been such a number of high class small fruit varieties available as there are now.

Exceptionally hardy, vigorous and productive varieties now available include: Alfred blackberry; Red Lake currant; Poorman gooseberry; Fredonia (early black), Portland (early white), Caco (mid-season red) and Sheridan (late black) grapes; Chief, Latham and Newburgh red Logan and Quillen black raspberries; Potomac purple raspberry; and Blackmore, Dorsett, Fairfax and Rockhill strawberries.

Several of these varieties are high in price because of low supplies of nursery stock. However, a few might be purchased and more propagated at home.

Best results will be obtained if the varieties chosen are adapted to the soil and climate particular to the locality. It is advisable to start with a small acreage on a site suitable to the needs of small fruit growing.

The plants require the best of seasonal care and must be sprayed if they are to maintain their vigor and high-yielding qualities. If fruit is to be sold on the market, it must be picked and graded properly and placed in clean packages of the size and style demanded by the trade. It should be moved rapidly and carefully to market.

Small fruits work well in connection with chickens, a vegetable garden and even a cow.

-M-

Farmers War On Rats, Their No. 1 "Public Enemy"

Rats rate as public enemy No. 1 on the farm at this season of the year, for they not only kill thousands of baby chicks but also destroy feed and other property, according to G. C. Oderkirk, of the U. S. Biological Survey. He is cooperating on rodent control in this state with the State Natural History Survey and the College of Agriculture, University of Illinois.

Powdered red squill is the best poison for fighting rats, since it is deadly to them but comparatively harmless to domestic animals and humans. The squill should be mixed with some bait such as canned salmon, hamburger or a mixture of moistened rolled oats and corn. One part of poison to 16 parts bait by weight is the correct proportion. The different baits should be put out in teaspoonful quantities so that the rats may enjoy their preference.

Even though red squill is comparatively harmless to domestic animals, care should be taken to prevent chickens, cats or dogs from eating large quantities of the poisoned bait.

Calcium cyanide fumigant is another rat exterminator which may be used successfully, especially in burrows, under concrete floors and other places where the gas can be confined. It should be applied with a foot pump duster made especially for the purpose. The operator should avoid breathing the poisonous fumes.

Other steps which will help rid the premises of rats include burning of rubbish and piling lumber and boxes so that there is a space underneath. Cooperative community rat campaigns during which poison is distributed all over the community at the same time are also effective.

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The Extension Messenger

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Illinois Coordinates Soils Programs In New Project

Foreseeing the day when Illinois may have its own dust storms or a soil conservation problem that is even worse, officials have mapped out a new attack to save the land for future generations.

A coordinated soil conservation and improvement program has been set up to combine the forces of all state and federal agencies now engaged in such work in Illinois. Supervision of the new plan will be in the hands of the College of Agriculture, University of Illinois, of which H. W. Mumford is dean and director. H. L. Buckardt, recently appointed chief erosion extension specialist of the college, is to be in immediate charge of the program.

Of first concern to the agencies which have combined their forces is the fate of no less than 18 million acres of Illinois land subject to erosion of one degree or another. The agencies include the agricultural college, its experiment station and extension service; the extension service, soil erosion service and national forest service of the U. S. Department of Agriculture; Illinois State Department of Conservation; Illinois State Department of Agriculture; rural rehabilitation division, Illinois Emergency Relief Commission; Illinois State Natural History Survey; the Illinois State Department of Public Works and Buildings, and the Illinois State Planning Board.

A special committee of the agricultural college staff members engaged in soil conservation and improvement work set up the details of the new plan under direction of Dean Mumford.

The new Illinois plan is in keeping with similar governmental action whereby all federal soil erosion work in the United States has been consolidated in the department of agriculture.

All the experience and the success which the College of Agriculture, University of Illinois has had in working closely with soil erosion problems since as early as 1906 is to be mustered into the new program.

A more recent development, the regional soil erosion service of the U. S. government under the direction of F. A. Fisher, is one of the units brought into the new Illinois plan.

Of the 18 million acres of Illinois land now subject to erosion, there are three million so threatened that they should never be farmed, it is shown by the soil survey findings of the agricultural college. More than three million additional acres are subject to serious erosion and are suitable only for orcharding, permanent pasture or timber. There is an additional 12 million acres where erosion control practices are necessary to maintain the productivity of the land.

Features of the new Illinois coordinated program include a survey of soil erosion problems, the adoption of proper soil management practices and the adaptation of land use to the problems of soil conservation and improvement.

Farm advisers, members of the extension service staff of the agricultural college and representatives of other agencies now involved in soil erosion and conservation projects in Illinois will be brought together in a series of regional meetings, April 9 to 24 to discuss further development of the new coordinated program.

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Farmers May Lose Selling Their Stock To Speculators

Rising livestock prices have sent a swarm of speculative buyers into the country, it is reported by E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois. Farmers run the risk of losing much of the benefits of the price boom if they sell to these buyers instead of consigning their stock themselves to the central markets, he said.

"Farmers have nothing to fear from honest, legitimate buyers, but in times like these it is more important than ever that producers be sure of their ground before making a deal on their stock. Only by visiting a market frequently and noting the quality of cattle and the kind of prices they bring can any farmer realize the changes which have taken place. Many grades of cattle are twice as high as they were a year ago.

"Speculative buyers now swarming the country may quote a price which looks attractive to the farmer but which may still keep him out of an additional return that he might get by selling some other way. Farmers have even been called out of bed in the eagerness of buyers to offer them practically as much for their stock as it would bring on that day's market. The activity also has extended to the buying of hogs, which have advanced considerably since the first of the year."

Although the market does not always operate to make this possible, the farmer, shipping his own stock to the central market, stands the same chance of making a profit as does the speculative buyer, it was pointed out.

"In the long run farmers probably get the most money for their stock when they consign it to the central markets or have their local cooperative marketing associations do it for them. At these central markets the animals sell strictly upon their merits at prices set by competitive bidding. It is not necessary for the farmer to be fully informed upon the last day's values in order to sell his stock as high as it can be sold. The commission men take care of that."

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New Standards In Apple Cooling Set By U. I. Tests

New standards for the refrigeration of apple shipments have been set up as a result of further experiments by the College of Agriculture, University of Illinois to reduce present heavy losses in fruit marketing. Reports of the latest studies are given in a new bulletin just issued by the experiment station of the college under the title, "Factors Influencing the Refrigeration of Packages of Apples," by J. W. Lloyd, chief in fruit and vegetable marketing, and S. W. Decker, associate.

Findings made in the study have an important bearing on the marketing of the Illinois commercial crop, which amounts to nearly 60 per cent of the state's total estimated crop of 5,000,000 bushels.

The experiments were carried out with special apparatus which the investigators constructed to produce conditions similar to those found in refrigerator cars.

Use of the lined tub bushel, bushel hamper or ventilated corrugated bushel box as an apple container allowed fairly rapid cooling of the fruit to the desired 45 degrees Fahrenheit. Unventilated corrugated boxes or the lined western apple box retarded cooling, as did also the use of oil wraps around the individual apples.

In addition to this information regarding the relationship of the package to rate of cooling, the experiments showed that size of the fruit had little to do with the rate of cooling but that the velocity of the air was an important factor when it got above 100 feet a minute. Pre-cooling was shown to have a decided influence in preventing spoilage.

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Beef Consumers Can Blame Woes On Ravages Of Drouth

Increasing complaints about the price of beefsteak going up while the quality is going down are just another result of the 1934 drouth and neither the farmer, the packer, nor the butcher can be blamed, according to the College of Agriculture, University of Illinois.

Fortunately, there is still plenty of nutritious beef to be had, provided consumers know what to look for, it was pointed out by Prof. Sleeter Bull, associate chief in meats. The housewife can still get her money's worth if she will put a little added skill into her selections of beef, he said.

"Prices of beef have been forced up by the drouth because short feed and water supplies compelled farmers to sacrifice livestock as quickly as possible with the result that today there are fewer cattle to go to market. At the same time the general quality of beef has been temporarily lowered as an aftermath of the drouth because underfed cattle yield meat that is less fat and tender.

"Consumers in some markets may be able to get beef that is graded for quality and if so, these grades will assist them in making a more satisfactory selection of meat. For all consumers, however, there are a number of tips which will enable them to do their own grading when they go to the butcher shop or meat market.

"In looking for 'prime' beef, consumers are likely to find that it is very scarce, even when fat animals are plentiful. The color of the lean in such beef ranged from bright pink to bright cherry red with tiny white lines of fat called marbling running through it like vines. The meat is covered with a thick, even layer of firm, white fat. Cut surfaces are smooth and firm.

"'Choice' beef has about the same characteristics as 'prime,' but is not so fat. 'Good' is considerably above the average and good enough for most people in the best of times. 'Medium' and 'common' are not so well fleshed, the lean is a dark red in color with no marbling and the fat is thin and yellow. Such meat usually comes from older cattle of dairy or scrub breeding. However, it is quite nutritious and if properly cooked is also palatable.

"Color and marbling are the easiest items for the amateur grader to remember. The lean should be bright cherry red with at least some marbling running through it. The fat should be white or creamy white."

-M-

Sound Program Now Needed In "Boom" Of Small Fruits

With small fruits staging a comeback in Illinois, a sound program of variety selection, planting and culture is needed to head off disappointments which would come from a too hurried rush of farmers into the small fruit field, according to a new circular just issued by the College of Agriculture, University of Illinois. Entitled, "Bramble Fruits," the new circular explains new and improved methods of growing raspberries, blackberries and dewberries in Illinois.

Cultural practices are dealt with in a section by Dr. A. S. Colby, chief in small fruit culture; bramble diseases and their control in a second section by Dr. H. W. Anderson, pathologist in the pomology division, and insects and their control in a third section by W. P. Flint, chief entomologist of the college and of the State Natural History Survey.

The value of sanitary measures in the culture of brambles is stressed in the circular, and a recommended spray schedule is included.

-M-

The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

Volume XVIII | April 10, 1935 | Number 15

Farmers Re-Arming To Check Losses From Chinch Bugs

Proper choice of crops and construction of protective barriers will be farmers' chief weapons in preventing recurrence of the $40,000,000 loss suffered by Illinois grain growers in 1934 from chinch bugs, according to a circular just issued by the College of Agriculture, University of Illinois.

"Fighting the Chinch Bug on Illinois Farms," is the title of the new circular. In it the best known methods of combating the pest are outlined by W. P. Flint, chief entomologist for the Illinois State Natural History Survey and the college; J. H. Bigger, Natural History Survey entomologist, and G. H. Dungan, college crop production specialist.

The cheapest and most effective method of fighting chinch bugs is to plant as large an acreage as possible of crops that are immune to bug damage. Alfalfa, red clover, sweet clover, alsike clover, lespedeza, soybeans, cowpeas, flax, sugar beets, potatoes and rape are among such crops. Comparatively large acreages of these crops cut down the food supply of the bugs and reduce their activities.

Suitable rotation systems also keep down the infestation of bugs by reducing their feed supply.

Properly constructed creosote or paper barriers such as are described in the circular will do much to prevent the bugs from getting into the corn fields early in June. That is the time when the young, wingless bugs start their migration from the ripened and harvested small grains to the corn fields.

Since the bugs do not like shady, moist, surroundings, the planting of soybeans or similar crop with the corn will increase the density of vegetation and assist in cutting down the damage from bugs that have succeeded in getting through the barriers.

There are some bug-resistant varieties of corn that help reduce chinch bug damage. For that part of Illinois south of Springfield, Decatur, and Tuscola, Champion White Pearl, Pride of Saline, Golden Beauty, Black Hawk and Mohawk are suitable. Waddell Utility White Dent and Waddell Utility Yellow Dent, developed recently by Elmer Waddell of Taylorville, are also proving satisfactory.

Progress is being made in the development of bug-resistant hybrids for central and northern Illinois. However, the seed of these hybrids is scarce.

Just because chinch bugs are bad one season does not necessarily mean that they will take a vacation the next year, the circular points out. Outbreaks sometimes last five years or longer, although the infestation may subside after a single season.

At their worst chinch bugs may, and often do, practically destroy the corn crop over an infested area. By using methods that have been tested and are known to be effective, farmers can avoid 50 to 75 per cent of the damage. Such a saving may mean the difference between a farmer's raising enough feed for his own needs and having some grain to sell and having to buy practically all his feed.

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Good Oils Would Add 140,000 Years to Tractor Life

As much as 140,000 years and possibly 210,000 years of service might be added to the 70,000 farm tractors in Illinois through proper crank case oiling and maintenance, says R. I. Shawl, of the department of agricultural engineering, College of Agriculture, University of Illinois. Seven years is the average life of a tractor, while machines given proper care are still in service after nine or ten years, he said.

Importance of using proper crank case oil in prolonging tractor life has been brought out in studies which the college has been conducting since 1928. A cardinal principle established in these tests is to pick the lightest grade oil of the highest quality that can be used without increasing oil consumption or crank case dilution. Such an oil, it has been proved, will be the cheapest, will last longest, cut down repair bills and save time, in addition to prolonging the life of the tractor.

Three samples of heavy oil have shown excellent resistance to heat and crank case dilution. However, these oils have proved too heavy to give proper lubrication except where the pistons and cylinders were badly worn. Making needed repairs is more satisfactory than the use of extremely heavy oils when the motor becomes worn, Shawl believes.

Two samples of light oil showed good lubricating qualities, but were too light to prevent dilution and excessive oil consumption. A slightly heavier grade gave much better results.

Cheap oils used in the tests proved unsatisfactory. They did not give proper protection to working parts nor did they resist heat and dilution. Some of the cheap oils thinned out under excessive heat, while others thickened to the extent that they could not reach to points of friction.

-M-

Seed-Type Soybeans Are Best Bet For Record Acreage

Record plantings of 1,682,000 acres of soybeans which are indicated for Illinois this year are likely to yield farmers the best harvest of hay or of beans if they are made with the varieties that ordinarily are thought of as grain producing types, according to W. L. Burlison, head of the department of agronomy, College of Agriculture, University of Illinois.

Experiments which he and his associates, J. C. Hackleman and C. A. Van Doren, have conducted for five years show that the grain producing types of soybeans also have superior hay producing qualities. The grain, or seed, types averaged 3.41 tons of hay to the acre as compared to 3.07 tons for the hay varieties.

Where several late-maturing hay type soybeans are being compared with seed-type varieties, the latter have continued to outyield the hay types for hay as well as for seed.

While the seed types may not produce more forage than the hay types in all sections of Illinois, crops specialists believe the dual purpose qualities of the seed types may make them worthy of consideration.

The seed types used in the five-year tests were: Dunfield, Manscy, Manchu and Illini. The hay types were: Kingwa, Peking, Ebony, Wilson V and Virginia.

Farmers who intend to plant either to seed or hay type varieties this spring should get their seed supplies as soon as possible, Burlison said. About half of the 1934 soybean crop of Illinois was sold by December 1, 1934, leaving approximately 5,000,000 bushels in the hands of growers.

At least 2,000,000 bushels will be required to plant the anticipated 1935 acreage in this state. Increased seed demands from states where the drouth has reduced feed supplies would indicate that soybean seed may be scarce later in the season.

-M-

Gains In Control Of Fruit Enemies Held By Spraying

Advantages gained by Illinois fruit growers in 1934 through the destruction of insect pests and diseases may be followed up at a profit this year by proper spraying, says the College of Agriculture, University of Illinois. Latest formulas and methods are outlined in a new circular, No. 429, which the college has just issued under the title, "Directions for Spraying Fruits in Illinois." It was prepared by H. W. Anderson, chief in fruit diseases, and W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the agricultural college.

Prospects for favorable fruit markets during the coming season increase the importance of spraying as a means of preventing losses, the authorities point out.

Last year some apple growers who followed the recommended spray schedule reduced codling moth infestation in their crop from 60 per cent in 1933 to less than 4 per cent in 1934. Insects and diseases attacking other fruits were similarly controlled where proper sprays were applied. While it is too late for the dormant sprays, the later applications will do much to maintain the control gained last year, Anderson and Flint believe.

"Public enemies" of the fruit grower and the fruit consumer for which control measures are outlined in the circular include the codling moth, San Jose scale, plum curculio, scurfy scale, oyster shell scale, aphids, fungous diseases of apples, leaf spots, pear scab, sooty blotch of pears, brown rot, bacterial spot, slugs, leaf spot, anthracnose, red spider and all of the other diseases and insects that prey on fruit and plants.

Spraying schedules are included for apples, peaches, pears, cherries, plums and the various small fruits grown in Illinois.

There is also a complete section on the preparation and use of oil emulsions, bordeaux, zinc sulphate and lime and oil dusts. General directions for spraying as well as precautions to be observed are included.

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Improved Poultry Houses Will Help Fortify Profits

Any profits resulting from better poultry and egg prices may be more certain if good hen houses are provided, in the opinion of W. A. Foster, rural architect in the College of Agriculture, University of Illinois. This spring, when housing and building projects are being pushed, is a good time to start getting the buildings in shape for the fall and winter season, he believes.

To assist Illinois farmers and poultrymen in building better houses, the college has assembled some 26 blue-printed plans for poultry houses and equipment. These plans are supplemented by college circulars No. 412 giving directions for construction of the straw-loft house, and No. 368 with instructions on building the shed-roof type. These plans are also included in the blue prints available.

All of the plans are based on observations made by Foster in cooperation with the poultry husbandry division. They include information on the construction of houses, feeding equipment, water apparatus, laying boxes, and brooding houses and equipment.

Reduced farm incomes during the past few years have caused many poultrymen to neglect making repairs on their buildings and equipment. This has added to the demand for information on repairs and alterations. The popularity of poultry as a means of adding to the income of low paid workers and subsistence families has also created a demand for cheap but satisfactory poultry equipment, built, if possible, from used lumber.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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4-H Club Girls Uphold Hopes For Younger Generation

Many of the worries about "this younger generation" and what is going to happen to it can be quieted by inspecting the record of some 11,427 Illinois farm and small town girls enrolled in 4-H club projects, says Mary A. McKee, junior club specialist of the College of Agriculture, University of Illinois.

The depression has not dimmed the spirit nor lowered the morale of these girls, she reported. This spring finds them preparing to go ahead with a new zest and enthusiasm, she added. While many of these club girls carry on during the entire year, the spring season marks the forming of new clubs, the enrolling of new members and the starting of new projects.

As an illustration of what may be expected from these young ladies this year, they made more than 26,000 garments in 1934. In addition, they mended 17,000 garments and darned 22,000 pairs of stockings.

Activities of club girls are not limited to clothing work. They took complete charge of 11,500 family meals last year, preparing the food, serving the meals, washing the dishes and clearing the kitchens after these meals. In spite of a dry summer, they canned more than 4,000 quarts of fruit and vegetables in 1934. They braved hot kitchens to bake some 26,000 pieces of food.

Home furnishings also come under the classification of 4-H club projects. Approximately 430 articles of the home furnishing type were made by club girls of the state last year. They added to the comfort, beauty and serviceability of 145 rooms through their efforts.

All club work is done in the members' homes where they have a definite responsibility and where their accomplishments are subjected to the acid test of being practical from the standpoint of every day use.

Girls who wish to enroll in clubs this year or start clubs in their communities, should see their home or farm advisers, Miss McKee says.

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J. H. Brock Successor To W. A. Herrington In McHenry

W. A. Herrington, formerly farm adviser in McHenry county, and J. H. Brock, farm adviser in Bond county, figure in the two most recent changes in the ranks of Illinois farm advisers, it is announced by Prof. J. C. Spitler, state leader of farm advisers at the College of Agriculture, University of Illinois.

Mr. Herrington resigned April 1 to accept a position as fieldman in the farm bureau-farm management service of the department of agricultural economics. Mr. Brock will succeed Mr. Herrington and will take up his new duties in McHenry county on May 1.

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Further Delay In Getting Soy Seed Will Be Too Risky

Farmers intending to plant soybeans this spring will do well to obtain their seed supplies before the last minute, in the opinion of J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois. An estimated 21 per cent increase in the national soybean acreage indicates that there may be a seed shortage, he said.

Factors pointing toward increased soybean acreage are: Danger of chinch bug infestation; new land available for soybean planting through provisions of 1935 corn-hog contracts; a favorable seed price; the need for legume hay; increased capacity of processing plants; and increased uses for soybeans.

In addition, it is expected that seed demands from the drouth areas will be strong.

With millions of chinch bugs coming out of winter quarters, many Illinois farmers will find soybeans valuable this spring because of their bug-proof qualities. Then too, Hackleman explains, last summer's damage to hay and pasture has increased the need for legume hay which may be grown on land taken out of corn production.

The chances are, he says, that soybean seed prices may be somewhat lower than during the January and February peaks, but they will still be high enough to afford the grower a profit. Additional processing plants were built in 1934 and more are planned for this year. These plants are needed to take care of the demand arising from soybean drinks, breakfast foods, macaroni, noodles, ice cream and dozens of other new products made from this crop.

-M-

Record Planting Puts Premium On Soybean Inoculation

With Illinois farmers preparing to plant a record soybean acreage this spring, L. E. Allison, Assistant in soil biology at the College of Agriculture, University of Illinois, points out that inoculating the seed bed with nitrogen-fixing bacteria is one of the two or three main essentials for success with the crop. Good inoculants bought from a reliable firm will be cheap crop insurance for soybean growers this year, as in every other year, Allison said.

Nitrogen is necessary for the satisfactory growth of soybeans. The cheapest available source is the free nitrogen in the air, but it must be fixed by the bacteria before it can be used by the plants. Acid soils or those on which legumes have not been grown for some time are usually void of the needed bacteria, and, consequently, produce very poor soybeans unless inoculated.

The best inoculation method, Allison says, is that of adding the bacteria to the seed just previous to planting. Through this method, the bacteria cling to the seed and penetrate the roots as soon as the seed germinates. Inside the roots they form nodules which are soon filled with more nitrogen-fixing bacteria.

A plentiful supply of nitrogen is essential to high yields of soybeans as well as to high protein content of the beans. The feed value of both the hay and beans is increased by high protein content.

Another important point stressed by Allison is that plants supplied with plenty of nitrogen are better equipped to withstand dry weather.

Commercial legume inoculants may be purchased in two types, the pure culture or jelly type sold in bottles, and the type having either a humus or soil base.

-M-

Pullorum Disease Toll Is Undermining Poultry Returns

Farmers and poultrymen who are losing baby chicks at this season of the year and thereby sacrificing future returns can more than likely lay the blame to pullorum disease, or bacillary white diarrhea, according to a new circular on this malady just issued by the College of Agriculture, University of Illinois. This year, when poultry prices are rising and the outlook for the industry is more favorable, the disease is a more costly threat than ever, it was pointed out. Dr. Robert Graham, chief in animal pathology and hygiene, is author of the new circular.

First of ten practices which he outlines for the flock owner's defense against the disease is to avoid buying eggs or breeding stock from infected flocks. The disease is one of the few affecting adult fowls that may be transmitted directly through the egg to the chick.

Other safeguards in the ten-point defense set up by Dr. Graham are: (2) Disinfect incubators, brooders, houses and equipment; (3) do not hatch eggs from tested and non-tested birds in the same incubator; (4) arrange to grow newly hatched chicks on clean grass range which has not been occupied by fowls for a period of one year or break up the old ground frequently; (5) brood and feed chicks carefully to maintain vigor and resistance to disease.

(6) Avoid feeding infertile, uncooked eggs; (7) destroy all dead chicks by burning; (8) test annually all breeding flocks that have been freed from the disease and test infected flocks monthly until all reactors are detected; (9) promptly remove all reactors, and (10) keep houses and water and feed containers clean and disinfect once a month or as often as necessary to hold the disease in check.

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Fowl Pox Lurks As Threat To Illinois Poultry Flocks

No matter how high poultry prices may go next fall and winter, the new crop of layers which farmers are now building up will never be profitable if fowl pox gains a foothold, according to a new circular on the disease just issued by the College of Agriculture, University of Illinois. Designed to arm growers against losses from the disease, the circular was prepared by Dr. Robert Graham, chief of the animal pathology and hygiene division, and Dr. E. H. Barger, assigned to that division from the state department of agriculture.

Outbreaks of fowl pox, if promptly diagnosed, may be suppressed by proper cleaning and disinfection of the premises and by destruction of all infected birds. If a large number of fowls are infected, destruction is not so practical a measure as sanitation coupled with vaccination, according to the circular.

All birds in the flock should be vaccinated if symptoms of the disease are detected or if there is danger of fowl pox being introduced into the flock. Either fowl-pox or pigeon-pox vaccine may be used, but pigeon-pox vaccine is less effective according to the circular. Its use is best limited to cases where a severe reaction may cut egg production or injure weak birds. Methods of vaccinating are given in the publication. Immunity to the disease lasts from six months to the life of the bird.

The best time for vaccinating flocks on infected premises is in late summer, at least two months before the birds begin to lay. Pullets that are to be vaccinated should be given sufficient time to recover completely from the effects of the handling and treatment before entering production.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Inferior Seed Is Barrier To Comeback Of Corn Crop

Chances of the Illinois corn crop making a comeback this year are being undermined by the fact that considerable seed corn of unknown vintage and uncertain germination is being offered for sale at comparatively low prices, according to J. C. Hackleman, crop extension specialist of the College of Agriculture, University of Illinois.

Any money which farmers may save at the time by buying such seed will be lost many times over through poor yields and low quality grain, he pointed out.

Not for 61 years has the state had a corn acreage that was as small nor a crop that was as poor as was the case in 1934, Hackleman said. The intended acreage of corn for harvest this year is 8,018,000 acres, and no small part of the success of the crop hinges on the kind of seed farmers use, he added.

Proof of this is shown by the fact that top-quality seed of adapted varities produced an average of nearly four bushels more to the acre last year than did seed of uncertain quality. The tests were made on the farms of farm bureau-farm management service members in McLean, Livingston, Tazewell and Woodford counties.

Tests conducted by state agricultural colleges during the period from 1930 to 1934 inclusive, showed an annual average net income of $11.55 an acre from corn where good cultural methods and quality seed were used. On land where poor seed corn was planted and the crop was cared for less carefully, an average loss of $4.40 an acre was recorded.

While it cost about $1.65 an acre for top-quality oats this spring, $1 an acre should cover the cost of the highest-quality seed corn in the state, Hackleman said.

Up-to-date lists of quality seed corn available in Illinois this spring may be found in the offices of all farm advisers. These lists give names and addresses of growers, the variety, amount for sale and the year produced.

—M—

Black, New Chief In U. S. Bureau, Is Illinois Man

One of Illinois' native sons and a graduate of the College of Agriculture, University of Illinois has been brought into new prominence with the recent appointment of Dr. A. G. Black as chief of the bureau of agricultural economics, U. S. Department of Agriculture. He succeeds Nils A. Olsen who resigned April 15.

Dr. Black was born in Peoria on April 2, 1896, the son of Mr. and Mrs. Judson H. Black. He was graduated from the U. of I. College of Agriculture in 1920. Shortly after his graduation from the University of Illinois, Dr. Black was appointed an agricultural economist for the Federal Farm Loan Bureau at Washington, D. C. He remained at Washington until 1922 when he became associated with the Joint Stock Land Bank of Dayton, O. It was in 1924, that he left this position to become assistant professor of agricultural economics at the University of Minnesota. From 1924 until 1929, Dr. Black taught at Minnesota and did graduate study. In 1929, he became head of the department of agricultural economics at Iowa State College. He was called into Washington, D. C., in June, 1933, to serve as chief of the AAA corn-hog section. On February 5, 1935, he was placed in charge of all livestock work, including that involving corn-hogs, cattle and sheep.

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3 Million Less Acres Needed For Corn In This Plan

Three million fewer acres would be required to produce Illinois' average annual corn crop if all farmers used limestone and either barnyard manure or green manure in a good rotation, including clover, according to L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois.

Such a change would cause a direct saving of many millions of dollars each year in production costs. It also would greatly reduce the annual losses from erosion and leaching and in the end would prolong the life of corn belt soils for future generations, he pointed out.

The estimate that the total size of Illinois corn fields could be reduced by three million acres is based on ten-year average results from 24 soil experiment fields which the agricultural college maintains in different parts of the state. Corn yields on these fields were improved 15 to 18 bushels an acre by the use of limestone and either barnyard manure or green manure in a crop rotation system including clover.

In contrast to these results, mineral fertilizers have improved corn yields only 2.4 bushels an acre. This is the average for 495 trials which the college made in farmers' fields under many different soil conditions. There were a few special soil conditions where mineral treatment was profitable, owing to potash deficiencies, but in the more normal soils the response from mineral fertilizers usually was not enough to justify the expense and the trouble.

Interest in fertilizing the corn crop to get the most efficient and the most profitable yields is reviving this year because of the higher corn prices, Miller pointed out. If money is to be spent for this purpose it is best spent for limestone and for seeding soil improving legumes, he recommended. Corn needs a soil high in organic matter, and this can not be bought in a fertilizer sack. It can, however, be produced on the farm as barnyard manure or as crop residues and green manure.

The average annual yield of Illinois' nine million acres of corn has been approximately 35 bushels an acre with little variation during the past 40 years. The benefits of new varieties and better cultural methods have just about balanced the increasing damage done by plant diseases, insects and soil depletion.

-M-

Old Clover May Make Profitable Seed Crop This Spring

With a 20-million-pound shortage of red clover seed supplies in prospect this year, Illinois farmers may be able to reap extra cash by saving any three-year-old red or mammoth clover fields which they have, it is pointed out by J. J. Pieper, associate chief in crop production at the College of Agriculture, University of Illinois.

Although it is not generally known, either red or mammoth clover that was planted in 1933 is capable of producing hay and seed this coming summer if there is still a good stand of the crop, Pieper says. Red and mammoth clover are both perennials, but are usually killed out by the clover root borer during their second year.

This borer destroys many of the roots and weakens the plants to the extent that they usually winter kill during the second winter. For some unknown reason, the root borers have not been effective in Illinois recently. Consequently, there are many three-year old fields of red and Mammoth clover in good condition this spring.

These fields, under normal conditions, should produce one good hay crop and a good seed crop this coming summer, Pieper believes.

The national average production is 60,000,000 pounds annually, with 1934 production down to 36,000,000. This amount plus 14,000,000 pounds carryover is still 20,000,000 pounds short of the average annual consumption.

-M-

Poisonous Weeds Worse Threat To Stock This Spring

Danger of livestock losses from poisonous plants has been heightened in Illinois this spring by short pastures and the lack of feed with which to finish the winter season, it is reported by Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

Requests for information on the treatment of farm animals poisoned by whorled milkweed and other poisonous plants have already started coming to the college. With winter feed supplies lower than usual, he expects early grazing to result in a greater than usual number of horses and cattle being poisoned this year.

Quite often the farmer is not aware of the danger until he finds some of his animals dead, Dr. Graham said. This is especially true where poisoning has resulted from the first growth of cockle burrs. This weed is highly toxic in the early stages of its growth and works rapidly. However, cockle burrs do not appear until later in the spring.

In many cases, the farmer may notice such symptoms as weakness, paralysis, abnormal sleepiness, rapid loss of weight or a tendency to stumble and fall. As soon as such symptoms are noticed, a graduate veterinarian should be called to administer stimulants and purgatives. With the slower acting poisons, prompt treatment by the veterinarian may often result in a cure.

The best measure is to keep poisonous plants out of reach of the stock, says Dr. Graham.

Ripened seed pods of the so-called coffee bean tree, as well as pods from black locust trees cause considerable poisoning in the spring, according to J. J. Pieper, associate chief in crop production at the college. Several reports of poisoning from these sources have come to the college this spring. The best preventative is to keep the stock away from the ripened pods, says Pieper.

Leaves of wild cherry trees are also poisonous and care should be taken to clean up fallen branches after storms or heavy winds.

Some of the more common poisonous spring weeds of Illinois are: Dutchman's breeches, larkspur, buttercup and the roots of water hemlock. The roots of the hemlock are often uncovered by gully washing and apparently have an appetizing flavor. They are exceedingly toxic and cause death in a comparatively short time.

While ripened pods of honey locust trees are not ordinarily considered poisonous, there are indications of some danger from these pods so it will pay to keep them out of reach of livestock.

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Food Costs Jump Only Half As High As U. S. Payrolls

Food prices, frequently discussed these days, may be going up, but during the past two years factory payrolls in the United States have increased nearly twice as fast as retail food prices, it is pointed out by R. W. Bartlett, of the department of agricultural economics, College of Agriculture, University of Illinois.

The total cash income of factory workers in February, 1935, the most recent month for which figures are available, was $613,000,000, which was an increase of $258,000,000 over the amount for February, 1934. This was a net increase of 73 per cent. During this same period food prices increased only 34 per cent.

The total cost of living during February of this year was 13 per cent higher than during the same month of 1933. The very small increase in fuel, light and housing costs during the two-year period accounts for the very moderate increase in living costs.

For the city consumer, fuel and light costs went up about 1.4 per cent. Housing costs increased approximately 2.3 per cent. Clothing costs showed a greater increase with prices climbing 24.4 per cent during the two years.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Young People See New Goals After U. of I. Conference

Rural youths of Illinois are fortified with new objectives and higher spirits following the second annual young people's rural life conference held April 27 at the College of Agriculture, University of Illinois. A total of 582 delegates, accompanied by county farm and home advisers, attended from 75 of the 102 counties of the state.

Rural young people made it plain during the discussions at the conference that they are looking for something to advance themselves socially, educationally, and culturally. Furthermore, whatever form the program takes, the young people would like for it to be something they can do themselves.

Thinking and action already under way among rural young people in the state is fast approaching the formulation of definite programs embracing social, educational and cultural features, it was brought out during the day. Sounding the keynote of the conference, Dean H. W. Mumford explained that the meeting was designed to further the work which the agricultural college is doing with and for young people to make a better rural Illinois.

Eight suggestions for building county programs which will meet the needs and wants of rural young people were brought out during the day's discussions. These were: (1) Formation of county-wide committees or councils of rural young people representing young people's interests; (2) conducting of training schools for those interested in the development and carrying out of young poeple's programs; (3) making of surveys to determine needs, wants and possibilities; (4) carrying on of an educational program to acquaint the general public with the meaning and scope of rural young people's work; (5) assistance from the extension service of the U. of I. College of Agriculture in heading up the program; (6) enlisting the cooperation of all interested agencies; (7) preparing material for use in connection with different kinds of young people's programs, and (8) setting up specific objectives for the group.

From the standpoint of young people's interests, the two greatest deficiencies at the present time in the rural communities of Illinois are the lack of leadership and the lack of a suitable meeting place, the delegates brought out in their discussion groups.

Spirits of the delegates were brightened by Dr. O. E. Baker, senior agricultural economist from the U. S. Department of Agriculture, Washington, D. C., who told the young people that the future for them is bright with promise.

"Farming," he said, "offers you the probability of better food than in the city, better health and longer life, greater accumulation of property, greater joy in your work and a better family life.

"I would that rural youth could see in front of them the opportunity to build not an urban but a new rural civilization--a civilization founded not on selfishness but on brotherly affection in which the economic objective is to produce sufficient for everyone while conserving the natural resources and in which the social objective is service rather than vanity."

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director*.

Rural Communities Becoming Center Of Farm Planning

Illinois farmers and homemakers are doing more and more of their own group planning right in their communities, according to D. E. Lindstrom, rural sociology extension specialist at the College of Agriculture, University of Illinois. Meetings were held in 1,000 rural communities in 1934 to assist in improving agriculture and homemaking through better adaptation of programs and projects offered by the extension service of the agricultural college. This year the idea of group planning by rural community units is going ahead with new enthusiasm, he reported.

New community units are being organized to supplement these already established and county wide meetings are being initiated as a means of correlating the plans of the various units. In all of these activities the main theme is the use of organization to make extension work in farming and homemaking more effective in the community.

As an example of the planning activities going on over the state this spring, Saline county community workers, in cooperation with the college, will hold a series of three meetings in each of eight communities during the spring and summer.

The first of the series will be held in May and will be devoted to discussions of AAA work and livestock marketing. In July, a second series of meetings will be held during which the outlook for grain prices as well as the future of agricultural planning will be under discussion. The September series will emphasize community organization and will also consider the livestock price outlook.

Interest in county-wide meetings was illustrated recently when 500 people got together in Rock Island county to lay further plans for the organization of community units, to correlate community plans and to enjoy a recreational program. A similar meeting is planned for Union county with eight communities scheduled to organize this spring.

Five communities in Pulaski and Alexander counties will soon hold meetings to discuss the many problems relating to extension work and to learn more about present and future AAA programs.

Units of longer standing which are serving as guides for the newly organized groups include 24 in Champaign county, 17 in Henry, 15 in Shelby, 13 in Randolph, 12 in Sangamon, 11 in Ogle, 10 in Livingston, eight in Ford, seven in Kankakee and a range of from three to 15 each in 70 other counties.

The community unit is the ideal organization for promoting better farming and homemaking and community betterment, Lindstrom believes. Activities this spring indicate a definite trend among rural folks of Illinois to do more of this kind of planning, he said.

-M-

No Magic Methods Or Short Cuts For Reducing Weight

Women, and even men, who succumb to the popular urge for reducing will find that there are no safe short cuts and no magic methods by which weight may be lost, according to a new circular, "Sane Reducing Diets and How to Plan Them," which has just been issued by the College of Agriculture, University of Illinois. Miss Harriet T. Barto, assistant professor of dietetics, is author.

While there is no magic method, it is not necessary to resort to semi-starvation or to peculiar combinations of food entirely unlike an ordinary diet in order to lose weight, Miss Barto explains. Planning a sane reducing diet is simple, for such a diet differs from an adequate diet for a person of so-called normal weight only in the number of calories it supplies, she said. Reducing menus for an entire week are printed in the circular.

-M-

Limited Grazing After May 1 Will Not Hurt Pastures

Even though drouth and hot weather damaged pastures in many sections of Illinois last year, moderate grazing can be started at the regular time of about May 1, says J. J. Pieper, chief in crops production at the College of Agriculture, University of Illinois. However, farmers in drouth sections should not over-graze their pastures this spring.

Where the drouth and hot weather damaged bluegrass pastures in 1934, excessive grazing may do further damage to the grass. Moderate grazing rather than delayed grazing is the best treatment for damaged pastures, in the opinion of Pieper. Delayed grazing, he explains, will allow the grass to mature and become unpalatabel. Moderate grazing, started early in May, will keep the grass in a growing state longer and still not injure the pasture.

Bluegrass pastures in many sections of the state are stunted this year because of the lack of warm rains. Consequently, they will probably mature faster and become woody. Under such circumstances the farmer who delays grazing this spring will probably lose much of the feed value of his pasture.

Bare spots and thin areas are showing up in many of the pastures because of last year's drouth damage. Moderate grazing and mowing to keep weeds from developing seed are the best measures to restore such pasture this spring, Pieper states. Where reseeding was not done early this spring, fall seeding or early seeding next spring will be beneficial.

Where the supply of pasture is not sufficient, emergency pasture crops may be seeded to relieve damaged pastures. Sudan grass sown at the rate of 20 pounds to the acre from May 15 to 20 will produce good pasture by July 1 to 15. Soybeans and sudan grass seeded after corn planting time at the rate of 20 pounds of grass to 1½ bushels of soybeans to the acre is another good mid-summer pasture.

Ordinary field corn seeded at the rate of 2 to 3 bushels to the acre anytime from May to July is another crop which will provide pasture after four to six weeks growth and until fall.

-M-

An Extra $50,000 Is Within Reach Of Wool Producers

Prospects for wool prices are none too bright now that the shearing season is at hand, but an extra $50,000 for their crop is not out of the range of possibility for Illinois farmers, according to W. G. Kammlade, associate chief of the sheep husbandry division, College of Agriculture, University of Illinois. All that sheep raisers of the state would have to do to add this amount to their gross return would be to grow, handle and market their average clip of five million pounds in such a way as to add a cent a pound to its value, he pointed out.

The quality of wool depends, first of all, upon the breed of sheep from which it came and the care of those sheep. However, the best quality wool may bring a poor price because of improper care during and after shearing, says Kammlade.

Before being shorn, sheep should be kept as clean as possible. Shearing should never be done when the wool is wet. This may permanently injure the fleece. The use of sisal or jute twines for tying up the wool is discouraged by Kammlade. Fibers from these twines may remain in the wool to cause imperfections in the cloth made from the clip.

Wool should be prepared for market immediately after shearing. It is at its best then, and the full value can be determined on a basis fair both to the farmer and the buyer. Storage of the wool for a considerable time may result in a variety of damages to the clip, Kammlade points out.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Wheat Acreage Slightly Increased In Foreign Nations

While farmers in Illinois and other parts of the nation are preparing to vote on the future of the AAA wheat program, 24 foreign countries are reporting a total of 163,004,000 acres of winter wheat as compared to 160,240,000 in 1934, an increase of 2 per cent. Official figures on the foreign situation have just been received by the College of Agriculture, University of Illinois, from the bureau of agricultural economics, U. S. Department of Agriculture.

Three countries, Portugal, Morocco and Tunis, reported decreases, but the aggregate for the 24 countries showed a gain of 2,764,000 acres. Russia, not included in the list, has reported a winter wheat acreage of 31,800,000 as compared to 29,900,000 acres in 1934, an increase of 6.4 per cent.

Prospects for the winter wheat crop in the western Mediterranean Basin are good, according to the foreign crop reporting service of the department. The outlook is especially favorable in France and Italy. Fair prospects are reported for Tunisia and eastern Algeria.

Lack of rainfall is apparently doing some damage to the wheat crop in western Algeria, Morocco and the principal producing areas of Spain.

Wheat markets of the western Mediterranean Basin are showing little activity. Some wheat is being imported into Italy, but mostly through agreements with the importing countries. Sales for export from France have been quite heavy, amounting to 19,474,000 bushels from August, 1934, through February, 1935. England and Denmark constituted customers for a considerable portion of denatured wheat, exported as feed wheat by France.

A new storage plan has not yet relieved the market in Spain where a surplus of about 22,046,000 bushels is complicating affairs.

Altogether, there seems to be little indication of import demands by countries in the western Mediterranean Basin. Better prospects come from the Shanghai market which is showing some improvement, but the improvement is too slight to justify any great expectations.

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Spread Of Cattle Disease Prompts Warning From U. I.

Increasing prevalence of paratuberculosis, or Johne's disease, in cattle herds of Illinois has promoted a warning to farmers from the College of Agriculture, University of Illinois. A new circular, "Paratuberculosis of Cattle," has just been issued giving complete information about the disease, its spread and control. Dr. Robert Graham, chief in animal pathology and hygiene, is joint author of the warning circular along with Frank Thorp, Jr., associate, and J. P. Torrey, assistant pathologist of the Illinois State Department of Agriculture.

Protection of the state's $2\frac{1}{2}$ million head of cattle against mounting ravages of paratuberculosis hinges upon farmers cooperating with their local veterinarians in the diagnosis of the disease, prompt elimination of reactors, strict sanitation in stables, clean pastures, feed and drinking water and insistence that all animals added to the farm come from herds that do not react to the tuberculin test, it is recommended in the circular.

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Young People's Work To Be Further Advanced By U. I.

Work with rural young people, one of the newer activities of county farm and home advisers and the extension service of the College of Agriculture, University of Illinois, has been given new impetus in an announcement by Dean H. W. Mumford. Two staff members of the college, G. S. Randall and Miss Cleo Fitzsimmons, formerly 4-H club workers, have been delegated to give their full time and attention to work with rural young adults.

Programs for rural young people are well under way in 38 different counties of the state as a result of work already done by the extension service of the agricultural college and county farm and home advisers. Numerous other counties are planning to start such activities, judging from the turnout at the recent second annual young people's rural life conference held at the college.

Planning and inaugurating programs for rural young adults is one of the most significant developments in extension service work of the agricultural college, Dean Mumford said. The programs are designed to meet the needs and wants of young people beyond the 4-H club age who are out of school but not yet married.

Holding of the recent second annual young people's rural life conference at the agricultural college was a step in the development of the proposed programs. A total of 582 delegates from 75 counties attended.

A number of projects already have been set up or are being arranged by the extension service of the agricultural college from which young people in the different counties can make selections for a program of their own liking. In their discussions at the recent conference the young men and women expressed interest in programs covering such things as land, finances and other matters to be considered in setting up farming, soil conservation, book reviews, recreation and farm planning.

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Neglect Tops Fire As Destroyer Of Illinois Buildings

At the present rate, it would require 250 years for fire to destroy all of the farm buildings in Illinois. Neglect would do the job just as completely in one-fifth the time, or 50 years, declares W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

Neglect, while less spectacular than fire, does far more damage to Illinois buildings every year, states Foster. One of the most important things neglected is the proper use of paint. Paint is an excellent preserver of both woods and metals. It is even useful in preserving stone by protecting against moisture and the consequent damage by freezing and thawing.

Properly applied and in the right colors, paint not only adds to the life of farm buildings but also adds to their beauty.

Good roofs and prompt repairing are also factors in preserving the life of the buildings. A good roof prevents damage by keeping rains and snow from reaching the inside timbers. In addition it protects the hay, feed and other things stored in the building. As to prompt repairing, a damaged portion of a building is like a rotten apple. If it is promptly removed by repairing, the damage will not spread, but neglect will cause the damage to increase.

Wind takes its toll of buildings in the state, but even this damage can be decreased through proper design and management, Foster points out. Buildings should be placed so that large flat surfaces will not be exposed to prevailing winds. Keeping the doors carefully closed keeps the wind from "getting under" the building and possibly wrecking it or at least wrenching the frame work.

Since buildings, like automobiles, are bound to go out of date, they can be kept modern only by careful remodeling and the installation of modern equipment.

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Termites Collecting Heavier Tax Than Are Chinch Bugs

While the chinch bug topped the list of tax collectors with an estimated assessment of $40,000,000 against Illinois agriculture in 1934, the termite outdoes the chinch bug in point of average annual cost to citizens of the state over a period of 10 years. That is charged by W. P. Flint, entomologist of the College of Agriculture, University of Illinois and the Illinois State Natural History Survey.

Termite infestation is especially bad in southern and central Illinois where houses, barns and fence posts are being destroyed year after year by these insidious little wood-eating insects.

Unable to exist in bright sunlight, the insects make their entry into the wooden parts of buildings and other structures from the ground. The parent or main nest is always in the ground, and it is from this nest that the termites enter the building. Consequently, the use of concrete or metal stops in the foundations will usually prevent infestation.

Keeping the premises free from old lumber, tumble down buildings and dead stumps also will help in protecting farm buildings against the termites.

Infestation is often first indicated by swarms of dark brown, flimsy-winged insects about a third of an inch long which suddenly appear in some part of the building. These are the adult males and females or young kings and queens. They fly from the nest to start new colonies. If they appear, the premises should be searched, and the nest cleaned out if possible.

Building codes should contain provisions for the protection of buildings from termite damage, Flint believes. However, since such provisions are not contained in the codes, builders should specify that the contractor construct the building termite-proof. Additional information on the control of termites can be obtained from the agricultural college or the Illinois State Natural History Survey.

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Leaf Hopper Losses To Beans Can Be Reduced One-Half

It is too early in the season to determine whether or not bean leaf hoppers will be plentiful enough to cause serious damage to the bean crop this year. However, the hoppers frequently reduce the crop by 50 per cent, and adequate preparations for dusting or spraying the beans with a copper compound will be good crop insurance, according to L. H. Shropshire, assistant entomologist of the Illinois State Natural History Survey.

Unprotected beans yielded 50 per cent less than those that had been sprayed or dusted in tests conducted at the Cook county branch experiment station of the College of Agriculture, University of Illinois.

A copper dust containing tobacco and gypsum is one of the dusts and sprays that has proved effective in controlling the leaf hopper during the tests. It was applied at the rate of about 20 to 25 pounds to the acre. Applications were made five times, beginning as soon as the plants were well above the ground and continuing until five applications were made.

The 3-6-50 Bordeaux spray also proved effective, but was not quite as good as the dust. Nicotine sulphate spray had little value in controlling leaf hoppers.

Bean leaf hoppers do not hibernate in the garden regions of Illinois, but migrate to the beans late in the spring. They constitute one of the worst enemies of beans and frequently infest Illinois gardens in heavy numbers.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Heavy Outbreak Of Army Worms Threatened In Illinois

One of the most severe outbreaks of army worms that Illinois has had in recent years is threatened within the next three to five weeks, and farmers should be on guard to protect their crops, according to a warning by W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

Although the outbreak will be spotted and will not occur in all sections of the state, severe damage will be done in many areas, Flint said. It will be well to keep careful watch on all heavy stands of grain or heavy bluegrass pastures during the next month and get the worms before they cause serious damage, he said.

While army worms may destroy entire areas of bluegrass pasture or fields of small grain or young corn in a short time, they can be completely and cheaply controlled by the use of poisoned bran baits. The bait that has been most generally used has a base of 1 pound of paris green mixed dry with 25 pounds of bran. When this is thoroughly mixed, there is added 3 gallons of water in which 2 quarts of cheap molasses, preferably black strap, has been thoroughly dissolved.

A newer bait, with which J. H. Bigger, field entomologist of the Illinois State Natural History Survey, has been working during the past year for cutworm control, uses oil instead of water and molasses. This bait is made by thoroughly mixing the 25 pounds of bran and the 1 pound of paris green or white arsenic. Then 2 quarts of a light grade oil of an S. A. E. 20 viscosity is added. No water or molasses is used. However, the bait should be thoroughly mixed so that the oil gets on every particle of the bran. Tests have shown that this bait is equal to the molasses one, is easier to make and is somewhat cheaper. However, it has not been tested against the army worm.

Whichever bait is used should be applied evenly and uniformly over the ground at the rate of approximately 10 pounds an acre. If the worms are on the move, the bait should be sown over a strip about 100 feet wide across their line of march. The molasses bait should be broadcast at dusk of the evening. The oil bait can be put out earlier in the day as it does not dry out as readily as the molasses bait.

Either of the baits may be used on cattle pastures without danger if no more than the 10 pounds an acre is put out and the bait is not applied in lumps. An endgate seeder may be used for distributing the bait or it can be sown by a man on horseback having boxes of the bait attached to the sides of the saddle.

Warnings that a severe outbreak of army worms is imminent are based on the heavy flight of adult moths during the past month. The female moths will lay their eggs in heavy stands of grain such as wheat, oats and rye or in heavy bluegrass pasture. Each female lays about 800 eggs. The worms hatching from these eggs are very tiny at first and usually feed for ten days to nearly two weeks without being noticed. Then they begin to grow very rapidly and their appetities increase enormously. In this stage they sometimes destroy all the food in the fields where the eggs were laid, and the growing worms march out seeking new sources of food. They feed on all kinds of grasses and to a slight extent on legumes, although they usually do not cause any serious damage to red clover, sweet clover or alfalfa.

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Merits Of Zinc Sulphate Established In U. I. Tests

Possibilities of zinc sulphate as a preventive for the damage that widely-used arsenical sprays cause to Illinois' four million peach trees have now been more fully established as a result of three years' experiments by the College of Agriculture, University of Illinois. Results of the experiments are reported in a new bulletin just issued by the college, "The Role of Zinc Sulphate in Peach Sprays," by K. J. Kadow and H. W. Anderson.

Although the tests demonstrated the value of zinc sulphate as a corrective agent in spray mixtures, they also revealed that this chemical has little value as a fungicide or bactericide for combating the diseases now menacing the state's peach raising industry. Neither did the material show conclusive evidence of having value as a plant nutrient under Illinois conditions, except on laboratory tests. The real value of zinc sulphate insofar as the Illinois peach grower is concerned is in its ability to reduce injury to peach trees from lead arsenate-lime sprays.

The lead arsenate-lime spray mixture has long been used as an effective weapon against various insects which attack peaches and peach trees. However, this mixture may cause severe injury to the trees under certain conditions. The injuries include bud killing, leaf injury, twig cankers and often the indirect killing of the entire tree, according to the bulletin.

This injury is caused by the liberation of injurious arsenic acid through the rapid carbonization of the lime. The addition of zinc sulphate to the spray mixture cuts down the speed of carbonization and greatly reduces the formation of arsenic acid, which is the direct cause of the injury. The zinc sulphate also precipitates an insoluble zinc arsenate whenever arsenic acid is formed.

The recommended formula for the peach spraying mixture containing the protective zinc sulphate is 6 pounds zinc sulphate, 6 pounds hydrated lime and 3 pounds of lead arsenate to 100 gallons of water.

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Soil Testing Protects Increased Seeding Of Legumes

With seed scarce and a larger acreage of legumes planted on Illinois farms this spring, thousands of farmers took the guesswork and gamble out of their plantings by testing the soil for acidity, it is reported by C. M. Linsley, soils extension specialist at the College of Agriculture, University of Illinois.

Prominent among those who tested their soil were 400 farmers of Whiteside county, according to a report from Farm Adviser F. H. Shuman. Another leading county in this work was Madison county. During March, 10,000 tons of limestone were used to sweeten the soil for alfalfa and clover planting, said Farm Adviser T. W. May.

These farmers have learned, along with thousands of others in the state, that the chances of getting a good stand of alfalfa or clover are much better if the soil is tested and sweetened with limestone if necessary before being seeded. This is especially true during dry seasons such as 1934, Linsley said.

Occasionally, when there is plenty of rain, alfalfa and clover may make a fair stand even though the soil is somewhat sour. During average seasons, however, these crops will burn out on acid soils. The weather usually gets the blame when the soil conditions really were at fault, adds Linsley.

Where the soil is tested and sweetened, as was done by the Whiteside county farmers, vigorous drouth-resistant plants are produced, and there is a good chance of getting a supply of feed in years when the corn and oats are stopped by dry weather. This was well illustrated in 1934, Linsley said.

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Skillful Feeding Gets Most Out Of Higher Hog Prices

With hog prices approximately $4.39 a hundred pounds higher than they were a year ago, Illinois hog raisers are in a position to make some profit from their pigs, especially if they cut feeding costs through the use of alfalfa pasture and protein supplements, in the opinion of W. E. Carroll and W. P. Garrigus, of the swine division, College of Agriculture, University of Illinois.

The possibility of cutting feed costs through the use of alfalfa pasture and protein supplements is shown by figures, recently computed from feeding tests conducted at the college experiment station.

In six lots of 20 hogs each, the cheapest gains, on the basis of current prices, were made by the lot fed corn and protein at the rate of 15 pounds of corn to 1 of protein supplement and having free access to alfalfa pasture. The cost for 100 pounds gain, considering feed at this spring's price levels, was $7.24. The lot fed a ration of corn and supplement but not having access to the pasture was next with a cost of $7.30. However, the added value of alfalfa hay, amounting to an average of 1.5 tons to the acre, cut from the hog pasture served as additional income.

Allowing the hogs free choice of corn, protein supplement and alfalfa cut down the supplement cost but increased the cost of corn, with each 100 pounds gain costing $7.95. Corn and alfalfa alone were cheaper, amounting to $7.66 a hundred, but the hogs were between 14 and 21 days longer in finishing. This is an important item since early sales often hit the best market during the fall.

The most expensive ration, on the basis of the present ratio between corn and protein supplement prices, was that using a minimum of supplement, more corn and no alfalfa pasture. At present prices, this ration cost $8.22 a hundred pound gain and required from seven to 12 days longer to finish the hogs.

Generally speaking, the 15-to-1 corn and protein supplement ration along with alfalfa pasture appears to be the best ration, Carroll and Garrigus stated. The cost is comparatively low, gains are moderately rapid and the alfalfa hay gives the producer some income above the sale of his hogs.

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Horse Comeback Brightens Outlook For Colt Raising

Colts now being produced by Illinois farmers are almost certain to find a good market at profitable prices by the time they are matured and ready for work, in the opinion of E. T. Robbins, animal husbandry extension specialist at the College of Agriculture, University of Illinois.

Horse numbers in the United States have been decreasing steadily for the past 17 years. During most of that time the decrease amounted to about a half million a year, but has slowed down recently with last year's decrease amounting to 136,000. With the horse price cycle averaging about 30 years, indications are that prices will continue to be good for another few years.

The decrease in numbers came about as a result of high-priced feed and the replacement of horses and mules by tractors and trucks. During recent years, however, feed prices have been low, making the horse a cheaper source of power than the tractor on many farms. This became more important as cash incomes of farmers decreased. Higher prices have been received at the markets this spring, and more horses and mules have been sold than for several years. Horses are scarce and the farmers need them, as shown by the fact that most of the horses are going to the country, Robbins said.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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New Bait Offers Cheaper Control Of Cutworm Damages

Cheaper control of the hordes of army worms, cutworms and grasshoppers which may infest Illinois crops this summer is promised through the use of a new poisoned bait which has been tested by the Illinois State Natural History Survey, it is reported by J. H. Bigger, assistant entomologist cooperating with the College of Agriculture, University of Illinois.

With army worms and cutworms threatening to be worse in the state this year, the new bait will save farmers money as well as crops if it proves successful under Illinois conditions, Bigger pointed out.

The new bait, which gave good results in 1933 and 1934 tests, is a variation of the time-tried poisoned bran mash. The main difference is that lubricating oil is substituted for the water and molasses. The bait is made by combining 25 pounds of bran, 1 pound of either paris green or white arsenic and 2 quarts of lubricating oil of S.A.E. 20 or 30 viscosity.

In this bait the oil replaces two quarts of molasses and three gallons of water. It is easier to mix and handle, may be applied any time of day or night and is cheaper. A 15-cent oil of the right viscosity was found, during the tests, to be entirely satisfactory, but used crankcase oil proved to be useless.

While the oil bait is still in the experimental stage, it was tested side by side with the regular poisoned bran mash during 1933 and 1934 and gave just as satisfactory results against grasshopper infestations, Bigger said. In 1934 the bait was tried against cutworms in Sangamon, Morgan and Pike counties with good results. While the new bait has not been thoroughly tested against army worms, experience with other baits leads Bigger to think that the oil bait would also be satisfactory against these pests.

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Destruction Of Corn Weeds Helps Check Flea Beetles

Thorough destruction of weeds in corn fields is the only effective means of protecting the young corn from flea beetles, which threaten to be plentiful this spring, according to J. H. Bigger, Illinois State Natural History Survey entomologist, cooperating with the College of Agriculture, University of Illinois. Abundant rainfall and heavy weed growth before the corn was planted has encouraged the beetles, since they live on weeds until the corn starts growing.

The flea beetle is a tiny black or greenish insect and derives its name from its habit of jumping like a flea when disturbed. Until the corn is up, the insect feeds on such weeds as purslane, lamb's quarter, ragweed and smart weed. As soon as the corn appears, the beetle turns its attention to the corn leaves, eating small round holes in them.

Where the flea beetles are numerous, they chew the corn leaves so seriously that the plants loose vitality, turn yellow and often die.

Keeping weeds out of the field before and after the corn is planted will do much toward controlling the insects, since they make their homes in the weeds until the corn appears above the ground. Vigorous, fast growing corn will often outgrow the beetles. Hence, it is advisable in many cases to delay planting until the ground is warm.

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Higher Prices For Horses Enliven Pulling Contests

Higher prices and the increasing demand for good work horses are adding interest to the Illinois horse pulling contests which will be held again this year for the eleventh season by the College of Agriculture, University of Illinois, it is announced by E. T. Robbins, livestock extension specialist.

Eleven contests are already definitely set, and four more will be held if local arrangements can be made, Robbins reported. The opening contest this year will be at the Chicago Tribune show at Wheaton, June 15. August, however, seems to be the favorite month with six shows scheduled. Competitions will be held at the Perry County Fair, Pinckneyville, August 13; Edwards County Fair, Albion, August 15; Iroquois County Fair, Milford, August 16; Illinois State Fair, Springfield, August 20 and 21; Warren County Fair, Roseville, August 23, and the St. Joseph Agricultural Fair, St. Joseph, August 27. Other contests are scheduled for the Hancock County Fair, Augusta, September 3; DeKalb County Fair, Sandwich, September 4; Lawrence County Fair, Bridgeport, September 6, and DeWitt County Fair, Farmer City, September 10.

The contests are used as a means of studying body measurements and other characteristics which influence the pulling power of horses and mules. Since the events were started, the college animal husbandry specialists have taken measurements and records on more than 1,500 horses. Pulling power of the teams is accurately measured by means of the university dynamometer.

Pulling contests have become regular features at many fairs with the interest of both team owners and spectators just as great as when the contests were first started. Competition is divided into two classes, one for teams weighing less than 3,000 pounds and the other for those weighing 3,000 pounds or more.

The light class state championship, made by Willard Rhoads' 2,920-pound team at Tuscola in 1932, still stands as a challenge to teams of less than 3,000 pounds. These horses lifted 2,825 pounds 27½ feet on the dynamometer to establish the state record. Rhoads lives at Springfield.

Homer Crawford, of Potomac, owns the team that holds the new state record in the heavy team class. This record was made at the Century of Progress contest in August, 1934. These two horses, weighing a total of 3,920 pounds, lifted 3,250 pounds 27½ feet on the dynamometer. This is equivalent to starting a 21-ton wagon several times in succession on a granite-block pavement or pulling seven 14-inch plow turning furrows six inches deep in stubble ground.

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Fowler's Solution Found Injurious To Animal Health

Fowler's solution, often used to fit show stock, has proved injurious to animals after a six-year test conducted by Drs. E. Roberts and W. M. Dawson at the College of Agriculture, University of Illinois. Facts concerning the experiment and the results are contained in the recently published college bulletin, "Effect of Fowler's Solution on Animals."

The solution, which contains arsenic, has been used by some persons in fitting show animals for the ring in the belief that it aided in putting on fat and giving the hair a more glossy appearance. The tests, however, showed that it distinctly lowered the reproductive capacity among the experimental rabbits which were used in the study.

In addition, the mortality of the young was more than doubled where the dams were given Fowler's solution. Growth of immature animals was also retarded through the use of the solution. The effect, however, was probably caused indirectly through increased susceptibility to disease. Treated animals were found to be more susceptible to respiratory diseases, and the solution caused injury of the kidneys and liver.

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Four Shifts Are Made Among Farm And Home Advisers

With the appointment of Miss Bernice Smith as home adviser of Greene county, 40 Illinois counties are now carrying on organized home economics extension work under direction of the College of Agriculture, University of Illinois, it is announced by Mrs. Kathryn Van Aken Burns, state leader of home economics extension.

Three changes among the 96 farm advisers who are serving 100 of the 102 counties of the state in agricultural extension service work also have been announced by Prof. J. C. Spitler, state leader of farm advisers.

Miss Smith, the new home adviser of Greene county, was graduated from the University of Illinois in 1930 and has been teaching school at Illiopolis. She is the thirty-fifth home adviser in the state. Some of them have two counties, which accounts for the fact that a total of 40 counties have this service.

In the ranks of the farm advisers, E. O. Johnston has been employed as farm adviser in Piatt county to succeed S. S. Davis, who resigned April 30. During the past two years Mr. Johnston has been serving as emergency agent in the corn-hog program and more recently has been connected with the office of A. J. Surratt, state agricultural statistician, Springfield. Mr. Johnston started work on May 1.

H. H. Gordon, farm adviser for Pulaski-Alexander counties, resigned April 22 to accept the position of assistant project manager in the AAA land policy section. He will be in charge of the southern Illinois forest project and will have headquarters at Anna.

W. E. Gould, Johnson county farm adviser, resigned May 1 to become project manager of the Robbs project, Robbs, for the Illinois Rural Rehabilitation Corporation.

Successors to Mr. Gordon and Mr. Gould have not yet been selected.

-M-

Added Nitrate May Be Needed By Cabbage This Season

With rainfall in most sections of Illinois above normal, it may be necessary to apply nitrate of soda to many cabbage fields this spring, in the opinion of B. L. Weaver of the vegetable gardening division, College of Agriculture, University of Illinois. The lack of nitrates in the soil will be evidenced by the yellow color and stunted growth of the young plants.

This shortage of nitrates is especially apparent when the weather is cool as well as damp. Such weather slows down the activity of soil organisms and is one of the main causes for a nitrate deficiency. On the other hand, hot weather and lack of moisture, such as was the case in 1934 bring about an accumulation of soluble nitrates on the surface of the soil. Any addition of nitrate fertilizers under such conditions will probably damage the crop.

Wherever yellow color and lack of growth indicate shortage of nitrates this year, the deficiency can be supplied through the use of nitrogen fertilizers such as nitrate of soda, Weaver said. It is usually most satisfactory to make two applications over a period of several days with the total amounting to about 200 to 300 pounds to the acre.

Fortunately, the lack of nitrogen does not permanently injure the cabbage plants if the deficiency is taken care of before the plants go too long. Inorganic nitrates such as are contained in the fertilizers dissolve readily and are almost immediately available as plant food provided there is sufficient moisture present.

Cabbage plants supplied with nitrogen fertilizers have produced higher yields and have matured earlier than the same varieties grown without the nitrogen fertilizer in tests conducted at the college experiment station.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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New Illinois Mark In Dairying Tops 25-Year Records

Despite unprecedented drouth and feed shortages last year, a new state standard which tops anything for the past 25 years was set up for milk and butterfat production by Illinois dairy cows, it is announced by Prof. C. S. Rhode and J. G. Cash, dairy specialists at the College of Agriculture, University of Illinois.

The highest average production in the 25 year's history of dairy herd improvement association work was made in 1934 by the 895 herds belonging to these associations, it is shown in the annual report which Rhode and Cash have just released on the work of these groups. The average for each cow was 8,470 pounds of milk and 324.9 pounds of butterfat.

During the same year the average production for all cows in the United States slipped to the lowest level in 10 years. The estimated average production of all cows in the state is estimated at about 180 pounds of butterfat.

By comparison with these marks, the new state record for the association herds is a tribute to the progress which the member dairymen are making toward more profitable production through better feeding, breeding and management of their herds, Rhode and Cash pointed out.

More than two-thirds, or 606, of the association herds had an average of 300 pounds or more of butterfat for each cow.

Out of all the 20,424 cows that were tested for milk and fat yield by the associations, the highest producer was a purebred Holstein in the herd of Mooseheart Farm, Mooseheart, that produced 12½ tons of milk and 834 pounds of butterfat during the year. The Ellwood & Nelson herd, DeKalb, had the second highest-producing cow; Mooseheart, third and fourth; Rock River Farm, Byron, fifth; Ellwood & Nelson, sixth; Mooseheart, seventh; N. G. Priess, Altamont, eighth; Gahlbeck & Lange, Woodstock, ninth; and Mooseheart, tenth.

The highest producing cow in the grade-cow group also was from Mooseheart. She had a record of 25,187 pounds of milk and 780 pounds of fat. Zimmerman Dairy, Washington, had the second best cow in the grade class; Illinois State Penitentiary, Stateville, third; F. S. Priess, Caledonia, fourth; and Alexander Guernsey Farm, Bloomington, fifth.

As to herd averages, Mooseheart Farm and the Palanois Farm No. 2, Palatine, tied for first place with butterfat production averages of 556.8 pounds a cow. This is the fourth consecutive average of more than 500 pounds for the Palanois herd. Both of the top herds were in the class of those having more than 10 cow years. Other high herds in the class included the herds of C. J. McCord, Newton, third; John Ellsworth, Harvard, fourth; and Gahlbeck & Lange, fifth.

In the class of herds having from five to ten cow years, the herd of Oscar Anderson, Somonauk, was first with an average of 502.3 pounds of butterfat. C. W. Guthrie, Charleston, was second; N. G. Priess, third; J. G. Busboom, Gifford, fourth; and Keenan Brothers, Leland, fifth.

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Better Supply Of Milk Is Memorial For Jane Addams

Among the many memorials to the late Miss Jane Addams, famed Hull House founder and social settlement leader who died recently in Chicago, will be the pioneering work which she did almost 40 years ago in conjunction with the College of Agriculture, University of Illinois for the improvement of city milk supplies.

Present high standards enjoyed by consumers in Chicago and even in other communities have their foundation in this early work, it is pointed out by Dr. P. H. Tracy, associate chief in dairy manufactures at the college. Indirectly, this work and its subsequent developments have benefited milk consumers in many other cities, he said.

Alarmed at the quality of milk being offered to residents in the vicinity of Hull House, the late Miss Addams in 1898 enlisted the cooperation of the experiment station, College of Agriculture, University of Illinois. When the work was completed, she, with Dr. H. S. Grindley, professor emeritus of animal nutrition, reported their findings in Circular No. 13, published in December, 1898, by the experiment station, on the subject, "A Study of the Milk Supply of Chicago."

"Overwhelming proof" that the milk supply of Chicago was remarkably poor was presented by the authors, they held that this was an injustice which should be remedied immediately and urged that immediate action be taken to improve the poor milk supply then going to Chicago people.

Since then there has been steady improvement in the supply, the most recent advance being the adoption of the Kelly milk ordinance which is modeled after the U. S. Public Health Service standard milk ordinance.

Almost 40 years ago when the late Miss Addams and the agricultural college were pioneering for an improvement of Chicago's milk supply, the chief concern was the matter of "Watering," or adulterating milk.

The college's first work on the Chicago milk supply, in which the late Miss Addams figured, has been followed by other studies and publications, all of which have played a prominent part in establishing the high standards of the present day, Prof. Tracy said.

-M-

Chopping Hay May End This Season's Storage Worries

With a record soybean crop in prospect, Illinois farmers are casting about for means of reducing hay storage space to make room for the expected soybean seed as well as for the additional hay from the beans. Chopping hay is a practical way of reducing the barn room needed for storing livestock feed, according to R. H. Reed of the agricultural engineering department, College of Agriculture, University of Illinois.

Chopped hay required from one-half to two-thirds less barn space than long hay. This extra room may be used for other purposes if the barn is strong enough to carry the added weight. Not only does chopping the hay make available more space for the storage of other feeds, but also waste is reduced, Reed said. With long hay, tests have shown that as much as 30 per cent may be wasted. Where chopped hay is used, waste may be reduced to a maximum of 5 per cent.

Convenience during the winter feeding season is another advantage of chopped hay. It is easier to pitch down from the mow than long, tangled hay. Since chopped hay has less bulk, a day's supply or more can be placed in the feeding chutes or mangers at one time.

The cost and speed with which hay can be stored by chopping varies with the individual farm. Where a hay chopper with adequate feeding mechanism is available, the hay can be put into the mow faster than by other methods. An ordinary ensilage cutter does not speed up the process, Reed said. With the equipment available on most farms, the cost of storing chopped hay is about the same as for long hay.

-M-

State Has Chance To Lead In Raising Quality Poultry

While Illinois farmers may not be in a position to compete with the commercial egg-producing areas, a plentiful supply of corn offers them the opportunity of becoming leaders in the production of market poultry, in the opinion of H. H. Alp, poultry husbandry extension specialist at the College of Agriculture, University of Illinois.

Corn, the major grain crop of the state, has been found to be the ideal feed for producing high-quality poultry famous for its delicious flavor, he reported. The fat produced by corn is distributed through the meat in a way similar to "marbling" in beef. Wheat produces the poorest quality poultry, it has been shown by experiments in Canada. Both oats and barley are less satisfactory than corn. Corn not only made the best-flavored poultry meat but also, when supplemented with 6 per cent animal protein, produced the best gains, Alp reported.

In addition to the needed corn, recent good prices offer further incentive to farmers of the state to excel in the production of quality market poultry. During the week of April 17, the New York price of a five-pound dressed fowl reached 26 cents, the highest quotation since December 7, 1931. An almost mythical figure of 25 cents a pound for the four-pound size was also reached during April, according to market reviews.

With good prices being paid for quality birds and the all-important feed available in the state's corn crop, the future looks bright for the poultryman who feeds for the poultry market, Alp said. It is even possible that the brand, "Illinois Fattened," could become a symbol for premium poultry. Too often all the emphasis in poultry husbandry is placed upon egg production, with little attention being given to the production of quality meat and its sale in an appetizing manner, he pointed out.

-M-

Sanitation Will Prevent Ropy Milk And Save Business

Ropy milk, one of the dairyman's spring bugbears that lowers the quality of his product and loses him customers, can easily be prevented by sanitation and pasteurization of milk, according to Dr. H. A. Ruehe, head of the dairy department at the College of Agriculture, University of Illinois.

Prevention of ropy milk is all the more important this spring because dairymen do not want to risk losing customers in the face of rising feed prices and higher production costs, it was pointed out by Dr. Ruehe.

While ropy milk is not harmful as a dairy food, many consumers object to using it. Consequently the dairyman or distributing plant selling milk in that condition is bound to lose customers. The ropy condition is caused by a bacteria, Bacterium viscosum.

The little bacterial cells form gluey capsules about themselves, thus clinging together to form the ropy texture of the milk. Since these organisms are present in dirt, surface water, streams, dust and hay, they usually enter the milk shortly after it has been drawn. They will not develop in sour milk because the lactic acid prevents their growth.

If the cow's flanks and udders are sponged with a mild chlorine solution and the milker's hands disinfected, the chances of the bacteria getting into the milk will be greatly reduced. All utensils should be sterilized with steam, boiling water or chlorine solution, Dr. Ruehe said.

Pasteurization will prevent the formation of ropy milk, provided the milk is not exposed to contamination after it has been treated.

Where milk is lumpy or stringy when drawn, it is an indication that the cow is suffering from mastitis, or garget. In such cases, the milk should not be used.

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The Extension Messenger

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Science May Breed New Farm Merit Into One-Time Weed

Sweet clover, one-time weed that is now grown on approximately 900,000 acres in Illinois, may rise to an even more prominent place as a soil building crop if it continues to be improved in experiments now being carried on by the College of Agriculture, University of Illinois.

Already several experimental strains have been developed which show desirable variations in maturity or which are able to withstand hard winters, dry weather and disease. In general new strains are being sought that will be better adapted to soil and climatic conditions of Illinois than are the existing types.

Heretofore little work on sweet clover breeding has been done in the United States, with the result that very few strains have definite breeding back of them.

One of the facts determined from the college tests is that common biennial sweet clover is cross-fertilized to a large extent by bees and other insects. This accounts for the wide difference in date of maturity, habit of growth, leafiness and susceptibility to disease. While cross-fertilization caused these variations, it also proved to be the means of developing desired strains of sweet clover.

By selecting the plants which had the desired characteristics, Woodworth and his associates were able to start the tedious process of developing pure strains. The flowers of the desired plants were covered with bags, paper parchment, glassine, cheese cloth or mineralized Tiffany cloth bags, thus preventing cross-fertilization with plants of less desirable characteristics.

In 1934, when common biennial check plants were compared with those selected for late maturity, the check plants began to bloom 10 to 14 days before the late-maturing variety, Woodworth said. This demonstrated the possibility of selection and self-fertilization as a means of developing new strains. However, no new strains have been developed to the point where they are ready for farm use.

-M-

More Than 1,100 Illinois Farmers Keep Herd Records

There was a time when any cow that gave milk could qualify as a dairy animal, but during 1935 those on at least 1,150 Illinois farms must prove their worth or relinquish their places to more worthy successors, said J. G. Cash, dairy husbandry specialist at the College of Agriculture, University of Illinois.

Recent organization of dairy herd improvement associations in Will, Whiteside and Franklin-Jackson counties has brought the total for the state up to 60 associations with a membership of 1,150 farmers as compared to 25 associations and 607 farmers in 1925.

The purpose of these 60 associations is not to increase the total milk and butterfat production of the state, but to encourage the keeping of fewer and better cows, Cash explained. This is accomplished through careful records on each cow and the culling out of those which fail to show a reasonable profit.

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Terraces Demonstrate Value During High Rainfall Of May

With the past month recorded as one of the wettest Mays in Illinois in 47 years, well-maintained terraces have given a rare demonstration of their value in conserving soil and moisture on farms throughout the state, according to R. C. Hay, agricultural engineering extension specialist at the College of Agriculture, University of Illinois.

However, poorly-maintained terraces were not satisfactory in stopping soil washing, even though the rains for the most part were of the drizzling variety, Hay said.

Keeping field terraces in good repair is as important as it is simple, in the opinion of Hay. If they were originally constructed at the proper grade with wide, flat channels and with ridges of sufficient height and width, terraces can be maintained with little labor and at small cost.

As an example, only a few hours extra work were required this spring to restore the effectiveness of terraces built in 1931 on the farm of George Hayes, near Galva in Henry county. In breaking up the field preparatory to planting it, Hayes back-furrowed along the top of each terrace ridge and used a V-drag to open the terrace channels. Now his terraces are in better condition than when first built.

Terraces on cultivated land can not be ignored during plowing and cropping operations, if they are to be properly maintained. Plowing, planting or cultivating across the ridges rather than with the terraces may destroy the whole system in one year, Hay declared. Such a practice will allow water to run through the ridge during heavy rains and small gullies will be rapidly formed.

Farming terraced land on the contour, that is following the terraces, really amounts to terracing the entire surface. While the regular terraces perform the big job of conserving soil and preventing run-off, the crop rows, following the terraces, act as small terraces.

The first cost of building terraces, while not exorbitant, amounts to a considerable investment. To plant and cultivate the field without regard to the terraces is to waste practically all of the investment. The terrace investment should be protected just as the farmer protects his livestock, buildings and machinery.

-M-

Old Customs Not Necessary For Success In Gardening

They may be old garden customs, but the pulling off of sweet corn suckers and the cutting of sweet potato vines do not rate a place in the list of profitable garden practices, according to B. L. Weaver, of the division of vegetable gardening, College of Agriculture, University of Illinois.

Contrary to a long standing belief, pulling off the suckers does not increase the yield or quality of the sweet corn. Consequently, the labor is wasted. In addition to wasting money, time and labor, destroying the suckers also reduces the fodder crop.

Another garden custom which has been found useless is that of lifting sweet potato vines off the ground to prevent them from taking root at the joints. The only object in lifting the vines is to cultivate under them and kill the weeds, Weaver stated.

Cutting the sweet potato vines is another practice which does not pay. In fact this practice may do more harm than good, since it will destroy many of the necessary leaves.

Leaves perform a vital function in the life and production of any garden plant by converting raw materials into a usuable form. Sweet potato leaves convert raw material into starch, sugar and other plant foods which build up the potatoes and make them grow.

-M-

Breeding Tests With Artichokes Will Aid New Crops

Any possibilities which the American artichoke holds as a new crop for Illinois farmers are expected to be opened up through experiments which the College of Agriculture, University of Illinois is now conducting on improved methods of propagating the plants.

While the artichoke has possibilities as a livestock feed or as a cash crop for farmers in this state, it has not been introduced except in experimental plots and, to a very limited extent, on farms, according to C. M. Woodworth, chief of the college plant genetics division.

One advance that has already been made in the experiments which the college has been conducting during the past three years is the discovery that hill selection is an ineffective way of propagating the plants. Since artichokes cross-fertilize, the resulting seedlings vary greatly as to height, number of branches, mildew infection, leaf blight, resistance to frost, stem color, and yield, size, shape and color of tubers. When propagated from the tubers, however, the plants are very uniform.

This discovery has opened up the possibility of developing adapted strains by crossing desirable self-fertilized plants and producing the crop with tubers secured from the superior hybrids. While no seed was produced during 1934, the tests are being continued this spring with tubers from more than 100 seedling plants, Woodworth stated.

The artichoke is a good feed for hogs, cattle and other livestock, it has been demonstrated by experiments. In addition its value as a human food has been proved. Not only can the plant be eaten as a vegetable but also it can be processed to produce both sugar and syrup.

Levulose sugar, produced from the artichoke, is a better preservative than cane sugar for canned fruits and is a very effective sweetener wherever sugar is needed. Syrup, produced at the college, was considered of very good quality by those who tried it.

-M-

This Is The Year To Deal Codling Moth A Death Blow

This is the year to deal the codling moth a death blow, said V. W. Kelley, horticultural extension specialist at the College of Agriculture, University of Illinois. Codling moths, which have damaged Illinois apple crops to the extent of a million dollars some years, were defeated in 1934 by hot, dry weather and effective spraying. They must be kept on the run this year by effective spraying or they will reorganize and return with a new attack in 1936.

Like an artillery barrage, the spraying must be done thoroughly this summer so that every possible hideout of the moths will be reached by the deadly mist. In addition the entire surface of every apple must be covered with the spray if the fruit is to be protected.

The codling moth larva has no preference to sides. It is just as likely to enter the apple from the side toward the center of the tree as from the outside. Consequently, it is necessary to cover the surface of the fruit on both sides. This can be done only by the use of proper spray guns in the hands of workmen who know the problem and are conscientious in their efforts to do a good job of spraying, Kelley stated.

After the spray has dried, any spots that have been missed can be seen. By climbing the tree, the orchardist can inspect the surface of the fruit next to the center as well as the top part of the tree. Finding the unsprayed parts and giving them a dose of the spray will go a long way toward assuring production of unblemished apples this year.

With large trees the spray should be applied both from the inside and the outside.

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Cold, Rainy Spring Gives Apple Crop Severe Setback

Cold, damp weather in May and in some cases the lack of adequate spraying have combined to seriously injure the Illinois apple crop, which during the past five years has had an average farm value of $3,213,000, according to reports of the horticultural department, College of Agriculture, University of Illinois. The injury is especially marked in the southern and northern sections of the state.

Other fruits, with the exception of peaches, appeared to be in good shape on June 1.

Prospects for the apple crop have suffered because conditions during May were ideal for the development of apple scab, a fungus disease which attacks both the foliage and the young fruit. With prolonged rainy weather it was impossible for orchardists to apply sprays in many cases. This was especially true in the southern and northern regions where the farm crop will be about 10 per cent of normal and the commercial crop between 65 and 75 per cent, it was estimated by H. W. Anderson, fruit pathologist.

Conditions are better in the western sections where last year's drouth reduced scab to a minimum, it was reported by K. J. Kadow, assistant pathologist.

Rainy weather is also blamed for the poor set observed in many apple orchards, since bees were not active during such weather and pollination was poor.

While most of the peaches missed frost damage, peach leaf curl, another fungus disease, has been riddling unsprayed orchards in the southern part of the state, according to V. W. Kelley, horticultural extension specialist. Trees sprayed during the dormant season show very little injury, but the leaf curl is playing havoc with the unsprayed trees.

Strawberry growers received both benefit and damage from the cold, wet spring. The weather reduced the quality in some cases, but prolonged the season, increasing the total yield. In some cases, yields were doubled even though acreage was 30 per cent less.

-M-

Eradication Of Moles Will Hasten Comeback Of Lawns

Comeback of lawns and gardens after the drouth of 1934 will be hastened if moles are eradicated, said G. C. Oderkirk, of the U. S. Biological Survey, who is cooperating with the College of Agriculture, and the Illinois State Natural History Survey.

While various preparations will keep the moles away from the lawn or garden temporarily, trapping is the most effective method of getting rid of the pests, Oderkirk said. The traps should be located along the main burrows or those which appear to be fairly new. The traps should be reset frequently, especially during the early forenoon and late afternoon when the moles are most active. The choker and scissor type traps are the most efficient, although the prong type is satisfactory if it is firmly anchored in the soil and the trigger is set in contact with the surface of the runway. In setting any type of trap, the operator should first step lightly on the runway and then locate the trap with the trigger in close contact with the soil, Oderkirk said.

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Bang's Disease "Cures" Outdoing Chain Letter Racket

Chain letters have had their day, but fake cures for Bang's disease of cattle are still being sold to farmers for $5 to $8 a pound, according to Dr. Robert Graham, chief in animal pathology and hygiene, at the College of Agriculture, University of Illinois.

Just as there is no sure "get rich quick" scheme, there is no cure for the costly Bang's disease, in spite of the claims made by agents selling these cures, he said.

One typical "cure" recently examined in a case before the federal court was found to be ordinary corn starch with just enough potassium permanganate added to make a pink solution in water. A pound of this combination costs only a few cents, yet the manufacturer was selling it to farmers at from $5 to $12 for packages weighing from a pound to a pound and a half. Not only was the price exorbitant but also the mixture was absolutely worthless, Dr. Graham stated. Pink cornstarch will not cure Bang's disease, but at $5 to $12 a package will help keep down the pocketbook.

Since Bang's disease causes great losses to herd owners each year, many farmers are willing to try some "medicine" which, agents claim, will eliminate the disease from the herd. Some credence is given to these claims by the fact that some cows develop a resistance to the disease, causing the symptoms to pass away. Often the quack remedy is given credit for this natural occurrence.

Even though the symptoms pass away, the animal retains the disease and is capable of spreading it to the rest of the herd. Only by finding the reactors and eliminating them from the herd can the farmer rid his farm of Bang's disease, Dr. Graham explained.

For details of Bang's disease tests, livestock men should communicate with state or federal livestock sanitary officials or the college, it was recommended. At the present time the federal government is carrying on an eradication campaign in Illinois and other states which offers indemnities to owners for cattle removed from the herd. In addition, the college is continuing a project which for several years has been giving farmers a chance to test their cattle and eliminate reactors.

-M-

Pressure Cooker An Economy, Not An Expensive Luxury

Far from being an expensive luxury, the steam pressure cooker will be an economy to Illinois housewives who plan to reduce next winter's food bills by canning fruit and vegetables this summer, says Miss Glenna A. Henderson, foods extension specialist at the College of Agriculture, University of Illinois.

Pressure cookers can be bought for as low as $8 although the average price ranges from $10 to $25. By using a cooker, the homemaker will be able to provide the family with safe canned foods and also prevent spoilage, especially of the non-acid vegetables and meats, thus saving many times the cost of this piece of equipment. Since there is practically nothing to wear out, the equipment will last for years.

The pressure cooker operates on the simple principle of increased heat with increased pressure. With the hot-water-bath method, the temperature never goes higher than 212 degrees fahrenheit at sea level. With the cooker, however, much higher temperatures can be reached because of the steam pressure generated.

Non-acid vegetables may spoil in the can unless they are subjected to the high temperatures possible only in the pressure cooker. In some cases the spoilage is accompanied by the formation of clostridium botulinum, a bacterium which gives off poison. While fruits may be processed in the pressure cooker, the high temperatures are not necessary for the successful canning of these foods.

-M-

Danger Of Heavy Damage To Peaches Can Be Prevented

Saving the peach crop in those Illinois areas infested with peach leaf curl will be possible only through an immediate application of some quickly available nitrogen fertilizer, in the opinion of V. W. Kelley, pomologist at the College of Agriculture, University of Illinois.

Foliage is rapidly being destroyed by the fungus disease, especially in the southern part of the state. The application of a quick-acting nitrogen fertilizer may help the trees to grow new foliage, thus saving the fruit crop.

Calcium nitrate and sodium nitrate are both suitable for such emergency use, since the nitrogen is already in a usable form. The fertilizer should be sprinkled on the soil under the tree at the rate of one-fourth pound for each year's age of the tree. The material becomes effective just as soon as it is washed into the soil by rain.

While the nitrogen preparations are beneficial to the foliage at any time during the summer, they must be applied at once if the new foliage is to become effective in saving this year's fruit crop, Kelley stated.

Peach growers who applied a dormant spray are having very little trouble with leaf curl, but this fungus disease has practically destroyed the leaves on unsprayed trees. Had the spring been less rainy, the fungus might not have gained such headway, but the cold, rainy weather was ideal for the growth and spread of the disease.

Happily, no more attacks will be suffered this year. Hence the second foliage growth will not need a protective spray. However, peach growers should not forget to spray early next spring, Kelley warned. With the start made this year, peach leaf curl might ruin the entire peach crop in 1936 if spraying measures should be neglected.

-M-

Not All "Ants" Are The Destructive White Termites

While the termite is one of the heaviest tax collectors in Illinois, many home owners become unduly alarmed by the presence of winged ant-like insects swarming around the premises early in June, said W. P. Flint, entomologist of the College of Agriculture, University of Illinois. Often the insects are ants which do no damage to buildings.

By learning to recognize termites and to distinguish them from ants and similar insects, the home owner will know when to take measures for the protection of his buildings.

Although the termite is often called a "white ant," it is no relation to the ant, Flint stated. The wings and the waistlines are the distinguishing features of the two insects. Termites have practically no waistlines, and their two pairs of transparent wings are almost identical in size and shape, being slender and about twice the length of the insect's body. Ants, on the other hand, have slender waistline which almost cut them in two. Their inner wings are smaller than the outer pair. Termites are about the same size as some ants, that is, three sixteenths of an inch long. Termites are usually black, as are also some ants, but ants may have reddish black, yellow or brown bodies.

The worker termites that do the damage are creamy white, thus accounting for the term "white ant" often applied to these insects. These white workers are not among those found swarming in the early summer.

Where insects are identified as termites, immediate steps should be taken to rid the premises of these pests and to protect the buildings from further infestation.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Swine Malady In More Herds Than Many Owners Realize

Many herds of hogs on Illinois farms are harboring Traum's disease, or infectious abortion, without the owner's knowledge, according to a newly revised circular which the College of Agriculture, University of Illinois has just issued to help farmers overcome this drain on their profits. The circular is entitled, "Brucellosis in Swine," and was prepared by Dr. Robert Graham, chief in animal pathology and hygiene, and Miss Viola M. Michael, first assistant.

Twenty-six cases of the disease have been found in 22 different counties of the state during the past several years, but many more herds than this undoubtedly carry the infection, the circular points out. Heavy losses from premature birth of pigs are traceable to this disease.

Only careful testing, elimination of reactors and sanitation are effective in keeping down the disease, according to the animal pathologists. No cure has been found for the infection.

The disease may exist in the herd without the farmer's knowing it because infected sows may farrow healthy litters and show no signs of harboring the malady. On the other hand when a sow or gilt looses her pigs, the cause may not necessarily be infectious abortion. Often the purchase of bred sows from supposedly clean but actually infected herds has been the means of spreading the disease from herd to herd.

The disease is spread through contamination of premises, feed and water and from infected boars to sows during the breeding season.

Two dependable tests are available for ascertaining whether or not hogs are infected with the disease. The blood agglutination test, if positive, is a definite indication that the animal has the disease. Even more definite is the finding of the microorganisms causing the disease. This is accomplished through microscopic examinations of discharges from the suspected hog.

A number of breeders are having their herds tested for infectious abortion with the view of having them accredited. Herds under the supervision of accredited veterinarians and enrolled in project 1046 of the Agricultural Experiment Station, College of Agriculture, University of Illinois, and which give two annual or three semi-annual tests are accredited free from brucellosis by the Illinois Department of Agriculture.

Along with the testing and elimination of infected animals, the pens, hog houses and equipment must be thoroughly cleaned and disinfected. A 3-per-cent solution of compound creosol is satisfactory for this purpose.

Man is susceptible to undulant fever caused by infection from hogs having Traum's disease. Since the infection usually enters through a break in the skin, great care should be taken in handling infected animals or parts of carcasses.

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Improper Mailing of Bugs Blocks Control of Pests

Of the hundreds of insect specimens which worried farmers and other citizens sent to the College of Agriculture, University of Illinois each week for identification, many are so badly damaged in shipment as to make identification impossible, according to W. P. Flint, chief entomologist of the college and the Illinois State Natural History Survey.

One danger in this is that if some new or rare insect should be found in some part of the state and then be damaged beyond identification in shipment, there might be costly and needless delay in combating an outbreak of the pest.

There are more than 20,000 different kinds of insects occurring in Illinois, all of which have at least three distinctly different forms or life stages. To be able to recognize any one insect from this group, it is necessary to see various things on the insect's body, such as color, shape, mouth parts, wings and legs. When these structures are destroyed by crushing in the mails, it often is impossible to make identifications.

The damage is caused by the insects being sealed in ordinary envelopes or flimsy paper boxes and then being smashed when the mail goes through the stamping machine. The entomology staff is more than glad to assist farmers, gardeners and homemakers of the state in identifying insects, Flint stated, but that is almost impossible when the "bug" arrives in the form of a sticky smudge with only a part of a leg or wing intact.

One of the best systems of mailing specimens is to drop the insect into a tin tobacco box, wrap and tie the box securely and mail it. With especially fragile specimens it is sometimes a good idea to use cotton packing inside the box.

Another good method of shipping insect specimens is to place them inside a bottle and close the bottle with a cotton stopper. The cotton is preferred, since it seldom shakes out as will a rubber of cork stopper and at the same time allows air to pass into the bottle and prevent the decay and putrefaction of the insect. The bottle is harder to wrap and address than the tin box, since it must be packed inside some sort of container to prevent breakage.

Whatever kind of package is used, the sender should address the package to the chief entomologist at Urbana, using plain accurate lettering. If the package is sent by parcel post, as is usually done, there should be no writing other than the sender's name and address in the package unless it is sent first class.

-M-

Yellows Gains Headway In Some Strawberry Plantings

Blakemore yellows, at one time considered a virus disease affecting Blakemore strawberries, is especially prevalent in Illinois this year and should be combated by immediate roguing of mother beds, according to H. W. Anderson, chief of fruit pathology at the College of Agriculture, University of Illinois.

The yellows is apparently a characteristic introduced in the original cross of the plants just as some Delicious apple trees produce deep red sports. Any Blakemore strawberry plant, whether green or yellow, may produce a yellows runner or plants, but a yellows mother plant always produces yellow progeny.

Consequently, only such mother plants as show no signs of having the so-called disease should be used for setting a new bed, Anderson stated. By eliminating the individual plants showing signs of yellows, the gardener will be able to avoid setting out yellows plants next spring. The yellows plants should be taken out of the bed during June when they are large enough to spot easily but before the runner plants have formed.

-M-

Roosters Can't Crow About Egg Loss Of Five Millions

Roosters have nothing to crow about for the rest of the summer, for they will cause a loss of from $30 to $40 in every poultry flock of 100 hens unless they are taken out to prevent fertile eggs, says H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois. This loss from fertile eggs that spoil in hot weather is a conservative estimate based upon current feed and egg prices. It represents 25 to 30 per cent of the annual egg income from laying flocks, he said.

The direct loss of $30 to $40 that roosters cause the farmer through fertile eggs that spoil does not include the loss of feed used in producing the spoiled eggs, Alp said. Altogether it is estimated that roosters cause a loss of about $5,000,000 to Illinois farmers each year.

Where egg buyers candle and grade eggs, the loss is direct, since spoiled eggs are culled out before the dealer makes the purchase. While grading and candling is not practiced by a large percentage of dealers, those who buy on the count basis are forced to pay a smaller price, thus causing an indirect loss to the farmer. This is well illustrated by the fact that several Illinois poultrymen were able to get 29½ cents a dozen for graded eggs on a New York market, while their local "run of the flock" price was 19 cents. The spread between graded and count-basis prices is growing wider as the weather becomes warmer.

Roosters are necessary during the breeding season when eggs must be fertile to hatch, but at other times of the year should be sold or confined, Alp said. Especially desirable birds or young cockerels may be held over if they are kept away from the laying flock.

As egg and feed prices go to higher levels, the loss from fertile eggs becomes greater. However, the secret of highest cash income from eggs at any price lies in good breeding, proper feeding, better housing and the production of infertile eggs which are much less likely to spoil.

-M-

Drouth-Damaged Trees Have Small Chance For Comeback

Few of the many trees ruined by last summer's drouth can be saved, L. E. Sawyer, extension forester at the College of Agriculture, University of Illinois, said in discussing numerous inquiries from Illinois people as to what should be done with drouth-ridden trees. The best procedure in most cases is to cut the trees for fire wood or lumber.

Where only a part of the top is dead, careful management may tide over the tree until new top growth and foliage are sufficient to support life and growth. The ground under the tree should be spaded up to make a good soil mulch and this supplemented by three or four inches of barnyard manure. All of the dead wood should be cut out of the top. Where dead trees are removed this summer, plans should be made for replacements next spring.

Damage done by the drouth drove home the fact that livestock should be kept out of the wood lot, Sawyer said. Livestock damage to trees is not apparent in wet years, but the accumulated damage of many seasons shows up in dry years like 1934. In fact, the worst damage last year was invariably in wood lots used as livestock pasture. Livestock keep the secondary growth eaten and tramped down, letting winds get a better sweep close to the ground. This causes the ground to dry out rapidly. In addition, the ground is packed hard by the constant trampling, and organic matter and natural mulch are destryoed. The result is that the rainfall runs off the ground rather than soaking in. Evaporation is speeded up by the lack of mulch.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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High-Grade Land Leads Way In Upturn Of Farm Values

With the recent gain in farm incomes in Illinois, high-grade farm land is setting the pace in the increase in farm real estate values, according to C. L. Stewart, chief in land economics at the College of Agriculture, University of Illinois.

High-grade land has shown an average of between 25 and 37½ per cent increase since 1933 as compared to 12½ to 25 per cent for the medium and poor grades. With a large share of the top-grade land located in the central part of Illinois, farmers in that section were favored with greater valuation increases than were those in the poor-land sections, mostly in the south and the medium grades in the northern sections.

This widening of the gap between high and low grades of land is the reverse of what happened in Illinois and other states between 1920 and 1933 when prices of farm land were falling. The falling values served as a leveler of prices on good and poor land.

Approximately 41.7 per cent of the farm land in Illinois is rated as top grade, according to a recent five-grade classification of all land in the United States. The second, third and fourth grades amounted to about 18.3 per cent each, while the fifth, or poorest, grade was only 2.9 per cent of all the farm land in Illinois.

For the entire nation, farm land falls into the five grades in the following proportion: First grade, 5.3 per cent; second, 11.1 per cent; third, 18.1 per cent; fourth, 19.1 per cent; and fifth, 46.4 per cent. Only Iowa outranks Illinois with a larger proportion of grades one and two combined.

While tax rates on Illinois farm land are still burdensome in relationship to prices received and paid by farmers, omission of the state levy in recent years has lightened the load considerably. In fact, this may have had more influence in increasing farm land values than the increased prices for farm products, Stewart believes.

-M-

Falling Of Leaves Is Caused By Anthracnose Damage

Spotting, withering and falling of leaves from sycamore, oak and maple trees that is now causing so much comment is the work of the anthracnose disease, says Dr. L. R. Tehon, botanist of the Illinois State Natural History Survey, cooperating with the College of Agriculture, University of Illinois.

Almost complete prevention of anthracnose can be obtained by spraying susceptible kinds of trees with bordeaux mixture. The first spray should be applied while the leaves are unfolding. If wet weather continues, the spray must be repeated at intervals of five to ten days in order to prevent the occurrence of new infections. Even if the first spray is omitted, much of the infection can be prevented and the beauty of shade trees largely preserved by beginning to spray as soon as anthracnose infection is observed. Trees that have suffered severely can often be induced to make good growth if they are supplied with a nitrogenous fertilizer.

An epidemic of the disease is always to be expected in wet cool springs. As a rule trees suffer very little permanent damage from the anthracnose attack.

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Insects Brighten Chances For Seed Crop Off Clover

This may be one of those rare years when insects will come to the aid of farmers and give them the benefit of a cash seed crop from the first cutting of red clover, according to W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

In answer to numerous inquiries, he is recommending that farmers let the first crop of red clover stand for seed if enough heads have bloomed to produce a profitable crop of seed. However, if heads are so scarce that only a light seed crop can be expected, farmers may as well follow the usual practice of cutting the first crop for hay and letting the second crop stand for seed, he said.

Shortages of clover seed following the 1934 drouth and the increasing acreages of legumes throughout the United States have combined to put a premium on the production of seed crops, it was pointed out. Success of the clover seed crop, however, depends largely upon the presence of certain insects that pollinate the seed heads, Flint said.

This year it just so happens that there are rather large numbers of clover pollinators present. Farmers can expect a good set of seed in the heads that bloom for the first crop. Ordinarily only the second crop of clover is used for seed, because by that time there are nearly always enough bumblebees to insure a good set of seed, although this seed may later be destroyed by other insects.

The chief threat to seed from first-crop clover this year is the clover bud weevil. It has destroyed so many of the clover buds that it is doubtful if enough heads will form in many fields to make a profitable seed crop in the first cutting.

Any seed that the farmer can get from the first crop undoubtedly will be worth saving, inasmuch as there are several seed-destroying insects that are fairly abundant this year and that are likely to cause more or less injury to second-crop seed, Flint said.

-M-

Danger Of Deadly "Stalk" Disease Still In Old Corn

With sporadic outbreaks of the so-called cornstalk disease still occurring in Illinois, farmers can not afford to take chances feeding either grain or fodder of the 1934 crop to their horses, said Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

The outbreak which was at its peak during the past winter is estimated to have caused a loss of nearly half a million dollars among farmers in the central sections of the state. Estimated loss during the winter period amounted to approximately 5,000 horses.

No definite conclusions have been reached as to whether the grain or the fodder has been the cause of the trouble. The disease was reproduced experimentally by placing horses in a 55-acre corn field in Champaign County during the winter. Confirming observations by veterinarians and stockmen indicated that damaged corn, such as that grown during the drouth of 1934 may, in some way, be responsible for losses of horses from the disease.

Old corn has been fed with safety to hogs and cattle on the same farms where the horses died.

Since there is a strong indication that the 1934 corn is at the root of the trouble, oats should be used as a horse feed until a new corn crop is available, according to Dr. Graham.

Early treatment of the diseased horse by a local veterinarian will often result in a cure. The first symptoms are sluggishness, staggery gait and evidence of sleepiness and blindness. When any of these first symptoms appear, the veterinarian should be called. After the horse goes down and is unable to rise, death usually follows.

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Tiny Bacteria Are Worst Enemies Of Milk Producers

Even though it would require about eight billion bacteria of average size to equal the size of an ordinary cigarette, these little organisms are the dairyman's worst enemy when it comes to lowering the market quality and value of milk, according to J. M. Brannon, dairy bacteriologist at the College of Agriculture, University of Illinois. The toll taken by these bacteria will begin to mount as soon as the weather gets hotter, and yet there are many who still doubt that anything like bacteria exists in milk, he said.

They not only are guilty of souring milk but also change its color, flavor and consistency. Souring is especially prevalent during the summer months, because the bacteria involved in the case thrive at the temperatures at which milk is generally kept during that season.

Cleanliness and immediate cooling of the milk after it is drawn are the only effective ways of combating sour milk which, until the coming of modern refrigeration and sterilization equipment, was the bane of every dairyman. Incidently, the bacterium causing sour milk is used to an advantage in producing buttermilk, acidophilus and bulgaricus milks, as well as butter and cheese, Brannon stated.

Some changes in milk actually injure its food value, others spoil its appearance and nearly all of them caused dissatisfied users. While a few of the bacteria thrive in low temperatures, prompt cooling, sanitation and sterilization will go a long way toward keeping the milk in the best condition.

-M-

Wise Strawberry Growers Prepare Now For 1936 Crop

With one of the best strawberry seasons ever recorded in Illinois drawing to a close, growers can protect their improved position by thoroughly renovating their patches this summer, it is pointed out by V. W. Kelley, fruits extension specialist at the College of Agriculture, University of Illinois. To rest on the good season they have just had may mean that they will have a record poor crop next year, he said.

Renovating or "working out" the strawberry patch each summer helps to promote more vigorous runner plants for the coming year and also keeps in check the various insect and disease pests that attack strawberry plants.

Each spring the mother plants send out runners on which a part of the fruit crop is produced. If the old plants are not reduced and thinned, the patch will be a tangled mass of old and new runners which will yield inferior berries. After the patch has been renovated by a thorough mowing, raking and burning, the old rows should be "barred off" with a plow or disc, leaving a ridge of plants only a few inches wide. Then the old plants can be thinned to a distance of nearly three feet apart.

After the patch has been renovated and thinned, it should be cultivated to keep down the weeds and to prevent the formation of too many runner plants, Kelley stated. If fertilizer is needed, it may be worked into the soil near the row during cultivation.

Each row should be held to a width of about 18 to 20 inches. New plants coming from each mother plant should be limited to six to ten for each square foot. Such vigorous varieties as the Blakemore should be held to even less.

Along with thinning the plants, the renovation process will help clean out the diseased plants and discourage insects. Because of this strawberries can usually be grown successfully without the use of sprays. Not more than two crops should be grown on the same ground in succession unless the vigor of the plants can be maintained at a high level.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Drouth Broken But Bugs Still Cost Growers Fortune

While Illinois gardens are not being ruined by drouth this year, gardeners and vegetable growers still stand to lose between four and five million dollars from insects if the season is average. This is pointed out in a new circular, "Saving Garden Crops From Insect Injury," which has just been published by the College of Agriculture, University of Illinois.

Insecticides are essential in the control of injurious insects, but cultural practices are also of great benefit in reducing the damage, according to the circular, which was prepared by L. H. Shropshire, field entomologist, and C. C. Compton, associate entomologist, Illinois State Natural History Survey, who are cooperating with the college.

Some 54 insects which commonly attack garden plants are listed in the circular. A description of each insect, its habits, method of injury, life history and and the best means of control is given. Illustrations are included to help gardeners recognize the various kinds of injurious bugs.

Insects attacking each of the major vegetable and truck crops are grouped separately and control measures outlined for each of them. There are separate sections for insects attacking cabbage and related crops, potatoes, sweet corn, tomatoes and eggplant, vine crops, onions, peas and beans, asparagus; beets, spinach, lettuce, celery and dill; carrots and parsnips, horse radish and sweet potatoes.

With insecticides playing an important part in the control of garden insects, the circular explains the composition, the kinds of insects against which each type of poison is effective and the precautions which must be observed in handling the insecticides. Arsenate of lead and the fluosilicates are not recommended for plants where the treated portions will serve for food, since there is slight danger of poisoning.

The two general types of insecticides, stomach and contact poisons, are described in the circular and directions given for mixing, applying and handling them.

-M-

Safety In Homes Would Reduce Bill Of 600 Millions

With home injuries costing people of the country 600 million dollars a year, the Fourth of July is a good time to start an intensive safety campaign in every Illinois home, in the opinion of Miss Gladys J. Ward, home management specialist at the College of Agriculture, University of Illinois.

Homes seem to be getting more dangerous instead of safer on the basis of the evidence that there were 3,000 more fatalities from home accidents in 1934 than there were in 1933, she said. The total for the past year, according to figures from the National Safety Council, was 33,000, the largest since the council started making estimates of home injuries and deaths.

The estimated total of both fatal and non-fatal injuries in the home during the past year was 4,800,000. The cost of these injuries, including wage loss, medical care and overhead expense of insurance amounted to 600 million dollars.

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Threshing Season Is Welcome Relief To Stock Feeders

Opening of the threshing season in Illinois is more welcome than ever this year, for it means the end of drouth feed shortages for stockmen who have been forced to buy corn, said E. T. Robbins, livestock extension specialist at the College of Agriculture, University of Illinois.

When corn is worth $1 a bushel, wheat is worth a dollar for general feeding purposes, rye 80 cents, barley 70 cents and oats 50 cents. This difference between the price of corn and of small grains allows for the grinding of small grains in most cases. The best results are usually obtained where the small grain is coarsely ground, Robbins stated.

For fattening cattle not more than half of the ration should be composed of any one small grain. Equal parts of wheat and oats form a satisfactory cattle fattening ration, especially when supplemented with one pound of cottonseed meal to each seven pounds of grain along with clover hay.

Such a ration has been fed to steers at the college with good results. The steers averaged 2.36 pounds of gain daily for three months. At that time corn was 77 cents a bushel, wheat 70 cents and oats 30 cents. A greater profit was returned on this ration than where corn or other grain combinations were used with the same supplements.

Pigs growing and fattening on pasture do well even though wheat replaces all of the corn in the ration. A ration of whole wheat and tankage, free choice, and pasture has also shown good results. The addition of a small amount of whole oats or up to one-third of the grain content in ground oats improved the ration.

-M-

Guernsey Field Day Is Set For July 10 Near Wheaton

Recent encouraging upturns in the dairy industry are expected to help swell the turnout of Guernsey cattle breeders for the annual field day of the Illinois Guernsey Cattle Breeders' Association which will be held on the St. James Farm, near Wheaton, on July 10.

Approximately 500 probably will attend, according to those in charge of the program. Prof. C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois, will be master of ceremonies for the day's program, and E. I. Pilchard, boys' 4-H club specialist of the college, will be in charge of a Guernsey judging contest open to teams of 4-H club members from any part of the state.

In addition to the contest other features of the program will include an inspection of the St. James herd, which is one of the best representatives of the Guernsey breed in the state. Outstanding animals as well as methods of feeding, breeding, and managing the herd will be attractions.

L. R. McNeil, Tuscola, is president of the Illinois Guernsey Cattle Breeders' Association, which is arranging the field day. H. C. Horneman, Danville, is secretary-treasurer, and directors are H. W. Winker, Belleville, R. E. Muckelroy, Carbondale, and L. C. Studer, Roanoke.

Plans for the meeting have the advantage of being laid at a time when Guernsey breeders and other dairymen are taking stock of a number of encouraging features in the industry. Prices of dairy products are markedly higher than they were last year, and with the short storage stocks and a fairly steady demand should maintain a reasonably firm position, economists believe. Pasture is much improved over what it was a year ago, thereby easing the feed situation, while butter imports, which amounted to 20 million pounds during the first five months of the year, have largely ceased owing to the disappearance of the import margin between New York and London prices.

-M-

Farmers Are Out To Save Timothy And Red Clover Seed

With supplies of red clover and timothy seed much smaller than usual and more of such seed being used for soil conservation and crop adjustment purposes, there will be an added premium on all the red clover and timothy seed that Illinois farmers can manage to save this season, in the opinion of J. J. Pieper, crop production specialist of the College of Agriculture, University of Illinois.

Fortunately, enough clover pollinating insects may be present this year to produce seed in the first cutting of red clover. Ordinarily, however, the first crop is cut for hay and the field then left for seed. The amount of seed produced by this second crop depends largely upon bees. Since the pollen of red clover is heavy and sticky, the crop will not fertilize unless there are plenty of insects to scatter the pollen. Bumble bees, the large solitary bees and the adults of cutworms and army worms are the best carriers of pollen.

Red clover should be cut for seed when the most ripe heads are on the plants said Pieper. If the crop is cut too early, the seed will shrivel. Late cutting means that a lot of the seed will be wasted by shattering.

While there is both a seed and hay shortage of timothy, the hay shortage will be the easiest to make up, according to Pieper. A large acreage of soybeans as well as recently seeded alfalfa and other forage crops will help supply the hay. Consequently, enough timothy should be left to supply at least the farmer's own needs for seed next year.

The best time to harvest timothy seed is when most of the heads have turned brown and the seed is just beginning to shatter from the extreme tips of a small portion of the earliest heads.

-M-

Heavy Rains Show Need Of Efficient Water Equipment

Heavy rains in Illinois during the past few weeks have emphasized the need for proper construction of livestock watering places to keep them from becoming mud holes filled with dirty, unpalatable water which is a costly menace to livestock health, said W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

Keeping plenty of clean, fresh water in every pasture and feed lot is a basic principle of good livestock management and one practical safeguard against spread of disease. The supply may come from a well, spring or stream, but the actual watering place should be so constructed as to protect the water from contamination.

Where the source of the water is a pond, the water will recede as the dry season of the year approaches. This will necessitate the livestock wading knee-deep through mud to reach the stagnant, impure water unless special provisions are made to avoid this.

One of the best watering systems for a permanent pasture can be made by building a short concrete trough in a spring run and providing a corrugated concrete approach. This arrangement makes the water easily accessible for the herd and does away with the mud hole menace.

Watering places which prevent contamination, formation of mud holes and waste of water are not only useful during wet seasons such as the present but are also well worth the money during dry seasons such as the summer of 1934.

Where plenty of gravel or stone is available, either of these materials may be substituted for concrete in the construction of approaches. However, sharp rocks should be avoided, since they may injure animals' feet.

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Welcome Rains Destroy Millions Through Soil Erosion

Welcome as they have been, record rains throughout Illinois this spring have ost farmers millions of dollars in soil erosion and left damage which will take years o repair, it is estimated by Dr. W. L. Burlison, head of the department of agronomy nd chairman of the soil conservation committee, College of Agriculture, University of llinois.

Fortunately, farmers and the general public have been so struck by the damage hat there is now a more concerted effort than ever before to halt erosion and keep arm lands and valuable soil fertility at home, he said.

Streams and rivers filled with muddy water, fields striped with newly formed ullets, gullys that have widened and deepened and ditches that have been silted full r partly full have all served to bring home the unreckoned damage which erosion has one to unprotected fields, according to Dr. Burlison.

In May alone almost double the normal amount of rainfall was reported by 101 eather stations of the state, Dr. Burlison said. The average was 7.78 inches, whereas he normal amount is 4.16 inches. Flood damage has been reported in 25 of the 102 coun- ies of the state.

Erosion this spring was at its worst on three million acres of Illinois land hat should never be farmed, Dr. Burlison said. Less severely hit were another three illion acres that are subject to serious erosion and that are suitable only for or- harding, permanent pasture or timber. There is an additional area of more than 2,618,000 acres in the state where erosion lowered the productivity of the land unless t was protected, and little of it was, he said. Soil washing even added to its toll n 16,000,000 acres of relatively flat land in the state where erosion occurs on the onger slopes.

Erosion was all the worse during the heavy rains because of the after effects f the 1934 dry weather, Dr. Burlison pointed out. In many fields the earth was dry nd powdery when the heavy rains came, and tons of valuable top soil went down rivers nd streams to make them still muddier than they already were, he said. With the top oil washed away, valuable fertility elements were lost and the raw subsoil was brought earer the surface. Once erosion has advanced to the place where the subsoil is ex- osed, Nature can build it into tillable top soil only after thousands of years, Dr. urlison said.

The fact that many fields also were stripped of vegetation as a result of he 1934 drouth made erosion losses heavier this year, Dr. Burlison said.

Seriousness of soil erosion this spring has given new impetus to the work hich the College of Agriculture, University of Illinois has been carrying on for years o help farmers cope with this problem. One of the most recent developments in this ork has been the inauguration by Dean H. W. Mumford of the state coordinated soil con- ervation and improvement project which brings together the forces of all agencies now ctive in this field.

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Harvesting Skill Of Farmer Taxed In Season Like This

A little special equipment and a lot of patience are the only means for farmers to overcome lodged straw and muddy fields in harvesting the state's crop of 2,209,000 acres of wheat, rye, oats and barley this season, according to A. L. Young, agricultural engineer at the College of Agriculture, University of Illinois. Heavy rains have made harvesting a far more complicated problem than it usually is, he said.

Suitable drive-wheel lugs and a power take-off will usually solve the muddy field problem for the farmer who uses a tractor and power binder. The owner of a horse binder, whether he pulls it with horses or tractor, has a different problem to meet in a muddy field, since the bull wheel of the binder skids and the binder will not work.

The only satisfactory solution to this problem is the use of a small gasoline engine attached to the binder and coupled to the cutting and binding mechanism of the machine, Young stated.

Lodged straw offers a difficult problem at the best, said Young. Extension guards attached to the regular guards of the binder are of some help in picking up and straightening the straw. Varying grain conditions also call for frequent changes of the reel. If the grain is badly lodged, it may be necessary to cut only in one direction, that is opposite the way the straw lays.

Cutting with a mower and raking is not a satisfactory method, but may be used with some success for small fields and where the straw is so badly lodged and tangled as to prevent binding.

During rainy years, such as the present, it is advisable to set the bundles up in long, narrow shocks to give them plenty of opportunity to dry out. It is also best to delay cutting until the grain is fairly ripe and make small bundles that will dry readily.

-M-

Fireworks Trash Harbors Danger For Farm Livestock

Fourth of July, with all its popping firecrackers, swishing skyrockets and beautiful firework displays, is over, but danger lingers on for farm livestock that may eat the remains of fireworks, said Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

Many varieties of fireworks contain yellow phosphorus, a highly poisonous substance. The remains of firecrackers and other Fourth of July explosives often contain a small amount of this poison. When these remains are eaten by cattle, hogs, poultry and other farm stock, there is a possibility that the animals will die from the effects of the yellow phosphorus.

A striking example of the danger is shown in the case of a farmer near Champaign who, two years ago, lost $150 worth of hogs because the animals ate the remains of 15 cents worth of exploded torpedoes. The stomachs and livers of the dead hogs were examined and traces of yellow phosphorus found.

The rest of the herd were treated with appropriate doses of copper sulphate and potassium permanganate and showed no symptoms of chronic poisoning.

Practically all the danger from this source can be eliminated if the remains of exploded fireworks are cleaned up from the premises and burned, Dr. Graham declared. It may seem like a tedious job, but when 15 cents worth of torpedoes may kill $150 worth of hogs as they did for the Champaign county farmer, it is a job worth while, he pointed out.

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Good Pastures Do Not End Risk Of Snakeroot Poison

Heavy rains which have made Illinois pasture luxuriant this year have not ended the danger of white snakeroot poisoning to man and to livestock during the coming few months, according to a warning in a newly revised circular, "White Snakeroot Poisoning," which has just been issued by the College of Agriculture, University of Illinois.

Even though pasture grass is abundant, animals may eat the leaves of the poisonous white snakeroot weed from time to time. Overstocking pastures, even if they are good ones, increases the risks from the poisoning, which occurs every year in Illinois, the circular warns.

Persons using dairy products or meat of animals affected by "trembles," as white snakeroot poisoning is known, may contract milk sickness, an ailment which runs a rapid course and has a high mortality rate.

Keeping livestock away from white snakeroot and eradicating the weed from pastures and woodlots are the only sure ways of preventing the poisoning, according to the circular. Treatments thus far developed are far from satisfactory. Tremetol is the toxic agent in the plant and is absorbed into the animal's system when the plant is eaten, according to the circular, which was written by Dr. Robert Graham, chief in animal pathology and hygiene at the college, and his assistant, Miss V. M. Michael.

The plant is a tall, slender perennial herb which usually grows in partially cleared woodlots, swampy areas, shady ravines and in groves along streams. The greatest danger is from July until late in the fall. This is especially true during dry years when pastures are short and dry. White snakeroot can generally be recognized by its broadly oval leaves, set opposite each other and having sharply-toothed, or serrated, edges. The non-poisonous varieties usually have narrower leaves.

In small patches the weed is best eradicated by pulling each plant by the roots. In large patches proper cropping is the most safisfactory means of eradication. Livestock should be kept out of pastures containing any of the weed.

Weakness, loss of appetite, constipation and a trembling of the voluntary muscles when the animal is forced to move are among the early symptoms of poisoning. When these symptoms are observed the stock should be taken from pasture and a reliable veterinarian called. The immediate attention of a physician should be given to cases of milk sickness among humans.

-M-

Chinese Elm Is Not As Stocky Shade Tree As Believed

A new threat to shade trees in the form of a trunk canker affecting Chinese elms has just been found in Illinois, while a root rot has been reported attacking this particular type of elm throughout the Great Plains region, according to Dr. J. C. Carter, tree disease specialist with the Illinois State Natural History Survey, who is cooperating with the College of Agriculture, University of Illinois.

These developments are a warning, he said, that persons who plant Chinese or other Asiatic elms in place of the American elm may be disappointed if they expect these new varieties to be entirely free from disease attack.

The Chinese and other Asiatic elms, while resistant to the Dutch elm disease, are susceptible not only to the two recently reported diseases but also to several others. Among the more common diseases which affect Chinese elms are root and basal trunk cankers and a number of leaf spotting diseases.

-M-

The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Chinch Bugs Gone In All But A Few Scattered Areas

Chinch bugs have now been nearly wiped out in Illinois for this season and probably will not recover from the setback for four or five years, according to W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

Except in a very few scattered areas over the state there are not many chinch bugs left, he reported.

By putting an end to the farmer's chinch bug worries for this year, the heavy rains which came just at the right time have been worth more than 40 million dollars to Illinois grain growers for this purpose alone, Flint said. Damage to this amount was done to the state's corn, wheat and oats by the 1934 infestation, and if the weather had not been unfavorable to the pests, the toll this year probably would have been even larger, he said. More old bugs came through the past winter to start the new infestation than was the case in 1934, he pointed out.

Only in a few scattered places in the state are the bugs thick enough to make it worthwhile for farmers to build barriers for protecting corn fields against the migration of the pests from small grain fields at harvest time, Flint said.

Farmers of the state last year built more than 22,000 miles of creosote barriers, without which the 40 million dollar toll taken by the bugs would have been even higher.

There could be no more striking demonstration that the weather is the most important factor in the control of chinch bugs than has taken place this year, Flint pointed out. Cool weather early in the season kept the old bugs in winter quarters and thus delayed mating and egg laying. Later the heavy rains drowned the old bugs and beat the young ones into the ground where they were "mudded" in and died. Dampness and high humidity were favorable to the spread of the white fungous disease which attacks the bugs.

The few bugs that were produced and survived from the first brood are now in cornfields or soon will be, Flint said. If they have not already done so, they will very shortly grow wings. There will then be a general flight and the bugs will scatter over the cornfields, usually picking the thinner stands of corn in order to avoid dampness and shade.

During the next three months the bugs from the first brood will remain in the corn. During this time a second brood will be produced.

Wet weather in August will greatly reduce the second brood and thereby lessen the danger of damage next year, Flint pointed out.

Any bugs that survive from the second brood will start their flight from the cornfields to winter quarters about the last of August. The movement will be completed by the first of November or earlier.

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More Seeding Of Alfalfa Likely On Illinois Farms

There will be a wave of new plantings of alfalfa and similar crops in Illinois this fall, and many farmers already are laying their plans for seed bed preparation, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

Hay shortages resulting from the 1934 drouth, as well as the loss of alfalfa seedings from late cutting last fall and from ice sheets in the winter, have made new plantings more urgent this year, he said.

In the northern sections of Illinois alfalfa does best if seeded between July 20 and August 15. In the central and southern sections August 1 to 20 is the best period, Hackleman stated. This means that seed bed preparation must begin immediately after the small grain has been removed from the field.

Proper seed bed preparation is one of the most important factors in the successful raising of alfalfa, Hackleman believes. The ground should be well pulverized, firm and settled. If neither alfalfa nor sweet clover has been grown on the field before, inoculation is a necessity. All soil should be tested for acidity before being seeded to alfalfa. Where limestone is needed, the safest method is to work it into the soil late this summer and then seed the alfalfa next spring. This method will give the limestone plenty of time to sweeten the soil.

In choosing seed, the farmer should consider his locality, normal climatic conditions, and the possibility of bacterial wilt. Variegated varieties such as Hardigan, Grimm and Canadian variegated are generally better adapted to the northern sections of Illinois, since they are extremely resistant to cold. However, they are short-lived in the face of wilt. Where bacterial wilt is known to be in the soil, a good quality western-grown common will be winter hardy for two years, which is the average length of life for alfalfa in wilt-infected soil, regardless of the variety.

Where the winters are not too severe, the northwestern common alfalfas grown in Montana and the Dakotas, as well as Nebraska and Kansas commons, will be satisfactory.

With the exception of Hardigan seed which is limited, seed of most of the varieties can be obtained without difficulty. However, growers should obtain seed of known origin and quality, preferably that which has been certified, Hackleman stated.

Twelve to 15 pounds of seed to the acre is the best sowing rate for Illinois conditions. This is on the basis of good quality seed having a high germination test.

-M-

Good Oats Crop Will Help End Feed Worries For Hogs

Prospects for a better than average oats crop as the harvest season opens are more cheering than ever to many Illinois farmers this year, since there will now be plenty of hog feed to supplement the short corn supply from the 1934 crop, according to W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois.

Oats is worth 90 to 95 per cent as much as corn for hog feeding, if the oats makes up only about one-third of the ration. This has been shown in extensive feeding tests on the college farm. Consequently the present price ratio between oats and corn makes it profitable for most Illinois farmers to replace at least a third of the corn in their grains ration with oats. Where oats and protein supplement are fed exclusively, the oats are worth only 70 to 80 per cent as much as corn, Carroll stated. Gains are slower as the percentage of oats in the ration increases and more total feed is needed for a given amount of gain.

-M-

Record Soybean Crop Will Build Up Reserves Of Hay

A record acreage of soybeans offers Illinois farmers an excellent way of rebuilding hay reserves this year, and the problem of rainy weather hay making will be minimized if the beans are cut at the right time, according to J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois.

The beans may be cut for hay any time from the forming of the seeds in the pods until they are about three-fourths developed. The best time, weather being favorable, is when the seeds have developed just enough to touch each other in the pods. At this time there are few if any dry leaves at the base of the plants, and the farmer will get the maximum yield of good quality hay.

Since soybean hay is slow to cure after the fall weather begins, it should be cut as early as possible after the seed begins to form, Hackleman said. For most of Illinois the last week in August is generally the most ideal time for putting up soybean hay. The weather is usually dry and fairly hot, and the heavy dews and cooler days of fall have not yet come.

Bean hay may be cut either with a mower or a grain binder, although the mower is usually the most satisfactory for Illinois conditions. If cut with a mower, the hay is generally allowed to cure to some extent in the swath and then raked into windrows before the leaves are dry enough to shatter. Some farmers, however, prefer to rake the hay immediately after mowing and allow it to cure in the windrow. This has been found an excellent method if the weather is dry and hot.

A grain binder can be used in dry weather, but the bundles must be small and loosely tied. If fall rains occur as they did in 1934, each bundle will probably develop a moldy core about two or three inches in diameter.

-M-

Rainy Weather Making Lespedeza A Popular Hay Crop

Lespedeza, the legume which has spread faster than any new crop introduced into Illinois in recent years, is gaining added popularity in a season like this when farmers are beset with the problem of curing hay between rains, according to W. B. Nevens, dairy cattle feeding specialist at the College of Agriculture, University of Illinois.

Being light stemmed, later to mature and comparatively quick to cure, lespedeza fits into a summer like the present when frequent rains hamper the putting up of alfalfa and similar crops which require a longer time to cure properly and must be cut early in the season.

Tests at the college have shown that Korean lespedeza and alfalfa are practically equal in feeding value. The only noticeable difference is that the cattle show a slight preference for alfalfa when both hays are available.

Lespedeza, cut at the full-bloom stage, has been found to have 60 per cent leaves and to show 13 per cent protein and 3 per cent lime. Good quality alfalfa hay is slightly less leafy, registering 49 per cent. However, alfalfa has 16 per cent protein and 4.5 per cent lime.

Milk production is practically the same whether cows are fed alfalfa or lespedeza. In college tests average daily production has been approximately 45 pounds of 4 per cent milk for each cow regardless of which hay has been fed, Nevens stated. Nor have the two hays shown any variance in their ability to produce gains when fed to young dairy cattle.

To make the best quality hay, lespedeza must be cut at about the full bloom stage, which is late August or early September in Illinois. As the seed stage approaches, the hay loses its palatability. Korean lespedeza reaches the ideal cutting stage in southern and central Illinois in late August or early September.

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Cross-Cultivating In Laying By Corn Checks Erosion

Destructive erosion on more than 5½ million acres of Illinois farm land can be materially reduced during the remainder of the year if farmers will only cultivate across the slope when they "lay by" their corn for the season, according to H. L. Buckardt, chief soil erosion extension specialist of the College of Agriculture, University of Illinois.

More than 75 per cent of the estimated 7,589,000 acres of corn in Illinois this year is on land where erosion will wash away top soil, drain off valuable fertility and jeopardize future crops unless proper protective measures are taken, he said. If the corn is cultivated across the slope at the last cultivation, each shovel mark will serve as a miniature terrace to help check the flow of run-off water, he pointed out.

Experimental results at Bethany, Mo., show that as much as 74 tons of soil an acre may be lost annually from land sloping 8 per cent that is growing continuous corn and that is cultivated up and down the slope, Buckardt reported.

"The common practice in Illinois is to check the corn rows the long way of the field, which in many cases results in corn rows running up and down slopes. Consequently after the corn is cultivated, each row serves as a surface drainage unit for the slope.

"The one-time favored opinion that crops should be planted up and down the slope so that each row could take care of its own water is no longer a desirable one. The best practice is to plant and cultivate corn so that the rows run across the slope. Each row ridge then helps check the flow of run-off water and thereby reduces the losses from erosion.

"While cultivating across the slope is always sound erosion prevention, it is most important when the corn is laid by at the last cultivation. The field will, in most cases, remain without further cultivation throughout the summer, fall and following spring. If the common practice is followed, the plow ridges and furrows up and down the slopes during this long period of time will create ideal conditions for serious losses from erosion."

Cultivating across the slope is only one of the practices which must be more generally adopted if soil erosion is to be controlled, it is pointed out by specialists of the college. Seriousness of the problem is revealed in the soil survey reports of the college which show that there are more than three million acres of Illinois land that are so subject to destructive erosion they should never be farmed. There are another three million acres that are subject to serious erosion and are suitable only for orcharding, permanent pasture or timber. There are more than 12,000,000 acres where erosion control practices are necessary to maintain the productivity of the land.

-M-

U. Of I. Station, W I L L, Reporting Grain Markets

A five-minute report of the Chicago grain market is now being broadcast daily except Sunday at 8:55, 9:55 and 10:55 a.m. by the University of Illinois radio station, W I L L. It broadcasts on 890 kilocycles.

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Wet Weather During Haying Heightens Danger of Fire

An estimated annual loss of one million dollars in Illinois from fires caused by the spontaneous combustion of wet hay may be increased this year unless farmers take extra measures to prevent the heating of hay which has been dampened by the frequent rains, according to E. W. Lehmann. He is head of the department of agricultural engineering at the College of Agriculture, University of Illinois.

Hay which goes into the barn or stack while it is damp from rains or dew is almost sure to heat. In many cases the temperature only gets high enough to spoil the hay, but there are frequent cases where enough heat is generated to start a fire. The heat is caused by bacterial and chemical actions which are speeded up by the presence of excess moisture.

The best preventive is to avoid putting damp hay into a barn or stack. However, frequent rains this summer have made that impossible in many cases, Lehmann said. If the moisture is only slight, the sprinkling of salt on the hay as it goes into the barn or stack will usually slow down the heating enough to prevent combustion. Not more than 20 pounds of salt should be used to each ton of hay.

Spreading the damp hay out in a thin layer will allow it to dry more rapidly. However, such hay should not be placed on top of dry hay, as the dry hay will burn much more readily and may catch from the heat of the damp layer on top.

Where long hay begins to heat, it is dangerous to move any of it until the whole pile has been thoroughly soaked. A slight disturbance may admit enough oxygen to cause the hay to burst into flame. Chopped hay can be handled readily provided enough water is handy to sprinkle any burning portions which may be removed from the pile.

A leaky roof is a possible source of danger as well as the means of spoiling considerable hay.

-M-

Alfalfa Is Good Summer Pasture When Bluegrass Fails

With the bluegrass pasture season rapidly coming to a close in most sections of Illinois, the record acreage of alfalfa growing in the state this year offers a satisfactory substitute, said J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois. Alfalfa is especially good in maintaining the flow of milk from dairy cows.

Danger of bloat is very slight if stockmen will follow a few simple precautions, Hackleman said. In fact, there is little more danger than in pasturing red clover.

Two general precautions should be observed in pasturing alfalfa. First, it should not be pastured when it is wet nor when the cattle are hungry. Second, the cattle should be fed plenty of dry forage and have access to plenty of water at all times.

Alfalfa that is wet, either from rain or a heavy dew, is much more likely to bloat the cattle than is alfalfa that is dry. The danger of bloat is increased when the cattle are turned on to the pasture while hungry, for they will gorge themselves with the green, succulent feed. A regular feeding of grain and good forage just before the cattle are turned on to the pasture will cause them to eat more leisurely and in smaller amounts. Thus the alfalfa becomes a part of the summer ration rather than the entire ration.

Such dry forage as alfalfa hay and oats straw along with plenty of water at all times will aid materially in avoiding alfalfa bloat.

Pasturing of alfalfa will not injure the crop if the pasture is not overloaded, Hackleman stated.

-M-

Proper Timing Of Peach Picking Increases Prospects

With prospects for the best crop in years, Illinois peach growers can still further increase their advantage this year by delaying harvest a week or so longer than is the usual practice, according to M. J. Dorsey, chief in pomology, and R. L. McMunn, associate, at the College of Agriculture, University of Illinois. Prospects now are for a fine quality crop of 3,420,000 bushels, which is double the five-year average for 1928-1932.

Tests made at the college show that the same number of peaches which will make only 100 bushels if picked on August 15 will make 124 bushels if not harvested until a week later. Harvesting at the right time thus allows the peaches to reach their maximum size.

Many peach growers in the past have harvested the major part of their crop during the early part of the ripening season just after the color of the fruit began to change from green to yellow. This was done in the belief that early marketings would net greater cash returns, keep better in transit and escape brown rot.

Early-picked fruit does not reach its maximum size. Consequently the yield is below that of peach crops harvested later in the ripening period. The advantage gained from early marketings as well as from the better keeping qualities of the fruit picked at the half ripe stage are outweighed by the smaller size of the peaches, it has been indicated by the college tests.

Elberta and other yellow varieties of peaches are at the ideal harvesting stage when the skins have changed from green to a light yellowish green and have about a 25 per cent blush apparent. At this stage the fruit will be of almost maximum size, but still be firm enough to withstand shipping.

Peaches should never be left on the trees until they become "soft ripe." While they may be excellent to eat fresh at this stage, they will not withstand shipping or storage.

-M-

Using Resistant Wheat Only Known Way To Check Rust

Planting resistant varieties is the only known means by which Illinois wheat growers can control outbreaks of yellow leaf rust such as have occurred quite generally over the state this year, said Benjamin Koehler, crop disease specialist at the College of Agriculture, University of Illinois. Being a fungous disease, yellow leaf rust is spread by spores. Moist weather increases the chance of infection. Unlike some kinds of rust it requires no alternate host, since the spores infect the new crop of winter wheat in the fall and live there until spring. So far, the development of wheat that is resistant to leaf rust is still in its infancy, according to O. T. Bonnett, plant breeding specialist at the college. However, a few varieties that are partially resistant to the disease have been developed and are available.

-M-

Rabies Control Hinges On Following Simple Measures

Instead of increasing as it now is, rabies among dogs and other animals could be practically eliminated if every person would follow a few simple precautions, according to Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois. Last year Illinois had 400 dog cases and eight human fatalities as compared with only 191 dog cases and four human fatalities in 1930. Avoiding the handling of strange dogs, eliminating ownerless or stray dogs, placing rabid dog suspects under observation, consulting a physician in the case of dog bite, vaccinating all dogs annually and obtaining microscopic diagnosis of rabid dog suspects are the chief precautions in suppressing rabies, Dr. Graham said.

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Peach Prospects Drop, But Quality To Be Best In Years

Although the Illinois peach crop will be much smaller than earlier prospects indicated, consumers have something to look forward to in the way of higher quality in the fruit which will be harvested this year, according to V. W. Kelley, horticultural extension specialist of the College of Agriculture, University of Illinois. The Illinois Elberta crop is expected to be harvested between August 5 and 25.

Recent experimental work in which the college demonstrated how both quality and yield of peaches are improved by delayed picking has paved the way for the higher quality which consumers of Illinois peaches will get this year, Kelley said. Convinced by the results of these tests, many growers are expected to let the fruit ripen on the tree somewhat longer than has been the practice in the past, with the result that the natural flavors will develop, Kelley explained.

"Peaches picked too green before the ground color begins to turn yellow never acquire the natural flavors and aroma which are essential to that high degree of palatability that is expected in this fruit. Because peaches are generally picked somewhat green for distant shipment from one state to the other, Illinois consumers are more likely to get highly-flavored fruit if they buy Illinois-grown peaches.

"Not only does delayed picking increase the quality of the peach, but also it greatly increases production because of the larger size of the fruit. In the 1934 experiments fruits harvested seven days after the normal picking date made about 25 per cent more fruit than they would if picked at the usual time. That is, each 100 bushels in the orchard on the normal picking date had increased to 125 bushels seven days later. The fruit not only was larger but also held up well in transit and storage and was of much better quality than the fruit picked earlier."

Late estimates place the Illinois yield at not more than half the bumper crop of 4,300,000 bushels of 1931. Damage by hail and a late drop after thinning are largely responsible for the smaller estimate. Because of the reduced yield the Illinois crop is expected to move at a price which should bring a fair return to the grower, Kelley said.

-M-

Shows And Fairs Keeping 25,000 4-H Club Members Busy

Illinois' 25,000 4-H club members are in the midst of their busiest season with an estimated 130 shows and fairs of various kinds scheduled between August 1 and December 15, according to reports reaching the extension service, College of Agriculture, University of Illinois. The majority of these events will take place during the coming six weeks.

Thirty-eight club shows will be held in 45 counties during August, it is shown by partial reports from those counties. The same reports indicate that July, with 19 shows already held, will probably be the second busiest month. September comes third with 17 club shows scheduled, while October has two and November and December each have three. Club workers at the college estimate that approximately half of the club shows and fairs were included in the partial report from 45 counties.

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Pastures Will Be Made Or Ruined In Next Few Months

Pastures have recovered remarkably from the drouth damage of 1934, and farmers can hold their gains by careful management during the rest of the summer, according to crops specialists at the College of Agriculture, University of Illinois. Protecting pastures at this critical period of the year also will help promote the shift from grain to more grass and legumes, it was pointed out.

Overgrazing, poor soil, dry weather or any other condition which tends to slow the growth of pastures will give weeds and brush a chance to get started. Last summer's drouth, which killed out large patches of pasture grass, gave the weeds an excellent chance to get started.

Getting rid of these weeds is one of the first measures to be followed in the pasture management schedule for the rest of the summer, the specialists say. While the small patches may be grubbed out or killed with chemicals, mowing is the best eradication method for larger areas. Mowing prevents many annual plants from producing seed and at the same time discourages growth of the perennials.

Mowing, grubbing and poisoning will not get all the weeds the first year. These practices must be continued from year to year, and the farmer will need to be on the alert for new patches of weeds.

Use of adapted seeding mixtures and proper fertilization will help combat the weed menace and at the same time will build up the pastures. One mixture which has given good results on the college farm is composed of 5 pounds of Kentucky bluegrass, 3 of red top, 12 of brome grass and 2 of white clover. A good mixture for northern and central Illinois pastures where the soil is sweet and contains medium to high amounts of available phosphorus is composed of 4 pounds of sweet clover, 4 of red clover, 1 of white clover, 6 of bluegrass and 4 of timothy. A recommended combination for northern and central Illinois pastures with sweet soils but which are low in available phosphorus includes 4 pounds of sweet clover, 3 of alsike clover, 4 or lespedeza, 4 of timothy and 6 of red top.

A mixture that can be used on southern Illinois pastures with slight to medium acid soils that are medium to high in available phosphorus contains 2 pounds of alsike clover, 5 of lespedeza, 3 of bluegrass, 3 of orchard grass and 6 of red top.

Many times weeds get into the pasture through impure seed. This can be avoided to a large extent by the purchase of guaranteed seed from reliable dealers.

-M-

Culling Will Fit Flock For Better Poultry Outlook

A favorable fall and winter outlook for egg prices promises added benefits from the careful and thorough culling of the laying flock this summer and fall to get rid of the non-layers and other "boarders," according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Good layers not only will produce more eggs for the favorable markets that are now in prospect but also will pay better returns on the feed they eat, he said. Since the average hen uses six to seven pounds of feed a month, non-layers can soon "eat their heads off," he added.

How close to cull the flock depends upon its size, average production, number of pullets available for replacements and other factors. In a high-producing flock the culling can be done very closely, since the percentage of non-layers will be small. On the other hand the producer who has only a limited number of pullets coming along may wish to cull rather lightly in order to avoid depleting his flock.

-M-

Prospects Of Soft Corn Put Trench Silo In Limelight

With condition of the state's 7½ million acres of corn, mostly late planted, continuing below average, trench silos bid fair to become an important factor in the preservation and use of soft corn which may be prevalent in many sections of Illinois this fall, it is said by E. W. Lehmann, head of the department of agricultural engineering at the College of Agriculture, University of Illinois.

Soft corn is difficult to store in cribs, bins or barns, but makes excellent silage. Since it is cheap, simple to construct and costs less to fill, the trench silo appears to be one of the best means by which Illinois farmers can store this soft, immature corn. The only construction equipment needed is a plow, slip and tractor or team of horses. Two men with this equipment can construct a trench silo in from two to four days depending upon the size.

The silo should be constructed with a slight slope in the sides and on high ground where there is less likelihood of standing water. If a bank or slope is available, the lower end of the "trench" may be left open as a natural drain.

Silage must be well packed and kept higher in the middle than on the sides during the filling process, said Lehmann. This causes the silage to settle in a rounded manner after the fashion of a hay stack. Covering the silage with about a 3 or 4 inch layer of finely cut straw followed by a layer of dirt will help keep out air and prevent spoilage.

-M-

Hog Prices Put Prize on Curbing Loss From Disease

Smaller numbers of hogs combined with higher prices now make it more worthwhile than ever for farmers to vaccinate their pigs and take other precautions against losses from cholera and other diseases, it is pointed out by Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

Vaccinations should be performed by a competent veterinarian and certain precautions taken, Dr. Graham said. Chief among these precautions is to keep the hogs on light feed during the vaccination period.

Hogs that are fed heavily before, during and just after vaccination occasionally fail to become immune to cholera, experimental tests have shown. While they may be safe from the disease for a short time, they will become susceptible as soon as the effect of the serum wears off and may even develop the disease from the vaccine.

The best method of handling hogs that are to be vaccinated against cholera is to put them on a very limited feed for at least three days prior to vaccination, Graham said. They should be kept isolated from untreated hogs and gradually brought back to full feed after being vaccinated.

Another question which always arises when hog cholera is in the vicinity is that regarding the means of spreading the disease. Experiments at the U. of I. College of Agriculture and in other states have shown that the stable fly which bites animals and humans so viciously about this time of the year is one of the more important factors in the spread of cholera.

The stable fly appears to be a worse offender than the house fly, although house flies have been known to transmit the disease.

Indications are that man is of less importance than was formerly thought in spreading cholera. In fact man has been shown to have very little effect as a spreader.

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Erosion Problem Is Heightened By Soil Diversities

Serious as soil erosion is on some 18 million acres of Illinois land, it is all the more a menacing problem because of the wide diversity of soils in the state, according to H. L. Buckardt, erosion extension specialist coordinator at the College of Agriculture, University of Illinois.

Soils of Illinois are now classified into 16 major groups with many subdivisions. To date more than 200 types have been mapped by the Illinois soil survey which has been in progress for more than 30 years and which is now being supervised by R. S. Smith, chief in soil physics at the college.

On some of these soils erosion goes on more rapidly and is far more destructive than on others. The worst eroded areas are found on soil types where the subsoil is impermeable to water, the surface of the land is rough and the organic matter content of the soil is low, Buckardt explained. The less serious erosion is found where soil absorbs the moisture rapidly, organic matter is plentiful and the land lies comparatively level.

In the badly eroded areas slopes up to 3½ per cent have impermeable subsoil which prevents the water from soaking into the ground especially after heavy rains. Consequently this water runs off in surface drainage, carrying much of the valuable topsoil with it. Such conditions exist in many parts of southern Illinois where clay pan and sandstone form a large share of the subsoil. Where the slopes are steeper than 3½ per cent, the subsoil is usually moderately permeable, allowing more of the water to soak into the soil.

In some parts of central and eastern Illinois farmers are faced with an erosion problem because the subsoil is composed of hard packed glacial deposits which act similar to the clay pan and sandstone substrata of southern Illinois as to their impermeability to water.

Presence of organic matter in the soil helps prevent erosion, since it increases the permeability, or water absorption qualities, of the soil and makes for good development of plant roots which serve as binders in preventing excessive soil washing. High organic matter content is characteristic of soils in the less eroded sections of Illinois, Buckardt said.

Rough, hilly land such as is found in the southern sections of the state erodes even where the subsoil is permeable and organic matter is present. On the other hand level land erodes only slightly. This is illustrated by the fact that erosion is less serious in central Illinois where glaciers leveled off the surface.

Loose, sandy soils are especially subject to wind erosion. However, this type of erosion is comparatively small in Illinois with only about 192,000 acres being affected. Most of the wind erosion area is located in Kankakee, Henderson, Mercer and Macon counties. This area is but a small part of total area of eroded land of approximately 18 million acres. Altogether, there are about 2½ million acres of badly eroded land, 2,900,000 acres seriously eroded and about 12½ million acres where erosion must be checked soon to prevent serious damage. On 16,640,000 acres there is little or no erosion.

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Farm Chorus Of 1,000 To Be Featured At State Fair

A chorus of 1,000 voices assembled from nine different counties that will be competing for a share of $1,000 in prize money will be featured on the August 23 program of the Illinois State Fair at Springfield, it is announced by D. E. Lindstrom, rural sociology extension specialist at the College of Agriculture, University of Illinois.

The contest is under the supervision of Lindstrom and is one phase of the music appreciation work being carried on in various counties of the state by the extension service. The huge chorus recital which will be held in front of the grandstand at 12:30 P.M. will be conducted by Lanson F. Demming, instructor in music at the U. of I. At the present time Demming is visiting the various competing counties to assist the choruses in preparing for the state contest.

Counties entered are Boone, McHenry, Kendall, McLean, Champaign, Iroquois, Shelby, Sangamon and Edwards. First prize will be $120, second $110, third $100, fourth $95, fifth $90, sixth $85 and the last three $80 each. Additional prizes will go to the three groups chosen to present special features.

Judging this year will be on the basis of the number in each chorus, distance traveled to reach the state fair and degree of balance among the various parts of the chorus, Lindstrom said.

The combined chorus will present four selections during the recital. In addition, three special features, chosen in advance by Demming will be presented. The four selections to be sung by the combined chorus are: "To Thee O Country," by Eichberg, "The Kerry Dance," by Malloy, "My Bonnie Lass," by Bottomley and "Break Forth O Beauteous Heavenly Light," by Bach.

Those in charge of the chorus work in the various counties are as follows: Boone, Harold Luhman, Belvidere, chairman, and E. C. Foley, farm adviser; Champaign, Mrs. R. W. Milligan, Ivesdale, chairman, and Mrs. Virginia Conn White, home adviser; Edwards, W. D. Murphy, farm adviser; Iroquois, Miss Grace Burnham, Watseka, director, and Mrs. Ruth Buckner, home adviser; Kendall, W. P. Miller, farm adviser; McHenry, Mrs. Clara Greaves Sweeney, home adviser; McLean, Mrs. T. M. Kwasigroh, Randolph, chairman, and Miss Clara Brian, home adviser; Sangamon, Mrs. Homer Kearnagham, Springfield, director, and Edwin Bay, farm adviser; Shelby, Mrs. Winefred Bohlen, Moweaqua, chairman, and W. S. Batson, farm adviser.

-M-

Consumers Have Rare Opportunity In 1935 Peach Crop

With Illinois about to harvest its best peach crop in five years, consumers have a rare chance to fill up empty cans and fruit jars and lay in a supply of quality peaches against the years when the crop will again be short or a failure, it is pointed out by V. W. Kelley, horticulture extension specialist of the College of Agriculture, University of Illinois.

Not a few housewives with an eye to their food costs and their storage cellar supplies are planning to can and preserve enough peaches for at least a two years' supply, he reported.

The Illinois crop of Elbertas, the principal variety in the state, is expected to be harvested between August 5 and 25.

Not since 1931 have consumers had a chance at an Illinois peach crop that is as near normal as the one this year,and there is no certainty as to when there will be another good crop. The peach is a tender fruit which seldom survives temperatures colder than 18 degrees below zero. Consequently production is somewhat irregular in the latitude of the middle west. The Illinois crop this year is estimated at about half the bumper crop of 4,300,000 bushels in 1931.

-M-

Present-Day Hogs Not Best Suited For Market Needs

None of the present-day types of swine effectively meet current market requirements being set by the low foreign demand for pork and lard and the domestic preference for small, lean, firm cuts, finished bellies and a minimum of lard, according to experiments conducted at the College of Agriculture, University of Illinois. The tests have just been summarized in a new bulletin, "Value of Present-Day Swine Types in Meeting Changed Consumer Demand."

Of the swine types now common on farms of the country the imtermediate comes nearest to meeting present-day demands, it was found in the tests by Sleeter Bull, associate chief in meats; F. C. Olson and G. E. Hunt, formerly assistants in animal husbandry; and W. E. Carroll, chief in swine husbandry at the college.

An ideal hog would combine the quality and plumpness of the intermediate type, the length of the rangy and the early maturity of the chuffy.

Intermediates rated good as to gains and dressing percentages, size and cutting percentages of wholesale cuts, quality of hams and loins and amount of lard stock produced. Their market grade was good in most cases but a few lacked finish, according to the bulletin.

Poor finish and firmness of the meat, especially the bellies, were the main defects in placing the chuffy type second. There was also some tendency toward too much lard production from this type.

The rangy type, which was rated third, showed favorable gains and dressing percentages, good cut sizes, good quality hams, fair loins and the right proportion of lard stock. However, the bellies were unfinished and soft, and the carcasses generally were lacking in firmness.

-M-

$20 Cave Pays Big Returns In Protecting Egg Quality

Twenty dollars' worth of material and a few days labor put into the construction of an egg storage cave have helped Lyman Bunting of near Albion prevent low quality eggs which cost Illinois poultrymen thousands of dollars every year. Bunting, who has been cooperating with the extension service of the College of Agriculture, University of Illinois, on improved poultry practices for several years, has added approximately 8 per cent to his egg sale returns by building this cave, it is estimated by H. H. Alp, poultry extension specialist at the college.

Having built up production of his flock of 600 White Leghorns to a high point by following approved practices, Bunting recently became interested in getting a better cash return from the sale of his eggs. His first step was to start grading the eggs at home and shipping them direct to distributors who were paying prices based on grades. This practice brought considerably higher returns than the old method of selling the eggs on the count basis.

With the coming of warm weather, low grade eggs were found in each shipment despite the fact that Bunting gathered the eggs several times daily, graded them according to size and color and shipped them frequently. His difficulty was a lack of cool storage space.

He built a small cave about six feet wide, 10 feet long and seven feet deep. Cull bricks secured from a local brick yard at a small cost were used in constructing the cave, which is covered with dirt and vines to help keep out the heat of the sun. Trays built of hardware cloth are set up in the cave so that freshly gathered eggs may be layed out in single layers to cool rapidly.

Because of this rapid cooling and storage of the eggs until they are ready to be shipped, Bunting is finding that fewer of his eggs are culled out because of spoilage.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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New Crop Is Bidding For Place As A Leading Legume

Lespedeza, a relatively new crop already grown in Illinois to the extent of 100,000 acres, promises to become one of the leading legume crops of the state, especially on soils of lower productive levels, according to experiments conducted by the College of Agriculture, University of Illinois during the past 13 years and reported in a new bulletin, "Lespedeza in Illinois."

The crop shows value as a source of hay and pasture, is drouth resistant, fairly free from disease and insect pests and has a relatively low seeding cost, it is stated in the bulletin prepared by J. J. Pieper, crop production specialist; O. H. Sears, soil biologist; and F. C. Bauer, chief in soil experiment fields at the college.

Lespedeza is valuable not as a substitute or replacement crop for other legumes, but for its ability to thrive where alfalfa, red clover and sweet clover will not grow satisfactorily. While it grows best on well drained, non-acid soils, lespedeza will do fairly well on soils relatively acid and poor in quality.

Thus it provides farmers with a legume which will set in motion the processes of soil improvement and erosion prevention without a large initial outlay for fertilizing materials.

Although the legume will grow in practically all parts of the state, it is better adapted to the southern and central portions, since it is resistant to dry, hot weather and sensitive to freezing weather in early spring and late fall, the bulletin stated.

Thorough inoculation is necessary where lespedeza is grown on soil for the first time. If the soil is acid, liming is desirable.

The legume is valuable mainly as a pasture or soil improvement crop, although it produces a very satisfactory hay and is useful in retarding soil erosion. As a pasture crop it furnishes the best pasture beginning about July 1 and continuing until late fall. It is also valuable as a seed crop, although the increasing acreage indicates seed will become less important as a cash crop in the future.

Annual varieties best adapted to Illinois conditions are headed by Korean, although under certain conditions Tennessee 76, Kobe and Common may be preferable. In the northern part of the state Harbin is the only variety that may be expected to be self-seeding. Sericea, a perennial, is showing promise as a hay crop for southern Illinois, according to the bulletin.

-M-

Clovis To Become Farm Adviser In Pulaski-Alexander

L. L. Clovis, formerly vocational agriculture teacher at Chester, will start work September 1 as farm adviser in Pulaski-Alexander counties with headquarters at Mounds, it is announced by Prof. J. C. Spitler, state leader of farm advisers at the College of Agriculture, University of Illinois. He succeeds H. H. Gordon who resigned April 12 to accept a position with the AAA land policy section.

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Smaller Peaches Are Not Bargain When Waste Counted

Unless small peaches are offered at extremely low prices, consumers will be money ahead if they buy the larger, high-quality fruit being harvested from Illinois orchards at the present time, stated M. J. Dorsey, pomology chief at the College of Agriculture, University of Illinois. Too much of the "bargain" prices that are paid for small peaches goes into seeds and peeling, he pointed out.

A bushel of large peaches two and one-half to two and three-fourths inches in diameter contains only three pounds of seeds, according to tests made at the college experiment station. In contrast a bushel of small peaches one and one-half to one and three-fourths inches in diameter contains about six and a half pounds of seeds with a consequent decrease in the amount of useable fruit flesh.

Not only do small peaches have a greater proportion of seed to flesh but also they are more tedious to clean, peel and prepare for canning, Dorsey explained. Those three inches in diameter run about 100 to the bushel, while those measuring two inches run close to 300 and the smaller ones approximately 1,000. Since each peach must be handled separately in the canning process, the size becomes an important factor in the use of time.

Another fact brought out by tests on the various sizes of peaches is that the smaller fruits have far more skin to the bushel than do the larger sizes. The smaller sizes have about 35 square feet of skin while the larger sizes run as low as 23 square feet. Since peeling involves both time and some waste of fruit, the smaller amount of skin is a point in favor of the large peaches.

Small peaches are seldom economical in the long run, except where the fruit is to be used for spicing. In that case the smaller sizes may be advantageous if the price is low.

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Quality Of Onions Kept By Proper Harvesting Methods

Onions both in home gardens and on commercial truck farms are of unusually good quality and size in Illinois this year, according to reports reaching B. L. Weaver of the vegetable gardening division at the College of Agriculture, University of Illinois. By following the best harvesting and curing methods, producers can preserve the quality of the product either for market or for home storage, Weaver said.

When an onion ripens properly, the neck shrivels first and the tops fall over while they are still green. After the tops have fallen, they gradually turn yellow and finally become dry and brown if the onion is not pulled. The best time to harvest is just after the tops have started to turn yellow, Weaver stated. If left much after that time, the onions are likely to start a second growth, especially if a few good rains fall after the onions have ripened. Those that have once started a second growth are useless for storage and must be used as soon as harvested.

When the leaves of the onion start drying from the top down while the neck remains rigid, the vegetable is not ripening properly and should not be saved for storage or shipment.

Onions may be dried, or "cured," either by placing them in windrows or in shallow crates. Where they are placed in windrows, the tops should be left on to protect them from sunburn. This method is satisfactory where good weather prevails. It is safer, however, to twist the tops from the onions as they are pulled and place them in shallow crates, Weaver said. The crates should have slatted bottoms and sides so that air may circulate freely among them. The common sized crate is four feet long, three feet wide and four inches deep.

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Interest In Horse Pulling Contests Showing Increase

Growing interest among farmers in more and better horses and the consequent strengthening of horse prices is reflected in the rising popularity of horse pulling contests being staged in Illinois this summer and fall, according to E. T. Robbins, animal husbandry extension specialist at the College of Agriculture, University of Illinois.

Contests have already been held at Wheaton on June 15, Charleston on August 5 and Mt. Sterling on August 8. Other contests on the list are Pinckneyville, August 13; Albion, August 15; Watseka, August 16; Springfield, August 20 and 21; Roseville, August 23; Pecatonica, August 24; St. Joseph, August 27; LaFayette, August 28; Augusta, September 3; Sandwich, September 4; Knoxville, September 5; Bridgeport, September 6; Monticello, September 7; and Farmer City, September 10.

These contests, supervised by Robbins, have been useful in illustrating the pulling value of horses, as well as the importance of proper breeding and training to increase the pulling efficiency of horses.

Adding interest to the contests this year is the fact that a new state record has already been established for teams weighing more than 3,000 pounds. This record was established at Wheaton on June 15 when a pair of grade Percheron geldings owned by Charles N. Lett, of Sandwich, lifted 3,400 pounds 27½ feet on the U. of I. dynamometer. The former record was 3,250 pounds. This team, weighing 4,090 pounds, defeated several of the best teams from neighboring states, as well as Illinois entries.

In the class for teams weighing less than 3,000 pounds the record established by the team of Willard Rhoads, Springfield, in 1932 is still unbroken. These two horses, weighing 2,920, lifted 2,825 pounds to a height of 27½ feet.

Scheduling of a stallion pulling contest at Lincoln Fields, Crete, on October 12 marks the first time in the history of draft horse breeding that ability to move a heavy load in a public contest will be used as a standard of merit for draft stallions according to J. L. Edmonds, chief in horse husbandry at the College of Agriculture, University of Illinois.

This contest, the first of its kind in the world, is being held by the Horse and Mule Association of America in cooperation with the college. The pulling power of the stallions entered will be measured by the U. of I. dynamometer under the supervision of E. T. Robbins, animal husbandry extension specialist. Ten cash prizes totaling $1,500 will be awarded to the owners of the 10 best pullers.

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New Apple Rust Not Likely To Damage Next Year's Crop

Apple producers of Illinois, beset by the quince rust disease which is causing some losses especially in the western part of the state this year, may console themselves by the fact there will be practically no damage from this disease in 1936, according to H. W. Anderson, fruit pathology specialist at the College of Agriculture, University of Illinois.

Quince rust, a fungous disease rarely observed on apples before this season, spends a part of its life on the red cedar trees that grow in many parts of the state. The spores which would normally attack the 1936 apple crop were destroyed to a large extent by the hot, dry weather of 1934. Consequently, little infection is espected next year.

The rust attacks the apple, killing the fruit tissues rather deeply beneath the black rust spot. As the apple grows, a crater like depression is formed in the diseased area, disfiguring the apple and reducing its value either for marketing or home use. Quince rust does not ordinarily attack the leaves as do apple rust and hawthorn rust.

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The Extension Messenger

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More Youngsters Becoming Active In Local Affairs

An increasing number of Illinois rural young people are becoming factors in the betterment of their home communities through their activities as groups, it is reported by the extension service of the College of Agriculture, University of Illinois. These groups not only help improve farming and homemaking but also contribute to a richer and happier social life. Active in two counties in 1931, such groups may now be found in 49 counties.

Counties in which young people older than 4-H club age but still too young to take their places among the grown-ups have become active since 1931 are: Adams, Bond, Boone, Bureau, Champaign, DeWitt, DuPage, Edgar, Edwards, Effingham, Hancock, Henderson, Iroquois, Jo Daviess, Kane, Kendall, Knox, Lake, LaSalle, Lawrence, Livingston, Macon, Macoupin, Madison, Marion, Marshall, Mason, Massac, McDonough, McHenry, McLean, Mercer, Monroe, Pike, Piatt, Pope, Pulaski, Putnam, Randolph, Richland, Scott, Shelby, Tazewell, Warren, Washington, White, Whiteside, Will and Woodford.

Activities of these young people's groups are varied. Twenty-five Kane county youths entered community affairs by staging a series of meetings two weeks apart and bringing other young people to each of the meetings to interest them in the county's problems and possibilities. Richland county youngsters operated all concessions during a recent farm picnic and turned the profits over to local agencies working for the betterment of agriculture and home economics.

Other groups have attacked economic problems of the home and community. In Adams county the young people are making studies to determine whether or not older children remaining on the farm can produce additional income to compensate for their living expenses.

Fifty-three Macon county young people are attempting to enlarge on the recreational and good fellowship facilities of the county as well as to find ways of broadening their general knowledge. Livingston, Hancock and Bond county groups are interested in "Know Illinois," one of the projects prepared recently by the extension service to meet the needs of young people's groups.

Older boys and girls of Scott county have found the "Building an Outdoor Home" project attractive. They have also shown interest in drama production, as has the DeWitt county group. These projects along with "Know Illinois" were arranged by G. S. Randall and Miss Cleo Fitzsimmons, junior club extension specialists at the college, in response to demands from the groups. Assistance in preparing the "Build an Outdoor Home" project was given by Max Fuller, landscape gardening extension specialist, while D. E. Lindstrom, rural sociology extension specialist, has helped with the project on drama.

In Woodford county a group of young women are making detailed studies of everyday art as applied to their individual needs in clothing designs and colors. In addition this group is finding foreign cookery not only interesting but also helpful in bringing new foods to the party table.

Many other activities are reported from among the 49 counties, but in all cases the young people's groups are attempting to follow a balanced program for the promotion of better home and farm practices and happier community life.

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Fertilizer Trials Solve Problem In Sweet Corn Crop

Although growers of sweet corn, one of Illinois' most important crops, have all but abandoned use of commercial fertilizers because of poor results, it has now been demonstrated in six years of experimental work by the College of Agriculture, University of Illinois that proper use of such fertilizers markedly improves both the yield and time of maturity of sweet corn.

The test results are reported in a new bulletin, "Fertilizer Requirements of Sweet Corn," by W. A. Huelsen, division of olericulture, and M. C. Gillis, former member of the division, who conducted the experiments.

Illinois is the leading state in acreage and production of sweet corn, but growers have taken losses for some time because yields, quality and maturity of the grain were not what they should be. Although commercial fertilizers have been resorted to, their use has been abandoned in all except isolated instances because of very slight or even negative results. Up until the time of the Illinois experiments but little reliable information was available as to the cause of this disappointing showing and the best methods of using fertilizers.

Of 63 different fertilizer combinations which were tried out during the six years of the tests, the one which gave the best and most consistent results was an 0-16-12 formula (no nitrogen, 16 parts phosphorus and 12 parts potassium) applied at the rate of 400 pounds an acre and supplemented with 50 pounds of side-dressed sodium nitrate. This treatment used in a rotation system including legumes increased the yield of marketable ears 41.66 per cent.

Under some conditions the 0-16-12 analysis may be reduced with advantage to 0-16-6, but the amount of nitrate used as a side-dressing should not be changed, it was brought out in the tests.

Other recommendations growing out of the tests were: (1) Use a rotation including legumes in order to get maximum responses from commercial fertilizers. (2) Where nitrogen is omitted, broadcast 800 pounds of an 0-16-3 fertilizer an acre. (3) If it is desired to apply less than 800 pounds of fertilizer (without nitrogen) an acre, an 0-16-6 combination will probably prove superior to 0-16-3. (4) Mineral fertilizers applied without nitrogen should contain not more than 6 per cent potash. (5) An application of 400 pounds of an 0-8-24 fertilizer plus side-dressed sodium nitrate at the rate of 50 pounds an acre may prove profitable under some conditions. (6) Nitrate of soda should be applied 30 to 60 days after the corn is planted.

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Illinois A Leading State In Meeting Of Nut Producers

Illinois will be well represented at the twenty-sixth annual convention of the Northern Nut Growers' Association at Rockport, Ind., September 9 and 10, with six people on the program, it is announced by Dr. A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois.

Heading the convention will be President Frank H. Frey, of Chicago, who will open the program September 9. Development of the nut industry in Illinois will be discussed by L. E. Sawyer, forestry extension specialist at the college, during the evening session of the first day. During the morning session of the second day Dr. Colby will outline the next steps to be taken by nut growers of Illinois. He will be followed by R. B. Endicott, of Villa Ridge, who will discuss chestnut growing in southern Illinois.

A.M. Whitford, of Farina, will tell the delegation something about simplified nut tree propagation during the afternoon session of the second day, and J. G. Duis, of Shattuc, will discuss the new Kaskaskia River pecans and hicans.

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Plenty Of Feed Brightens Dairy Prospects In State

With plenty of good roughages and grains being produced in Illinois this year, dairymen can forego the skimpy rations of drouth times and again feed their cows more profitable and better balanced combinations, says C. S. Rhode, dairy husbandry specialist at the College of Agriculture, University of Illinois.

Those who cull out their lowest producing cows and use the plentiful feed as a basis for adequate rations will probably be able to make a reasonable profit during the coming winter. With milk cow numbers now 6 per cent less than the record number a year ago, the six-year expansion in the nation's dairy herds has been ended. Continued close culling of lower producing cows and the feeding of better rations will further strengthen the dairyman's position, it is believed.

Not since 1927 has the state had a hay crop as large as the indicated harvest of more than four million tons for 1935, according to reports of A. J. Surratt, state agricultural statistician, Springfield. Feed grains this year are more than double the 1934 crop, and the corn crop, estimated at 74 per cent of normal on August 1, may be nearly twice as large as the 1934 crop. Soybean prospects are good, and the crop is in the making on the largest acreage in the history of Illinois.

Considering the roughage and small grains already harvested and the prospects for those not yet matured, there seems to be no reason for feeding cows inadequate rations this winter, especially if the corn crop makes good, Rhode said.

Equal parts of ground corn and oats along with a liberal allowance of good legume hay as the only roughage makes an excellent ration for milk cows. If soybeans are available, they will furnish the needed protein concentrates. Where both legume hay and plenty of silage or good fodder are available, a satisfactory grain ration may consist of 5 parts ground corn-cob meal, 3 parts ground oats and 1 part ground soybeans.

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Bagworms Arrive To Menace Shade Trees In Illinois

Newest arrivals among insect enemies of Illinois trees this year are bagworms on many evergreen trees as well as on some of the box elders, soft maples, lindens and willows, it is reported by W. P. Flint, chief entomologist for the College of Agriculture, University of Illinois and the Illinois State Natural History Survey.

The worms appear during August in little moveable cocoons hanging from the leaves. They are not actual cocoons but little houses for the worms and give the bagworm its name, Flint explained.

Worms are numerous this summer and are attacking both deciduous and evergreen trees. However, they are more injurious to evergreens since one stripping of such trees kills them.

While sprays should have been applied earlier in the summer just after the worms were hatched, many of the pests will be killed if a lead and lime spray is thoroughly applied during August. The most satisfactory mixture is made of 2 pounds of lead arsenate, 2 pounds of lime and 50 gallons of water. The lime is sometimes needed to prevent burning of the foliage by water-soluble arsenic in the spray.

During the coming winter further control may be obtained by picking the bags off the smaller trees. The bags should be burned.

The ideal time to spray for bagworms is just after they have hatched. In southern Illinois they begin to hatch about June 1, in the central part of the state June 10 is about the date, while June 20 to 25 is the hatching date in the northern sections.

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Record Meeting Of Cattlemen Is Expected At U. of I.

Because of the unusually large number of Illinois farmers who plan to market a good share of their prospective corn crop in the form of cattle this fall and winter, a record crowd is expected to attend the eighth annual meeting of Illinois beef cattle feeders September 13 at the College of Agriculture, University of Illinois, said H. P. Rusk, head of the animal husbandry department at the college.

Visitors at this year's meeting will have the opportunity to inspect more than 200 head of experimental cattle divided into 17 lots no two of which have been fed exactly the same way, Rusk stated. The chief object of interest will be eight lots of yearling steers which have been furnishing daily information during the last seven months on the value of protein concentrates, bluegrass pasture, corn silage and other feeds in producing choice market cattle.

Another point of interest this year will be the experiments which have indicated that an acre of soft corn properly stored and fed will produce as many pounds of grain on a steer as an acre of mature corn. This experiment has taken on added significance because of the late corn crop in many sections of the state and the prospects for a considerable amount of soft corn this fall.

Until the new corn crop becomes available, cattle feeders are using to good advantage various combinations of small grains recently threshed on Illinois farms, according to E. T. Robbins, livestock extension specialist of the agricultural college. With favorable cattle prices in prospect, feeders plan to keep the animals gaining as rapidly as possible and then put on the finish with the new corn this fall.

Among the combinations showing good results are oats and wheat, oats, wheat and barley, or oats, wheat and corn where corn is available. These grain rations along with good pasture and legume hay, so plentiful in the state this year, have produced good gains and furnish a fairly economical way of keeping cattle gaining until more corn is available, Robbins stated.

Some operators are buying corn at 90 cents a bushel to continue the feeding program which they started in the spring. In cases where cattle fed in this manner have been sold, they have paid a good return on the feed and risk which was involved in the venture.

Cattle feeders are also making plans to conserve all the roughage available for next winter's feeding, since last winter they found that roughage is an economical feed for wintering cattle as well as a good supplement to grain rations where the animals are being fattened for market.

The silo is expected to be the most popular place for the storage of corn fodder and corn stover as well as many other types of roughages, Robbins stated. Pit silos are especially suitable, since they may be constructed at a relatively small cost to take care of the extra amount of roughage crops expected this year.

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Gets Cent Apiece More For Eggs By Using Extra Care

Value of proper flock management and marketing of eggs as practiced by several southern Illinois poultrymen is illustrated by one farmer of that section who has received greater returns and higher profits from his flock this summer than have many of his neighbors, it is reported by H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Because he fed and managed his flock for high production of quality eggs, handled and graded the eggs carefully after they were laid and marketed them on the grade rather than count basis, this poultryman at one time during the summer received 31 cents a dozen, less shipping and packing costs, as compared to the local "count basis" price of 19 cents.

First of all he got rid of his roosters after the hatching season. Consequently all of the eggs produced on the farm this summer were infertile, and spoilage was held at a low level. The laying flock was confined and well fed on a common grain and mash mixture. The hens also were well supplied with oyster shell and water. Under this management the flock maintained a high egg production average.

Eggs were gathered two or three times a day and stored in a cool egg cellar. Cases, flats and fillers were kept in this same cellar and consequently were precooled. As the eggs were brought from the laying house they were sorted as to size and placed on wire-bottom trays where they cooled rapidly.

In packing eggs for market, the poultryman graded them according to size and used only the clean eggs. He was also careful to see that flats and fillers were clean, Alp said. Each case or part of a case was labeled so that the buyer could tell at a glance what grade or grades were contained in the case. If two grades were included in a case, they were packed separately. All cases were protected from the sun and heat while being transported to town.

Since the eggs were well packed and graded before leaving the farm, they usually reached the market in excellent condition and were purchased on the grade basis.

-M-

Outbreak Of Wilt May Be Threat To 1936 Tomato Crop

Tomatoes are of good quality and the yield is generally fair this year, but fusarium wilt is showing up in some sections of Illinois, according to B. L. Weaver, vegetable gardening specialist at the College of Agriculture, University of Illinois.

There is nothing that can be done about the disease now, Weaver said, but growers should take warning and lay plans to outwit this disease when they plant the 1936 crop next spring. Fusarium wilt causes greater losses to tomatoes in Illinois than any other disease with the exception of leaf spot. It can be controlled only by the planting of resistant varieties.

Among the varieties resistant to fusarium wilt are Prarieana, Early Baltimore, Illinois Pride, Marglobe, and Pritchard. The first three of these have been developed at the College after several years of experimenting and will be available for the 1936 crop.

Fusarium wilt is seldom carried on the seed, but once in the soil it has the ability to live in the organic matter in the absence of its host plants for a number of years. Thus the wilt may be spread by the transplanting of tomato plants from infected to uninfected soils. Soil washing, wind, insects, garden tools and livestock also spread the disease. Consequently the possibility of preventing damage by planting the tomatoes on clean ground is small.

In greenhouses soil sterilization is effective, but this method is not practicable under ordinary field conditions.

-M-

Record Hog Price Sets New High Mark For 4-H Members

The new world record price of $1.10 a pound for fat market hogs, which was recently established by an Illinois 4-H boy's pig, sets a new all-time high in achievements of the 5,000 farm boys and girls of the state who are enrolled in 4-H pig club work under supervision of their county farm advisers and the extension service of the College of Agriculture, University of Illinois.

The holder of the new world record on fat hog prices is Willard Brittin, a 16-year-old 4-H club member of Sherman, Sangamon county. It was established during one of the night society horse shows at the recent Illinois State Fair when Willard's 170-pound Berkshire barrow was sold to a petroleum company for a total of $187.20.

All of Willard's 5,000 fellow pig club members in Illinois are being trained in modern and approved methods of breeding, feeding and managing hogs under direction of their county farm advisers, local leaders and the extension service of the agricultural college, but the new price of $1.10 a pound is expected to stand for some time.

Less than 24 hours after the check for $187.20 had been placed in his hands, he had invested $25 of it in a purebred Berkshire gilt. With this as a start he hopes to build up a purebred herd of his own and spend his life on the farm. With the remainder of the money he intends to re-establish his bank account which he was forced to deplete in order to get expense money for his competition at the fair.

Previous to the sale of Willard's pig at $1.10 a pound, the best mark was $1.06 and before that it was 77 cents.

Willard will be a junior in the Williamsville high school this fall and is now in his third year of 4-H club work.

He has two brothers, and his father owns and farms 100 acres of land, specializing in Berkshire hogs and purebred Hereford cattle.

The record breaking sale was the feature of the state fair 4-H club show in which approximately 1,250 of the 26,000 boys' and girls' 4-H club members of the state competed for a share of the $10,315 in prize money.

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Tomato Juice Can Now Be Canned In The Home Kitchen

Tomato juice, the increasingly popular health drink, may be made in the home kitchen this fall especially since the Illinois tomato crop is showing a fairly good yield of desirable fruit, said Glenna A. Henderson, foods extension specialist at the College of Agriculture, University of Illinois.

The juice is extracted by pre-cooking the tomatoes only until soft at a temperature of from 170 to 180 degrees, or slightly below boiling if a thermometer is not available. The hot, softened tomatoes are then put through a cone-shaped sieve. Skins should be removed before the tomatoes are cooked.

The juice should be reheated once after it has been put through a sieve, poured into sterilized containers and then sealed and processed in a hot-water bath for 10 minutes. Salt may be added if desired in the proportion of one-half to one teaspoonful to the quart. It is more desirable to add other seasoning just before the juice is used.

Only a small amount of tomatoes should be worked up at a time, and neither the cooked tomatoes nor the juice should be allowed to stand any longer than is absolutely necessary during the processing, since exposure to air will destroy the flavor as well as the health-giving vitamins. Neither should the fruit be allowed to boil.

After the tomato juice has been canned, it should be labeled and stored in a cool, dark place.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Record Soybean Crop Brings Danger Of Soft-Pork Loss

A record crop of soybeans in Illinois this year will mean heavy losses from soft pork if farmers attempt to use the whole soybeans for fattening hogs, according to a warning by Prof. Sleeter Bull, associate chief in meats at the College of Agriculture, University of Illinois.

While whole soybeans cause soft, flabby pork that is of inferior market quality, soybean oil meal used as a supplement for corn in hog rations will make firm pork, Prof. Bull pointed out. At the same time soybean oil meal will produce faster and more economical gains than can be obtained with whole beans.

It is suggested that farmers trade any whole beans which they would feed to hogs for soybean oil meal, thus securing a valuable farm-grown protein supplement for their corn and at the same time avoiding the risk of soft pork losses.

It is to the advantage and profit of farmers to do everything possible to avoid soft pork, since neither shippers, feeders, meat packers, exporters nor consumers want such meat, Prof. Bull said. The soft pork problem may become so serious that "soft" hogs will have to be discriminated against. A few loads of such hogs from any one shipping point would be sufficient to give that territory a reputation for inferior pork, with the subsequent danger of price penalties to producers.

An added inducement for using soybean oil meal instead of whole soybeans is the fact that it produces just as good gains as tankage and linseed meal and at present prices is more economical than these two supplements, Prof. Bull said. Experiments at the U. of I. College of Agriculture have shown that 14 pounds of soybean oil meal and four pounds of alfalfa meal are equal to the standard corn belt supplement of eight pounds of tankage, four pounds of linseed meal and four pounds of alfalfa meal. At present prices the soybean oil meal would be the more economical feed.

Other experiments in Illinois, Indiana and Ohio have demonstrated that soybean oil meal used to balance corn produces 10 to 20 per cent more rapid gains than whole soybeans, shortens the fattening period one to two months, saves 10 to 20 per cent of the feed and makes firm pork of high quality, Prof. Bull reported.

Corn and soybean oil meal fed at the rate of one bushel of corn and nine pounds of soybean oil meal with alfalfa meal makes a good ration for fattening hogs. However, a mineral mixture should always be fed when soybean oil meal is used in swine rations. A good home-made one can be mixed from 2 parts ground limestone, 2 parts steamed bonemeal and 1 part salt.

Cooperation among farmers in avoiding the feeding of whole soybeans will protect their shipping point against getting a reputation for soft hogs, Prof. Bull pointed out. At present market prices of soybeans and soybean oil meal 100 pounds of farm pork can be produced quicker and cheaper than 100 pounds of soft pork. Furthermore, the reputation of the community for producing good hogs will add much to the profitableness of future operations, he said.

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director.*

12-Year-Old Soil Plan Paying Dividends On Fulton Farm

Twelve years of rebuilding and maintaining the fertility of his 250-acre farm through the use of limestone and legumes are now paying dividends in the form of feed, better balanced rotations and reduced costs of production for L. F. Randolph, of Fulton county, it is reported by C. M. Linsley, soils extension specialist of the College of Agriculture, University of Illinois. Randolph has limed about 200 of the 250 acres of his farm, and the rest probably will be limed within the next two years.

This year 20 acres of sweet clover on limed land pastured 25 head of cattle, 20 sows with 125 pigs and six horses. The pasture could have carried almost double that number of livestock, Linsley believes.

This same 20 acres, once considered the poorest land on the farm, furnished 12 loads of sweet clover hay and plenty of pasture for 25 cattle and six horses during the drouth last summer. The clover came up as a volunteer crop last spring and took a poor crop of oats. Its excellent growth in spite of the drouth was possible because limestone had been used to sweeten the soil, Randolph believes.

Another proof of the value of limestone is shown by the fact that corn yielded 45 to 55 bushels to the acre on limed land at Randolph's farm last year, Linsley stated.

"Nothing can beat lime and sweet clover for putting life in the soil," declares this Fulton county farmer. He has found limestone profitable, since it has enabled him to maintain soil fertility and obtain better than average hay and pasture crops from legumes.

During the past two years shifts from surplus grain crops to alfalfa and clover have been much easier for Randolph because much of his soil is limed and grows these soil-building crops, readily, said Linsley.

Randolph's farm is an example of hundreds of Illinois farms on which soil fertility and earning power have been maintained and increased by the use of limestone. Many farmers have found that acid soil must be limed and clovers grown regularly in the rotation if the land is to continue earning enough to support the farm family.

Where the common practice of grain cropping is followed, fertility of the soil will be depleted and crop yields will decrease year by year. Eventually a stage of soil depletion may be reached when the income from poor crops will not furnish a living for the farmer. When conditions get this bad, it will be too late to make any investments in soil improvement, Linsley declared. Many Illinois farms are not far from this stage now, he said. The longer liming is postponed, the more difficult it will be to finance this soil improvement work.

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Good Feed Supply Ends Need For Late Alfalfa Cutting

With supplies of feed, especially good roughage, plentiful in Illinois this year, there is no necessity of injuring alfalfa stands by late cutting, declared J. J. Pieper, crop production specialist at the College of Agriculture, University of Illinois.

To avoid winter injury to their alfalfa, Illinois farmers should not cut hay crops later than six weeks before the first killing frost. For northern Illinois the average date for the first killing frost is about October 16, which means that alfalfa should not be cut later than the first week of September.

In central sections of the state killing frosts occur a few days later, averaging about October 18 to 19. They may be expected in the southern third of Illinois about October 24. Frosts have killed vegetation in all of these sections during September, occurring as early as September 14 in the northern and southern sections and on September 16 in the central section. However, such early frosts are the exception, and most alfalfa will be safe if not cut after the first week in September, Pieper said.

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Soft-Corn Risks Turning Farmers To Temporary Silos

Possibilities of a large amount of soft corn in Illinois this fall have turned farmers to preparations for temporary fence silos and other emergency means of saving as much of the crop as possible, according to the agricultural engineering department, College of Agriculture, University of Illinois.

While corn is making rapid growth, there is danger that frost will catch some of the crop before maturity, it is shown in reports coming to J. J. Pieper, crops specialist at the college. The fence silo offers an economical and satisfactory way of preserving this soft corn for winter use.

Most common among the temporary fence silos are those constructed of the familiar picket, or snow, fence. Woven wire fencing is also used to some extent. The fence is set up in a circle of the desired diameter after the ground has been leveled for the base. The inside is lined with heavy building paper and filled to within about six inches of the top before the second section is fastened on top, said W. A. Foster, chief in rural architecture at the college.

Diameter and height are governed by the capacity desired, although a height of not more than the diameter will assure greater stability. A silo 10 feet in diameter will hold approximately 12 tons of silage, while a 20-foot silo will hold about 96 tons. A complete table of sizes and capacities as well as instructions for building fence silos and pit silos are available at the agricultural engineering department of the college.

This information gives details for determining the size of silo needed, laying out the ground, constructing the silo, filling it and preparing the ensilage for better keeping.

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Silos Make Good Storage For Extra Supplies Of Hay

Since hay mows are already bulging with good legume hay, silos probably will be pressed into the unusual service of furnishing storage space for much of the additional hay crops being raised in Illinois this year, said W. B. Nevens, associate chief in dairy cattle feeding at the College of Agriculture, University of Illinois.

Contrary to the popular opinion, most legume hays make excellent silage for dairy cows if handled in the right way, Nevens declared. Alfalfa, soybeans and the various clovers, all of which are growing in abundance in the state this year, can be made into palatable, nutritious ensilage.

The only difficulty with legumes as silage is that they will develop a strong, unpleasant odor and become unpalatable if put into the silo too green. This is caused by deterioration of the large amount of protein in such crops. This condition not only reduces the feeding value of the ensilage but also is likely to taint the milk, since the odor will pervade the entire barn. Some of the taint also is carried to the milk from the silage eaten by the cows.

Allowing the legume hay to wilt and dry out after it is cut will help prevent the unpleasant odor and taste. The surest method of preventing the development of these damaging qualities, however, is to mix fairly green corn with the legumes half-and-half by weight or not less than one load of green corn to two loads of legumes. The additional sugar in the corn causes an acid to form, thus preventing deterioration of the protein and the development of the bad taste and smell, Nevens explained.

Another method which may be used where green corn is not available is to mix black strap or sugar beet molasses with the hay at the rate of 1 to 2 per cent, or 20 to 40 pounds to the ton.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Illinois Wheat Growers Busy Starting New AAA Plan

Determined to prevent recurrences of burdensome wheat surpluses and bankrupt prices such as were experienced in 1932, wheat growers and county wheat association officials throughout Illinois are working to place the new AAA four-year adjustment program into effect as soon as possible, according to reports from the extension service of the College of Agriculture, University of Illinois.

Illinois is the ninth ranking wheat state of the nation and therefore one of the leaders in getting the new program under way. While there is no definite forecast as to how many wheat contracts will be signed in Illinois under the new program, the 12-to-1 referendum vote registered last spring in favor of continuing the program in the state promises strong support for the new plan, according to the extension service. On the basis of recent developments, the coming sign-up is estimated at a possible 27,000 contracts as compared with 23,982 in the original wheat program.

Twenty-two district educational meetings were held throughout the state beginning September 6 and ending September 10 during which approximately 96 farm advisers and 200 county and district wheat allotment committeemen attended. The purpose of the meetings was to give the county and district workers complete details of the new contract.

Recognizing that the emergency is largely over, AAA wheat section officials designed the new contract as a flexible instrument in maintaining the ground gained, according to information from the extension service. Both the producer and the consumer will be protected against a return of those days when wheat was 25 cents a bushel and industry was in the doldrums because the farmer had no money with which to buy goods.

Through adjustment payments and actual adjustment in acreage from year to year, producers will have a guarantee of parity prices on 54 per cent of their annual average production as well as assurance that the carryover will not become so large as to depress prices unduly. The reason for the comparatively small reduction of 5 per cent below base acreage on the 1936 crop is that domestic supplies stand at about normal and there is no need for a large adjustment in acreage. However, the program is set up so that reductions up to 25 per cent of the base may be made in case of bumper crops.

The consumer is protected against dangerous shortages of wheat and exorbitant prices by provisions which not only require contract signers to seed 54 per cent of their base acreage each year but allow for increases in acreage should short crops create a need for additional wheat.

Without a continuation of production adjustment, new surpluses of wheat threaten to pile up in the United States at the rate of 100,000,000 bushels a year, according to AAA officials. It seems quite certain, they declare, that if there were no adjustment of seedings, the wheat area of the United States during the next few years would average annually at least 66,000,000 acres, the average seeding in the three-year period of 1930-32 when wheat prices were very low.

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Well-Ventilated Cribs Will Help Save Late Corn Crop

Since much of the Illinois corn crop of an estimated 262 million bushels will be late in maturing, cribs which not only protect the grain but also give it plenty of ventilation for drying and curing will save what might otherwise be heavy losses, it is believed by W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

Facilities for adequate ventilation can be built into new cribs or added to those which will be undergoing repairs this fall, Foster said. In addition to plenty of air circulation, the crib should protect the grain against bad weather and keep rats, mice and other destructive rodents away from the corn.

These provisions are of added importance this year, since the Production Credit Corporation is already prepared to make loans on properly stored farm grain and there is a possibility that AAA loans similar to those of the past two years may be offered. Such loans will undoubtedly be confined to corn which is properly stored and protected.

In figuring the amount of space needed, the farmer can base his estimates on the fact that ear corn requires 2½ cubic feet to the bushel, while shelled corn or small grain requires just half that much. This means that a crib 10 feet wide and 10 feet high will hold 40 bushels of ear corn to each foot of length. The most convenient length is 36 to 40 feet, Foster stated.

Since it is better to have all of the crib room at one location rather than scattered about the farmstead, the "growing plan" is ideal, especially for the young farmer who is just starting to build up his place. One crib may be built on the selected site this fall. Later on another unit may be added facing the first and with a drive way between. As small grain bins are needed they may be built above the cribs and the roof finally completed.

Either wood or concrete floors are satisfactory for corn cribs if properly constructed. However, extra care should be taken to "build out" the rats. This can be done by placing a strip of half-inch mesh hardware cloth around the edge of the crib between the studding and the outside wall. This strip should reach from the floor to about two feet up on the walls and be topped with a strip of galvanized iron bent outward to prevent the rats from getting through the wall above the strip of hardware cloth.

Detailed plans of the growing crib are available for a nominal charge from the department of agricultural engineering at the college.

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Egg Income Protected By Fall Culling of All Pullets

Prospects for fairly high egg returns during the remainder of 1935 may be made more certain by careful culling of pullets before they are put in the laying house this fall, it is stated by H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

In practically every flock there are individuals lacking in the vigor and thriftiness necessary for good fall and winter egg production. Lack of body weight is one indication that the pullet is low in vitality, Alp said. Other signs of poor physical condition include rough, loose feathers, paleness of comb and face, lack of pigment in feet and shanks and a general listlessness.

The ideal time to weed out such weaklings is when the pullets are being transferred to the laying house. By following this method, the poultryman will be able to start the fall season with a flock of thrifty, vigorous young pullets that are prepared to give maximum egg production for the feed consumed.

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Fall Pasture Makes Valuable Erosion-Preventing Crop

Late fall pastures have assumed added importance in Illinois this year because of their value as soil-erosion control crops and their ability to fit into the various AAA programs as substitutes for grain crops, according to J. J. Pieper, crops specialist at the College of Agriculture, University of Illinois. Nor have these new possibilities detracted from the value of late fall pasture as a feed saver and economical producer of milk.

Many of the small grains such as winter wheat, barley and rye make excellent fall pasture. Winter barley is coming into general favor in the southern section of the state, since it may be seeded earlier than the other grains without danger of injury from Hessian fly. It usually reaches the pasture stage four to six weeks after planting and will furnish feed during late fall and into the early winter. October 1 will be the approximate seeding date for most small grains this year, Pieper said.

Added benefit may be derived from these crops if they are used as nurse crops for fall or spring seedings of pasture grass mixtures. Pasture mixtures which are adaptable to fall planting may be seeded with the small grain. The grain will furnish late fall and early spring pasture, while the grasses will become available later next year. Spring plantings of pasture grass may be made in the small grain next year without destroying the early spring grazing furnished by the grain, Pieper declared.

Pasture mixtures which may be seeded this fall include timothy, brome grass, red top and bluegrass. Spring mixtures best suited to most sections of Illinois include such legumes as alfalfa, sweet clover, red clover, alsike and white clover in addition to the above mentioned grasses.

With the 1936-39 wheat contract requiring that new areas be planted in substitute crops this year, fall pastures offer a convenient and effective method of meeting this requirement. Also, these crops will help bind the soil and minimize the losses from washing during the late fall and early spring rains. The addition of the pasture grass mixture will add to the erosion control feature of the crop.

Where farmers intend to plant small grains for use as pasture crops on acreage taken out of grain production, they should consult their county or community committeemen to be sure their intended plantings will conform to terms of their contracts.

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Efficient Method Of Applying Limestone Lowers Cost

More efficient and cheaper methods of hauling and spreading limestone, such as those developed in Winnebago county last spring, have enabled Illinois farmers to make a far greater use of this material than formerly, it is believed by C. M. Linsley, soils extension specialist at the College of Agriculture, University of Illinois.

Under new methods such as those followed by E. E. Porter, of Winnebago county, tedious and costly hand methods have been eliminated. The limestone is moved from the quarry by a steam or gasoline shovel to the crusher where it is pulverized and dumped into a storage bin.

This storage bin is high enough to allow five-ton trucks to back under the chute and be loaded without hand shoveling, Linsley said. The trucks, of the power dump type, are equipped with spreader attachments. Consequently, the limestone is transported direct from the quarry to the field where it is spread by operating the dump and allowing the limestone to feed into the spreader as the truck is driven across the field. Where the ground is plowed, the limestone is dumped from the trucks into five-ton hopper spreaders which are pulled by tractors. By this method all of the hand shoveling has been eliminated.

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The Extension Messenger

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Milestone Is Set In Spread Of Good Farming Methods

A milestone in the spread of good farming methods has been set up with the holding of a "good farming" meeting at Normal by the College of Agriculture, University of Illinois, according to Prof. H. C. M. Case, head of the department of agricultural economics.

Ten years of records in the college's farm bureau-farm management service project were summarized and studied by several hundred farmers attending the meeting. Sixty-three farmers who have kept records during the ten consecutive years of the project were paid special tribute by Dean H. W. Mumford, of the agricultural college.

This is the twentieth year that farmers have been keeping accounts in cooperation with their county farm advisers and the agricultural college. The farm bureau-farm management service, in which approximately 1,000 farmers in 16 counties are enrolled, represents an advanced stage in the development of this account keeping.

Through their records farmers have found out how well they are running their farms as compared with other cooperating farmers and they have been aided in applying to their own farms the practices that have proved profitable on other farms of a similar type.

One of the outstanding products of the record keeping has been a seven-point program for good farming. This has been built up by the college through a half century of experimental work backed up by the records which thousands of farmers have kept during the past score of years and the accounts summarized during the past ten years in the farm bureau-farm management service project.

The seven points of the recipe are: (1) plan a rotation of crops and a good field arrangement; (2) keep the kinds and amounts of livestock that are well suited to the farm, the farmer and the market; (3) produce high yields of crops; (4) produce good returns from feed fed to livestock; (5) keep labor costs low in proportion to income; (6) keep power, farm machinery and livestock equipment costs low in proportion to income, and (7) keep building and fence costs low in proportion to income.

Among the 63 farmers who have kept records throughout the ten years of the project, the one farmer whose farm excelled in all seven of these factors had an average annual net income of $4,050 during each of the ten years. The six farmers whose farms excelled in six of the seven factors had an average annual net income of $2,890.

Farms strong in five of the seven factors had an average annual net income of $2,380; those strong in four factors earned an average annual net income of $2,140; those strong in three, $1,915, and those strong in only two factors, $1,550. Farms which excelled only in one or none of the seven factors had an average annual net income of only $965 for each of the ten years.

Some farms not ranking high in earnings at the present time are building up the productivity of a badly-depleted soil and getting high-producing livestock herds established. With good farming practices these farmers will be able to improve their earnings materially in years to come.

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Erosion Control Will Be Aided By New Soil Studies

Control of soil erosion on thousands of acres of Illinois farm land is expected to be aided through new studies started by the College of Agriculture, University of Illinois, to find out what happens to rainfall on different soil types.

Samples of soil from eight extensive soil types have been "planted" on the college farm as a basis for the studies. These include soils from as far south as Madison county, as far north as Lee county, as far west as Hancock county and from other places within this general area.

By measuring the amount of surface run-off from these soils and the rate of water percolating through them, the investigators hope to secure information needed in the development of more effective erosion control methods in the state. Findings made in the college's soil survey show that there are more than 4 million acres of Illinois farm land that are subject to destructive erosion and should never be farmed, more than 4 million additional acres that are subject to serious erosion and suitable only for orcharding, permanent pasture or timber and more than 19 million acres where erosion control practices are necessary to maintain the productivity of the land.

Only by knowing what happens to the rainfall on these different soils is it possible to work out the most effective erosion control methods, it was pointed out by R. S. Stauffer, associate in soil physics, who is in charge of the new studies.

The samples used in the studies were taken by forcing hollow cylinders, 36 inches in diameter and 40 inches long, into the soil. The cylinders with the soil cores in them were then loaded on trucks and brought back to the college where they were set up so that water falling on the surface is free to escape as run-off or by percolating through the soil.

Both the run-off and the percolation are measured. A rain gauge near the set-up records total precipitation. Thus the disposal of the water falling on the surface may be calculated. While the test has not been in operation long enough for any definite conclusions to be drawn, it is hoped that within a relatively short time accurate information may be available as a help in meeting soil erosion problems.

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Water As Well As Feed Needed For Production Of Eggs

It takes water as well as feed to produce eggs, according to H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois. This means that since hens have very little water storage capacity, water must be supplied at all times if the flock owner expects to take advantage of higher egg prices now in prospect.

Approximately nine pounds of water are required for each dozen eggs laid, according to records of daily water intake of 60 White Leghorn pullets at the college over a period of four weeks.

Another significant fact brought out by the trials was that egg production increased almost in direct proportion to increased consumption of water. During the first week the hens drank approximately 2.16 pounds of water each. Egg production during the same week averaged 2.99 eggs to the hen.

During the last week of the trials water consumption averaged 3.08 pounds, or about 138 per cent of the first week's average. Egg production during the last week averaged 4.19 eggs, or approximately 140 per cent of the first week's production. These figures indicate that where the ration is adequate, plenty of drinking water will help boost the laying efficiency of hens, Alp stated.

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Lamb Profits In View If Feeders Use Sound Methods

Favorable lamb market prospects indicate that Illinois feeders may realize a fair profit from western feeder lambs now being shipped into the state if they follow the right feeding and management methods, says W. G. Kammlade, sheep husbandryman at the College of Agriculture, University of Illinois.

A higher than usual slaughter of 1935 lambs up-to-date has reduced the number that will be available this fall and winter. This indicates that marketings during the rest of the year probably will be light. Another factor contributing to the favorable outlook is that improved range feeding conditions have enabled many western growers to market their lambs as butcher stock instead of feeders. Illinois farmers also will have the advantage of plentiful supplies of economical feed, Kammlade stated. A pound of gain should cost roughly one-half as much as in 1934, he added.

All these factors indicate that western feeder lambs may be profitable if they are bought right and managed carefully. Since they may have been in transit from one to two weeks, the lambs are likely to be exhausted when they arrive. Consequently they should be handled with care and, if driven from the yards, given ample time to reach the farm.

Palatable dry roughage or bluegrass, plenty of water and a small amount of salt is an ideal ration for the first three or four days after the lambs reach the farm. They should be allowed plenty of rest under shade trees or shelter, Kammlade said. This early care is highly important, since many of the lambs, weakened by the trip, may contract such diseases as hemorrhagic septicemia unless they are handled carefully.

Clean, well-ventilated shelters of sufficient capacity to house the lambs without crowding also will contribute to a healthy, fast gaining flock. The shelter houses should contain feeding racks so that lambs will not have to eat in the open during cold, damp weather. Plenty of water and salt should be available at all times.

The lambs should be transferred gradually from roughages to concentrated feeds to avoid losses from digestive disturbances. Even after the lambs are on full feed, plenty of palatable roughage will be needed to guard against over-eating of concentrates, according to Kammlade. Detailed information on the care and feeding of lambs is available in circular No. 413, "Feeding Lambs on Illinois Farms," available at the college.

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Butter Imports Show Rapid Decline Since Last Spring

A rapid falling off in foreign butter imports has accompanied increased domestic production and decreased consumption this summer, according to reports received by the College of Agriculture, University of Illinois, from the U. S. Bureau of Agricultural Economics. No New Zealand butter has been imported since April, it is stated in the report. European imports amounted only to 177,238 pounds in July of this year as compared to 1,437,000 in June and 2,665,000 in May.

While imports have been decreasing, domestic production has been increasing. June butter production this year amounted to approximately 197 million pounds as compared to 183 million last year. Consumption, however, decreased from 140 million pounds in June, 1934, to 135 million in the same month this year, the bureau reported.

Under the February London and New York price conditions, importers could pay the 14-cent import tariff on each pound of butter brought into the country and still have a margin of profit. However, as the spread between New York and London prices decreased, the margin disappeared and imports declined.

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Ear-Corn Silage Best Way To Save Corn Hit By Frost

Any of the 7½ million acres of Illinois' corn crop which may be caught by threatened frost damage this fall can best be utilized by being snapped, husk and all, and made into ear-corn silage, according to H. P. Rusk, head of animal husbandry at the College of Agriculture, University of Illinois.

There have been six soft corn years since 1900, and the college has worked out the best methods of salvaging the grain by running extensive feeding tests.

Corn that has been frosted before maturity usually is too high in moisture content to keep if placed in a crib. In fact, a moisture content above 24 per cent is too high for cribbing corn safely, Rusk stated. Tests during such soft-corn years as 1924 have shown that soft corn rarely contains less than 30 per cent moisture.

Running the snapped corn through the ensilage cutter and putting it in a silo helps to conserve much of the feed value of the immature grain, conserves storage space, lightens the feeding work during the winter and is the most satisfactory way of curing soft corn, according to tests made at the college.

During the tests an acre of soft corn handled in this way produced 280 pounds of gain on a herd of steers. The nearest approach to this was an average of 240 pounds gain to the acre where the soft corn was stored in the shock and fed from the shock as needed during the winter.

Where the corn was allowed to stand in the field and husked as needed, an acre made 235 pounds gain on beef steers. Pasturing proved to be the poorest method with each acre of soft corn producing a gain of only 170 pounds where the steers were allowed to run in the field and eat the corn from the stalks or ground.

None of the methods tested showed good results with hogs, although hogs following steers fed shocked corn did the best, making about 32 pounds total gain for each acre of corn fed in this manner.

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State Contest In Corn And Poultry Judging On Oct. 5

One hundred of the best judges from among the 5,000 Illinois farm boys and girls who are enrolled in 4-H corn and poultry projects will settle the year's state championship judging honors in these two lines of work in a contest to be held at the College of Agriculture, University of Illinois, October 5, it is announced by E. I. Pilchard, boys' club specialist.

This year the poultry judges will be required to place eight classes of four specimens each, Pilchard said. Four classes are to be judged by the American standard of perfection rules and the other four according to egg production qualities. Breeds which may be used will include Barred Plymouth Rocks, Rhode Island Reds, White Wyandottes and White Leghorns.

The corn judges will be required to place three classes of corn consisting of four 10-ear samples each. The classes will include two samples of utility type yellow corn and one sample of utility type white corn.

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Tests Show Safe Methods Of Meeting Spray Tolerance

With a large crop of apples to be moved in Illinois this fall and lower spray residue tolerance in effect, growers can protect themselves by following successful methods of spray removal worked out in experiments by the College of Agriculture, University of Illinois, according to fruit specialists of the institution.

Lead tolerance has been reduced by law to .018 grains to each pound of fruit during 1935. The arsenical tolerance remains at .01 grains. If the lead tolerance is met the arsenic tolerance almost invariably will be met also, it is stated by W. A. Ruth, chief in pomological physiology, and K. J. Kadow, associate pathologist.

The tolerance specified by the government must be met before the apples can be sold. Shipments which do not meet the specifications are liable to seizure. Because of these regulations the consumer may rest assured that there is no danger of spray poisoning from fruit that has reached the market.

Since the tolerance is relatively low, growers are faced with the problem of removing the spray residue without injuring the fruit. The process consists in washing the apples, either in hydrochloric acid or sodium silicate followed by acid. Usually one acid bath is sufficient. Acid injury may be caused by too high a concentration of acid, too warm a solution or too long an exposure of the apples to the solution, Ruth and Kadow stated.

Variety and condition of the apples also may influence the injury. Apples picked prematurely usually are more sensitive to the treatment. The safest procedure is to run tests with the different varieties of fruit and vary the methods of washing until the injury is reduced to the smallest possible degree.

Acid solutions for a test run should be made up with about 1½ per cent actual acid and held at a temperature slightly above 100 degrees fahrenheit. Acid injury shows up in minute cracks usually at the calyx end of the apple.

Silicate injury is caused by the lack of thorough rinsing after the apples have been washed in sodium silicate. Such injury is indicated by a round, burned area at the calyx end of the apple and sometimes cracking similar to that caused by acid.

It is a good idea to analyze a sample of the apples before washing to determine tentatively the strength of the solution needed. The apples should be analyzed after the washing to be sure the residue is down to government specifications.

Detailed information on washing and testing apples is available from the horticultural department at the college.

-M-

New-Type Cotton Eases The School Clothes Problem

Cotton fabrics that have anti-crease qualities and resemble wool to the extent that they may be substituted satisfactorily in many cases are now available to simplify the winter school clothing problem for many Illinois mothers, according to Miss Edna R. Gray, clothing extension specialist at the College of Agriculture, University of Illinois.

With these developments cotton is destined to become more popular as a fabric for school clothing, since it possesses many other qualities, both from the economic and comfort standpoints, which adapt it to the school child's needs, Miss Gray believes.

Information on the buying and construction of school and play clothing is available at the home economics department of the college. In addition, three recent U.S.D.A. publications, No. 52, 54 and 80, describing the construction of suits for boys, dresses for girls and play suits, are available at a small cost at Washington, D. C.

-M-

Ten-Year Records Fix Value of Good Farming Methods

A new price tag can now be put on good farm management methods as a result of ten years of records which Illinois farmers have kept in the farm bureau-farm management service project of the College of Agriculture, University of Illinois, according to Prof. M. L. Mosher, of the department of agricultural economics.

The figure on the price tag, or the value of good farm management, may be a surprise to those who have underestimated the worth of good crop yields, livestock efficiency and other recommended practices in safeguarding farm earnings and promoting general farm prosperity, Prof. Mosher pointed out.

Records kept by 63 farmers who have been enrolled throughout the ten years of the farm bureau-farm management service project form the basis for the new price tag. Fifty-seven of these farmers occupied the same farms during the ten years and otherwise operated their land so that it was possible to make direct comparisons between them.

Ten of these 57 farms made more marked improvements in their farm management methods than others during the ten years of the project. However, during 1925, 1926 and 1927, the first three years of the project, before the improved farm management began to make itself felt, these ten farms each had an average annual income of $1,195 less than the average for the whole 57 farms.

During 1932, 1933 and 1934, the last three years in the ten-year period, each of these ten farms on which the farm management methods were improved earned an average annual net income of $390 more than the average for the whole 57 farms.

These farmers improved their position, Prof. Mosher explained, by using their records and accounts to find out how well they were running their farms as compared with other cooperating farmers. They also applied practices that had been proved in the records to be profitable on other farms of a similar type to theirs.

Thus in ten years these farmers, as a group, advanced from a position far behind the average for all farms in the project to a position well ahead of the average.

-M-

Fall Festival To Proclaim Watermelon Fame of State

Illinois' fame as a watermelon state will be proclaimed in the first annual fall watermelon festival at Havana, September 25 to 26, according to L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois.

Some of the state's finest melons will be "on parade" at this show. The Cuban Queen, recently introduced into Illinois by the extension service of the Agricultural College, will be a featured variety.

The festival, supervised by the Cimco Valley Watermelon Growers' Association, is the first of its kind in the state and was originated to improve the melon growing industry in Illinois, an enterprise which produces annually more than $100,000 worth of fruit.

Melon growers managing the festival plan to appeal not only to the eyes but also to the appetites of visiting melon fanciers, Somers stated. They expect to slice 2,000 of their finest melons into quarters to be given to visitors as added proof of the quality of their product.

Varieties of melons which will be on display will include the Cuban Queen which is gaining rapidly in popularity in the state, as well as the older standard varieties such as Dixie Belle, Tom Watson and Klickley Sweet.

Another feature of this colorful show will be the crowning of a watermelon queen. The queen-to-be and her two ladies-in-waiting will be selected by votes among association members and announced during the festival.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Farmers Attacking Erosion Problem On Three Fronts

Illinois farmers and others working to check soil losses on more than 19 million acres of the state's farm land are attacking the problem from three different angles, according to H. L. Buckardt, erosion extension specialist coordinator at the College of Agriculture, University of Illinois. These are: mechanical control, vegetative control and land use, including good management.

Mechanical control includes properly constructed terraces, gully control structures and contour furrows. Terraces, carefully maintained, help to prevent sheet erosion and gullying. Where gullies are already formed, check dams and other structures will slow down the water, causing soil to be deposited rather than carried away, Buckardt said.

Contour furrows check the flow of water, allowing much of it to be absorbed and thus helping to prevent runoff and erosion. Such furrows are particularly adapted to the improving of pastures.

Among the various vegetative control methods, such cover crops as wheat, rye, and first-year sweet clover are effective in controlling erosion. Experiments have shown that comparatively little soil is lost from fields growing good stands of cover crops, either during fall or spring rains. Permanent vegetation, where it is adaptable to the farming system, is an excellent means of preventing soil washing. Alfalfa and bluegrass excel all other crops for erosion control, Buckardt said. Where the soil is poor and badly eroded trees are superior to grass and hay crops.

Under the land use phase of erosion control, crop rotations, controlled livestock grazing and the use of special practices are considered the most important. Proper rotations which include legumes increase the organic matter content, thus helping to prevent soil washing. Controlled grazing prevents the surface from being denuded of soil-binding vegetation, while the use of special practices such as contour farming and strip cropping may meet special problems on the individual farms or fields.

Publications of the college which contain valuable information on various phases of erosion control include a mimeographed leaflet, "Grasses and Legumes for Soil Conservation and Improvement" and Circular No. 290, "Saving Soil by Use of Mangum Terraces."

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So-Called Winter Oat Varieties Not Adapted To State

In the widespread search which they are now making for new crops to adjust and modify their crop rotations, Illinois farmers should beware of the so-called winter oats, according to a warning by J. C. Hackleman, crops extension specialist at the College of Agriculture, University of Illinois. Winter-hardy varieties of oats generally are unsuited to the central and northern parts of the state and are questionable even in the southern part, he said.

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Avoiding Poison Weeds Best Way To Protect Livestock

Keeping cattle, horses and sheep away from poisonous plants such as white snakeroot and deadly nightshade is the best method of coping with this danger, said Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois, in discussing reports of such poisoning from various parts of Illinois this fall.

Both white snakeroot and deadly nightshade are especially dangerous at this time of the year, since they remain in a green, succulent stage after many other plants have ripened. Deadly nightshade is an annual somewhat resembling horse and bull nettles except that it has no spines, according to J. J. Pieper, crop production specialist at the college. It is from 1 to 2½ feet high and usually thrives in cultivated soil. The plant is dark green and has a white, five-toothed flower. The berries, now beginning to appear, are black, while the leaves have smooth edges.

White snakeroot is a slender, erect perennial reaching a height of from 1 to 5 feet. The leaves are from 3 to 5 inches long and have saw-toothed edges. The plant bears a white flower. Shaded, damp areas are preferred by snakeroot.

Cattle affected develop such symptoms as trembling, rapid loss of weight, glazed looking eyes and a generally "dopey" condition, Dr. Graham said. If a graduate veterinarian is called at the first sign of such symptoms, he may be able to save some of the poisoned animals, but the best cure is to keep the stock away from these weeds. Hogs may be poisoned by the nightshade.

Since farm animals ordinarily do not eat either of these weeds, many farmers may not know the poisonous plants exist in their pastures, fields or woodlots. Only with frequent examinations of the pastures and fields, together with careful observation of the livestock can Illinois farmers cut down losses from such poisoning. Suspected plants may be sent to the college for identification.

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Green Tomatoes Can Be Saved If Picked Before Frost

Frost may nip gardens almost any time after October 1, but the many green tomatoes still remaining on the vines need not be sacrificed if homemakers and gardeners will pull them just ahead of frost, according to Miss Grace B. Armstrong, foods extension specialist at the College of Agriculture, University of Illinois.

Frosted tomatoes are practically of no value, but green tomatoes picked from the vines before frost and stored in the cellar or pantry can be used for any number of appetizing dishes, Miss Armstrong says. The fruit will ripen gradually or it may be used while still green.

Sometimes the practice is followed of pulling the tomatoes, vine and all, before frost and hanging them in the cellar where they may be used as needed. An occasional sprinkling of water will prevent the tomatoes from shriveling.

One of the most common ways to use green tomatoes is to slice them, dip them in egg and crumbs and then fry them. A thick, brown gravy, made in the frying pan after the tomatoes have been cooked, will make this fall garden dish even more delicious.

Green tomatoes also may be used for making mustard pickles or as one of the several vegetables used in making mixed pickles, Miss Armstrong states. In addition, there are such green tomato combinations as marmalade, mince meat and green tomato pie, according to information from the bureau of home economics at Washington, D. C.

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Storage Prolongs Benefits From Good Fall Garden Crops

One way to cash in on the much better crop of fall vegetables in evidence in most home gardens this year is to store them where they will keep for winter use, said L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois. Plenty of stored vegetables will help save money on living costs and contribute a healthful variety to winter meals.

Irish potatoes, carrots, beets, turnips, rutabagas, celeriac and winter radishes all are subject to damage from freezing, rotting or drying out. Consequently they must be kept between 50 and 32 degrees and in a damp atmosphere. Such vegetables may be placed in boxes of slightly moist sand in the cellar or in sunken and covered barrels, Somers said.

Parsnips, horseradish and salsify, not being subject to freezing, can be stored in much the same way except that little or no precaution is needed to protect them from below-freezing weather.

Cabbages may be stored outdoors by pulling them, roots and all, and placing them, heads down, in a long, low ridge, Somers explained. This ridge should be covered with straw and dirt with the soil layer being increased as colder weather approaches. For storing indoors, cabbages should be cut out of the crown, the diseased and discolored leaves removed and the heads stored on slatted shelves near the ceiling of a dry, well ventilated cellar. Onions and sweet potatoes should be stored in a similar manner after they are thoroughly cured and before cold weather arrives.

Since pumpkins and squashes are not subject to drying out, they may be stored on slatted shelves similar to those used for sweet potatoes. However, they should be allowed to mature on the vine and removed by cutting the stem an inch or more from the fruit.

Celery, leeks, kale and parsley can best be stored by being taken up with a ball of moist earth surrounding the roots and placed on the floor of the cellar. Moisture can be added when absolutely necessary by applying water to the soil. Such vegetables also can be stored in trenches out of doors.

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No Effective Way To Kill Webworms Before Next Summer

Nothing can be done this fall to rid Illinois trees of the webworms which are unusually numerous at the present time in the form of small, light green, fuzzy caterpillars, said W. P. Flint, chief entomologist for the College of Agriculture, University of Illinois and the Illinois State Natural History Survey. To be effective, control must be practiced next summer. These worms have been more troublesome than ever in Illinois this year, and their unsightly webs can be seen on many shade trees and shrubs.

Methods of combating the webworm include spraying, hand picking or pruning and, in some cases, burning with a torch. The cheapest and most effective method is to spray the trees and shrubs about August 1. Two pounds of lead arsenate to 100 gallons of water make the best spray. The worms now in evidence will soon find protected spots near the ground where they will spin flimsy cocoons and develop into the pupal stage for the winter. About June 1 of next year a snow white moth will emerge to lay from two or three to 300 eggs on the undersides of leaves. These eggs hatch into tiny caterpillars which spin a web over the leaves and feed together under this web. The web usually is enlarged as the caterpillars seek more leaves for food.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Farmers Anxious To Check Costly Losses From Erosion

Eagerness of Illinois farmers to check soil losses on the millions of acres of land subject to serious erosion is indicated by the added interest being shown in soil erosion control activities, according to H. L. Buckardt, erosion extension specialist coordinator at the College of Agriculture, University of Illinois.

Fifty-five counties now have soil conservation and improvement committees actively engaged in helping to coordinate and carry out erosion control programs, according to a current report from 92 counties. Of the 37 counties without such committees on September 23, 23 were making definite plans to appoint them in the near future.

Under the newly launched plan of having county soil conservation and improvement associations to facilitate erosion control work, 11 associations are organized with 18 counties included. Five associations are incorporated. Plans are going ahead in many other counties to get such associations organized, Buckardt stated. These associations are being set up as permanent organizations and, as such, will assist in coordinating the activities of the various soil erosion agencies in the county and will help supply equipment for the larger projects.

In addition to special erosion control work being carried on by farmers and conservation agencies in the various counties, the extension service of the college is conducting a number of projects which deal either directly or indirectly with soil conservation. These include limestone and legume projects, pasture improvement, farm management, terracing, contour farming, drainage and a number of other closely related projects. In all cases the work of the extension service is being coordinated with that of the other agencies to bring about a unified soil conservation and improvement program in the various counties, Buckardt said.

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Gardeners To Air Problems During November Meeting

Problems both of market gardeners and of truck farmers will be discussed during the fifth annual meeting of the Illinois State Vegetable Growers' Association at Springfield, November 12, 13 and 14, according to L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois. The meeting will be held in the Abraham Lincoln hotel.

Details of the program are not complete, but the tentative set-up indicates that a wide range of subjects will be discussed, Somers said. These will include tomato culture, the use of electric hotbeds, vine crops grown in Illinois, new fruit varieties as compared with the old, fruit and vegetable canning and the growing and certification of southern plants. Marketing problems also will receive considerable attention during the meeting. The women's auxiliary will take up such special subjects as canning, preparation of fruit and vegetables for local markets and the growing and use of flowers. Officers of the association are: President, Emmett Orr, Rockford; vice-president, August Geweke, Des Plaines, and secretary-treasurer, John Wenke, Peoria.

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Cattle Malady Being Suppressed By Testing Of Herds

A new and concerted drive against costly losses from Bang's disease of cattle has been carried to the point where 12,714 animals infected with the malady were removed from 3,611 Illinois herds under the federal eradication program during the year ending this past June, according to reports received by the College of Agriculture, University of Illinois from the federal department of agriculture. More than 70,500 cattle were tested in the state during the year in an effort to weed out diseased stock.

Illinois farmers get more than one-third of their cash income from milk, cattle and calves, or a total of more than 92 million dollars in a year like 1934, and Bang's disease is one of the worst plagues of the industry. It is a contagious breeding disease.

In addition to the progress that has been made in the federal eradication program, nearly 10,000 cattle have been tested for stockmen who are cooperating with the college extension service in a project launched 10 years ago, according to Dr. Robert Graham, chief in animal pathology and hygiene at the college. His records show that 109 state herds have been accredited through the extension service project.

Launching of the federal eradication program in 1934 has materially speeded up the drive against Bang's disease in Illinois, according to Dr. Graham. Under this program herds are tested and the reactors slaughtered with the owner receiving an indemnity. Under the state project owners attempted to remove infected animals at their own expense and then keep their herds healthy through approved metnods of sanitary herd management.

Among the 212,482 herds tested in the United States during the year ending June 30, about 40 per cent had some animals infected with tne disease, the federal report shows. Approximately 13 per cent of more than 300,000 cattle tested were infected.

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Soybean Gaining Popularity As A New Source Of Food

Soybeans either in the green stage or as mature shelled beans are fast becoming recognized as an economical source of food, it is stated in a mimeographed circular just issued by the College of Agriculture, University of Illinois. As a revised edition of a soybean food circular issued two years ago, the current publication contains many new recipes for using both green and matured soybeans.

The circular was prepared by Miss Sybil Woodruff, associate chief in foods in the home economics department of the college. That department has been conducting experiments and tests on the food value of soybeans since the crop first became significant in Illinois. At the present time more than 100 varieties of vegetable type beans growing on the college experimental farm are being tested.

Soybeans owe their nutritive quality principally to their nigh protein content and high calorie value contained in the rich soybean oil, according to the circular. The vegetable is fairly high in vitamin B content. Compared with other vegetables, it also is fairly high in such minerals as calcium, phosphorus and iron.

On the other hand mature beans or flour made from them contain a relatively small amount of starch. They also are much lower in carbohydrates than other dry beans. Consequently soybeans or soybean flour are often used in diabetic diets.

Not only do soybeans constitute a valuable source of required nutrients, but also they make appetizing foods especially when combined with other vegetables or dairy products. Recipes for 31 such soybean dishes are described in the circular.

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Soybean Disease Found This Year Is Probably Mildew

Diseased soybeans being found in many sections of Illinois this fall probably are infected with downy mildew disease, said G. H. Boewe, field botanist for the Illinois Natural History Survey, cooperating with the College of Agriculture, University of Illinois.

In a recent survey 25 fields located in 12 counties were examined, and only one field was found to be free of the disease. Careful counts made in 10 of these fields showed an average of 85 per cent of the plants infected and 49 per cent of the leaves on these plants diseased.

Downy mildew is an Oriental disease of soybeans which attacks and destroys the leaf tissue. It was first seen in the United States in 1929, and in that same year small areas of infected plants were found in Champaign and Piatt counties.

So far no effective remedy has been found for this disease. Since it is new in Illinois as well as in the U. S., plant disease workers have had very little opportunity to make investigations and tests, according to L. R. Tehon, botanist in charge at the survey office.

Indications are that the disease is more prevalent during years of plentiful rainfall. This indication is borne out by conditions in Illinois. Very little of the disease was seen during the recent dry years, but with the greater supply of moisture this year soybean downy mildew is abundant.

Examinations of diseased plants this year show that about 10 per cent of the leaf tissue has been destroyed by the disease.

-M-

Fulton Wins Three Of Four Championships In Judging

Fulton county won three out of four state championships and Sangamon county the fourth one in a round of judging contests held October 5 at the College of Agriculture, University of Illinois for 4-H club members and vocational agricultural students of the state.

Both the state championship in corn judging and in poultry judging went to the Big Ten 4-H club of Fulton county in the annual contest staged for 4-H club members. The winning corn judging team was composed of Kenneth Voorhees, Maurice Wilson and Bernard Deakin, while the state championship poultry judging team was made up of Rollin Smith, Ralph Foulk and Charles Turner.

Fulton county's third championship came in the meats identification contest for vocational agricultural students. This team, representing the Canton High School, was composed of Nelson Moore, Leonard Nelson and Donald McFall.

Sangamon county took the state championship in milk judging when a team composed of Alvin Maris, Max Somers and Bob Sallenger, representing the Springfield High School, outscored all other contestants.

The winning 4-H corn and poultry judging teams will represent Illinois in national contests to be held in connection with the Chicago International Livestock Exposition, while the winning meats identification and milk judging teams will represent the state in national contests to be held at the Kansas City American Royal Livestock Show, October 19 to 26.

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Fifteen Stallions To Compete In October 13 Contest

At least 15 three-year old draft stallions representing Illinois and five other states are entered for the world's first stallion pulling contest which will be held at Crete, October 13, it is announced by E. T. Robbins, animals husbandry extension specialist at the College of Agriculture, University of Illinois, who will be in charge of the U. of I. dynamometer during the contest.

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Weeds In Pasture May Be Clue To Losses Of Livestock

Losses of livestock from weed poisoning such as have occurred on several Illinois farms this fall often remain a baffling puzzle only because many farmers are not aware that they have poisonous plants in their pastures, according to a mimeographed circular just issued by the College of Agriculture, University of Illinois.

The circular, "Plant Poisoning of Animals," was prepared by Dr. Robert Graham, chief in animal pathology and hygiene, and Dr. J. J. Pieper, associate chief in crop production at the college. It contains sketches and descriptions of 37 poisonous plants found in most sections of Illinois along with information on treatment of affected animals and eradication of the plants.

Deadly nightshade and white snakeroot are two of the most troublesome poisonous weeds. Both of them recently have been responsible for cases of livestock poisoning in this state.

Poisonous weeds affect different animals in a variety of ways, according to the circular. As an example swine are noticeably resistant to white snakeroot, while cattle, horses, and sheep are highly susceptible. Lactating cows can, with comparatively little danger, eat amounts of snakeroot which would be fatal to steers or dry cows. Only white-skinned animals are susceptible to alsike clover. Black Angus cattle or Duroc Jersey hogs may be pastured safely on alsike. In the case of Hampshire hogs only the white belt will be affected.

While not all poisonous weeds cause fatal poisoning, many of them do and, in many cases, there is no effective treatment for stricken animals. Consequently the best cure is to prevent livestock from eating such plants, according to the circular, which is available at the college.

-M-

Dry Weather Of Past Is Main Cause Of Oak Trees Dying

Much of the dying of oak trees being reported in Illinois this fall is the delayed results of last year's drouth and the several successive dry seasons preceding, according to J. C. Carter, tree disease specialist with the Illinois State Natural History Survey, cooperating with the College of Agriculture, University of Illinois.

During the past several seasons and especially in 1934 the supply of moisture was so low that vigorous growth was not maintained and many of the feeding roots died. This year favorable weather conditions produced abundant foliage which could not be adequately supplied with food and water by the drouth-weakened root systems, Carter explained. Consequently the foliage and limbs have died, causing conditions known as "die-back" and "stag-head" as well as complete death of some trees.

The best treatment against drouth injury is to maintain the trees in a vigorous condition by use of fertilizer and removal of all dead or diseased wood. While it is not practical to fertilize farm wood lots and forestry plantings, the dead and diseased wood can be removed.

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Leading Growers To Appear During Vegetable Meeting

Leading vegetable growers of Illinois as well as prominent authorities from outside the state are being scheduled on the program for the annual meeting of the Illinois Vegetable Growers' Association at Springfield, November 12, 13 and 14, it is announced by L. A. Somers, vegetable gardening extension specialist at the College of Agriculture, University of Illinois. The meeting will be held in the Abraham Lincoln Hotel.

Illinois growers and garden specialists scheduled on the program include: Tom Keithley, well-known grower from Dixon; John Wenke, Peoria grower and secretary-treasurer of the association; Trevor Jones, manager of the Cimco Farm at Havana; Walter McLaughlin, director of the Illinois State Department of Agriculture at Springfield, and Jesse Venarde, in charge of the St. Louis Cooperative Market.

Specialists from the college will include Somers; K. J. Kadow, associate plant pathologist; L. H. Shropshire, field entomologist for the Illinois State Natural History Survey; H. B. Dorner, chief in floriculture; Miss Harriet T. Barto, dietetics specialist; S. W. Decker, associate in fruit and vegetable marketing; J. W. Lloyd, chief in vegetable gardening, and P. E. Johnston, farm management specialist.

Out-of-state people scheduled for the program are Stanley Johnson, superintendent of the South Haven Branch Station of Michigan State College; G. H. Riemen, Associated Seed Growers, New Haven, Conn.; F. W. Schroer, grower from Valdosta, Ga., and George Sweet, grower from Ft. Wayne, Ind.

-M-

High School Girls Learn More Than Cooking In Class

Contrary to the old-fashioned belief still held by many people, the estimated 5,000 or more Illinois high school girls enrolled in home economics food classes in approximately 328 high schools of the state are learning far more than just cooking, according to Miss Anna Belle Robinson, home economics education specialist at the College of Agriculture, University of Illinois.

While most of the high schools maintain food preparation as a factor in their home economics courses, the work is now carried on in such a way as to give the students a wider knowledge of economic and social problems, as well as the technique and cooperation necessary in the handling of supplies and the planning and preparing of meals.

From start to finish the girls enrolled in the classes are given an opportunity to use their judgment in planning and working out the many details incident to food preparation, Miss Robinson said. Especial attention is given to the preservation of foods, particularly in the fall. The students not only can various foods but also study the various methods of preservation and learn advantages and disadvantages of each.

Kitchen convenience comes in for its share of attention, as does also the preparation of economical but unusual and appetizing dishes.

It is generally recognized that the average high school girl receives pretty thorough instruction at home on how to cook. Hence an attempt is being made in many high schools to supplement this knowledge by helping the girl meet the entire food preparation problem. This involves not only the preparation of the food but also its purchase, the use of various kinds of equipment, the choosing of foods necessary for a balanced diet and the general management of kitchen and dining room. The courses also encourage cooperation in the students' homes, Miss Robinson believes.

-M-

Good Season To Clear Up Mystery Of Apple Varieties

This is the year when the mystery of the many unknown and unidentified varieties of apples growing in Illinois orchards could be cleared up if growers were more careful in sending in specimens for identification, according to R. L. McMunn, of the pomology division, College of Agriculture, University of Illinois.

Trees have borne so well and so generally that the state's estimated crop of 7,208,000 bushels of apples is almost three times the 1934 crop and considerably more than the five-year average of 4,545,000 bushels, he pointed out. Some specimens sent to the college for identification are from orchards planted as many as 30 or 35 years ago.

However, there is something more than a sentimental reason why orchardists are anxious to secure identification of all varieties with which they are unfamiliar, McMunn said. Apples placed on the market must be labeled with the correct variety name or as "variety unknown." With their trees bearing better than usual this year, growers have a chance to identify hitherto unknown varieties.

Unfortunately many of the specimens being sent in for identification are arriving in a damaged condition or with tags mixed, making accurate naming almost impossible, McMunn said.

Apples sent in for identification should be mature, free from disease and insect injury and of average size and color for the variety. Each specimen should be wrapped individually or placed in a sack with the number written on the sack. Tags tied to the stems often are lost in shipment, since stems may fall off. Records should be kept of specimens sent to the horticulture office.

Properly wrapped and tagged fruit should be packed in strong containers to prevent crushing in transit. Cylinder-shaped bottle mailing cartons are satisfactory for a few specimens. For larger amounts any good, strong carton will be suitable, McMunn said. The package should be stamped "perishable."

A letter stating that identifications are desired and giving the name and address of the shipper should accompany the package. However the letter must be inclosed in an envelope and stamped with the regular letter postage unless the package of specimens is being sent first class. The specimens should be sent to the department of horticulture, College of Agriculture, University of Illinois.

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Neglect Is Worse Cause Of Heavy Rural Fire Losses

Negligence is largely responsible for an annual fire loss of approximately $3,000,000 on Illinois farms, or the equivalent of one farmstead each week in the year and two on Sundays, according to W. A. Foster, rural architect in the College of Agriculture, University of Illinois. For the nation as a whole rural fire losses totaled $225,000,000 and 3,500 lives in 1934, he reported.

These tremendous losses can largely be prevented through careful and frequent checking on the danger points in buildings, cleaning up of premises and greater care in handling fires both in the stove and for such outside work as trash burning or heating of butcher vats.

Among the fire hazards which may be found around the farmstead are dry grass, fallen leaves or piles of old papers or rags stacked in the corner of some building. A badly worn roof often constitutes a fire risk, since the shingles are loose and splintered, thus giving sparks from the chimney a better opportunity to start a fire. Flues should be inspected for possible cracks in the mortar, Foster said. Electric wires should not only be properly installed but also should be large enough to carry the peak current consumption of the circuit without overloading.

-M-

The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Soft Corn Is Now A Grave Certainty In Many Sections

This is now certain to be the seventh soft corn year since 1900, with the amount of soft and chaffy corn ranging from 10 to 50 per cent of the crop in different parts of the state, according to latest estimates of crop and livestock specialists at the College of Agriculture, University of Illinois.

No class of livestock can utilize this soft corn as well as can cattle, and no method of salvaging the crop has been found superior to ear-corn silage, according to Prof. H. P. Rusk, head of the animal husbandry department. Trench silos or other temporary forms of silos may have to be put up on some farms to conserve the maximum feeding value of the immature corn, he said.

Horses and mules offer scant outlets for soft corn, inasmuch as heavy death losses have resulted from feeding this class of livestock on damaged corn such as is found in almost every crib during a soft-corn year, Prof. Rusk said. Sheep are notoriously finicky about their feed and cannot utilize much soft corn except in the form of silage or as ear corn direct from the field before any spoilage has taken place. Hogs are better soft-corn users than horses and sheep, but trouble with scours and the inability of hogs to eat enough high-moisture corn to make fast gains have made soft corn unpopular with hog feeders.

As for the different methods of utilizing soft corn, the best one that was found in a long series of investigations at the agricultural college was ear-corn silage. Pasturing the soft corn in the field with cattle did not prove satisfactory. Shocking was dangerous, and cribbing was out of the question.

Silage made from the snapped ears, husk and all, kept as well as normal silage and made an excellent feed for beef cattle. There was practically as much feeding value in the dry matter of soft corn as in the dry matter of sound corn. However, because of the high moisture content of the soft corn, steers could not eat as much feed equivalent in that form as they could in the form of normally matured corn. Hence cattle fed soft corn do not gain as fast as those full fed on sound corn.

An acre of soft corn may have as much dry matter in the ears as an acre of mature corn. If this dry matter is conserved and properly fed, it will produce practically as much beef as an acre of sound corn.

-M-

Good Hen House Helps Cash In On Outlook For Poultry

With business conditions showing steady improvement and cold storage egg stocks reduced to reasonable levels, prospects during the coming six months are brighter for Illinois poultry raisers who manage their laying flocks for high egg production, said H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois. One of the most important considerations is adequate housing. If old buildings can not be remodeled or repaired, it may be necessary to construct a new house. Whatever the requirements may be, the flock will maintain a higher laying average if quartered in a roomy, comfortable, well-ventilated house before cold weather, Alp stated.

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Freezing Of Late Corn Risk To Seed Supplies Of 1936

Freezes which already have caught some of this year's late corn crop and the danger of further damage if the grain is left in the field may lead to a serious seed corn situation next year unless farmers pick their seed promptly and store it carefully where it will dry out without freezing, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

Approximately 25 per cent of this year's estimated crop of 273,204,000 bushels in Illinois is so late that it was caught by the early October freezes and may be still further injured by later frosts, he reported. Much of the grain that farmers had expected to be of seed quality undoubtedly has been damaged.

Selecting seed corn immediately before more serious damage is done is the best way for farmers to protect themselves, Hackleman recommended. Ears should be picked which apparently were the most mature and therefore of the lowest moisture content when the freeze came. If seed picking is delayed, growers will run the risk of selecting dead ears. Thus at planting time next spring there might be unusually large amounts of dead seed, he said.

If at all possible farmers should select plenty of seed to allow for discarding large quantities after the full effects of the freezes are determined through culling and germination tests, Hackleman said.

Selecting corn now gives some opportunity to take advantage of any cold resistance which the plants may show. Plants which were able to withstand the low temperatures and still show a green stalk, although the leaves and husks are dry, may carry some cold resistance. Well matured ears from such stalks should be well worth saving.

"Plants from which seed ears are selected also should be well anchored by the roots. Root rots and other weaknesses of the root system may be propagated by selecting ears from plants which do not stand erect.

"Husks that cover the ear well reduce the chances for ear infection. In some fields it is hard to find well-covered ears, but several years of selection for long husks will help correct this.

"The ears themselves should not be very large in circumference as much ears dry slowly and therefore are open to disease infection for a longer time. Ears showing mold or insect injury should not be taken, for they would be culled out later."

-M-

Soybean Oil Meal Expected To Rank High As A Protein

A large crop of soybeans combined with increased stock feeding activities on Illinois farms indicate that soybean oil meal will rank high among the protein supplements used in feed lots of the state this winter, said E. T. Robbins, animal husbandry extension specialist at the College of Agriculture, University of Illinois. This standard by-product of the large Illinois bean crop already has established its merits as an all-around healthful and suitable high protein feed. At present prices it has a low cost for each pound of protein as compared with other supplementary feeds.

Hog raisers in particular will find soybean oil meal an excellent protein supplement during the coming winter months. Tests have indicated that hogs given free access to powdered limestone will thrive almost as well on a ration containing soybean oil meal as they will on rations in which tankage is used as the protein concentrate.

Hog raisers are cautioned that the feeding of whole or ground beans will produce soft pork, whereas soybean oil meal produces firm pork, Robbins said. Every shipment of soft pork from a particular locality hurts the reputation of that locality on the market, he explained.

Soybean processors are willing to cooperate with feeders in the matter of exchanging soybeans for soybean oil meal. This is a good trade because it gives the farmer more protein than he would have in his beans.

-M-

Farm Storage Of Soybeans Is Safer If Beans Are Dry

With record amounts of soybeans being stored on Illinois farms this year, farmers can cut down the risk of losses by being sure that the beans are dry before being threshed and stored, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

In spite of the fact that early October freezes reduced the acreage of beans kept for seed, Illinois will still harvest a record crop somewhat greater than last year's total of 10,298,000 bushels. More beans than usual therefore will be stored on farms this season.

With frost during the first 10 days of October having hastened maturity of the plants remaining in the field, most combined-threshed beans will be dry enough for storage. However, those that have been cut and stored in the shock must be watched at threshing time, since they may have absorbed enough outside moisture to make storage risky, Hackleman said.

The best way to find out whether or not the beans are dry enough for storage is to take a representative sample of the freshly threshed crop to a local elevator where equipment is available for determining the moisture content. A quart of beans is sufficient for the test. The beans should be placed in a fruit jar and the lid fastened to prevent drying out while the sample is on the way to the elevator.

A moisture content above 14 or 15 per cent is likely to cause spoilage when the seed is stored, Hackleman stated.

Extra care will be needed where morning glory and bull nettle plants are present, since pieces of these plants mixed with the beans will increase the moisture content. Farmers should be doubly sure that seed beans are dry before being threshed.

When the beans are dry enough to store satisfactorily, there is some danger of them being cracked in the threshing process. Cracked beans are useless for seed, and those with injured seed coats will deteriorate rapidly. The presence of cracked seed is an indication that the thresher is being operated at too high a speed or the concaves are set too close. Beans containing large amounts of cracked seed should never be saved for planting purposes, since cracked beans are indications of many more with injured seed coats.

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Weathered Hay Best Used As A Roughage For Dairy Cows

One of the most profitable ways of using the somewhat weathered legume hay found on many Illinois farms this fall is to feed it to the dairy cows, said J. G. Cash, dairy husbandry extension specialist at the College of Agriculture, University of Illinois.

However, if this hay is to give the best results, it must be supplemented with the right kind and amounts of carefully-balanced grain mixtures. If plenty of alfalfa, soybean, cowpea, clover or lespedeza hay is available and little other roughage is being fed, the grain mixture need contain only 11 to 14 per cent protein. Where roughage is low in protein content, the necessary amount of protein may be supplied through use of supplements. Bran, brewer's grains, cottonseed meal, soybeans, soybean oil meal, linseed oil meal, gluten feed and gluten meal are among the most generally used supplements.

Choice of supplements depends upon the local price and the amount of protein used. Cottonseed meal contains the largest percentage of protein with soybean oil meal and gluten meal second. Bran contains the least. However, on the basis of early October prices, soybeans and soybean oil meal were the cheapest sources of protein with gluten meal, cottonseed meal and linseed oil meal moving up the cost scale. Gluten feed and bran were the highest priced sources of protein.

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The Extension Messenger

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Illinois Poultry Offers An Outlet For Soybean Crop

Illinois' 35,000,000 chickens will furnish a good market for some of the state's record soybean crop this year especially if the beans are used in the oil meal form, said H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois. Soybean oil meal is a satisfactory protein supplement for the poultry ration if the ration also contains sufficient mineral, he added.

For growth and egg production soybean oil meal, supplemented with sufficient minerals of the right kinds, is about equal to meat scrap and fish meal, somewhat better than tankage, gluten feed and cottonseed meal, and not quite as good as dry milk products.

Both soybeans, fed whole or ground, and soybean oil meal must be supplemented with sufficient minerals, Alp said. The minerals needed are calcium, phosphorus, sodium and chlorine. These can be supplied by a mineral mixture containing 2 per cent bone meal, 1 per cent ground limestone and 1 per cent salt.

For laying hens the following mash containing soybean oil meal has been found satisfactory: 160 pounds ground yellow corn, 100 pounds wheat bran, 100 pounds ground oats, 50 pounds meat scrap, 50 pounds soybean oil meal, 40 pounds alfalfa leaf meal, 10 pounds steamed bone meal, 5 pounds ground limestone or oyster shell and 5 pounds salt. The grain mixture suggested is $\frac{1}{2}$ corn and $\frac{1}{4}$ each of wheat and oats or barley.

Whole soybeans are not very satisfactory, since they contain a large amount of oil which makes it necessary to feed them sparingly. Because of this high fat content, ground beans may become rancid during warm weather. The value of whole soybeans as poultry feed does not measure up to that of commercial soybean oil meal. Another factor to be considered where beans form a large part of the ration is that flocks do not relish the taste of beans until accustomed to this type of feed.

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Unemployment No Problem With Ag. College Graduates

Unemployment is not a problem in the ranks of the 120 graduates in agriculture and home economics who went out from the College of Agriculture, University of Illinois, last June, according to replies being received by Assistant Dean R. R. Hudelson. More than 90 per cent of those who have replied to his inquiry have jobs either in farming or elsewhere, and the only ones still unemployed are nine graduates in home economics. To date replies have been received from 98 of the 120 graduates. Since leaving school the 120 graduates have scattered to a dozen different states and Argentina, South America, to start their careers.

Opportunities open to young men and women trained in agriculture and home economics are indicated by the fact that the remainder of the graduates are engaged in some 40 different lines of work. One of the home economics graduates, Miss Ruth E. Riegel, formerly of Tolono, is clerking and modeling in a Chicago department store, while the range of work in which the agricultural graduates are engaged includes resettlement, soil conservation, meat packing, milk marketing, farm management, farmer organization and farm credit.

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Careful Poultry Management Pays For Farm In Year

Careful poultry management has enabled James Anderson, of near Enfield, to pay for a 63-acre farm in one year from egg returns on his White Leghorn flock, it is reported by H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Anderson, who has been in the poultry business for several years, purchased the farm by assuming the mortgage of approximately $1,300 held against it. A little more than a year ago he moved to this farm and established his flock in two new tile hen houses. His 1934 pullets went into production about September 1 and by September 1 of this year had produced $1,751.43 worth of eggs. During 21 weeks of this past year the 600 young hens averaged 30 dozen eggs a day.

Most of his success has been brought about by close attention to housing, feeding and management of his flock, Anderson believes. During recent years he has followed the practice of buying baby chicks from a commercial hatchery rather than hatching them at home. He attempts to get the chicks from well-bred, disease-free flocks and buys them early.

The chicks are fed a starting mash recommended by the extension service of the college. This mash is composed of 5 pounds alfalfa leaf meal, 45 pounds corn, 15 pounds bran, 15 pounds shorts, 15 pounds meat scrap, 5 pounds dried buttermilk, 1 pound salt and a pint of cod liver oil. The chicks are started early and allowed to grow to full maturity before going into production. Thus the pullets do not lay small eggs which cut the grade and price of those marketed. The hens are fed the laying mash recommended by the extension service.

Both houses are of the shed-roof-type and built of hollow tile. They are sealed inside to insulate against both heat and cold. There is plenty of light and air at all times, and frequent cleaning keeps the houses in a sanitary condition.

Anderson grades his eggs and ships to a market offering a premium for first grade. To maintain a high percentage of firsts, he gathers the eggs at least twice a day and cools them in an egg cellar before grading and packing them. His net price has been as much as eight or nine cents a dozen above "run-of-the-mine" prices.

-M-

Good Crops Spur Interest In Fruit And Garden Meet

An apple crop estimated at three times the 1934 yield, together with the best peach crop in four years, a better than average pear crop, a fine grape harvest and increased yields of most vegetables have added interest to this year's winter meeting of the Illinois State Horticultural Society, said J. C. Blair, chief in horticulture at the College of Agriculture, University of Illinois. The meeting which will be held in Decatur on December 11, 12 and 13 climaxes the 1935 fruit and vegetable season.

While the program has not been completed, the discussions are expected to cover practically all phases of gardening and fruit growing. Garden and orchard equipment probably will be emphasized. Fruit washing machinery will be of special interest, since spray residue regulations have created new problems for orchardists. The premium list for the fruit display has been revised since last year with the idea of getting a larger and more interesting display.

Preliminary to the main meeting, sectional get-togethers will be held. The southern Illinois group will hold its meeting at Marion, November 25 and 26, where the emphasis will be placed largely on orchard fruits. The central group will meet in Peoria, November 19 and 20, to discuss all phases of horticulture, while the northern group will meet at Stockton, December 4 and 5. This group will specialize in vegetable discussions.

-M-

Repetition Of Bug Injury Avoided By Fall Clean-Up

Cleaning up and plowing gardens in Illinois this fall not only will put them in better shape for next year but also will be good protection against a repetition of insect and disease damage such as occurred in some parts of the state this past summer, according to B. L. Weaver, vegetable gardening specialist at the College of Agriculture, University of Illinois.

Horned tomato worms, potato beetles, flea beetles, Mexican bean beetles and squash beetles are among the insects which may be prevented from repeating last summer's depredations during the 1936 season if plant refuse is cleaned up and gardens plowed this fall. While none of these insects were numerous enough to become scourges, they were prevalent in some sections of the state, said W. P. Flint, chief entomologist for the college and the Illinois State Natural History Survey.

The horned tomato worm spends the winter underground in the pupa stage. Potato beetles spend the winter as adults in the ground, while Mexican bean beetles hibernate under trash. Fall plowing exposes these insects to freezing weather, the drying effects of the air and to attacks by birds and animals.

Any rubbish and plant refuse left on the ground will furnish winter quarters for the flea beetle and the squash beetle. Burning or plowing under this refuse will help destroy these insect enemies, Flint explained. In practically all cases it is just as effective to plow under the refuse as to burn it, he added.

Plowing under is the best practice from the soil fertility standpoint, since it helps to restore organic matter to the soil, Weaver said. Around fence corners or other places where plowing or spading is difficult or where sloping ground makes fall plowing an erosion risk, burning is advised.

Where manure is available, it is very beneficial if plowed under along with the dead plants, lawn clippings or leaves. If the ground slopes too much for fall plowing, the manure and plant residue may be composted during the winter and plowed into the ground next spring.

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Frosted Lespedeza May Still Yield A Harvest Of Seed

Much of the lespedeza seed caught in a green, immature stage by early October frosts will mature and make good seed if threshed and stored before the heavy freezes occur, J. J. Pieper, associate chief in crop production at the College of Agriculture, University of Illinois, says in answer to inquiries from Illinois lespedeza growers. It is only where frost killed the plants before the seed actually reached the green, plump stage that the seed has been destroyed or damaged.

Before growers start cutting lespedeza for seed, however, it will be to their advantage to examine the seed pods, according to Pieper. A few pods rubbed out in the palm of the hand will give a rough idea of seed possibilities. If a large percentage of the pods yield either brown, mature seed or that in the green, immature stage, the chances are that there will be enough seed in the field to make harvesting worth while. If the pods are empty or contain only the remains of frosted seed, there will be little use of threshing the crop.

A more exact test is to gather the pods from a small area of known size, thresh out the seed by hand and weigh it so as to estimate the yield for each acre of the entire field. Yields of 200 pounds an acre and more are considered good enough to pay for harvesting. It is important, however, to get the green seed threshed and well along toward the mature, dry stage before hard freezes occur.

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The Extension Messenger

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First Mapping Of Power Lines Aid To REA Activities

Approximately 15,000 miles of Illinois electric power lines carrying voltages from which farm homes can be served have been mapped for the first time by the agricultural engineering department of the College of Agriculture, University of Illinois as one aid to groups intending to construct additional power lines under the Rural Electrification Administration.

In addition to the map other information on rural electrification problems also is available from the department, according to E. W. Lenmann, head. This information includes data on number of customers, monthly energy used, costs of operating, rates and kinds of equipment best suited for farm homes.

Showing practically every power line in the state, the map offers a ready means of determining which areas already have adequate service and those which are in need of rural power lines. Information used in drawing the map was secured by the agricultural engineering department from the power companies in the state. Copies of the map may be obtained at a small charge to cover the cost of preparation.

Facts obtained through 10 years' operation of an experimental line running out of Tolono have given the college much valuable data on the requirements of electrified farms and may be of considerable value to groups planning to take advantage of loans offered by the REA.

In connection with REA activities in Illinois, the technical staff of the Illinois Commerce Commission is studying construction problems with the hope of evolving standards which will cut costs of building rural lines, according to the REA reports. Several utility companies are cooperating to make it less expensive for farmers to obtain electrical service. Since January 1, 1935, one company alone has constructed 138 miles of rural power lines and signed up 639 farms. This company has 122 more farms in prospect for the same line. Other companies are cooperating in the construction of rural power lines.

-M-

Mosaic Prevalent Among Bulbs In Illinois This Fall

This has been a poor bulb year, and many varieties of flower bulbs such as the Tiger and Mary Madonna lilies and some tulips are infected with mosaic and other diseases, it is reported by Max G. Fuller, landscape gardening extension specialist at the College of Agriculture, University of Illinois. Consequently, home gardeners and commercial flower growers should inspect bulbs carefully before planting them this fall.

Bulbs which have not done well this season should be dug up, thoroughly cleaned of dead and infected parts, dusted with sulphur and planted in a new location, Fuller explained. The dead and infected parts should be burned. Any bulbs that are infected with either mosaic or botrytis should be destroyed. It is wise to plant suspicious bulbs away from those known to be disease free. The soil around diseased bulbs should be removed from the plot when the infected bulbs are dug up, since it will be infected and may help spread the disease. This soil may be sterilized with formaldehyde.

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Heredity Shown To Play Role in Animal Disease Fight

It has now been established that heredity plays an important role in resistance and susceptibility to at least one animal malady, pullorum disease, or bacillary white diarrhea of poultry, according to a new bulletin, "Inheritance of Resistance to Bacterial Infection in Animals," just published by the experiment station of the College of Agriculture, University of Illinois.

Reporting 10 years' experiments involving more than 29,000 chickens, the bulletin was written by Elmer Roberts, chief in animal genetics, and L. E. Card, chief in poultry husbandry. Pullorum disease was chosen for the study because it lends itself readily to the laboratory methods necessary in such an experiment.

During the 10-year experiment selection was effective in producing strains of fowls which were more resistant to pullorum infection than was the unselected stock. This success in breeding up resistance to bacillary white diarrhea indicates the possibilities of developing strains of poultry or other farm animals which are resistant to certain diseases. Thus this genetic method would become an important ally to the two other general methods, prevention and cure, in combating disease. However, the work has not progressed to the point where resistant strains of poultry and other farm animals are available for breeding purposes, the bulletin points out.

The experimental results were especially promising, since the selected stocks were consistent in maintaining resistance to the disease through successive generations. A susceptible male mated to a susceptible female produced chicks much less resistant to the disease than were chicks from the same susceptible male mated to a resistant female. No significant difference was found between progeny of susceptible and resistant females mated to the same resistant male. Nor was there any indication of acquired immunity among the birds, since the progeny of infected hens showed no greater resistance to the disease than did the progeny of noninfected hens.

-M-

Turkey Prospects Bright For Finished, Quality Birds

Turkey market prospects are favorable for Illinois growers who are careful to sell only birds of top finish during the approaching holidays, said H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois. Smaller numbers of turkeys being raised in many of the main producing areas outside the state give promise of a reasonably high holiday price.

However, this does not mean that turkeys with poor finish or other inferior qualities can be expected to bring good prices, Alp said. While the decrease in production is reported by the U.S.D.A. as approximately 13 per cent below 1934, this is not considered sufficient to put a premium on inferior birds. On the other hand this decrease together with improved business conditions may bring turkey raisers a better holiday season for quality stock than they have enjoyed for several years, he added.

By culling out turkeys of poor finish and marketing only top quality specimens during the Thanksgiving season, growers will have at least three weeks in which to bring culled birds up to top finish for the Christmas and New Year's season. Thus they will be able to get good prices for a large percentage of the turkeys sold.

Decreases in production have been principally among farm flocks rather than among the large commercial flocks, according to the U.S.D.A. report, which states that 3 to 5 per cent fewer farmers in the south Atlantic and far western states reported turkeys, while the decrease was nearly 10 per cent in the other sections.

Heaviest reductions in numbers of turkeys are reported from the main producing states such as Texas and North Dakota. Increases are reported for Minnesota, Oklahoma, Pennsylvania, northern New England and several of the southeastern states. Illinois production is above last year, Alp believes.

-M-

Tests Show Hybrid Corn Outstanding For Silage Uses

Hybrid corn varieties, which are growing in popularity because of their superior grain producing qualities, have now shown that they may also excel ordinary varieties for silage purposes, according to results of tests made by W. B. Nevens, associate chief in dairy cattle feeding at the College of Agriculture, University of Illinois.

The hybrids contained a higher proportion of grain, had greater lodging resistance and gave slightly higher yields of dry matter in the crop harvested for silage. Sixteen hybrid varieties used in the trials were, on the whole, superior to Station Yellow Dent, a high yielding strain of Reid Yellow Dent used in the check plots. Both hybrids and the open-pollinated variety made large yields of silage ranging from 10 to 13 tons an acre. The tests were conducted by the dairy husbandry and agronomy departments of the college with the cooperation of the U.S.D.A.

One of the most significant advantages of the hybrids was their resistance to lodging, Nevens said. Ninety-one per cent of the hybrids were standing erect on September 13 and 14 as compared with 84 per cent of the Station Yellow Dent variety.

Another advantage of the hybrids was their higher proportion of grain. Fifty-two per cent of the total dry matter of the hybrids consisted of ears, whereas the ears on Station Yellow Dent amounted only to 47 per cent of the total dry matter. The hybrid varieties also produced slightly more dry matter to the acre, but not enough to be of particular significance, Nevens stated.

Since the experiment has only been carried through one season, the results should not be taken as conclusive evidence of the superiority of hybrid varieties for silage, according to Nevens and his co-workers. However, the trials did prove that hybrids may be used very satisfactorily for silage production as well as for grain production.

-M-

Injury By Screw Worm This Fall Is First In Illinois

Some 7,000 cases of screw worm injury reported among Illinois cattle this fall mark the first serious damage ever done by this insect in the state, said W. P. Flint, chief entomologist for the College of Agriculture, University of Illinois and the Illinois State Natural History Survey. The outbreak indicates that the insect may become a serious pest unless infestation is checked when warm weather returns.

Screw worms never have constituted a serious menace to Illinois livestock until this fall when they killed about 400 animals in the west central section of the state. It is believed that the heavy infestation was brought in on stock shipped to Illinois feeders.

The fly attacks any warm-blooded animal, but most cases reported are those of cattle, sheep and goats, although hogs, dogs and humans may be affected. The eggs are laid in open wounds caused by barbed wire or nail scratches, ticks or biting mites, dehorning, branding and other operations. Maggots hatching from these eggs should be removed from wounds with a wad of cotton saturated in benzol. They should not be removed mechanically, as there is danger of destroying tissue by this method. Treated wounds should be coated thoroughly with pine tar oil to prevent reinfestation. Serious wounds should be treated by a veterinarian.

Other methods of control include breeding cows to calve from November 1 to June and avoiding dehorning or other operations during summer months when screw worms are most prevalent. All common causes of wounds such as projecting objects should be eliminated. Open wounds should be treated in summer to prevent infestation.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Terracing Record To Set New High In Erosion Control

Record advances are being made this year against erosion on Illinois' 12 million acres of rolling cultivated land with the building of more terraces than in any previous year in the state's history, it is reported by R. C. Hay, agricultural engineering extension specialist of the College of Agriculture, University of Illinois.

Activities are at their height this fall, with forces of the extension service, U. S. Soil Conservation Service and CCC camps cooperating with farmers to get terraces built and outlets finished before winter. Much of the work is being carried on through the various county soil conservation associations which have been set up recently in many counties of the state.

In 11 counties terracing machines either have been purchased or leased by the associations and are being operated by the associations in cooperation with CCC camps and the conservation service. Bond, Jersey and White counties are using large 10-foot blade terracers. Eight-food blade terracers have been purchased in Tazewell and Marshall-Putnam counties, while the new whirlwind-type machines are in operation in Macon, Adams, Schuyler, Randolph, Jackson and Williamson counties, Hay reported.

These machines, either owned or leased by the county associations, are being operated by tractor power. Some of the associations own their own tractors, while others have contracted with local dealers or farmers to furnish them. Farmers on whose places the terraces are built pay for the work at an hourly rate calculated to meet operating expenses and the proportionate cost of the machinery.

In addition to the outfits operated by county associations, many privately and publicly owned machines are being used. These range from 6-foot blade terrace machines suitable for horse or farm tractor power up to large road graders.

Terraces are being staked out and checked by engineers from the conservation camps and outlets are being constructed by CCC men. Assistance has been given to many of these projects by the agricultural engineering department of the college.

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Music And Drama Tourney Drawing Bigger Entry List

The largest turnout of rural talent in the seven years' history of the event already has started preparations for the annual state music and drama tournament to be held during Farm and Home Week, January 13 to 17, at the College of Agriculture, University of Illinois, according to D. E. Lindstrom, rural sociology extension specialist at the college.

Fifty-six counties are expected to participate this year as compared to 46 last year. The state has been divided into 10 districts and preparations are going ahead rapidly in each of these districts. County tryouts already have been held in Shelby county and are being planned in 15 other counties. Definite plans have not been made in the remaining 40 counties expected to participate. Talent of various types will have a chance to display its skill during the tournament.

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New High Reached In Bang's Disease Control In State

A new high for accomplishments under the Bang's disease eradication work in Illinois has been reached by the Coles County Dairy Herd Improvement Association with 100 per cent of the member herds entirely free from the disease, according to a report received by C. S. Rhode, dairy specialist at the College of Agriculture, University of Illinois, from Marvin Fairchild, tester for the association.

This is the first dairy herd improvement association in Illinois to have all its herds free of Bang's disease, Rhode believes. The accomplishment marks one of the first big milestones on the eradication program that was started some 14 years ago by the animal pathology and hygiene division of the college.

During those years approximately 23,000 cows, 300 swine and 214 goats have been tested under the state-wide project which the college is carrying on to combat the disease. The malady not only has cost farmers of the state thousands of dollars but also has endangered public health. Humans may contract undulant fever by using products from Bang's infected herds, said Dr. Robert Graham, chief in animal pathology and hygiene.

Since the project was started, 111 of the 1,196 herds that have been tested have been freed of the disease. In the remaining herds testing and control measures are rapidly cutting down the losses. Conservative estimates are that Illinois farmers have saved $25,000 through tests.

In 1934 the Federal government launched a more intensive eradication campaign which, up to June 30, 1935, has been responsible for eliminating 12,714 reactors from Illinois herds. Under this plan farmers may sign up to have their herds tested and all reactors are removed. Farmers receive indemnities under the federal plan for all reacting cattle.

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Home Improving Picks Up With Improvement In Income

Substantial improvement registered in farm incomes during 1935 has been one of the main factors in the increased interest of farm women in kitchen improvement, according to Miss Gladys J. Ward, home management extension specialist at the College of Agriculture, University of Illinois. Nearly 400 farm women have been reached during the series of "kitchen clinics" conducted in nine counties this year, Miss Ward estimated. In all of these clinics the idea of making the kitchen more convenient without a large cash expenditure has met with enthusiasm. Counties in which clinics have been held are Adams, McDonough, DuPage, McLean, Coles, Warren, Mason, Iroquois and Knox.

In many cases a few home-made shelves together with a rearrangement of the kitchen furniture and equipment was all that was necessary to make the room a convenient, cheerful place. One Mason county homemaker reported that her kitchen has been greatly improved by eight changes which cost a total of 27 cents plus the time spent by herself and husband. The changes included moving the range, moving the sink, building a drain board for the sink, adding a built-in cob bin, putting a partition in the cupboard, placing a silver drawer under the sink, adding a soap rack above the sink and equipping an old pantry for wrap storage.

Water systems were among the most needed of the home improvements involving a greater cash outlay than the minor changes, Miss Ward said. Only about 50 per cent of the rural homes of the state have running water, according to a Federal Housing Administration survey conducted during 1934. While the cost of a complete system involves considerable expense over a short period of time, the installation of the system by units is one method of spreading the cost over a longer period.

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Home Accounts Are Safe Guide In Increased Spending

Home accounts being kept by more than 639 Illinois farm and small-town families are furnishing at least a partial guide to many homemakers who are wondering what percentage of their increasing incomes should be spent for food and other family expenses, said Mrs. Ruth C. Freeman, home accounts extension specialist at the College of Agriculture, University of Illinois.

An increase of $413,000,000 in 1935 farm income over that of 1934, as reported by the U. S. bureau of agricultural economics, has lightened the job of maintaining high living standards, but also has brought on the risk of unplanned spending, Mrs. Freeman added.

Since a number of families have kept accounts for three or more years, summaries of these accounts furnish valuable budget planning data both for the account keepers and for other families of similar size. Many women who have wondered whether or not they were spending too much of the family income for food or economizing to the point of improper feeding now are using these "average family" records for comparisons.

As an example, records show that the average family in the $500 to $999 a year income class used approximately $320, or 39 per cent, of the total income for food in 1934. As incomes increased, a smaller percentage of the total income went for food, although more actual money was spent for food, Mrs. Freeman said. Only 22 per cent of the income went for food among account keepers having annual incomes of $2,500 or more. Figures for 1935 are not yet available.

Another fact brought out by home accounts is that many farmers and small-town families reduced cash expenditures for food by producing garden, dairy and poultry products at home. Among some of the low-income groups as much as $209 worth of the estimated $320 worth of food used in 1934 was produced at home. However, families in the higher income brackets also reduced cash food expenditures by raising food at home.

Such figures as these and many others derived from summaries of home accounts are furnishing valuable data on meal planning as well as the budgeting of clothing expenditures and other family expenditures.

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Less Expensive Dairy Feeds Help Raise Net Incomes

More than one Illinois farmer is making the most of the improved prices for dairy products by adopting economical feeding methods, according to reports reaching J. G. Cash, dairy husbandry extension specialist at the College of Agriculture, University of Illinois. Savings made through more economical feeding are only one of the many ways in which more than 1,100 farmers who are members of dairy herd improvement associations are increasing their returns, he said.

Substitution of home-grown grains for more expensive protein feeds together with replacement of part of the corn by oats are two ways by which Illinois dairymen are finding it possible to cut feed costs without lowering their herd production averages. One member of the McLean county No. 1 association increased his monthly net income from 17 cows by $10.88 with a less expensive ration. Oats replaced a part of the corn in the ration, thus reducing the cost of feeding approximately 24 cents a hundred pounds. His herd also produced 34 more pounds of butterfat a month on the cheaper feed.

A member of the Vermilion-Edgar county association used a ration composed of corn, oats and distiller's grain instead of corn and a high protein supplement previously used and was able to cut feed costs by nine cents a hundred pounds, although the protein content was the same. The cheaper ration reduced the feed cost of butterfat by five cents a pound and the feed cost of milk by 14 cents a hundred pounds, Cash said.

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COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Conferences For Young Folks Next In State Program

Latest among the rural young peoples' organization developments in Illinois is a series of conferences, the first of which is scheduled for December 9 to 12 inclusive at the College of Agriculture, University of Illinois, according to announcements from Miss Cleo Fitzsimmons and G. S. Randall, junior club extension specialists in charge of young peoples' activities throughout the state.

Special instructions in play presentation, discussion leadership and program planning will be given to delegates during these conferences which are being planned to give each delegate an opportunity to take an active part in the program. Dates and locations for the remainder of the series will be announced just as soon as they have been definitely set, Randall said.

This series is only one of the late developments with regard to the rural young peoples' groups which are being organized and sponsored by the extension service of the college to give farm boys and girls between the 4-H club and adult age a greater part in the community's activities. Another late development is the special exhibit of young peoples' hobbies which is being planned for Farm and Home Week, January 13 to 17. This exhibit will be set up because of increasing demands by local program planning committees for such information.

Along with these special activities, interest in organization continues to move forward in the state. Initial steps toward setting up groups were taken in Schuyler, McLean and Montgomery counties during October. Others already organized are planning their winter programs with drama as a favored project. Macoupin, Shelby, Scott, Pike, Williamson and Edwards county organizations are making plans to produce plays this fall and winter. Other groups have or are planning to take trips to historic spots of Illinois as a part of the "Know Illinois" project.

The Edgar county young men's forum which has been conducting discussions during the past three years considered two topics, "Illinois Sales Tax from the Farmer's Standpoint," and, "The Illinois Property Tax Law from the Farmer's Standpoint," during their last discussion series.

Many young peoples' groups plan to attend the agricultural economics schools where these sessions are being conducted in their counties by the agricultural economics department of the college.

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Greater Interest Is Being Shown In Farm Discussions

Increasing interest of Illinois farm people in discussions dealing with the problems of agriculture is indicated by the fact that 10 county teams plan to enter the state discussion team tourney this year as compared to four teams last year, according to D. E. Lindstrom, rural sociology extension specialist at the College of Agriculture, University of Illinois.

This year's tourney, second of its kind to be held in Illinois, will take place during annual Farm and Home Week, January 13 to 17. The topic for discussion will be, "How Should Agriculture Adjust Its Production."

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Family Of Six Can Use An Orchard Of 19 Fruit Trees

It takes about 19 fruit trees and 382 small fruit plants to supply the average family of six with the fruit it needs, according to estimates prepared by V. W. Kelley, horticultural extension specialist of the College of Agriculture, University of Illinois. Such a planting would produce, on the average, approximately 80 bushels of tree fruit, 250 pounds of grapes and 340 quarts of small fruits.

The estimates were prepared as an aid to the many Illinois farmers who are planning to start small home orchards to supply fruit for their own families. Liberal allowance was made both for fresh fruit and for canning.

The number of trees recommended for the average family of six plus occasional hired help includes six apple trees, three pear trees, three peach trees, three plum trees, two sour cherry trees and two sweet cherry trees. A separate variety should be chosen for each tree so that successive crops will ripen through the fruit season, Kelley explained.

In the small fruits division the estimated number of plants includes 20 grape vines, 250 strawberry plants, 40 black raspberry bushes, 30 red raspberry plants, 25 blackberry plants, 10 gooseberry bushes and 12 currant bushes. While the number of trees and small fruit plants may seem small, better and larger crops usually are produced from relatively small orchards because of the better care these orchards receive. Too large a home orchard encourages neglect, Kelley said.

This selection will need to be varied according to local soil and climatic conditions as well as individual preferences among various families, Kelley explained. Peaches, for example, bear infrequently in the northern half of the state. Sweet cherries are not well adapted to Illinois, especially in the northern part. Consequently, the prospective home orchardist should consider growing conditions on his place before making final choices as to kinds of fruit to be grown.

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Home Repair Will Help To Protect Health Of Family

Health and safety of Illinois families during the coming winter months may be protected to a great extent by preparations and repairs made in the home before cold weather arrives, declared W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

One of the greatest of winter dangers can be eliminated if provision is made to have kindling handy for starting early morning fires. There is often a temptation to speed the job along by dashing kerosene on a freshly-kindled fire. The all too frequent news of people being burned to death from this cause indicates that it will be much safer to have a good supply of kindling near the stove and the kerosene supplied in the form of well soaked cobs or chips which may be placed on the fire without risk, Foster said.

Another detail which, if taken care of properly, will do much to prevent numerous colds is that of repairing windows and doors to keep out cold drafts. A rattling window sash may be repaired by the resetting of stops or the addition of shims made of built-up paper ribbons or felt strips. Cracks which permit cold drafts to enter the room under the baseboards may be repaired in the same way. Loose fitting doors can be repaired by the use of bronze metal or felt stripping which can be purchased at a nominal cost.

Cementing up the cracks between the basement wall and the sill as well as replacement of broken basement windows will go a long way toward making the floors warm and eliminating the necessity of doctor's calls to treat coughs and sniffles of the small children in the family.

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49 State Champions Named From 4-H Club Membership

Forty-nine 4-H club state champions and 43 state honor roll members have been chosen for their outstanding work from among 14,200 club members engaged in agricultural projects in Illinois during 1935, according to an announcement just made by E. I. Pilchard, junior club extension specialist at the College of Agriculture, University of Illinois. The championships represented 25 counties and the honor roll 39.

To win a state championship, club members had to make a score of 80 or more in some chosen better farming project supervised by the extension service of the agricultural college and their county farm advisers. Honor roll winners were required to score between 70 and 80.

Fulton county clubs topped the list with seven of the 49 championships and five members listed on the honor roll. Sangamon county was second with five state champions and two honor roll members, while Lake county placed third with four champions.

State champions in agricultural projects include Edwin Allen, colt, and Opal Ward, home grounds beautification, Kankakee county; Milton Bell, beef, Champaign; Lewis Benckendorf, beef, LaSalle; Duane Brett, dairy, and Kenneth Ferill, corn, Macon; Herman Brown, pig; Alice Buecker, poultry; Alvin Mavis, sheep; Mary Richardson, home grounds beautification, and Max Summers, pig, all from Sangamon; William Brown, dairy, Winnebago; Paul Engel, colt, Woodford; Fred Francis, Jr., beef, Will; Webster Gehring, Jr., pig, Knox; William E. Greenleaf, corn, and William Hadden, beef, Morgan; William Hamilton, beef, and Robert Harris, corn, McDonough; Henry Hartman, corn, McHenry; Earl Kane, Jr., dairy, Lake; Charles Long, pig, Edgar; Keith Lynch, poultry, Marion; Donald O. Mahr, poultry, and William D. Masters, sheep, Fulton; Donald Mosher, pig, DeKalb; Earl Oertley, pig, and James Potter, pig, Peoria; Sam Ridlen, poultry, Williamson; Dean Sims, sheep, Adams, and Robert Stetson, pig, Bureau.

State contest champions are Gilbert Baker and J. Harrison Buckingham, demonstration team, Woodford; Bernard Deakin, Kenneth Voorhees and Maurice Wilson, corn judging team, and Ralph Foulk, Rollin Smith and Charles Turner, poultry judging team, Fulton; Delbert Gardner, dairy judging, Warren; Rollin Johnson, poultry judging, Mercer; Earl Kane, Jr., Harry Lohman and Norman Nehmer, dairy judging team, Lake; James Padgett, livestock judging, Adams, and Bert Phillips, Norman Smith and Wayne Wilson, livestock judging team, Marshall-Putnam.

Members of the honor roll are Frederick W. Boebel, Jr., DuPage county; James Cummins, Jefferson; George Bertelsen, Warren; John Cameron and Norman Smith, Marshall-Putnam; Jeane Coates, Bureau; Bernard Deakin, John Ewan, Garold Kepplo, Ernest Krider and Kenneth Voorhees, Fulton; Homer F. Dodd and William E. Perisho, Edgar; Robert Dunlap, Champaign; Burdell Gardner, John Hahn and Joe Hubly, Livingston; Ira Hamer, John Oren Kuhn and Ruth Stetchel, LaSalle; Jim Henderson, Tazewell; Eugene Hudson, Williamson; Kermit Kruger, Massac; Bernice Miller, Vermilion; Dean Miller, Henderson; Daniel E. Moeller, Effingham; Nelson Thomas, John Roesch and Ruth Toben, Ford; LaVern Niehaus, Washington; John Paarlberg and Kenneth Paarlberg, Cook; Francis C. Potts and Robert Summers, Sangamon; Axel Rasmussen, McHenry; Beryle Rutledge, DeWitt; Fred Spickler, Winnebago; Burdette Stauffenberg, Will; Edwin Thornton, Mercer; James L. Winn, Stark; Harold Winters, McDonough and Myrle Woodward, Bond.

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Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Fifty Illinois 4-H Members To Attend Club Congress

Fifty Illinois 4-H club boys and girls will attend the fourteenth annual national 4-H club congress at Chicago, November 29 to December 7, where they will join delegates from 47 other states and the Province of Ontario, Canada, in celebrating their club accomplishments for 1935, according to announcements from state club headquarters at the College of Agriculture, University of Illinois.

Illinois' delegation includes 25 boys and 25 girls selected from the list of 1935 state champions and best all-around record winners. Thirty-three counties are represented by the delegates.

Benita Krier, Livingston county, and Donald Foster, Grundy county, will represent Illinois in the national health contest, which is one of the features of the club congress. They won the right to represent their state by being adjudged health champions among approximately 26,000 Illinois 4-H club members.

Other contest entrants among home economics project members will include Eleanor Moody, Rock Island county, complete costume for the 4-H girl; Martha Burgess and Evelyn Thompson, Kendall county, clothing judging; Virginia Esmond, LaSalle county, home furnishings judging; Mabel Krusa, Scott county, food preservation judging; Helen Wolf, Fulton county, baking judging; Martha Finley, Lawrence county, dress revue; Virginia McBroom, Fulton county, food preparation; Anna Oertwig, canning achievement, and Margery Mays, McLean county, record contest; Ruth Irwin, Rock Island county, wash school dress.

Other home economics project delegates not entered in the competition are Marjorie Chappell and Mary Lois Sunderland, Jersey; Jean Graham, Menard; Estalene Blair, Greene; Frances Vilmin and Mary Ada Pope, Kendall; Louise Bolin, Moultrie; Virginia Huston, Edgar; Grace Gregory, Sangamon; Alice Green, Ford; Lucille Howell, Shelby; Helen Bitterman, Will, and Irene Riley, Jefferson.

Other agricultural project delegates in addition to Foster who is entered in the health contest are Edwin A. Allen, Kankakee county; Milton Bell, Champaign; Lewis Benckendorf, LaSalle; George C. Bertelsen, Warren; Herman J. Brown and Max Summers, Sangamon; William Brown, Winnebago; J. Harrison Buckingham, Woodford; Jasper DeMonbrum, Menard; Homer F. Dodd, Edgar; Fred Francis, Jr, Will; Roy A. Gardner, Livingston; William E. Greenleaf and William H. Hadden, Morgan; Delmar Gurley, Ford; Earl Kane, Jr., Lake; Keith Lynch, Marion; William D. Masters, Fulton; Donald Mosher, DeKalb; Myron Mueller, Rock Island; Earl C. Oertley, Peoria; Samuel F. Ridlen, Williamson; Henry J. Ransom, Marshall, and Dean Sims, Adams.

Aside from Foster none of the agricultural project delegates will enter national contests. However, several boys won state prizes in the form of part or all of their transportation expenses to the congress. Among these are Benckendorf, Herman Brown, William Brown, Buckingham, DeMonbrum, Gardner, Kane, Mosher, Mueller, Ridlen, Ransom and Summers.

The national club congress will be held in conjunction with the International Livestock Exposition with all exhibits and contests at the exposition grounds.

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Higher Egg Prices Put A Premium On Good Fall Layers

More favorable egg prices plus the seasonal rise this fall places a premium on feeding and managing poultry flocks for high fall and winter egg production, according to H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Value of high egg production during late fall and early winter is shown by farm management records taken from several farms during 1933 and 1934. In 1933 flocks that produced less than 10 per cent of the year's egg crop in October, November and December brought poultrymen an average of 13.2 cents a dozen for the eggs. Where 20 per cent or more of the year's egg crop was produced during these months the average price for the year was 15.1 cents. In addition the annual production was higher where fall and winter production was increased.

In 1934 the average price for the flock of low fall and winter production was 16.4 cents as compared to 20.7 cents where fall and winter production was high.

Poor fall and winter egg production is an indication that the flock needs better care and management, Alp said. The hens should have plenty of fresh, clean water fron sunrise to sunset. Plenty of the right kind of feed should be available at all times. The laying house should be kept in repair so that drafts and leaks can be avoided. The entire house should be kept clean, and clean, dry litter should be placed on the floor as often as necessary. Crowding should be avoided with approximately four square feet of floor space allowed for each hen.

Weak, parasite-infested birds should be culled from the flock and only the promising layers kept in the laying house, Alp said.

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Play Institutes To Give Boost To Rural Recreation

Recreation in Illinois rural communities will be given another boost this winter when eight district recreation institutes will be held for county delegates during the five weeks beginning December 9, it was announced by D. E. Lindstrom, rural sociology extension specialist at the College of Agriculture, University of Illinois.

The first institute will be held at Sugar Grove on December 9 and 10. Locations and dates for the others are as follows: Dixon, December 12 and 13; Galesburg, December 16 and 17; Bloomington, December 19 and 20; Effingham, December 30 and 31; Harrisburg, January 2 and 3; Belleville, January 6 and 7, and Jacksonville, January 9 and 10.

In addition to instructions to be given by extension specialists and the various farm and home advisers and local leaders, special work will be given by W. P. Jackson, representative of the National Recreation Association, who has been assigned to Illinois for the entire five weeks.

Various counties are expected to send from six to eight delegates to the institutes in their districts. These delegates will represent such groups as men's and women's extension units, 4-H clubs, young peoples' groups and local churches.

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U. of I. Graduate In Charge Of New KWK Program

One of the most recent radio programs to be inaugurated for Illinois farmers and other listeners is in charge of a graduate of the University of Illinois, Charles A. Stookey, and is broadcast from 5:30 a.m. to 7 a.m. over Station KWK, St. Louis. The program gives the first market of the day on the air from St. Louis and includes livestock receipts for the day at East St. Louis, Chicago, Kansas City, Indianapolis and Mississippi Valley, as well as weather reports and the butter, egg and poultry market. Mr. Stookey was graduated from the University of Illinois College of Education in 1926 after three years as a student in the College of Agriculture. KWK broadcasts on 1,350 kilocycles.

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Plans Laid Ahead Of Time Simplify Job Of Toy Buying

Those aching legs and the feeling of confusion that often go with the job of shopping for Christmas toys can be avoided this year if a carefully planned list is made out before the shopping tour begins, declared Miss Edna E. Walls, child development and parent education extension specialist at the College of Agriculture, University of Illinois. Not only that, but also the toys probably will be better suited to the youngsters for whom they are bought, she added.

Many toy manufacturers are attempting to build toys which will give children not only entertainment but also education and inspiration. The makers also recognize that children differ in their likes and dislikes. Consequently toy departments now carry a variety of entertaining and instructive toys for children of all age classes from babyhood up to 10 or 12 years of age. It only remains for the shopper to choose toys in the right age class and suited to the special abilities and desires of the child in question, Miss Walls said.

As an example, a half pound or a pound of modeling clay would be more suitable than a clanging fire engine for the child showing artistic leanings. The would-be construction engineer of three to five will be able to handle a construction set with patented locking that eliminates bolts and screws, while his brother, age 10, will prefer a set that does fasten with bolts and screws.

For the baby, sanded wood blocks, wooden beads and other simple toys are best. A little more perception on the part of the three to five-year olds will necessitate toys having more detail. Construction sets, log cabin sets and instructive puzzles come into their own during this period. The child of five to seven years and older will demand toys which are in keeping with his advancing mind. Tool chests, steel construction sets, canvas playhouses, puppet theatres, toy telephones and drawing sets are among the many articles suitable for children of this age. The main idea is to size up the children both from the age and temperament standpoints and then list the desired toys before going to the toy shop, Miss Walls said. With this list and the help of a capable clerk, the buyer can make a fascinating pleasure instead of a drudgery out of this duty.

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Revival Of Horse Pride Is Shown By Fair Enthusiasm

Revival of interest and pride in horses among Illinois farmers is reflected in the enthusiasm displayed during the 1935 fair season just ended, it is reported by E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

One of the best shows was held at Clayton with about 100 horses and mules entered in the competition. The show included three six-horse teams, five four-horse teams, three four-mule teams, 10 pairs of farm horses, five spans of mules, four horse colts, five mule colts and eight entries in the quick team-hitching competition.

A great deal of the old-time pride in horsemanship was revived by the team-hitching competition in which each entrant harnessed, hitched and drove his team across a lot while being timed, Robbins reported.

The three six-horse teams were especially good, according to Robbins who judged all of the animals entered. They were good horses, evenly matched and well trained, he said.

Clayton's horse show was conceived, organized and handled by A. G. Beckman, president of the Adams County Farmers' Institute, and a committee consisting of Guy Cutforth, James Jud and Harve Bowen.

Interest in this contest was typical of that evidenced in all of the shows and contests held in Illinois this summer and fall, Robbins stated.

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Illinois 4-H Members Score Heavily At International

A 17-year-old 4-H club girl of Illinois showed the way to the nation's adult breeders and feeders in the matter of producing quality beef when Marie Krejci, Edwardsville, Madison county, showed the steer which won the championship in the slaughter tests of the International Livestock Exposition. An Illinois 4-H club boy, Wendell Morgan, Aledo, Mercer county, won the reserve championship.

Both had Aberdeen-Angus entries, but Miss Krejci showed in the class for steers weighing 800 to 1,000 pounds on the hoof, while young Morgan competed in the class for steers weighing between 1,000 and 1,400 pounds. After being judged on the hoof, the steers were to be slaughtered and the carcasses graded in a contest featuring quality beef. These winnings, made in the open classes against adult breeders and feeders as well as other 4-H members, figured prominently in the good account which Illinois competitors gave for the 26,000 farm boys and girls who are carrying on definite projects in better farming and homemaking practices under supervision of their county farm and home advisers and the College of Agriculture, University of Illinois.

Illinois 4-H members started in early to win their share of honors when the livestock judging team from Marshall-Putnam county, composed of Norman Smith, Bert Phillips, Wayne Wilson and John Cameron, took third in competition with teams from other states in the non-collegiate livestock judging contest.

Then Lawrence Morgan, 14 years old, of Aledo, Mercer county, won the reserve championship of the junior livestock feeding contest with his purebred Aberdeen-Angus steer, "Barnum," to top a long string of awards which Illinois competitors ran up over entries from nine other states.

William E. Hamilton, Good Hope, McDonough county, brought one of the year's major 4-H honors to the state when he was awarded the President Roosevelt trophy as the 1935 boys' achievement champion of the nation.

First place in the crops judging contest in which teams from eight states competed went to the Illinois team composed of Kenneth Voorhees, Bernard Deakin and Maurice Wilson, of Cuba, Fulton county, while another Fulton county team brought Illinois second place over other states in the poultry judging contest. This team was composed of Rollin Smith, Charles Turner and Ralph Foulk.

Illinois girls' 4-H club members won their share of honors, too, in competition with members from other states. In the contest on girls' complete costumes, for instance, Eleanor Moody, Rock Island county, took second, while one of her Rock Island neighbors, Ruth Irwin, was winning second on school dress.

Still another major honor came to Illinois when Fred Francis, a 4-H baby beef member from New Lenox, Will county, was awarded one of the Thomas E. Wilson $300 scholarships in the junior livestock feeding record contest.

Other events in which Illinois 4-H club members were competing had not been completed at the time of this report. Hence the state's record undoubtedly will be even more impressive when the final accounting is made.

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Higher Prices Of Horses May Help Finish Parasites

A 25 per cent increase in horse prices during the past year is proving to be bad news for worms, bots and other horse parasites, according to Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois.

Encouraged by the stronger prices for horses, more farmers than ever are reconditioning and rebuilding their work stock by joining in local campaigns for eradication of parasites, he reported. Experimental tests have shown that even horses which are about to be destroyed can be restored to useful service if freed of bots and worms.

Thirty-six counties conducted organized campaigns during the winter of 1934-35 in an effort to stamp out the parasite menace which is costing Illinois farmers an estimated $100,000 a year in lost horse power, Dr. Graham said. While no figures are available, indications are that the 1935-36 campaign will be more extensive than last year's campaign in which 15,000 horses were treated by 68 cooperating veterinarians.

In the county programs, most of which have been organized through the efforts of farm advisers, arrangements are made with local veterinarians and horse owners so that all the horses in a given community may be concentrated at one place on a certain date for examination and needed treatment. This method of wholesale diagnosis and treatment greatly reduces the costs for parasite treatment, it was pointed out.

Farmers living in counties not having such programs already organized probably will be able to get together with their farm advisers and local veterinarians to organize and carry out similar plans. In the meantime, the individual farmer can prevent infestation to a large extent by practicing sanitation, Dr. Graham declared. Since most parasites enter the body of the horse from droppings of infested animals, all sanitation methods hinge on keeping the horses in clean lots or pastures, supplying them with clean feed and water and disposing of manure on the fields and not in the horse pasture.

Treatment for such parasites as strongyle, or blood worms, involves the use of highly poisonous drugs. Consequently, a competent veterinarian should be called to diagnose the disease and administer the treatment, Dr. Graham cautioned. The follow-up treatment may be given by the owner, but only after he has secured directions from the veterinarian.

A leaflet showing what may be done through treatment against horse parasites has been published and may be secured by writing to the animal pathology and hygiene division of the college.

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Rabbits Threaten Exposed Trees In State's Orchards

Rabbits are so numerous in some sections of Illinois this winter that thousands of fruit trees may be damaged unless they are made rabbit-proof before the first heavy snows, according to R. S. Marsh, of the horticultural department, College of Agriculture, University of Illinois.

Heavy snows not only cut off other food supplies of the rabbits, but also make it possible for them to reach the upper trunks and crowns of fruit trees to nibble at bark which they seem to relish, he said.

Heavy roofing paper, wood veneer or hardware cloth may be used for protective barriers around the trees. The material should be wrapped around the trunk of the tree from the base up to at least 20 or 30 inches above the ground. The deeper the snow is likely to be, the higher the barriers should be, Marsh said. While there are a number of paints and chemical preparations which may be applied to the trunks of the trees, none of these preparations has been found as satisfactory as the mechanical barriers.

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Basement Party Fills Place Once Held By Husking Bee

While rural young folks of Illinois do not have the barn dances, husking bees and other entertainments enjoyed by their fathers and mothers, they do have modern homes with basements where they can set up recreation rooms for parties, dances and other winter get-togethers, according to W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

A well-built basement can be transformed from a dusty catch-all to an attractive and comfortable recreation room at a relatively small cost. Such a room will be ideal for organized meetings, parties or those informal get-togethers where young people of the neighborhood spend pleasant winter evenings playing games and enjoying popcorn, apples and other cold weather specials, Foster said.

If the walls are of concrete they may be painted or plastered. Stone or brick walls also can be painted or plastered, although a more attractive finish can be had if they are lined with knotty pine boards. This finish also can be applied to concrete walls if desired. Wall plaster should be made with a cement base.

There are a variety of ways of finishing the floor after it has been troweled smooth. It may be covered with homemade rugs or with a plain, heavy linoleum. It also may be painted. The painted or linoleum-covered floor makes an excellent surface for dancing or games.

Where sufficient money is possible, a fireplace adds a great deal to the basement recreation room, since it imparts a cheery warmth and serves as a focal point for arrangement. Although a basement fireplace is more easily installed when the house is being built, it can be put in later, especially if there is a fireplace in the room above.

A basement recreation room may be constructed at a cost ranging from a few dollars to $100 or more but, regardless of the cost, it will be an investment in home supervised recreation, youth, health and friends--assets which are not measured in dollars, Foster declared.

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Wheat Land May Need Reseeding Because Of Hessian Fly

Because of continued warm weather far into the fall this year, a late brood of Hessian fly is doing considerable damage to wheat in many sections and may necessitate the reseeding of some fields next spring, according to W. P. Flint, chief entomologist for the College of Agriculture, University of Illinois, and the Illinois Natural History Survey.

The fly damage was brought about by the emergence of a brood at least a month after the normal date of seeding for highest yield, Flint said. With the mild fall weather, eggs laid at that time developed, causing the present Hessian fly infestation. Usually eggs laid after November 1 will not develop sufficiently to cause serious damage.

On strong ground much of the wheat will recover from the damage and send up tillers which will produce a crop next summer. However, the infested fields should be watched and, if the wheat becomes seriously damaged, it may be necessary to reseed the land next spring.

Since there is every indication that the spring brood of Hessian fly will be plentiful, fields damaged by this fall's infestation probably should be reseeded to a fly-resistant crop such as oats, Flint said. Aside from wheat and barley, rye is the only other grain subject to fly damage.

Hard freezes which may be expected in most sections of Illinois from the latter part of November on will have no effect in ridding fields of Hessian fly before next spring. Consequently, this fall's infestation may be a forerunner of a heavy infestation when the 1936 crop season begins.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Spirited Race On For Grain Honors At Illinois Show

Competition for the "corn king" title of Illinois, now held by C. J. Simmons, Stockton, is expected to be more spirited this year than for a number of seasons when the state's best corn growers come together next month during the annual Illinois Seed Grain and Utility Corn Show, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

As in former years the show will be a feature of the annual Farm and Home Week to be held January 13 to 17 at the college.

Other title holders besides Simmons whose honors will be at stake in the various divisions of the show are C. E. Canterburry, Cantrall, soybeans; F. W. Wilson & Son, Edgewood, sweet clover seed; Russell D. Maurer, Carlock, red or mammoth clover; Keith McGuire, Tuscola, early oats; Keith Turner, Seymour, hard winter wheat; Clarence Akin, St. Francisville, soft red winter wheat; Virgil Beckerman, Mt. Carmel, "corn prince," and George Shuman & Son, El Paso, 10-acre corn growing contest.

Stimulating interest in the show this year is a harvest of important crops that for the state as a whole is generally good. The combined acre yield of important crops is above the 10-year average. This year the show can draw on a crop of 284,588,000 bushels of corn as compared to the drouth-riddled 1934 crop of 146,760,000 bushels. The state also has a record crop of almost 19 million bushels of high quality soybeans.

One indication of the large number of entries expected in this year's show is the fact that 17 growers have entered the 10-acre yield contest as compared with nine last year. For the show as a whole, the total number of entries is expected to be considerably larger than the 218 in the 1935 event.

Chief interest in the show is expected to center in the 10-ear classes for yellow and white corn, from which the new "corn king" and "corn prince" of the state will be picked. There will be 10-ear classes both for junior and adult exhibitors. Other classes will be provided for peck samples of shelled seed corn and for the various small grains.

Prices for the corn show winners will be presented at the annual banquet of the Illinois Crop Improvement Association on the evening of January 15.

Growers expecting to enter the competition may secure copies of the premium list by writing the college.

Addition of two more addresses completes the list of speakers for the general sessions of the week. Mrs. Emily Newell Blair, of the Consumers' Division, NRA, will speak Thursday, January 16, on, "The Work of the Consumers' Council," and Dean Chris L. Christensen, of the College of Agriculture, University of Wisconsin, Madison, Friday, January 17, on, "The Agricultural-Industrial Balance in Our Economic Life."

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Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumford, *Director.*

Dairy Cow Is Good Market For Feed At Present Prices

At present feed and dairy product prices Illinois farmers can almost double their cash return from forage and grain if they market these feeds in the form of milk, cream and butter rather than sell them on the market, according to C. S. Rhode, of the dairy department at the College of Agriculture, University of Illinois.

To do this, however, means that the dairyman must have good cows and must give them plenty of the right kinds of feed combined into a balanced ration, Rhode said. Many dairy cows in Illinois are producing less this fall than in other years largely because of inadequate feeding rations. With feed prices lower in proportion to milk and butterfat prices this year than last, there is every incentive for Illinois dairymen to get the most out of their cows through careful feeding.

Cows should receive about all the hay and other roughage they will clean up. In addition they should be given a balanced grain ration fed according to production. Holsteins and Brown Swiss usually are fed one pound of grain for each four pounds of milk produced daily, while the rate for Guernseys and Jerseys is one pound of grain for each three pounds of milk.

When legume hay and silage or clover and timothy are fed, a satisfactory grain mixture is 500 pounds of corn and cob meal, 200 pounds of ground oats and 100 pounds of soybean oil meal or ground soybeans.

If the hay and roughage ration includes plenty of alfalfa, clover or soybean hay but no silage, the grain ration should be composed of 600 pounds of corn and cob meal, 300 pounds of oats, and 100 pounds of soybean oil meal or ground soybeans. A special bone meal will furnish calcium and phosphorus. One pound of the bone meal should be mixed with each 100 pounds of the grain ration. Salt and bone meal both may be used. In such case they should be mixed in equal parts and placed where the cows may have free access to them or one pound of each may be added to the 100 pounds of grain.

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Need For Berry Mulch Increased By Drouth In August

Mulching of strawberry plants before extremely cold weather takes its toll is more important than ever this year since the lack of moisture during August reduced the number of plants which will be available next spring, according to V. W. Kelley, fruit extension specialist at the College of Agriculture, University of Illinois.

The number of plants going into the winter dormant period this year was about the minimum needed for a good 1936 crop in many cases. Without a protective mulch many of these plants will be winter killed and the 1936 crop will be seriously impaired, Kelley said.

Mulching should be done just as soon as the plants become dormant. However, there still is time to save the plants if they are mulched before temperatures of 20 degrees or less become prevalent.

Wheat straw is considered one of the best mulching materials. Oats straw, soybean or cowpea hay and lespedeza also are satisfactory. However, soybean or cowpea hay should be used only after the seed has been threshed. Lespedeza hay should not be used unless it was cut before it reached the bloom stage. In no case should hay or straw be used if it contains any appreciable amount of weed seed, since the weeds will add to the cultivation problem during the growing season.

From three to five tons of mulch to the acre is the usual amount applied. This will give a depth of about two inches after the straw or hay has packed down. If suitable material is scarce the available supply can be made to go farther if only the rows are mulched.

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Holiday Expense Bogey Is Reduced By Careful Plans

Careful planning on the basis of past records has enabled many of Illinois' 600 home account keepers to anticipate the joys of approaching Christmas this year with less worry about the piling up of expenses, according to a report from Mrs. Ruth C. Freeman, home accounts specialist at the College of Agriculture, University of Illinois.

By examining their accounts these homemakers have found that December commonly is a month of heavy expense because many regular purchases are made at the same time Christmas presents are being bought. By transferring some of the routine expenditures to other months, the homemakers have been able to relieve the financial pressure of December and get more enjoyment out of Christmas.

In some cases insurance premiums have been changed to fall due in some other month instead of December. Occasional presents have been purchased months ahead of time to lighten the Christmas load and, in some instances, necessary foodstuffs have been bought on special sales weeks before the Christmas dinner rush.

However, December is not the only "heavy" month considered by the account keepers in making their buying plans, Mrs. Freeman said. The accounts have shown that the opening of school makes September an expensive month, car licenses and other bills add to January expenditures and vacation expenses are a drain on the pocketbook during August.

With these facts at hand homemakers have made plans to smooth out these peak expense periods. Coal is purchased in July, clothing bought in October and other expenditures shifted to afford better distribution throughout the year. By this method many homemakers are finding that the heavy months no longer threaten to upset the budget and wreck the bank account.

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Club Girls Darned 22,000 Pairs Of Hose During Year

Twenty-two thousand pairs of hose darned during 1935 is just one of the several records made by Illinois 4-H club girls this year, according to reports from Miss Mary McKee, junior club extension specialist at the College of Agriculture, University of Illinois. During the same 12 months the 12,438 girls enrolled in club work also made some 26,000 garments and mended 17,000 garments, Miss McKee reported.

Furthermore, clothing work was only one of their many lines of activity. They planned, prepared and served 11,500 meals for their families, doing everything from cooking the food to clearing the table and washing the dishes. Other foods work included the making of more than 26,000 baked products and the canning of more than 4,000 quarts of fruit and vegetables.

A third line of endeavor was that of home furnishings and room improvement. Girls enrolled in projects of this class made 430 articles for their homes and through their efforts improved 145 rooms in 1935, Miss McKee reported.

Of greater worth probably than the money value of articles made was the new feeling of responsibility and the cooperative spirit developed by club girls through their project work, Miss McKee believes. For example, Mary Lois Sunderland, of Jersey county, writes that baking projects in 1935 attracted the favorable interest of adults in her community with the result that the club has helped bring about a more unified spirit in the community.

Marjorie Kane, of Lake county, has been able to guard her health more carefully through principles learned in the health project, she reports.

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The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College, Experiment Station, and Extension Service

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Farm-Home Week Seeks Reduction in Rural Theft Loss

With farm thefts now totaling more than a million dollars annually, Illinois farm folks will make this problem one for aroused study and action when they meet during the thirty-ninth annual Farm and Home Week, January 13 to 17, at the College of Agriculture, University of Illinois.

E. S. Bayard, editor of the Pennsylvania Stockman and Farmer, will be brought from Pittsburg, to tell about successful methods being used in that state to protect life and property in the country. He is scheduled to speak at 11 a. m. Tuesday, January 14, before a general session of all Farm and Home Week visitors.

Losses such as were suffered during the past month by a Knox county farmer when 58 hogs valued at $1,000 were stolen from his place have added new worries to farmers' concern over mounting losses from the theft of chickens, cattle, hogs and other farm stock and grain. In addition to the property loss, life itself is endangered by the thievery and rustling now rampant in many Illinois communities, authorities pointed out.

Scheduling of Bayard to explain how Pennsylvania is coping with this problem is in line with the recommendations of Illinois officials that the solution lies in arousing farmers and giving them a practical and safe protective system.

Action already is being started in a number of communities, and Bayard's report is expected to stimulate and direct the movement. In Will county, for instance, a corps of farm vigilantes has been organized for action. In Sangamon county some 150 farmers met recently to back up the Farmers Protective Association, made up of companies of the Illinois Detective Association and the Anti-Thief Association. Aroused efforts of Sangamon county farmers to protect their property have been so successful that no cattle stealing has occurred and only three cases of chicken stealing have been reported in two months. However, there have been reports of some stealing of corn from fields near Springfield.

-M-

Cut In Apple And Peach Crops Seen For 1936 Season

Present indications are that both peach and apple crops in Illinois next year will be considerably below 1935 levels, according to reports being received by R. S. Marsh, associate professor in pomology at the College of Agriculture, University of Illinois. The reports are based on the smaller numbers of buds on most apple and peach trees throughout the state.

This condition is the result largely of the heavy 1935 set together with some disease and spray injury, Marsh explained. Loss of foliage through scab damage and spray injury plus the large crop reduced the vitality of the trees to the extent that a heavy fruit bud set for 1936 was impossible.

Orchardists can do very little to improve the situation except by caring for their trees in such a way as to allow as many as possible of the buds to develop into fruit next summer. This care includes careful pruning and the following of a strict and safe spray schedule.

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No Curb Put On Normal Potato Supplies Under New Act

People can plant their front lawns or any other ground they wish to potatoes, grow just as many potatoes as they please, and give away as many as they can without any restrictions or penalties whatsoever under the potato act. This is made clear in a statement setting aside current potato act rumors and misunderstandings which the College of Agriculture, University of Illinois has just received from AAA officials.

In addition to all this, growers of potatoes can sell up to the limit of their tax-free allotments without any restrictions or penalties from the act, the statement points out. Most of the misunderstanding regarding the act arises from a failure to distinguish between "production" and "sales."

The only restrictions imposed by the act are on the sale of potatoes in excess of tax-free allotments. Furthermore for the nation as a whole the allotment of tax-free sales for 1936 has been set at approximately 7½ million bushels more than the average yearly sales for the period 1929-1934. This means that very few of the potatoes reaching the consumer's table will have had the tax assessed against them.

Restrictions on sales of surplus potatoes are imposed in the form of a stamp tax at the rate of 45 cents a bushel for all potatoes sold above the producer's tax-free allotment. The tax-free allotment for each producer is determined on the basis of his average annual sales during the base period. This means that Illinois producers will be able to sell close to the usual amount of potatoes without paying a cent of tax.

What may be confusing and misleading to some is the fact that all potatoes produced after December 1, 1935, and sold on the market will bear the tax stamp. However, the stamps are given free of charge to the producer up to the limit of his tax-exempt sales. Only when he has used up his quota will he have to purchase stamps for further sales.

Since no Illinois potatoes will be subject to the tax until the 1936 crop comes on the market next summer, farmers will not have to concern themselves with the act until the 1936 growing season.

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Skillful Turkey Selection Ends Post-Christmas Hash

Choosing a Christmas turkey of the right size this year will assure every guest plenty of delicious meat and at the same time avoid the usual post-Christmas series of turkey hash meals, according to Miss Annabelle Robinson, associate in home economics education at the College of Agriculture, University of Illinois.

A general "rule of the thumb" is to allow three-fourths to a pound of dressed turkey for each guest. If the bird is to be served with dressing, the 3/4 pound allowance probably will be ample. If there is no dressing, more meat will be needed, and the larger allowance will be the safest.

At the above rates a 15-pound turkey will feed approximately 20 people, while a 10-pound bird will be sufficient for 13 guests. Since many Illinois families do not plan to have more than five or six at the Christmas table, even smaller birds probably will be in demand. However, it usually is better to get a bird weighing at least 10 pounds dressed, since smaller turkeys do not develop as fine a flavor.

Whether the turkey is chosen from the home flock or bought at a market it should be a fat, plump bird and preferably a young one. The skin should be smooth and clean, and the breast and thighs plump and meaty. The bird should be reasonably fat, since the fat imparts a better flavor and prevents the dry, tasteless flavor common to turkeys in poor flesh.

-M-

Dairymen Culling Herds As Move To Higher Efficiency

Illinois dairymen are turning to the idea of fewer and better cows in steadily increasing numbers as they discover that this policy helps bolster their cash incomes, it is reported by J. G. Cash, dairy extension specialist at the College of Agriculture, University of Illinois.

This is shown by the fact that 4,588 low-producing cows were culled out of the 1,165 herds belonging to dairy herd improvement associations during the first nine months of this year. A total of 21,100 dairy cows were included in the member herds on November 1, as compared to 20,145 in the 1,060 herds belonging to the associations on January 1. Sixty-three local associations were in operation this fall as compared to 57 last January.

Proof of the value of fewer and better cows is shown by the fact that carefully-culled association herds averaged 8,470 pounds of milk and 324.9 pounds of butterfat during 1934 as compared to the state average of 4,380 pounds of milk and 166 pounds of butterfat. It is questionable whether cows producing on the level of the state average would make a net return, Cash said.

While complete records on 1935 productions are not yet available, it is expected that cows being tested in improvement associations will show a similar advantage this year.

Through the improvement associations operated under the supervision of the extension service of the college, member dairymen are learning more about the value of production tests, culling, feeding of balanced rations in proportion to production and the use of proved sires.

In addition to the improvement association work dairymen have gained additional knowledge through a series of county-wide feeding schools directed by the extension service. Also more than 400 dairymen from 40 counties attended the dairy tours at the college during the fall where they studied breeding, feeding, herd management and pasture management. Seven cooperative breeding associations were organized in the state during 1935 to promote the use of better herd sires.

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Good Supply Of PopCorn On Hand For Holiday Season

Since a fairly large crop of high quality popcorn has been produced in Illinois this year, consumers should have no difficulty in securing supplies for Christmas festivities or even for the entire winter, according to B. L. Weaver, vegetable gardening specialist at the College of Agriculture, University of Illinois.

Yields have run as high as 40 to 45 bushels to the acre, and most of the supplies now on sale are in good popping condition. It only remains for the consumer to buy the variety best adapted to his needs and test a few samples to determine the best popping temperature.

For such uses as stringing to decorate Christmas trees, candying or making into balls, a variety which pops into large, fluffy pieces is the most suitable. Variations of the South American Yellow are of this type. Various strains grown in Illinois sometimes are called South American Giant or Yellow Giant because of the unusually large size of the popped kernels.

The pearl, rice and hulless varieties are better adapted to general family use, since they pop into a better-textured kernel. Among such varities are Monarch White Rice, Japanese Hulless, Golden Hulless, Ivory Pearl and Golden Queen.

Corn that is too dry will pop best over a high fire. Such corn should be placed out doors where it will take up moisture. New corn often pops best over a low fire indicating that it contains too much moisture. This defect can be remedied by drying out the corn. A heavy metal popper usually is the most satisfactory.

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Ten District Tryouts Set For Music And Drama Talent

Climaxing a season's work in rural music and drama, ten district tryouts will be held January 9 to 11 to select entries for the annual state rural music and drama tournament, it was announced today by D. E. Lindstrom, associate in rural sociology at the College of Agriculture, University of Illinois.

The best one-act plays, men's quartets, women's quartets, mixed quartets and orchestras from the district tryouts will be featured in the state tournament, which will be held January 16 as one of the main events of the thirty-ninth annual Farm and Home Week at the college.

More than 50 counties, which have the largest turnout of rural talent in the seven years' history of the tournament, are holding county tryouts to select their best entries for the district meets.

Places and dates for the district tryouts, together with the counties which will be represented, are as follows:

Urbana, January 6, at the University of Illinois, for Moultrie, Ford, Iroquois, Vermilion, Edgar and Kankakee counties. Mrs. L. D. Graham, Lovington, chairman.

Lincoln, January 7, in the high school, for Mason, Tazewell, Logan, DeWitt, Menard, Sangamon and Macon counties. Miss Marjorie Layman, Lincoln, chairman.

January 8, place to be announced, for Rock Island, Mercer, Henderson, Warren, Knox, Hancock and McDonough counties. Mrs. Webster Gehring, Galesburg, chairman.

Olney, January 8, in the high school, for Shelby, Effingham, Richland and Edwards counties. Vance Hulbert, Altamont, chairman.

Polo, January 9, in the high school, for Jo Daviess, Stephenson, Ogle, Whiteside, Lee and Carroll counties. Homer Curtis, Stockton, chairman.

Belleville, January 9, in the high school, for St. Clair, Fayette, Monroe, Washington and Randolph counties. Lester Helms, Belleville, chairman.

Sugar Grove, January 10, in the community house, for Boone, McHenry, Kane, DuPage, Kendall and Will counties. Joe McCrudden, Geneva, chairman.

Marion, January 10, in the high school, for Williamson, Pope-Hardin, Jackson, Massac and Pulaski-Alexander counties. Ellsworth Lyon, Villa Ridge, chairman.

Pontiac, January 11, in the high school, for Bureau, Marshall-Putnam, Livingston and Woodford counties. Mrs. Howard Jenkins, Streator, chairman.

Winchester, January 11, in the high school, for Pike, Morgan, Scott, Greene, Jersey and Montgomery counties. Mrs. Roy J. Coultas, Winchester, chairman.

Following the district tryouts, the successful entries will return home to finish preparations for Farm and Home Week. Finals in the music division of the tournament will be held Thursday afternoon, January 16, with the finals in the one-act play competition coming that evening. A banquet for tournament participants and friends will be held Thursday evening at 6 o'clock in the cafeteria of the Woman's Building.

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Some Cattle Best Not Rushed Onto Market This Season

Although there are more cattle on feed in Illinois this winter than last, it probably will pay farmers with plenty of home-grown corn to feed quality cattle long enough to get a prime finish before marketing them, said R. R. Snapp, associate chief in beef cattle husbandry at the College of Agriculture, University of Illinois.

On the other hand the feeder who has medium grade cattle and only a limited supply of corn but plenty of good clover hay and corn silage may find it to his advantage to put the cattle only in good butcher condition and sell them as short feds rather than buy corn for a full feeding period.

The feeder who purchased his cattle between November 1 and 15 and who intends to market them before summer should have the cattle well on corn by the latter part of December. While early gains can very well be made from hay, stalk pasture, second growth or seedling clover and meadow remains, the animals may stop gaining or actually lose weight if they are not fed enough grain when cold weather sets in, Snapp said.

While there is some danger of beef cattle going off feed if put on full feed of corn too suddenly, the gradual change from hay and roughage to grain should be made in most cases before the first of the year.

This gradual change does not apply to choice, fleshy feeders that are to be put in prime condition in a relatively short period. Such cattle should be started on corn as soon as they reach the feed lot and then increased to full feed by the end of the second or third week.

Future market trends always are uncertain, but indications are that this winter and spring's beef cattle markets will remain good provided heavy sales do not glut the market. Consequently, the feeder's procedure depends largely upon his individual situation and supply and kinds of feed on hand, Snapp said.

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Plenty Of Water Is Best Protection From Farm Fires

An adequate supply of water is one of the best guarantees Illinois farmers can have against fires such as have destroyed numerous lives and thousands of dollars' worth of property already this winter, according to W. A. Foster, rural architect at the College of Agriculture, University of Illinois.

One hour's supply of water for an engine throwing a one-half inch stream may often mean the saving of a building. Since the engine of such dimensions will require about 50 gallons of water a minute, the supply should amount approximately to 100 barrels.

This is not an excessive supply to have on hand, Foster said. A cistern 10 feet in diameter and seven feet deep will hold this amount. A cubical tank eight feet each way, or about the size of a ton of hay in a mow, also will hold approximately 100 barrels of water. A small dam in the spring run or in a convenient stream will impound enough water for fire fighting purposes. The pond formed by the dam not only will furnish a much-needed water supply but also will add to the beauty of the premises. It will serve as a center for landscaping and may even be used as a skating pond during the winter.

Even where road conditions or distance make it impossible for the small-town fire department to answer rural calls, the water supply is a valuable protection, Foster declared. Plenty of water, a good pump and conveniently located ladders will enable neighbors to quench many a fire before it has had time to get a good start.

When considering building problems, it is well to make arrangements for the water supply and if possible install pressure water equipment.

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Home Seed Tests Will Help Avoid Poor Stands Of Corn

With much of the seed corn intended for next spring's planting in Illinois below standard because of early frosts and late maturity of the crop last fall, poor stands can be avoided only through home testing this winter, said G. H. Dungan, associate in crop production at the College of Agriculture, University of Illinois.

Seed corn should germinate at least 90 per cent to assure a good stand. Prospective seed supplies can be tested readily at home by the use of the well known "rag doll" tester. This tester is made by placing 100 grains of the chosen seed stock on a dampened cloth, covering the samples with another cloth and rolling the two pieces together loosely. The tester should be kept damp and at a temperature of about 80 degrees.

Testing the samples before late winter will give the farmer opportunity to secure additional seed supplies before planting time if the available supply does not measure up to the required germination standards, Dungan said. Good quality seed corn may be located through the agronomy department of the college later this winter.

While it is too late to improve the germination qualities of corn that was cured improperly after picking in the fall, frequent inspections of the stored supply will help keep the seed in good condition. This is especially necessary if there is an abrupt change from a cold, dry condition to warm, damp weather.

During such a change the moisture condenses and collects on the cold grains of corn and may ruin the seed if allowed to remain until the weather again turns cold. A small stove or other heating equipment in the farm seed room will dry the corn and prevent such damage.

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Terraces Costing Same As Plowing Will Stop Erosion

By applying labor and power equal to that needed for one plowing, many Illinois farmers can halt erosion which is now costing them millions of dollars in loss of fertility, the washing away of valuable top soil and the slow destruction of their farms, according to estimates by E. W. Lehmann, head of the department of agricultural engineering at the College of Agriculture, University of Illinois. This estimate applies to the terracing of fields with moderate slopes and in good condition. Steeper slopes, gullies and other conditions naturally will increase the amount of labor and power needed for terracing.

The actual amount of cash needed for terracing depends upon how much of the labor and power is furnished by the farmer. Five Illinois farmers reported an average cost of $2 an acre, one indicated that the cost was $3 and 17 replied that their terraces had cost nothing, since they did their own work with homemade or borrowed equipment and teams.

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Home Butchering Now Saves $20 A Hog On Meat Bills

At present hog market levels and retail pork prices, Illinois farmers stand to save approximately $19.56 on their family meat bills for each 225-pound hog butchered at home, it is estimated by Sleeter Bull, meat specialist at the College of Agriculture, University of Illinois.

This estimate is based on recent Chicago market quotations less shipping expenses from Urbana. At the prices quoted, the farmer would receive about $21.26 for a 225-pound hog, and the meat and lard from such a hog would retail for about $40.82. Only about $1.19 of the nearly $20 margin between farm and retail prices would be accounted for by net profits to the packer and retailer, according to figures from the Institute of American Meat Packers. The remainder would be absorbed by processing taxes and shipping, handling and overhead costs.

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