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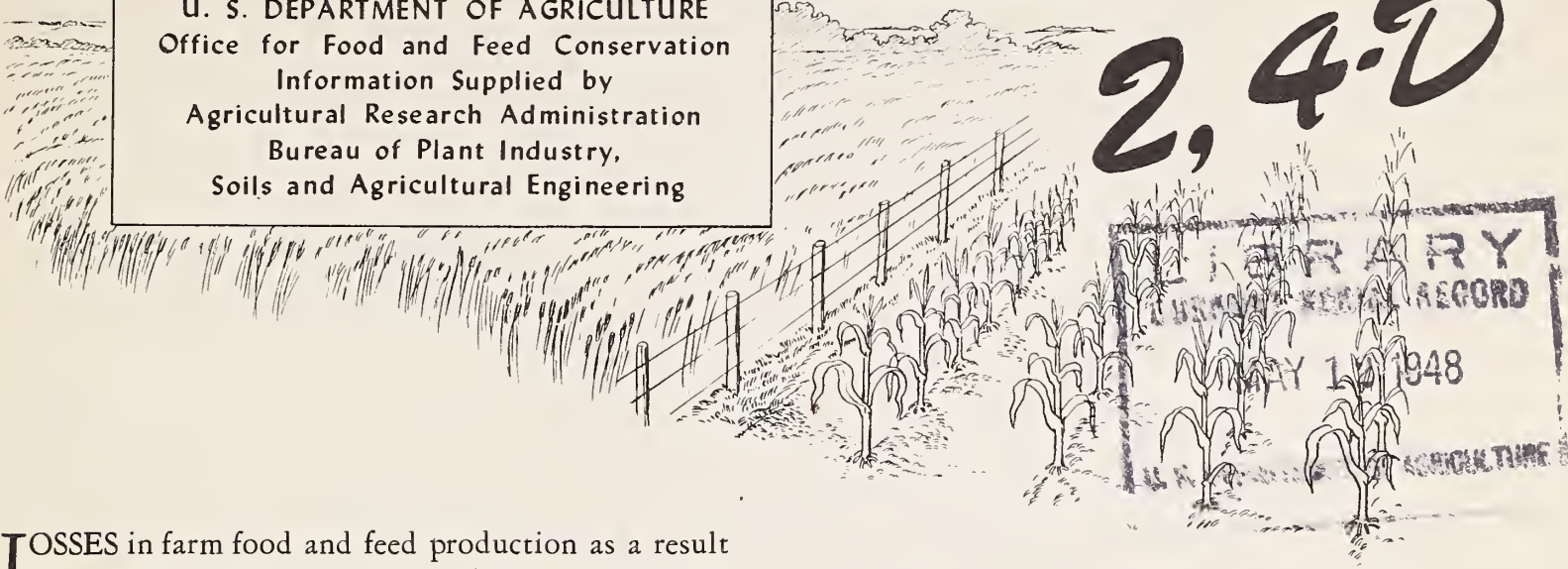
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Cap 3

WEEDING SMALL GRAIN and CORN

with
2,4-D

FACT SHEET
U. S. DEPARTMENT OF AGRICULTURE
Office for Food and Feed Conservation
Information Supplied by
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LOSSES in farm food and feed production as a result of weeds sometimes can be reduced satisfactorily through the use of the new weed-control chemical 2,4-D. *The chemical must always be used properly and cautiously, however, or it may do more harm than good.*

This chemical is relatively new to agriculture, having been introduced only in 1944. Many of its effects are not yet known. When used properly, however, it has already proved that under some conditions it can do a good job of controlling weeds among small grains and corn. General experience with 2,4-D shows:

1. **Satisfactory use in small grains and corn is limited to fields where most of the weeds are of broadleaf kinds.**
2. **It is not effective in controlling grassy weeds.**
3. **Its effective use in corn is generally limited to wet lands such as river and creek bottoms.**
4. **Overdoses, runoff from leaves, and wind drift should carefully be avoided.**

Through application of 2,4-D, spring wheat yields have been increased as much as 2.5 bushels per acre. Corn yields have been increased by 11 to 49 percent. Large acreages of corn, grown up to weeds during long periods of wet weather, have been saved with 2,4-D and have produced average yields of 60 bushels per acre.

In the form in which it is applied to small grains and corn, 2,4-D is not poisonous to animals or humans, Department specialists say. In concentrated

form it should be handled with care and used according to directions. Keep it away from children and store in plainly marked containers, away from food and feed materials and seed.

2,4-D on Small Grain

Safe use of 2,4-D on any small grains calls for application after the plants are well stooled and before they have reached the jointing stage. Extra care must be exercised to avoid an overdose, particularly on barley and oats. Points to remember when using 2,4-D on small grain are:

1. **Use the right dosage and equipment.**
2. **Apply it at the right time.**
3. **Apply it to leaves uniformly.**
4. **Avoid too high spray pressure as it increases danger of wind drift.**
5. **Do not use where clover has been seeded in the grain.**

In 1947, about 70,000 acres of spring wheat in the United States and Canada were treated with 2,4-D. The result was an estimated average increase of 2.5 bushels per acre. Some specialists consider that such an increase is possible over all the weedy portion of the spring wheat area.

Use Right Dosage and Equipment.—For most of the common annual broadleaf weeds, such as mustard, the recommended application is from $\frac{1}{4}$ to $\frac{3}{4}$ pound of 2,4-D (acid basis) per acre. This chemical *is not*

sold in acid form but is available in "ester," "amine," and "salt" forms. The manufacturer's package carries printed information which shows how much to use to equal the recommended amount in "acid" form. The dosage depends on the kind of weeds as well as the form of the chemical. When it is in "ester" form, 25 percent less should be used than when it is in "amine" or "salt" form. The cost of the material to treat an acre is usually between 75 cents and \$2.25.

Because enough commercially manufactured equipment has not been available most farmers have been using home-made apparatus to apply 2,4-D. The usual 80-pound pressure ground sprayer does a satisfactory job in applying the solution in very dilute form. A disadvantage is that it necessitates hauling a lot of water over the field. About 4 rows of corn can be treated at one time. In small grains a 40-foot boom can be used. This year more commercially manufactured equipment is becoming available. It has the advantage of making unnecessary the hauling of so much water, since the machines apply a concentrated solution. Similar coverage with 2,4-D is obtained with both types of equipment.

Apply at Right Time.—Application is most effective when weeds are succulent, or at least in active growth. In determining "just the right time" to apply 2,4-D, consideration should be given to the stage of development in the crop as well as the weeds. This means that most treatment of small grains should be done in the spring. This applies even when the crop is fall-sown grain.

Apply Uniformly; Avoid Runoff or Wind Drift.—The important thing to remember is—apply to the plants the specified quantity per acre of the chemical recommended. The essential requirement in sprayers is that they cover the leaves uniformly with no runoff or wind drift. Pressure between 30 and 100 pounds per square inch gives best results. Too high pressure increases the danger of damaging other vegetation. Fan nozzles give more uniform distribution than cone nozzles.

2,4-D on Corn

It is generally agreed that use of 2,4-D for control of weeds in corn should be limited to wet lands in river and creek bottoms where most of the weeds are

of broadleaf kinds. Weeds in corn on dry land are most often grasses. There is not yet a practical chemical for control of grassy weeds. A "pre-emergence" method of application, in which soil is sprayed with 2,4-D before the corn comes up, sometimes is satisfactory, though by no means foolproof. For most satisfactory results in using 2,4-D on corn careful attention should be paid to these points:

1. **Use minimum quantity of 2,4-D.**
2. **Use careful timing (consult your county agent).**
3. **Use caution.**

In 1947, about 45,000 acres of Kentucky, Iowa, Indiana, and Pennsylvania corn that had grown up to weeds during a long period of wet weather, was saved from ruin by being treated with 2,4-D. An average of 60 bushels per acre was harvested. In Nebraska more than 50,000 acres were treated and estimated gains of 11 to 49 percent in production resulted.

Use Minimum Quantity.—When treating corn with 2,4-D it is recommended that no more than the minimum quantity ($\frac{1}{2}$ to $\frac{3}{4}$ pound on the acid basis) be used. When the chemical is in "ester" form about 25 percent less should be used than when it is in "amine" or "salt" form. Rate of application and type of equipment are essentially the same as for small grains.

Use Careful Timing.—While there is some difference of opinion as to the best time to apply 2,4-D, most authorities say it should not be applied before the corn is 8 inches high. Local conditions have an influence in this regard. The county agent should be consulted about both the quantity to be used and timing of the application.

Use Caution.—Weed control by cultivation in corn on bottom lands often is extremely difficult because of wet fields. There are several million acres of such soils in the Mississippi, Missouri, and Ohio River valleys. *Weed specialists believe that use of 2,4-D in place of machine cultivators could bring an average increase of 10 bushels per acre in production of corn on these lands, year after year. But, they say, the job must be done carefully or crop losses instead of gains may result.*