Virginia Polytechnic Institute, Blacksburg. Agricultural Extension Service.
MR-169.

2,4-D WEED SPRAYS FOR CORN

During the past several years, many claims have been made of the benefits derived from spraying corn with 2,4-D. Experiments in Virginia show that the farmer cannot expect to increase corn yields from the use of this material for weed control over that obtained from weed control by shallow cultivation. Neither can he expect to eliminate the necessity of cultivating. Chemical weed control at the present time is recommended only in conjunction with cultivation, unless conditions are such that cultivation is impossible, as is sometimes the case in wet river bottoms.

A properly timed application of 2,4-D can effectively replace two cultivations, provided a high percentage of the weeds present can be effectively controlled. All weeds are not controlled by 2,4-D; therefore, it is important to find out whether the weeds prevalent in a given corn field can be killed by the chemical. If the most important weeds present are susceptible to 2,4-D, it will probably pay or be worth the effort to apply a spray.

2,4-D may be applied to corn as a pre-emergence spray (before corn comes up) or as a post-emergence spray (after corn comes up). In all cases, use the amine type material for spraying.

Listed below are the factors involved and the recommendations for chemical weed control in corn fields using 2,4-D.

PRE-EMERGENCE SPRAY
(before corn comes up)

General Considerations:

1. If annual grasses or smartweed are the most important weeds to be controlled, this time for applying 2,4-D is best. Grasses cannot be killed by this material after they are large enough to be seen. All weeds are more susceptible in the seedling stage.
2. Overlapping of the spray pattern is good, but it should not come directly over the corn row. Overlapping on the row would give too high a concentration of 2,4-D and might result in injury.
3. Effectiveness of the spray depends upon climatic conditions. If the soil is moist and warm, so that weed seeds will germinate within 2 or 3 days after planting the corn, good weed control should result. If soil is too dry or too cold, poor results may be obtained.
4. If 2,4-D is applied at planting, rain may dilute the spray, making it ineffective, or it may carry it down to the root zone of the young seedlings of corn, causing damage.
5. Due to the short time a spray may be applied, custom spraying is not practical. There is a leeway of only 3 or 4 days for good control and minimum injury to the crop.

Recommendations:

1. In view of the risks involved in pre-emergence spraying, the maximum possible benefits from 2,4-D spraying should be obtained by spraying 4 to 8 days after planting. Spraying with this concentration should be completed before the corn bud opens.
2. Rate of application: 1 to 1½ pounds of 2,4-D acid equivalent per acre in 10 gallons of water, applied in a low pressure, low volume sprayer or other suitable equipment.

POST-EMERGENCE SPRAY
(after corn comes up)

General Considerations:

1. At least one cultivation is usually advisable on heavy soils, even though weed control is adequate. On light soils, cultivation may be needed in conjunction with spraying to maintain or supplement weed control. After cultivation, do not spray until enough moisture has fallen to germinate weed seeds, then spray as soon as the land is dry enough to travel over with the sprayer.

2. Less 2,4-D is used in post-emergence than in pre-emergence spraying, since corn would be damaged by pre-emergence rates.

3. Avoid spraying chemical above corn or directly on the leaves. This is likely to cause damage by stalks bending, becoming brittle, stunting, and deforming brace roots.

4. Post-emergence spraying is more adapted to custom spraying, since timing is not so limited for effective control.

Recommendations:

1. Spray corn after it has reached a height of 12 to 18 inches, if the field is heavily invested with morning glory, giant ragweed, red root or pigweed, cocklebur, or other susceptible late season weeds.

2. Rate of application: Apply ½ pound 2,4-D acid equivalent per acre in 5 or 10 gallons water, depending upon equipment.

If only bands on each side of the row are sprayed, then the rate of application should be adjusted to the area covered. Should only half the area be covered, the amount of 2,4-D can be reduced to ¼ pound.

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