

# Weed Control in Onion Seed Fields

by

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It is difficult to imagine a more acute weed problem than that associated with onion seed production. Nearly all of the circumstances that make for weed troubles are operative. The crop occupies the land at least from early spring through late summer. The onions are subjected to the whole spectrum of annual weed species throughout the season. The necessity of frequent irrigation favors almost continual germination of weed seeds. Their control by cultivation is complicated by the necessity of early layby of the crop to avoid injury to the fragile seedstalks. Finally, onions never develop a canopy that has any significant shading influence on weeds.

During the past three years research on weed control in onion seed fields has been conducted at the Parma Branch Experiment Station. The results have been promising to the extent that safe and reasonably useful herbicidal treatments have been devised. At this time DCPA (trade-

marked Daethal<sup>1</sup>) is the best herbicide registered for use on onions by the USDA. Other promising herbicides are being tested. It's not likely that they will be approved for use in 1967.

## Considerations about DCPA

DCPA will give reasonably effective control of most of the annual weeds in onion seed fields. The chemical is generally more effective on grass weeds than on the broad-leaved weeds. On research plots at Parma the control of Russian thistle, lambsquarters, and nightshade by DCPA has been marginal.

DCPA should not be used with the idea that it will give satisfactory season-long weed control. Cultivation and hoeing are also needed. How-

<sup>1</sup>The use of trademarks implies no endorsement by the University of Idaho. They are used only to identify the chemicals as they are known in the marketplace.



ever, DCPA will reduce the hoeing time by approximately 70 to 85 percent.

After layby time DCPA will give a certain amount of weed control help. At the poorest, it will prevent the onions from being submerged in a jungle of weeds.

DCPA has a good margin of safety in onions. On research plots at Parma, using twice the normal rate did not injure the onions, seed yield, or seed germination. Applications of DCPA made early in the season (March and April) caused no injury to crops grown on treated land the following year.

However, when layby applications of DCPA are made later in the season (after June 1), exercise caution with the crop in the following year. Until more information is obtained, such early-planted crops as sugar beets or grain should not follow DCPA applied after June 1 of the preceding year.

Depending upon the circumstances, DCPA can be used either as a preplant or a postplant treatment. DCPA will not damage the onion foliage when used as a post plant treatment in the seed-producing year. However, in the interest of herbicide economy, a spray directed to the soil surface should be used. DCPA on onion foliage doesn't kill weeds.

DCPA should be mixed into the soil thoroughly. To be effective the herbicide must make direct contact with germinating weed seedlings. Rainfall in southwestern Idaho is seldom adequate to move the herbicide into the soil where it will reach weed seeds.

## Directions For Using DCPA

Mother-bulb planting: Just before planting, spray 12 to 14 pounds of 75 per cent wettable powder DCPA per acre on the soil surface. Use a water spray at a volume of at least 40 gallons

per acre. Mix the herbicide in the soil to a depth of approximately 3 inches. Rotary tillage is preferred but discing or spike tooth harrowing twice with the trips at right angles to each other is reasonably satisfactory. Plant the bulbs in the usual manner.

Seed-to-seed planting (in the seed-producing year): Prior to germination of weed seeds in late-February or early-March spray 12 to 14 pounds of 75 per cent wettable powder DCPA per acre between the seeded rows. Cultivate at least twice with a shovel cultivator or rotary hoe to incorporate the herbicide into the soil.

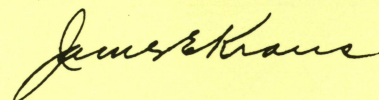
Layby treatment in either mother-bulb or seed-to-seed field: At layby time first cultivate and hoe thoroughly. Insure that growing weeds are cut off below their crowns; otherwise they will make rapid regrowth and DCPA will not affect them. Spray 8 to 10 pounds of 75 per cent wettable powder DCPA per acre between the seeded rows. Cultivate two or more times to incorporate the chemical into the soil. Furrow deeply, throwing the herbicide-treated soil against the base of the onion seedstalks.

Residues: These recommendations are based on the best information currently available. If followed carefully, residues should not exceed the tolerance established. To avoid excessive residues, follow recommendations carefully with respect to dosage level and number of applications.

Drift: The grower is responsible for residues on his crops as well as for the problems caused by drift from his property to other properties or crops.

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Onion seed growers with special weed problems in their crops may consult with the authors at the Station or have the problems referred to them by their county agricultural Extension agent.



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