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Weed Control in Carrot Seed Fields

by Paul J. Torell

Carrot seed production is hampered by two rather distinct weed problems. The first has to do with the massive competition furnished by annual weeds. The second is concerned with parasitism by dodder.

During the past five years, a number of herbicides have been found that will reduce the losses and difficulties associated with weed problems. However, at this time (for the 1966 crop year and for the weed problems peculiar to southwestern Idaho) only the following herbicides are registered by the USDA for weed control in carrots: Linuron (trademarked Lorox[1]) is useful for controlling the common annual weeds; DCPA (trademarked Dacthal[1]) is indicated for killing dodder.

Common Annual Weeds

The virtue of linuron for annual weed control is demonstrated in Figure 1. On the basis of the present information concerning the use of the herbicide on carrots grown for seed in southwestern Idaho, it appears that its most efficient use will be as a postemergence treatment according to the following schedule:

1. Cultivate and hoe as necessary to control weeds from planting to the first irrigation.
2. Delay the first irrigation as long as possible consistent with favorable carrot growth but not beyond lay-by time.
3. Apply linuron at 2 to 4 pounds per acre as the total chemical product. Use the lower rate on sandy loam soils and the higher rate on silt loam and clay soils.
4. Direct the herbicidal spray to the base of the carrot plants. Use a spray volume of at least 40 gallons per acre and have either mechanical or strong hydraulic agitation in the sprayer tank.
5. Irrigate immediately after the herbicide application.
6. Thereafter, delay any subsequent irrigations as long as possible consistent with favorable carrot growth. Restrict each irrigation to the least amount of time deemed necessary for the carrots. This is important. Excess water will hasten dissipation

[1]The use of trademarks implies no endorsement by the University of Idaho. They are used only to identify the chemicals as tney are known in the marketplace.

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of the herbicide, and it will cause more weed seeds to germinate.

The foregoing schedule will not give complete weed control. But it will provide a marked and economical reduction of the weeds in a carrot seed crop. The actual level of weed control obtained will be related to the judicious use of irrigation water after lay-by time as well as to the direct herbicide effects on the weeds.

Dodder Seedlings

Dodder seedlings use broad-leaved weeds as a temporary host for survival until they can reach carrot foliage. Thus, early-season control of broad-leaved weeds has been shown to reduce dodder attachments on carrots from 65 to 80 percent, but in fields bearing a considerable amount of dodder this level of control is not adequate. A separate treatment is necessary to kill dodder seedlings that germinate close to carrot foliage. For this need a band treatment of DCPA is helpful used according to the following schedule:

1. Apply DCPA in an 18-inch band centered over each carrot row either at planting time or as soon as dodder germination is evident.
2. Use 12 pounds per acre of the chemical product as the 75 percent wettable powder on the area actually sprayed.
3. Use a spray volume of at least 40 gallons per acre. Nozzle screens and line strainers should be no smaller than 50 mesh. Good mechanical agitation in the sprayer tank is essential.

RESIDUES: These recommendations for use are based on the best information currently available for each chemical listed. If followed carefully, residues should not exceed the tolerance established for any particular chemical. To avoid excessive residues, follow recommendations carefully with respect to dosage, level, number of applications and minimum interval between application and harvest.

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

Figure 1. The carrot row in the foreground was treated with linuron; the row in the background received no treatment. Compare this with the photograph below, taken after the carrots were in seed in mid-August.

Figure 2. Carrot row in foreground treated with linuron; row in background untreated.

THE AUTHOR: Paul J. Torell is Assistant Agronomist for the University of Idaho based at the Parma Branch Station. Carrot seed growers with special weed problems in their crops can consult with the author at the Station or have their problem referred to him through their county agricultural extension agent.

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