

insect answers



CARROT RUST FLY

The carrot rust fly can be a serious problem. Besides carrots, it also attacks other plants including parsnips, celery, celeriac, and parsley. The carrot rust fly maggot damages plants by eating the small fibrous roots and by tunneling in larger roots. A rust-colored material develops in the tunnels, giving the insect its name. Affected plants may become yellow, stunted, and die. Usually the plant tops continue to look healthy. Maggots often continue to feed in stored carrots. Disease organisms may enter the feeding tunnels and cause them to rot.

The adult fly is 1/5 inch (5 mm.) long and has a dark, shiny body with straw-yellow legs and head and large red eyes. It lays eggs in May and June on the soil surface around the plants. The eggs hatch in a few days and the maggots, the only plant-injurious stage, feed on and in the roots. The maggots are yellowish white and reach about 1/3 inch (8 mm.) in length. They feed about a month and then change into brown

puparia about 1/5 inch (5 mm.) long. The puparia stay in the soil near the roots until August when the adult flies emerge. The new flies lay more eggs which change to maggots. This group causes plant damage into the fall. Some flies may develop in the fall. These insects spend the winter as puparia in the soil or as maggots in the roots. Maggots from the August-September generation cause the greatest damage. Damage generally increases the longer the carrots are left in the ground.

Control

Carrot rust fly damage to carrots may be reduced but not totally eliminated by applying Diazinon 5% granules at 7 ounces per 500 square feet in



Carrot rust fly damage



Carrot rust fly adult



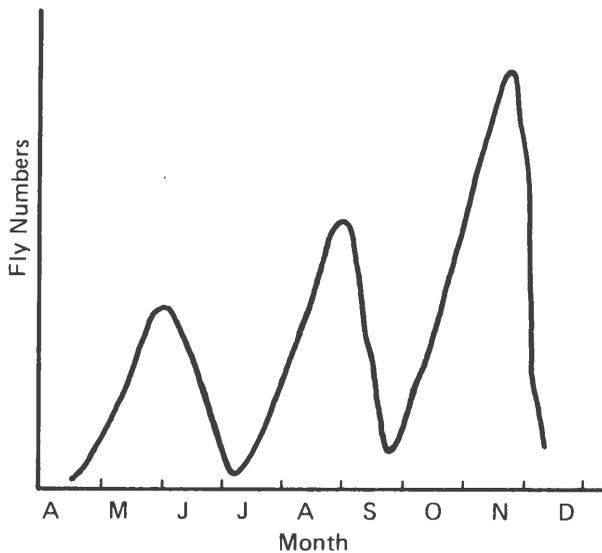
Carrot rust fly larva



seed furrow at planting time. There are no registered chemicals which can be used for control of carrot rust fly on other plants.

Ways to Minimize Rust Fly Damage

Where rust flies are serious pests, place carrots and other infested plants that are badly damaged in the garbage can quickly. This will eliminate



Generalized peak emergence of adult rust flies. This pattern can change with weather and location.

part of the source of next year's rust fly population. Early fall harvesting and storage of carrots in pits and root cellars rather than in the ground helps minimize fall infestations caused by late second and early third generation maggots. Avoid early-season egg laying by planting after early adults have emerged and dispersed (for example, mid- to late June, see graph below). Success of this practice depends on neighboring populations, alternate hosts, etc.

Certain conditions favor rust fly infestations and in commercial plantings many of these conditions can be avoided. Such conditions include:

- A previous history of rust fly infestations.
- Consecutive annual plantings of carrots.
- Soils with high organic matter content.
- Abundant carrot rust fly weed hosts in area.
- Fields surrounded by brush and woods.
- Fields adjacent to homes and other buildings.

Although avoiding such practices will help, it must be remembered that there are no "magic" cures. By the very nature of home garden plantings and the way they are managed, most of these conditions would be impossible to avoid. Thus home gardens are normally vulnerable to rust fly build-up.

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Assistance from Washington State University is available to all persons, without regard to race, color, or national origin.



Use pesticides with care. Read the label and follow its directions. Never smoke while using pesticides and avoid breathing the spray or dust. Wear natural rubber gloves when handling pesticides. Wash hands and face carefully with soap and water after applying. If insecticides are spilled on skin or clothing, remove contaminated clothing and wash skin thoroughly. Store pesticides in their original containers and be sure labels remain on the containers. Keep containers away from food or feed and out of reach of children or irresponsible persons.