A3719-E

GARDEN FACTS
University of Wisconsin–Extension

Cabbage Maggot

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Cabbage maggot larvae on cabbage roots.

Cabbage maggots (*Delia radicum*) are insects that damage cole crops by feeding on the plants' roots and lower stems. Wounds produced by this feeding can create entry points for several cole crop diseases.

Cabbage maggots are a pest of all cole crops including cabbage, broccoli, cauliflower and Brussels sprouts. They can also be a very serious problem on rutabagas. Early season transplants, late season seedlings and spring root crops are damaged most severely.

Appearance

The adult cabbage maggot is an ash gray, bristly fly that resembles a housefly but is half as long with black stripes on its thorax. The larvae are typical fly maggots—white with no legs and a 1/3-inch long body that tapers toward the head.

Symptoms and effects

Cabbage maggots feed both internally and on the surface of roots. Their tunneling provides a point of entry into the plant for pathogens such as soft rot bacteria and the blackleg fungus. Maggots can be especially damaging to seedlings, injuring the growing point of the root, and stunting plant growth. Affected plants appear stunted and off-color. Severely damaged plants may wilt during hot weather.

Life cycle

Cabbage maggots overwinter as pupae in the upper few inches of the soil. In early May, adults emerge and lay eggs on the soil near the base of cole crops. The eggs hatch in 3–7 days and the larvae immediately begin feeding on the roots of the plant. Feeding continues for 3–4 weeks before larvae pupate in the soil. The sec-

Cabbage maggot life cycle

When to scout for cabbage maggot

April			May			June			July			August			September		
early	mid	late	early	mid	late	early	mid	late	early	mid	late	early	mid	late	early	mid	late

ond generation of adults emerges in late June and lays eggs. The second generation adults lay the third generation eggs, which develop into overwintering pupae by fall.

Scouting suggestions

Growers can predict peak fly emergence by monitoring degree-day (DD) accumulations. (For an explanation of how to calculate degree days, see page 14 in *Growing Broccoli, Cauliflower, Cabbage and Cole Crops in Wisconsin* (A3684) at www.uwex.edu/ces/pubs.) Use a base temperature of 43°F and begin accumulating degree days when the ground thaws. The first generation of adult flies appears after $300DD_{43}$ have accumulated. The second and third generations appear when $1476DD_{43}$ and $2652DD_{43}$ have accumulated.

Fly populations can also be monitored using yellow plastic dishpans filled with soapy water. Place dishpans at 100-foot intervals along the field edge and check them every 4–6 days. Count and record the number of flies caught to determine if the population is building or dropping off.

Control

Cultural: Prevention is the best way to manage cabbage maggots. Plant crops in well-drained soils when soil temperatures exceed 50°F. Late plantings (mid-June) generally suffer less damage than early plantings. If possible, time planting dates to avoid peak fly emergence. Transplants should be planted one week before peak fly emergence while seeds should be sown at least three weeks before, or one week after, emergence. Floating row covers are also effective in protecting plants during flight periods.

Root crops planted in sand are seldom attacked by cabbage maggots. Do not plant cole crops in fields where animal manure has been freshly applied. Crop residues should be worked into the soil immediately after harvest to reduce sites where cabbage maggots can overwinter.

Chemical: Insecticides at planting time are recommended in areas that have historically had problems with cabbage maggots. If insecticides are used, direct applications at the base of the plants to avoid disrupting soil-inhabiting beneficial insects.

The cabbage maggot is resistant to many insecticides. Therefore, select an effective material and rotate among pesticide classes to prevent the build-up of resistant populations. Refer to the University of Wisconsin–Extension publication *Commercial Vegetable Production in Wisconsin* (A3422) for a list of recommended products.

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