

CUCUMBER, MELON, SQUASH AND PUMPKIN INSECT PESTS



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Seed corn maggots overwinter as small, brown pupae in the soil. Adult flies (Fig. 1) (¼ inch long, dusty brown) emerge in early to mid-May. They are attracted to soils that are high in decomposing organic matter, such as plowed-down winter cover crops or animal manure. The eggs are laid on or just under the soil surface and hatch in a few days. The maggots begin to feed on the decomposing organic matter in the soil. Seeds planted in such soils are often attacked before they sprout (Fig. 2) or shortly thereafter. This may cause substantial loss in stand. Three or more generations occur per year. The generations emerging after late June are less important because most plants are well established by this time.

Thrips (Fig. 3) are very small (less than 1/16 inch long, cream to brownish-black) and damage plants by rasping the undersides of the leaf surfaces and sucking up the resulting sap. The rasping process is repeated many times. On muskmelons and hand-harvested cucumbers, when the harvest consists of several weeks of picking rather than a once-over, destructive, machine harvest, this leaf surface damage can be an important cause of vine deterioration, which becomes apparent when the plants are under stress from fruit set, high temperatures, insufficient water, etc. There may be 3 to 6 generations of thrips per year. Crop damage from thrips is usually intensified after mid-season when their other hosts—grasses and weeds—mature and die. Unusually dry growing conditions also intensify the damage.

Spotted cucumber beetle (Fig. 4) (¼ inch long, yellowish-green with 12 black spots on its back) is a general feeder on over 200 host plants, including common grasses, weeds and cultivated crops.

Striped cucumber beetle (Fig. 5) (1/5 inch long, yellow with 3 longitudinal black stripes on its back) is also a serious pest of cucurbit crops in Michigan. Both beetles overwinter as adults in fencerows, woodlots, ditch banks and similar sheltered areas. On the first warm days of spring, they move into the cucurbit fields, arriving about the time the young seedling plants are emerging. The striped beetle has even been known to dig down in the soil to meet the emerging sprouts. After feeding for a few days on the young seedlings, the adults mate and lay eggs at the base of the plants. The eggs hatch in about a week and the larvae feed on the plant roots. The defoliation of the young plants (Fig. 6, L & R) by moderate to high beetle populations can severely stunt or kill the plants. In addition, both species harbor the organism that causes bacterial wilt disease in their gut over the winter and spread the disease (Fig. 7) to the young plants in the spring. Both the striped and spotted cucumber beetles have one or two generations per year.

Aphids (Fig. 8) (1/16 inch long, green to black) are sometimes pests of cucurbit crops in Michigan. They may suck large quantities of sap from the leaves, causing the leaves to curl downward and ultimately stunt the plants. In addition, they transmit cucumber mosaic disease (Fig. 9) to susceptible cucurbits and other

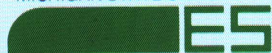
vegetable crops. Cucumber mosaic stunts the plants, reducing yield and causing the fruits to be malformed and often unmarketable. All the aphids are females, giving birth to live, all-female young, so populations can build and spread rapidly. Ten or more generations per summer may occur in Michigan. The last generation includes males and produces overwintering eggs.

Bees are vital to cucurbits as pollinators. Particularly in highly gynoecious varieties — those with predominantly female flowers — the yield and quality (especially shape) depends on the presence of numerous pollinators. Except in extreme cases, do not spray insecticides during pollination. If insecticides must be used, exercise all possible care to minimize harm to honey bees and other pollinators. Move or cover beehives, select materials less toxic to bees and treat in the late evening.

For chemical control recommendations, homeowners should consult Extension Bulletin E-760(b), "Home Vegetable Garden Disease, Insect and Weed Control," available from your county Cooperative Extension Office. Commercial growers should consult Extension Bulletin E-312, "Control of Insects, Diseases and Nematodes on Commercial Vegetables."

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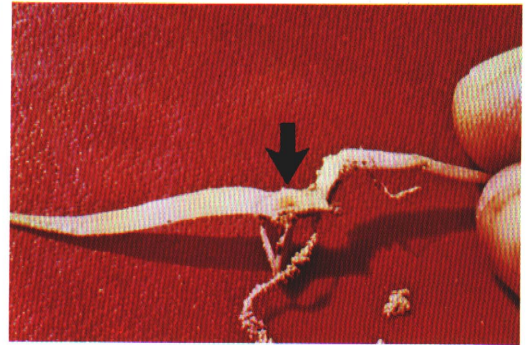
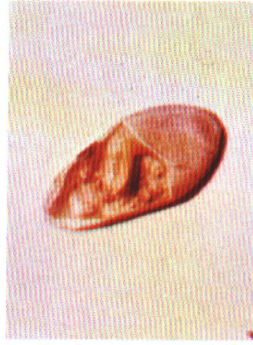
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1. Seed corn maggot adult



2. Seed corn maggot (left: maggot in seed; right: maggot in stem)



3. Onion thrips (left: closeup; right: on cucumber leaf)



4. Spotted cucumber beetles



5. Striped cucumber beetles



6. Cucumber beetle damage (left: mature plant; right: seedling plant)



7. Bacterial wilt disease transmitted by cucumber beetles



8. Green peach aphids



9. Cucumber mosaic disease