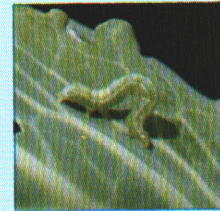


COLE CROPS INSECT PESTS



By Ed Grafius, Department of Entomology, Michigan State University

Cabbage maggots overwinter as pupae in the soil. The adult flies emerge in early May and are attracted to cole crops and wild crucifers for egg laying. They lay their eggs in the soil or on the soil surface at the base of the plants. The eggs hatch in 5 to 7 days, and the maggots (Fig. 1) move down in the soil and attack the main stem and roots. This root damage (Fig. 2, left) kills and/or stunts the plants (Fig. 2, right: nearby plant that was unaffected). There are 3 generations per year. The second and third generations emerge in July and late August to September, respectively. The later generations are usually not as damaging as the first, because the plants are already well established and are more tolerant to damage. Radishes, turnips and rutabagas, however, can be seriously damaged.

Imported cabbage worms overwinter in Michigan as pupae. The adult butterflies (Fig. 3) emerge in early to mid-May and begin laying their eggs on the leaves of newly transplanted plants and wild crucifers. The eggs hatch in about a week. The young larvae (Fig. 4) (velvet-green) begin to feed on the leaves. This feeding damage (Fig. 5) causes loss in quality and yield and can be a source of contamination at harvest. There are 3 to 4 overlapping generations per year.

Adults are active and laying eggs all season.

Cabbage looper adults (Fig. 6) may migrate into Michigan as early as late June but usually don't arrive until late July or August. The adults lay their eggs on the plants mainly in late evening or at night. Hosts include cabbage, broccoli, cauliflower, brussels sprouts, celery, tomatoes, potatoes, etc. The eggs hatch in about a week, and the larvae (Fig. 7) (light green with a white stripe along each side) feed on the leaves. Like imported cabbage worms, loopers can be a source of contamination at harvest. The larvae grow rapidly and become increasingly difficult to control with age. The larvae get the name "looper" from their inchworm-like movement. There may be 2 or 3 generations per year in Michigan.

Cabbage aphids (Fig. 8) (1/16 inch long, greenish-white) begin appearing in the fields in mid-June but are most often damaging in the late fall. Heavy aphid populations can cause the leaves to cup and curl (Fig. 9), stunting the plants and preventing heads from forming. The population may build up rapidly and spread throughout the field. The cabbage aphid overwinters as eggs on crop residue.

Thrips (Fig. 10) are very small (less than 1/16 inch long, cream to brownish-black) and damage plants by rasping small holes in the leaf surface and sucking up the resulting sap. The rasping process is repeated many times. The damage to cabbage heads appears as tiny brown spots that turn black in time (Fig. 11). The thrips may work their way in and around several layers of leaves, thus causing internal damage to the head. Three to six generations of thrips may occur per year. Thrips damage to crops is usually intensified after midsummer when their other hosts—grasses and weeds—mature and die. Unusually dry weather also generally intensifies thrips damage.

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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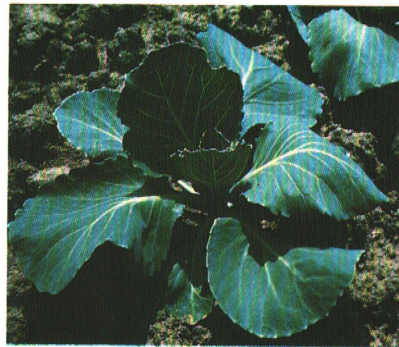
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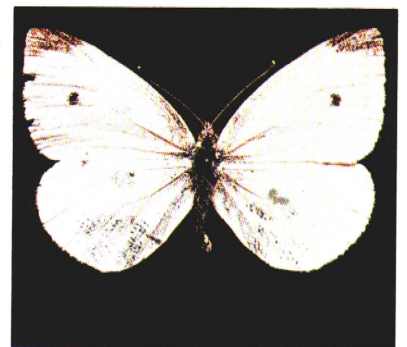
Cole Crops Insect Pests



1. Cabbage maggots and damage to roots



2. Cabbage maggot (left: damaged plant; right: healthy plant)



3. Imported cabbage worm adult



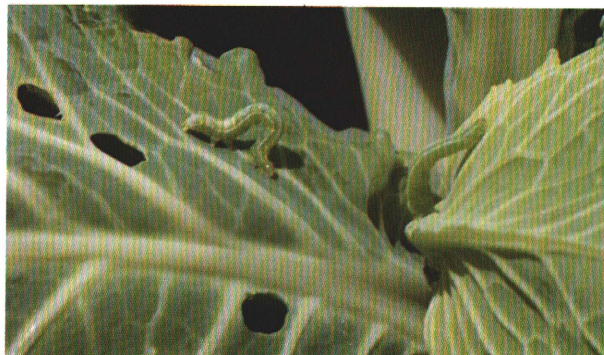
4. Imported cabbage worm larva



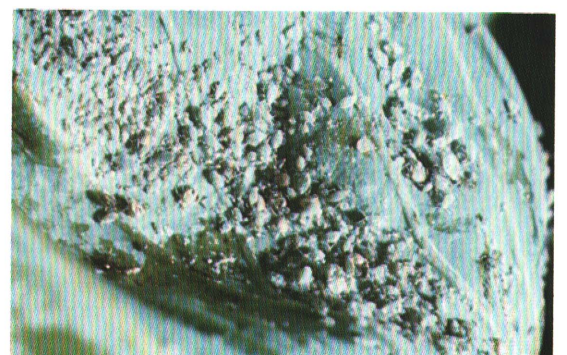
5. Imported cabbage worm and looper damage (undamaged head on right)



6. Cabbage looper adult



7. Cabbage loopers and damage



8. Cabbage aphids



9. Cabbage aphid damage to plant



10. Onion thrips



11. Thrips damage to cabbage (speckled brown areas)