VEGETABLE INSECTS, II

An Aid to Identification and Control

1. LOOPER ON CABBAGE

2. VEGETABLE LEAF MINER DAMAGE TO TOMATO

3. SQUASH BEETLE
Left - Adult
Right - Larva

4. ASPARAGUS BEETLE
Left - Larva
Right - Adult

5. CABBAGE WORMS
Left - Diamond Back Moth Larva
Right - Imported Cabbage Worm

6. PICKLEWORM
Left - Young Larva
Right - Older Larvae

7. COWPEA CURCULIO

8. BANDED CUCUMBER BEETLE
(Larva on Sweet Potato)

9. CROSS STRIPED CABBAGE WORM

Prepared by the Clemson University Cooperative Extension Service's Department of Entomology, Department of Plant Pathology and Physiology, and the Public Service Publishing Section, Federal Extension Service Cooperating.

Photo Description And Life History Information

1. Cabbage Looper. *Trichoplusia ni.* Frequently called the measuring worm.

It causes damage similar to that of the imported cabbage worm. Feeding from the underside, it causes ragged holes in leaves and deposits dark pellets of excrement. Attacks leaves of many plants, including all members of the cabbage family, lettuce, cotton, tobacco, soybeans, tomatoes, and several annual flowering plants.

Loopers are pale green with a light stripe along each side of the body. Mature larvae, sometimes slightly exceeding $1^1/_2$ inches in length, crawl by loops or by doubling up.

2. Vegetable Leaf Miner on Tomato. *Liriomyza munda.*

In recent years this insect has become of extreme importance in greenhouses and home gardens and on commercial acreage not properly protected.

Hosts of the vegetable leaf miner are tomato, beans, southern peas, and various cucurbits.

The blister-like blotches that appear on the leaves are where the small maggots have eaten out the tissue between the upper and lower surfaces. Damage may cover so much of the leaf that the plant is unable to function and yields are noticeably decreased. Leaf miner damage to tomato is often confused with leaf diseases by the lay- person.

This insect largely passes the winter in greenhouses or is brought in on plants from southern climes, but it may overwinter outdoors in parts of South Carolina. The four stages of its development are: egg, larva (leaf miner), pupa, and adult (a small fly).

3. Squash Beetle. *Epilachna borealis.* On cantaloupe. One of the two ladybird beetles that infest vegetables, the other being the Mexican bean beetle.

The insect and its spiny larvae eat the leaves of squash, cantaloupe, and other cucurbits. An unusual characteristic of this insect is that it circles the leaf area in which it is going to feed. In our observations, no feeding was observed until this circling had taken place.

4. Asparagus Beetle. *Crioceris asparagi* (Linne).

Adults injure young asparagus shoots. After leaves come out beetles and slug-like larvae gnaw stems and devour leaves and thus cause a reduced supply of shoots the next season by robbing the root system of food materials. Asparagus is the only plant attacked so far as is ~nown.

Eggs may be laid on shoots or leaves. Larvae feed for about 2 weeks and pupate in the soil. Generations may be completed in 3 to 8 weeks.

5. Diamond Back Moth Larva (Left). Attacks cabbage, collards, greenhouse plants, and some ornamentals such as alyssum, candytuft, and wallflower. Imported from Europe, this insect now occurs all over the U. S.

It usually devours only a small portion of leaf. Larvae work on the underside and eat many small holes. Frequently they leave only the upper epidermis, which has an isinglass-like effect.

It gets its name from a row of diamond-shaped yellow spots which meet down the back of the moth. The moths spend the winter hidden among crop remnants. The larvae seldom exceed one-third inch in length, are pale green in color, and are murh more nervous in habit than other cabbage worms.

Imported; Cabbage Worm (Right). This is one of the major pests of cabbage and related plants. In addition, it feeds on certain ornamentals, such as nasturtium and alyssum.

The imported cabbage worm is a velvety leaf green caterpillar with a very slender orange stripe down the back. It may range up to$1^1/_4$ inches long. The white butterflies usually found around each planting are parents of this caterpillar. The caterpillar rags the leaves and eats its way to concealment, and in so doing it deposits dirty pellets where the leaves join the stem.

6. Pickleworm. Throughout the state pickleworms bore into cantaloupes, cucumbers, and squashes (watermelons are only rarely attacked), and finally such fruits tend to sour and spoil. Larvae push out masses of green sawdust-like excrement.

Early crop damage is usually avoided as the insects do not survive except in semi-tropical areas. Young larvae are conspicuously marked with about 100 black spots evenly distributed over the body. Full-grown larvae are greenish or copper except for the brown head and an area just behind the head.

Cantaloupes are usually not seriously infested before mid-July or later.

7. Cowpea Curculio. The curculio is a major pest of southern peas and snapbeans. Other wild plants are also hosts. The egg-laying punctures lower the quality of the beans, and infestation of seeds make the green peas unsuitable for human food.

The insect overwinters as an adult and finds its way to the fields to lay eggs when pods are developed. Eggs hatch into larvae which develop within individual seeds and then drop to the ground for pupation.

8. Banded Cucumber Beetle. *Diabrotica balteata.*

It is a much greater problem along the coast and for about 40 miles inland. It is especially important on many fall-grown crops in this area. In addition to leaf damage, it can cause serious below-ground damage as a worm.

It is related to the southern corn rootworm adult. The banded cucumber beetle has become a major pest on sweet potatoes. The larval stage causes greatest damage to sweet potatoes, although the adult may cause considerable damage above the ground to cucurbits.

9. Cross Striped Cabbage Worm. It is perhaps more of a home garden insect. The cross striped cabbaqe worm has numerous black transverse bands across the body. The larvae feed on cabbage and occasionally may be more damaging than the looper, imported cabbage worm, or diamond back moth larva.

Note: Since controls change often, consult your county extension agent or **Clemson University** extension entomologists for specific details on controlling these pests.

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