

VEGETABLE INSECTS

An Aid to Identification and Control



1. HARLEQUIN BUG
Adult



2. STRIPED CUCUMBER BEETLE
AND FEEDING DAMAGE



3. HORNWORM



4. TOMATO FRUITWORM



5. COLORADO POTATO BEETLE
Upper - Larva
Lower - Adult



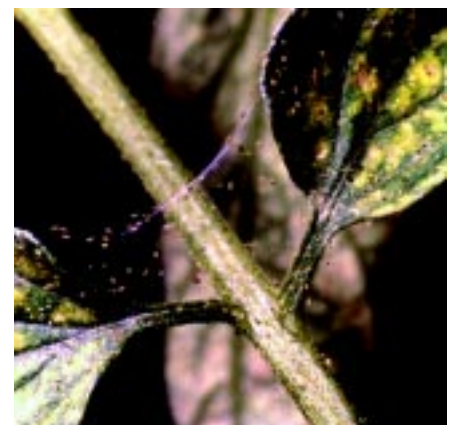
6. APHIDS OR PLANT LICE



7. MEXICAN BEAN BEETLE
SHOWING EGGS, LARVA, PUPA,
ADULT, AND FEEDING DAMAGE



8. BLACK CUTWORM AND
DAMAGE TO CORN SEEDLING



9. SPIDER MITES — SHOWING
WEB AND PLANT INJURY

Photo Description And Life History Information

1. Harlequin Bug. Shield-shaped true bug. Both the adult and young are black with brilliant dorsal area colored red or yellow. These sucking bugs cause plants to wilt and leaves to turn brown as if scalded.

They pass the winter as adults with true hibernation doubtful. The three stages are egg, nymph, and adult. Egg masses are deposited in double rows and average 12 in number. Generations require 50 to 80 days.

2. Striped Cucumber Beetle. Adults are yellow to black, about $\frac{1}{5}$ inch long, with three black stripes down their back.

The insect is a known carrier of mosaic and bacterial wilt. Adults feed on leaves, stems, and fruit. Larvae bore into roots below soil line.

Beetles emerge from hibernation about the time melons come up and begin flying when temperatures reach 60 °F. Eggs are laid about the base of plants, and larvae feed from 2 to 6 weeks on roots and stems below ground. Pupal stage—found in the ground—lasts about a week. Probably two generations occur.

3. Hornworm. Two species damage tomato. General color is green with white diagonal lines on its side. Prominent horn on rear gives name to the group. Larvae measure up to 4 inches long. Damage is done by larvae eating foliage and sometimes fruit on eggplant, pepper, and tomato.

It passes the winter as a pupa, which gives rise to the hawk moth during late spring. Incubation period of eggs is about a week; larvae feed about 4 weeks. Pupal stage lasts about 3 weeks, except for the overwintering generation.

4. Tomato Fruitworm (Also Corn Earworm, Cotton Bollworm). Larva is variable—may be green, brown, or pink with light stripes along sides and on back and may measure slightly under 2 inches. It is one of the most important insects in the United States because it causes serious damage in a wide host range.

It passes the winter as a brown pupa about 2 to 6 inches below the surface of the soil. Moths emerge from these pupae during late April and May. The four stages are egg, larva, pupa, adult (or moth).

Moths fly and lay eggs at dusk on warm days. Eggs numbering from 500 to 3,000 are laid on hosts plants. Early generations feed on corn, tobacco, tomatoes, cotton, and legumes.

5. Colorado Potato Beetle. Adults are true leaf beetles, yellow with black stripes. Larvae are brick red, have a hump back, and are about $\frac{3}{5}$ inch long.

Both larvae and adults devour foliage of eggplant, Irish potato, and tomato and may be very destructive. Adults hibernate and emerge during the early stages of shoot development.

Eggs are laid on the undersurface of leaves and hatch in about a week. Pupation occurs in an earthen

cell in the soil, and adults burrow back to the surface. Then they mate, feed, and begin their life cycle anew.

6. Aphids or Plant Lice. Plant lice are small, soft-bodied, sucking insects found on a large number of vegetable crops. The aphids, by sucking the sap, cause leaves and shoots to become distorted, curled, and weakened.

Generations are numerous, and the rate of increase is tremendous. Young are often born rather than hatched from eggs. Plant lice injure vegetables more during cooler periods; in warm weather they are usually checked by natural enemies.

7. Mexican Bean Beetle. Adults are lemon- to copper-colored, oval in shape, and $\frac{1}{4}$ inch long with 16 black spots on back (wings). Larvae are orange to yellow with fuzz or spines and may be $\frac{1}{3}$ inch long. Eggs are yellow and laid in masses. Pupae are attached to plant and are yellow to orange, depending on age.

Adults hibernate in protected places and first appear on bean plants during April and May. The yellowish eggs are laid in large clusters on the leaves; larvae feed on undersurface of leaves and pupate on the plants. Young adults are light lemon-colored. Several generations occur each season.

8. Black Cutworm. Many species. Cutworms may be dull grey, brown, black, striped, or spotted. These soft-bodied, stout worms curl up tightly when disturbed.

They are most destructive to early-season or cool-season plantings of tomato, pepper, corn, and various vegetable crops. They may cut off plants either at, above, or below soil surface. Some climbing cutworms may feed on buds, leaves, or even fruits.

Most pass the winter as partly grown to fully grown larvae. However, some hibernate as adults and some as pupae. The four stages are egg, larva, pupa, and adult. Usually there is only one generation per year, but some may have as many as four.

Cutworms feed mainly at night. One must look under clods, rocks, and debris to find them during the daytime.

9. Spider Mites. Spider mites are not classified as insects but as close relatives. Several species, adults and young, are barely distinguishable to the naked eye but may be noticed at times when they move in the sunlight. Both adults and young may be red or greenish-red. They are usually found on the underside of leaves, but general infestations feed on all parts of the plant.

They may attack all vegetables grown in the garden, but especially beans, tomatoes, and melons. They cause yellow specks and webs on the leaves. Severe injury of foliage and fruits is frequent, and in many cases defoliation may occur.

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