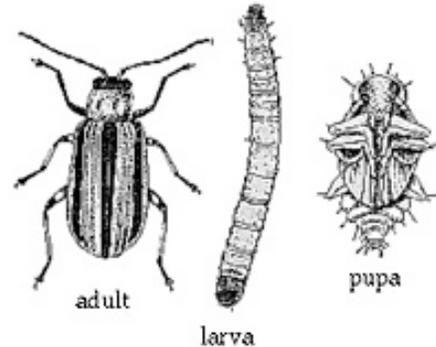


Cucumber Beetles

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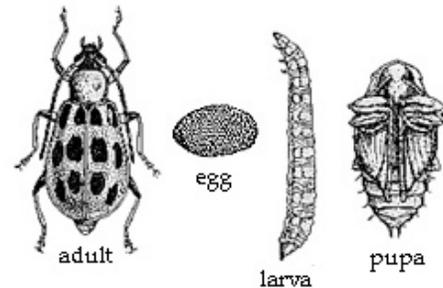
PLANTS ATTACKED: Cucumber, cantaloupe, winter squash, pumpkin, gourd, summer squash, and watermelon, as well as many other species of cucurbits. Cucumber beetles may also feed on beans, corn, peanuts, potatoes, and other crops.

DESCRIPTION OF DAMAGE: Cucumber beetles are important pests of cucurbits. They cause four types of damage: seedling destruction, flower and foliage damage, root feeding, and transmission of bacterial wilt disease. Damage from cucumber beetles starts in the spring with feeding by adults on the seedling stage of the cucurbits. The beetles feed on newly emerged cotyledons and stems, and they have been reported to go below ground level and feed on plants as they emerge. Adults lay eggs in the soil near the seedlings and larvae soon hatch and begin feeding on roots of the cucurbits. Larvae chew holes and tunnel into the roots. Damage by the larvae, except under dry conditions, is usually considered minor. The first generation of adults emerges in late June and early July to feed on the foliage and flowers. Feeding damage by cucumber beetles to foliage is usually very minor, but severe feeding on flowers can result in poor fruit set. The second generation emerges in September and October.



The Striped Cucumber Beetle, *Acalymma vittatum* (Fabricius)
Coleoptera: Chrysomelidae

Probably the most serious damage by cucumber beetles is from transmission of bacterial wilt caused by *Erwinia tracheiphila*. Bacterial wilt can kill many plants in a field and seriously reduce the yield. The striped cucumber beetle and the spotted cucumber beetle have very similar life cycles and both can carry the bacteria, but both are not equally important pests on cucurbits. The spotted cucumber beetle, also known as the southern corn rootworm, is a general feeder and is a pest on other crops, peanuts and corn in particular. The spotted cucumber beetle, however, is not considered as serious a problem as the striped cucumber beetle. The striped cucumber beetle has a more specific host range and feeds almost exclusively on cucurbits in the adult stage. The larvae are dependent on cucurbits for development; they cannot live on any other host plant. Both beetles should be monitored where cucurbits are grown.



Spotted Cucumber Beetle, *Diabrotica undecimpunctata howardi* Barber.
Coleoptera: Chrysomelidae

DISTRIBUTION: Cucumber beetles are native insects and occur throughout the United States from Canada to Mexico. They are most abundant and destructive in the southern range and are usually not a problem in sandy soil. Cucumber beetles are widely distributed throughout Virginia.

DISEASE TRANSMISSION: Cucumber beetles transmit bacterial wilt of cucurbits (caused by *Erwinia tracheiphila*). Wilting usually starts with a single leaf and spreads to the entire plant, killing it. A stringy,

viscous, white bacterial ooze forming a 'string' between cut ends of an affected stem is considered diagnostic for the disease in the field. Bacterial wilt of cucurbits is a serious disease of cucumber and muskmelon, and to a lesser extent, pumpkin and squash. The impact of disease transmission during the growing season is probably the most important aspect of the cucumber beetle's biology.

CONTROL PRACTICES: There are three strategies for control of cucumber beetles. The earliest method that provided a good degree of control, reported in 1841, was to exclude the beetles by covering cucurbit plants with some sort of cloth cover, such as cheese cloth, that was thin enough to let light in but kept the insects out. This method can still be used. Now there are commercial row crop covers that will provide protection from cucumber beetles, and in addition provide late frost protection and help in moisture retention.

Trap crops may give some degree of control. An early planting of cucurbits can be made in order to attract the overwintering cucumber beetles where they can be destroyed by insecticides. This reduces the numbers of cucumber beetles that could feed on the main cucurbit crop planted later. It is important to pull out and burn the remaining vines of the trap crop after destroying the cucumber beetles. Trap crops should probably not be relied on solely for control.

Chemical control is often needed, particularly in commercial plantings. To prevent cucumber beetle damage to seedlings, treat when one beetle per 10 feet of row is found. To prevent bacterial wilt, treat when one beetle per 100 feet of row is found. Usually, a soil insecticide is used at planting time for control of cucumber beetles during the seedling stage and foliar treatments are applied later in the growing season as needed. For current specific control recommendations see the Commercial Vegetable Production Recommendations, Virginia Extension Publication #456-420 for commercial plantings or the Pest Management Guide for Home Vegetable Gardens.

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