



Cucumber Beetles

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Plants Attacked

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

Description of Damage

Striped cucumber beetle, *Acalymma vittatum* (F.) (Fig. 1), and spotted cucumber beetle, *Diabrotica undecimpunctata* Barber (Fig. 2), are leaf beetles collectively referred to as cucumber beetles. Both have similar life cycles and 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 begins in the spring with adult beetles feeding on the seedling stage of the cucurbits. Adults feed on newly emerged cotyledons and stems; they may go below ground to feed on plants as they emerge. Adult females lay eggs in the soil near cucurbit seedlings. Newly-hatched larvae feeding on the host plant roots, chewing holes and tunneling inside them. Damage by the larvae is usually considered minor except when conditions are dry and root damage impairs water uptake by the plant. The first generation of adults emerges in late June and early July to feed on the foliage and flowers. Foliage feeding is usually very minor, but severe feeding on flowers can result in poor fruit set. The second generation of adults emerges in September and October. Adults may feed on the rinds of pumpkins and other winter squashes in the fall. Probably the most serious damage by cucumber beetles is transmission of *Erwinia tracheiphila*, the causative agent of bacterial wilt. Bacterial wilt can greatly reduce plant yields or simply kill many plants in a field.

The spotted cucumber beetle, also known as the southern corn rootworm, is a generalist feeder on

other crops. Both larvae and adults are pests on corn and peanuts. The striped cucumber beetle has a more specific host range and the larvae feed exclusively on cucurbits. For this reason, the striped cucumber beetle is the more serious pest in cucurbits, but populations of both species of beetles should be monitored where cucurbits are grown.



Figure 1. Striped cucumber beetle and feeding damage to a cucurbit stem. (Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org).

Life Cycle

Cucumber beetles have a complete life cycle of egg, larval, pupal, and adult stages.

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 states, but usually not a problem in sandy soil. Cucumber beetles are widely distributed throughout Virginia.



Figure 2. Spotted cucumber beetle. (Joseph Berger, Bugwood.org).

Disease Transmission

Cucumber beetles transmit bacterial wilt of cucurbits, caused by the pathological agent *Erwinia tracheiphila*. Wilting usually starts with a single leaf and spreads to the entire plant, killing it. A white, stringy, viscous ooze stretching between the two cut ends of an affected stem is considered diagnostic for this disease in the field. Bacterial wilt of cucurbits is a serious disease of cucumber and muskmelon, and to a lesser extent in pumpkin and squash.

Control Practices

There are several cultural control strategies suggested for cucumber beetles. Exclusion, first reported in 1841, was the first method developed with a good degree of control. Cucurbit plants can be covered with thin cloth that lets sunlight reach the plants but keeps adult cucumber beetles out. Row covers should be kept in place from planting until bloom. This method is still useful with commercially-available floating row crop covers made of spun fabric. Row crop covers also offer protection against late frosts and can help with moisture retention in warmer weather.

Planting cucurbits at a specific time can greatly help protect the crop. Plant cucurbits in mid-June to avoid peak populations of adult cucumber beetles.

Chemical control of cucumber beetles may be required if cultural controls have failed, particularly in commercial plantings. To prevent cucumber beetle damage to seedlings, treat when one adult beetle is found per 10 feet of row. To prevent

bacterial wilt, treat when one adult beetle is found per 100 feet of row. Treat with a registered insecticide following all label instructions regarding the wait period between application and harvest. 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. Protect bee populations by not using insecticides while cucurbits are in bloom.

For current control recommendations for specific crops, see the Mid-Atlantic Commercial Vegetable Production Recommendations (VCE 456-420) for commercial plantings or the Pest Management Guide: Home Grounds and Animals (VCE 456-018) for home gardens.

Revised

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2020

2808-1009 (ENTO-368NP)