XHT1092

University of Wisconsin Garden Facts

Extension
UNIVERSITY OF WISCONSIN-MADISON

Provided to you by:

Cucumber Beetles

Karen Delahaut, UW-Madison Fresh Market Vegetable Program

There are two common species of cucumber beetles in Wisconsin: the striped and spotted. The striped cucumber beetle is the more serious problem in the state. Cucumber beetles are a problem on vine crops because they transmit the bacterial wilt organism, *Erwinia tracheiphila*. Vine crops attacked by cucumber beetles include cucumbers, muskmelons, watermelons, squash and pumpkins. However, only cucumbers and melons are susceptible to bacterial wilt.

Striped cucumber beetle (top) and spotted cucumber beetle (bottom).

Appearance: The striped cucumber beetle (*Acalymma vittatum*) is ⅕ inch long and yellow-green in color with three black stripes running the length of its body. It is often confused with western corn rootworm beetles that are not a pest of vine crops, but are often found feeding on the pollen of cucurbit blossoms. To distinguish between the two, look at the underside of their abdomens. Striped cucumber beetles have black abdomens while the abdomens of western corn rootworms are yellow-green. Spotted cucumber beetles (*Diabrotica undecimpunctata*) are yellow-green with 12 black spots on their backs.

Symptoms and Effects: Cucumber beetle larvae feed on roots and stems, and can stunt or kill seedlings or transplants. Adults feed on stems, foliage and fruit. More importantly, these beetles transmit the bacterium (*Erwinia tracheiphila*) that causes bacterial wilt. Adults pick up the bacterium when they feed on infected weeds in early spring. When the beetles begin feeding on cucumbers and muskmelons (bacterial wilt is not usually a problem in pumpkins and squash) they spread the bacterium either through their feces or contaminated mouthparts. Once the bacterium is in the plant, it travels through the vascular system and causes blockages of the vessels. The first symptom of bacterial wilt is a distinct wilting of individual lateral leaves. Eventually, the entire plant wilts and dies. To diagnose this disease, cut through a wilted stem and hold the cut ends together for 10 seconds. Slowly pull the ends apart and look for white, viscous material (that looks like a spider's silk) that stretches between the two stem pieces. This material is a combination of plant sap and the bacterial wilt bacterium. Adult cucumber beetles are such effective carriers of the bacterium that serious crop damage can occur if only 10% of the beetles are carriers.

Life Cycle: Striped cucumber beetles overwinter as adults in protected areas. They become active in mid to late May. Females lay their eggs in the soil at the

Revised
Jan. 6, 2005

University of Wisconsin Garden Facts

Extension
UNIVERSITY OF WISCONSIN-MADISON

base of curcurbits (i.e, cucumbers, muskmelons, etc.). The beetles are attracted to the chemical cucurbitacin that is produced by the plants. The small white larvae feed on plant roots for two to three weeks before pupating in the soil. Striped cucumber beetles have one generation per year. The spotted cucumber beetle does not overwinter in Wisconsin. Adults migrate north in early to mid-July. As a result of this late appearance, they are seldom a serious problem.

Scouting Suggestions: Plants infected with the bacterial wilt pathogen will not recover. Therefore, controlling cucumber beetles early in the season is very important in order to prevent the initial spread of the pathogen. Scout fields for adult beetles two to three times per week early in the season, and weekly thereafter. Pay particular attention to field edges where beetles tend to congregate initially. Treat when there are more than four to five adults per 50 plants. When beetle populations are high (i.e., in excess of 20 per plant) transmission of the bacterial wilt organism is likely to occur before insecticides have a chance to control the beetles.

Control

Non-Chemical: Non-chemical control can be achieved in small plantings by covering the plants with floating row covers to keep the beetles out. Make sure you uncover flowering plants to allow bees to enter and pollinate the plants. If bacterial wilt infections have already occurred, remove the diseased plants immediately to prevent the spread of the pathogen while insects are present.

Chemical: There are several insecticides available for control of cucumber beetles. Refer to UWEX publication A3422 “Commercial Vegetable Production in Wisconsin” for a complete listing of available products. If the insecticide carbaryl is selected, care must be taken when making applications while bees are present. Applications should be made late in the day to reduce bee mortality. Adios® is a relatively new insecticide that combines cucurbitacin, the chemical that attracts cucumber beetles to vine crops, with a very small amount of carbaryl. The cucurbitacin causes the beetles to feed compulsively and ingest the insecticide, while reducing bee mortality.

For more information on cucumber beetles: See UW-Extension Bulletin A3422, or contact your county Extension agent.

Thanks to Jeff Wyman and Phil Pellitteri for reviewing this document.