

Cucumber Beetles

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There are two species of cucumber beetles that are common in Wisconsin - striped and spotted. The striped cucumber beetles are more serious in Wisconsin. Cucumber beetles are a problem on vine crops because they transmit the bacterial wilt organism. 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)
Spotted cucumber beetle
(bottom)

Appearance The striped cucumber beetle (*Diabrotica vittatum*) is 1/5 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 (*Cerotoma trifurcata*) 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. The adults feed on stems, foliage and fruit. More importantly, these beetles transmit the bacteria that causes bacterial wilt. This disease plugs the water-conducting vessels of the plant, eventually resulting in plant death. Adults pick up the bacteria 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 bacteria either through their feces or contaminated mouthparts. Once the bacteria 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. Cutting through the stem and holding the cut ends together for 10 seconds can help you diagnose the disease. Slowly pull the ends apart and look for white, viscous sap which is the bacteria reproducing in the xylem. Adult cucumber beetles are such effective carriers of the bacteria that serious crop damage can occur if only 10% of the beetles are infective.



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 base of cucurbits. The beetles are attracted to the cucurbitacin produced by the plants. The small white larvae feed on plant roots for 2-3 weeks before pupating in the soil. There is one generation per year. The spotted cucumber beetle doesn't 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 bacterial wilt will not recover. It is therefore important to control the beetles early in the season to prevent the spread of the disease in the first place. Scout fields for adult beetles 2-3 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 4-5 adults per 50 plants. High beetle populations in excess of 20 per plant may transmit the bacterial wilt organism 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 the 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 disease 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 in the first place, with a very small amount of carbaryl. The cucurbitacin causes the beetles to feed compulsively and ingesting the insecticide while reducing bee mortality.

For pesticide recommendations: See UW-Extension Bulletin A3422 or contact your County Extension Agent.

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