

## Bacterial Wilt of Cucurbits

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After vine crops begin to run, gardeners and farmers often notice individual leaves with severe wilt symptoms on sunny days. Within a week or two the condition spreads to entire vines which do not recover from the wilt. This disease, called bacterial wilt, is especially common with cantaloupes and cucumbers. Squash and pumpkins may not wilt as rapidly, but may be dwarfed with extensive blossoming and branching. Watermelons are rarely affected.

### Symptoms

Wilting of individual leaves or vines of the plant is the characteristic symptom. One or a few leaves wilt and become dull green. The disease spreads from the leaves downward into the petioles and then the stem until the entire plant wilts and dies. There are other factors, such as vine borers and soil-borne fungal pathogens, that may cause cucurbits to wilt. Sometimes, if an affected stem is cut off near the ground, the sap may be milky in



Figure 1. Early symptom of bacterial wilt in cucumber.



Figure 2. Vine death of cucumber caused by bacterial wilt.

appearance or sticky and, if touched with the finger, the sap will string up to half an inch. This is a helpful test in diagnosis of bacterial wilt, but cannot be depended upon for positive identification.

### Causal Organism

This disease is caused by a bacterium, *Erwinia tracheiphila*, that overwinters in the bodies of the striped and 12-spotted cucumber beetles. In the spring, the beetles emerge from the ground and feed on young plants, introducing bacteria into the leaves or stems. The bacteria reproduce in the water-conducting vessels, producing gums that interfere with water transport. The beetles and bacteria are so intimately related that controlling the beetles will control infection by the bacteria. Once infection has occurred, however, no control is possible and wilting plants should be removed, if practical. The disease is not seed-borne.



Figure 3. Severe bacterial wilt in zucchini squash.



Figure 4. The striped cucumber beetle, one vector of the cucumber bacterial wilt pathogen.

## Management

The only practical management measure is to use an insecticide when seedlings first emerge to control the black and yellow cucumber beetles. Early infections are most severe, but total control depends on applications continuing at frequent intervals during the growing season. In some cases, if insect pressure is heavy, it may be necessary to apply an insecticide when plants are just cracking the soil, but have not yet emerged. Management of this disease is completely linked with preventing feeding of cucumber beetles on susceptible hosts. Consult the Ohio Vegetable Production Guide (OSU Extension Bulletin No. 672) for current insecticide recommendations.

This publication contains pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registration, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author, The Ohio State University and Ohio State University Extension assume no liability resulting from the use of these recommendations.

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