

Problem: Bacterial Wilt - *Erwinia tracheiphila*



Host Plants: Cucumber and muskmelon very susceptible but squash, pumpkin, and gourds can also contract the disease.

Description: Initial symptoms appear as individual leaves drooping. These leaves may recover overnight only to wilt during the next day. Eventually the whole plant wilts, turns brown and dies.

There is a good diagnostic field test for this disease. Cut a plant near the crown and squeeze sap from the newly cut stem. Heavily infected plants will ooze a milky sap from the cut stem. Regardless of whether you see the milky sap, touch a clean knife to the cut surface and draw the surfaces apart. If you see fine threads stringing from the stem and the knife blade, then the plant has bacterial wilt.

Bacterial wilt is carried by the [cucumber beetle](#). The bacteria hibernate in the digestive tract of the beetles. Feeding by these insects results in deep wounds to leaves. Bacteria enter these wounds and thereby the rest of the plant through insect feces. The bacteria multiply within the xylem vessels of the plant until water movement is obstructed. Symptoms normally appear 6 to 7 days after infection. Bacteria can survive for one to two months in the dried up plant but cannot survive the winter in any location other than the cucumber beetle's digestive tract.

There are two types of cucumber beetles; striped and spotted. The striped cucumber beetle is the most common. The 1/4 inch long striped cucumber beetles are conspicuously colored: black head and antennae, straw yellow thorax and yellowish wing covers with 3 distinct parallel and longitudinal black stripes. Beetles deposit their eggs in the soil around the bases of host plants.

Recommendations: There is no cure for bacterial wilt and therefore control is aimed at prevention of infection by the beetles. Since cucumber beetles overwinter as

adults, early control measures are essential. Young plants can be protected by the use of row covers, cones, or other types of mechanical barriers. Edges must be sealed to ensure that the beetles do not find a place of entry. Plants will eventually outgrow these barriers or they will need to be removed to allow insect pollination of the flowers. Apply insecticides before beetles are noticed in the planting. Continue to spray until the end of the season on weekly intervals. Homeowners can use:

Permethrin: (Bonide Eight Vegetable, Fruit & Flower Concentrate; Eight Garden & Home RTU; Eight Garden Dust; Eight Yard & Garden RTS; Hi-Yield Lawn, Garden, Pet and Livestock Insect Dust; Hi-Yield Lawn, Garden, Pet and Livestock Insect Control; Hi-Yield Indoor/Outdoor Broad Use Insecticide) and carbaryl (Sevin). Check labels for waiting periods.

Again, there is no cure for the disease. Infected plants should be pulled and destroyed.

References:

1. [Bacterial Wilt of Cucurbits](#), Ohio State University, HYG-3121-96
2. [Options for Managing Bacterial Wilt Affecting Cucurbit Crops](#), Vegetable MD Online, December 6, 2001, Cornell University

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