

Sugarbeet XX

Bacterial Vascular Necrosis

Howard F. Schwartz and David H. Gent

Identification and Life Cycle

Bacterial vascular necrosis, also known as Erwinia root rot, is caused by the bacterium *Erwinia carotovora* subsp. *betavasculorum*. The disease is generally confined to warmer sugarbeet growing areas, such as California, Arizona, Washington, Idaho, and Texas. Splashing water, insects, soil, and contaminated equipment may spread the pathogen. *E. carotovora* subsp. *betavasculorum* survives between sugarbeet crops in and on unharvested beets, soil, and weeds. Several races of the pathogen occur and can also attack tomato, potato, and chrysanthemum.

Plant Response and Damage

Foliar symptoms of bacterial vascular necrosis are not always apparent, but dark black streaks running up petioles can develop. Gas produced by the bacterium generate froth in the center of crowns. Root symptoms vary, ranging from soft rot to dry rot. Vascular bundles in roots become necrotic, and if cut and exposed to air turn pink to reddish. Wilt can result if roots become severely affected, but plants do not die from the disease. Roots can become hollowed-out cavities. Yield losses of up to 40% have been reported.

Management Approaches

Biological Control

No biological control strategies have been developed for bacterial vascular necrosis.

Cultural Control

Plant resistant varieties where available. Avoid sprinkler irrigation, excess nitrogen fertilization, and low plant populations. Do not reuse irrigation tail water. Early planting when temperatures are cool can reduce losses, but may not be practical in some areas of the High Plains.

Chemical Control

No chemicals provide effective control of bacterial vascular necrosis.

Categories: Sugarbeet, Diseases, Bacterial Vascular Necrosis

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