



Plant Disease Diagnosis

780 Palmer Rd.

Walnut Creek, CA

(925) 937-3841

Luellen@pdd.biz

Verticillium Wilt



Verticillium wilt on Japanese maple.

Symptoms

Early symptoms of *Verticillium* infection are wilting and yellowing of foliage. Symptoms of drought are evident. The plant appears unhealthy, and begins to decline, and branches gradually die back. One side of the tree may decline while other parts appear healthy. If the bark is removed from an infected branch, dark streaks in vascular tissue may be visible. A laboratory culture is required to confirm diagnosis. There is no obvious darkening of the roots.

Biology

Verticillium causes disease by plugging the plants vascular system. Water and nutrients cannot be transported so the tree appears to be dying of drought. The fungus survives in the soil as resting structures (sclerotia). When the weather is cool and moist, the sclerotia germinate and infect the roots. After the roots die the fungus forms more sclerotia in the roots which then re-infest the soil as the roots disintegrate.

Host Range

Verticillium has a very wide host range including trees, shrubs and herbaceous plants. Maple, ash, camphor, Chinese pistachio, pepper tree and pistachio are trees that are commonly infected. *Hebe* and rose are shrubs that are susceptible. *Verticillium* is also a major problem with chrysanthemums. Lists of resistant and susceptible plants are available.



Vascular streaking

Management

Small, infected plants may die in a single season. Larger trees may live a long time before succumbing or they may recover if given good cultural care. Giving infected plants proper irrigation, fertilization and other appropriate care may improve vigor enough to allow recovery. If the tree dies a replacement tree should be chosen from the resistant species list. There is no chemical control available for the home gardener. Solarization (heating by the sun of moist soil covered with plastic) may kill the sclerotia in the top several inches of soil and allow smaller annual plants to be grown.

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