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Phytophthora bleeding canker

Several species of the *Phytophthora* fungus cause Phytophthora bleeding canker.

Host plants:

Phytophthora species cause bleeding canker on many trees and shrubs including apple, American and European beech, birch, cherry, dogwood, horsechestnut, (black, Norway, red, silver, sugar, and sycamore) maple, (pin and red) oak, tuliptree, walnut, and weeping willow.

Description:

Foliar symptoms caused by Phytophthora canker reflect the disruption of water transport within the infected plant. Early symptoms include leaves that are smaller than normal, show early fall color, and wilt (even when there is sufficient water in the soil), along with stunted shoot growth and blight of branches.

Left: Bleeding canker on red maple caused by *Phytophthora palmivora*.

Right: Well-defined zone line between infected and uninfected bark and sapwood.

Photos: Edward L. Barnard, Florida Department of Agriculture and Consumer Services, www.forestryimages.org

Phytophthora canker causes the inner bark and cambium to turn brown (or pink on some trees) with a well-defined margin, and it is often associated with the weeping/bleeding of a red-brown liquid from the edges of the stem or branch lesions.

Disease cycle:

The *Phytophthora* species that cause bleeding canker generally live in the soil. They thrive in wet as well as low-oxygen soil conditions. Compaction of soil leads to the development of puddles of water, and saturated soil stimulates germination of *Phytophthora* spores that splash onto wounded bark. Once the plant is infected, the fungus survives as resting spores in the margins of canker lesions in the bark.

Management strategies:

Use a combination of cultural measures and plant resistance to manage Phytophthora bleeding canker. Too little as well as too much soil moisture plays a significant role with this disease. Trees growing where there was a water shortage had extensive cankers. However, if provided with soaking irrigations of the root zone during dry periods, and it appeared that the trees could compartmentalize the canker infections. Maintain a well-drained site through soil aeration and improved drainage. Provide several inches of composted bark mulch or a

ground cover that prevents wounding of the stem and branches, along with reduced puddling during irrigation and rainstorms. If Phytophthora bleeding canker is a persistent problem, replace diseased plants with resistant cultivars or other plants better adapted to the site. In laboratory tests, fungicide treatments had some activity against *Phytophthora*, but in field trials, the treatments were less successful.

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