

## Botryosphaeria Dieback and Canker

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Dieback and canker diseases caused by *Botryosphaeria*, *Sphaeropsis*, *Diplodia* and other closely related fungal pathogens are exceptionally common on woody landscape plants. This group of diseases are often referred to collectively as *Botryosphaeria* diseases and this article will follow that convention to discuss them as a group. Examine any mature oak tree long enough and you're likely to find at least some stems dying due to *Botryosphaeria*. Check the base of dying stems of cranberry bush viburnum and you're likely to find a *Botryosphaeria* canker. Look closely at sunken cracked stems and dieback on redbud and, you guessed it, more *Botryosphaeria*.

*Botryosphaeria* is opportunistic and is often seen killing individual branches that have been wounded or attacked by other diseases, providing an entry point for the fungus. (Fig 1) Stress factors like drought, freezing or defoliation due to disease or insect attack increases susceptibility to infection, and reduces plant defenses so that existing infections often move faster down the stem. However, wounds are not required for infection. In susceptible trees and shrubs, the fungus may attack the smallest twigs and later spread to larger branches where they cause cankers.



Figure 1: This crabapple tree was attacked first by fire blight and later by *Botryosphaeria* canker, killing the main trunk.

Symptoms: Discoloration and death of leaves on individual stems may point to *Botryosphaeria* canker at the base of the dying stem (Fig 2). As the canker girdles a stem, the portion of the stem above the canker gradually dies. Smaller twigs with immature bark may become discolored as the pathogen spreads. Symptoms may vary depending on the plant species infected. In many cases the infection fails to completely encircle the stem, resulting in stems with half necrotic and half living stem tissue (Fig 3).

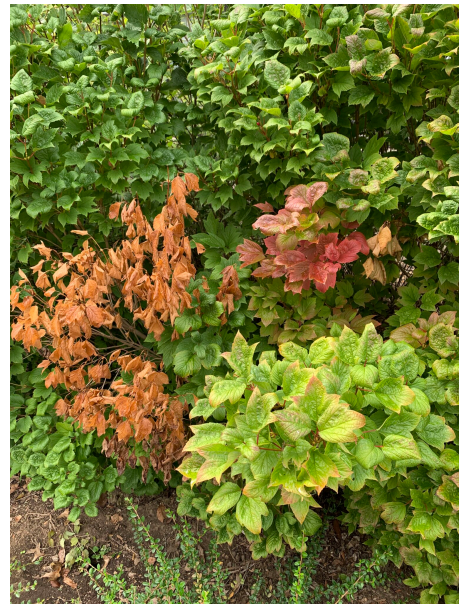


Figure 2: A viburnum hedge with dieback caused by *Botryosphaeria*. Leaf color may progress from yellow to red to brown as branches die.



Figure 3: A rhododendron stem showing one-sided necrosis caused by Botryosphaeria infection. The tan to brown discoloration in the wood is typical of Botryosphaeria on many deciduous trees and shrubs.

Botryosphaeria cankers usually cause bark to be cracked, sunken and discolored (Fig 4). Fruiting bodies of the fungus appear as pinhead-sized black specks embedded in the bark, which may be raised in small bumps covering the cankers.



Figure 4: This *Viburnum x burkwoodii* stem has a large Botryosphaeria canker at the base, killing the branch above that point. After the branch was pruned out the remainder of the shrub survived.

**Management:**

Prevention of infection depends mainly upon avoiding unnecessary wounding and minimizing environmental stresses that induce susceptibility. Avoid allowing trees and shrubs, especially those recently transplanted, to become drought stressed. Keep plants in good condition and in moderate growth. Avoid high fertilizer rates that induce rapid, succulent growth that may be more susceptible to infection.

Prune out and destroy any dead branches at least six inches below discoloration in the bark or sapwood. Be sure to clean pruning tools with a disinfectant after working on infected plants.

Fungicides have not been effective at preventing infections, and once the fungus is inside the wood fungicides can't touch it, so they are generally not recommended in the landscape.

Avoid using highly susceptible plants, such as *Viburnum trilobum* or *Salix spp.*, in drought prone sites.

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