

Boxwood Blight

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Boxwood blight, a disease caused by the fungus *Calonectria pseudonaviculata* (syn *Cylindrocladium buxicola*) was first discovered in the U.S. in 2011 in North Carolina and Connecticut. It has now been confirmed in 20 states and three Canadian provinces. Prior to the discovery in the U.S., boxwood blight was found in the United Kingdom and other countries in Western Europe in the mid-1990s. Initial reports on boxwood blight in Tennessee in 2014 were from garden centers or in landscape plantings where infected plants had been introduced. In 2018-19, boxwood blight was reported in gardens where no new boxwoods were introduced.

Boxwood blight can be found on container and landscape plants and on Christmas decorations, such as wreaths and garland made with boxwood foliage. All commonly used boxwood cultivars are thought to be susceptible to infection, although they do vary in susceptibility. Dwarf cultivars such as *Buxus sempervirens* 'Suffruticosa' and *Buxus microphylla* 'Grace Hendricks Phillips' are particularly susceptible to damage. Related plants *Pachysandra*, a common ground cover, and *Sarcococca*, also known as sweetbox, are also hosts of boxwood blight.

Boxwoods may become infected with boxwood blight anytime during the growing season, but are particularly susceptible during the spring and fall when temperature ranges from 65-75 F and foliage stays wet from irrigation or rainfall. Infected plants may defoliate within a few weeks when conditions are favorable for infection.

Symptoms of Boxwood Blight

The main symptoms of boxwood blight are leaf spots, twig lesions and leaf drop. Boxwood blight does not infect large stems or branches, or roots.



Figure 1. Symptoms of boxwood blight are large, circular necrotic lesions with purple-to-black borders.



Figure 2. Severe infections of boxwood blight lead to defoliation and purple-to-black lesions on green twigs.

Large areas of blighted leaves and severe leaf drop can occur when conditions are favorable for infection. When scouting boxwoods for boxwood blight during winter months, look for twigs with few leaves and small black lesions. If conditions have been particularly favorable for disease development, infected leaves will turn tan to brown and remain on the plant.



Figure 3. Severe infections occur when the environment is favorable for disease development. Infected leaves turn tan to brown and remain on plants.

The Causal Fungus: *Calonectria pseudonaviculata*

The fungus that causes boxwood blight produces rod-shaped spores in bundles on leaf spots and twig lesions (Figure 4). Spores are moved short distances via splashing rain and irrigation. Because spores are sticky, they may be moved on clothing, garden tools, pets and wildlife. It is also possible that boxwood blight may be dispersed by leaf blowers, as infected leaves are dispersed over a wider area. The causal fungus may also contaminate pruning tools used to prune and shape boxwoods. In addition to spores, the fungus produces spear-shaped vesicles that aid in identification (Figure 5). *Calonectria* also produces structures called microsclerotia, bundles of tightly bound hyphae, which help it survive in soil for several years.



Figure 4. Rod-shaped spores of *Calonectria pseudonaviculata*, the causal fungus of boxwood blight..



Figure 5. *Calonectria* produces spear-shaped vesicles, which are useful for identification.

Best Management Practices for Boxwood Blight

- Know the symptoms of boxwood blight.
- Resistant cultivars may become infected but show few symptoms.
- Quarantine new boxwoods for two to four weeks before introducing into existing nursery stock or landscape plantings (Figure 6). Inspect for symptoms during this quarantine period.
- Shear boxwoods when foliage is dry.
- Sanitation is critical to slow spread. Disinfect tools and equipment with horticultural disinfectants.
- Wear disposable gloves and shoe covers when collecting specimens/visiting a property where boxwood blight exists.
- Boxwood blight may be spread in boxwood garland and wreaths used for Christmas decorations.



Figure 6. Boxwoods should be isolated for two to four weeks and observed for symptoms before planting.

What To Do if Boxwood Blight Is Suspected

Contact your local Extension office for information on boxwood blight diagnosis. If possible, ship the whole plant (if small) to the Soil, Plant and Pest Center for examination. Otherwise, send symptomatic branches with leaf spots and/or twig lesions in a plastic bag with a dry paper towel to absorb moisture. Submission information can be found at ag.tennessee.edu/spp/Pages/default.aspx

What To Do if Boxwood Blight Is Present in Your Landscape

- Bag infected plants and dispose of them in a landfill.
- Use a shop vacuum to remove fallen leaves from the ground.
- Protect nearby boxwoods with a fungicide spray labeled for leaf spots.
- Fungicides work best as a preventative treatment to protect healthy leaves and twigs.

Keep in mind that there are other diseases and insect pests that can cause leaf damage and branch dieback. These would include: *Volutella* blight, boxwood dieback, phytophthora root rot, leaf miners and boxwood mite.

Boxwood Blight Quarantine

In February 2018, the Tennessee Department of Agriculture established a boxwood blight quarantine to protect consumers and nurseries. This quarantine requires out-of-state growers to participate in a boxwood blight cleanliness program to reduce the spread of boxwood blight and to have a recent phytosanitary certificate indicating that plants have been inspected recently for disease. It also requires that the Tennessee vendor notify the Tennessee Department of Agriculture at least three days before boxwoods from out-of-state vendors arrive.



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