

# Boxwood Blight in commercial nurseries

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## Common names

boxwood blight  
box blight  
blight disease of boxwood  
boxwood leaf drop

## Fungal pathogen causing this disease

*Calonectria pseudonaviculata*  
Also called *Cylindrocladium*  
*pseudonaviculatum* or *C. buxicola*

## Initial symptoms



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Figure 1. Light brown spots with darker brown to purple edges develop on the leaves.



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Figure 2. Foliar spots may continue to grow and merge until the whole leaf is affected.

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## Advanced symptoms



Figure 3. Leaves become bronze colored (take on a blighted appearance) and leaves drop rapidly (defoliation). A combination of humid conditions with temperatures between 64°F–80°F (18°C–27°C) favors infections.



Figure 4. Black streaks or lesions appear along the stems together with an angular, diamond-shape spot. This is a distinctive diagnostic characteristic of the disease.



Figure 5. Symptomatic plants at the greenhouse. Observe defoliated stems.



Figure 6. Symptomatic container plants at nurseries, outdoors during winter. Note excessive leaf debris.



Figure 7. Roots of plants infected with *C. pseudonaviculata* remain intact and appear healthy, as shown here.

## How the spores are spread

- Short distance: Splash-dispersed by normal or wind-driven rain, or overhead irrigation
- Medium distance: Movement of leaf debris by runoff water or wind; contact-dispersed by humans' contaminated clothing, boots, and equipment; small animals carrying spores
- Long distance: Movement of infected plants, contaminated trucks, and shipping containers
- In production: Pruning infected plant material and then using the contaminated tools; contaminated flats; contaminated water runoff

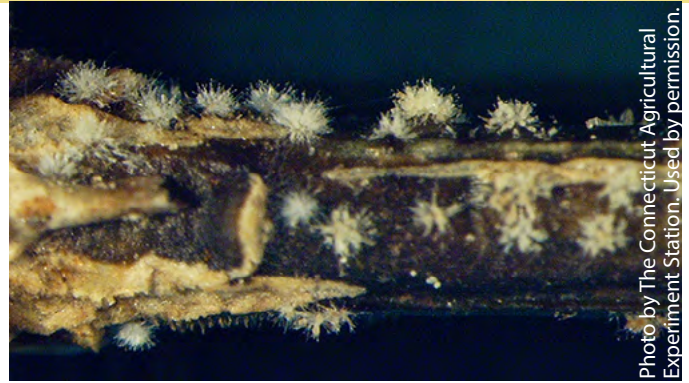


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Figure 8. Spore masses can be observed on affected leaves and occasionally on affected stems with a magnifying lens. Spores are sticky. In high humidity, the fungal spores germinate and penetrate the host plant within 5 hours.

## Managing boxwood blight

- Start with clean material. Inspect plants or cuttings for symptoms.
- Isolate rooted cuttings or new plants from other boxwood plants for at least 1 month (preferably several months).
- If possible, space plants to improve air circulation and minimize high humidity.
- Avoid working among the plants when they are wet.
- Sanitation practices are key in preventing disease spread:
  - Use disposable shoe covers or thoroughly clean and sanitize your shoes, especially if you are working in an area suspected of *C. pseudonaviculata* infection.
  - Disinfect pruners and other tools often within one production area before moving to a different production area.
  - Sanitize all tools, shipping containers, benches, and equipment. Products for sanitizing: alcohols, ethyl and isopropyl 60–85%; phenolics 0.4–5%; quaternary ammonium 0.5–1.5%; chlorine, 10% household bleach 100–1,000 ppm
- Never dispose of infected plant material near other production areas.
- Destroy all infected plants and plant material. Burial or incineration is recommended.
- Do not compost infected plants. Resting structures of the fungus can survive at least 5 years in decomposing boxwood leaves.



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Figure 9. Burying potted boxwood at a nursery.

## Other diseases in boxwood

Boxwood plants are susceptible to other pathogens that produce symptoms that could be misidentified as boxwood blight, such as *Volutella* blight (Figure 10) (caused by the fungus *Volutella buxi*), boxwood decline, and *Macrophoma* leaf spot.



Figure 10. *Volutella* blight symptoms on boxwood are sometimes mistaken for boxwood blight.

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## Known host plants

In natural conditions, *C. pseudonaviculata* has only been observed on leaves and shoots of *Buxus* species. Some varieties of boxwood are more susceptible than others. *B. sempervirens* “*Suffruticosa*” (English boxwood) and American or common boxwood are highly susceptible. A host’s susceptibility can vary depending on the cultivar, the region where it is grown, and physical features of the plant, such as foliage that retains water and is compact or dense (Figure 11).

Under laboratory conditions, both *Sarcococca* species and *Pachysandra* can be infected by this pathogen (Figure 12).



Figure 11. Boxwood cultivars are diverse in structure and size.

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Figure 12. *Pachysandra* leaves infected with *C. pseudonaviculata*.

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