

LOUISIANA PLANT PATHOLOGY

DISEASE IDENTIFICATION AND MANAGEMENT SERIES



Boxwood Blight

(*Calonectria pseudonaviculata*)

Boxwood blight, also known as box blight, is a fungal disease caused by *Calonectria pseudonaviculata* (*Cylindrocladium pseudonaviculata*, *C. buxicola*).

The disease was first detected in Connecticut and North Carolina in 2011. Since then, it has been identified in 10 other U.S. states including Delaware, Massachusetts, Maryland, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island and Virginia. More recently, the disease also has been confirmed in landscapes in Alabama and Georgia.

The pathogen causes symptoms on all above-ground plant parts. Symptoms include light brown to dark brown spots or lesions with dark borders on the leaves (Figure 1). As the disease develops, spots enlarge and coalesce and exhibit a zonate appearance (Figure 2). Numerous dark brown to black cankers develop on the stems (Figure 3). Infected plants appear blighted, with straw-colored leaves that rapidly defoliate, and infected plants weaken and ultimately die (Figure 4). Roots of infected plants remain symptomless.

All *Buxus* species are susceptible to boxwood blight. Other members of the Buxaceae family that are susceptible to boxwood blight include *Sarcococca*, *Pachysandra terminalis* and *P. procumbens*.

The pathogen survives as mycelium in cankers on the stem or on the infected leaf debris. Under warm, moist conditions, abundant sticky spores are produced on infected leaves and stems (Figures 5 and 6). Spores readily disperse from infected tissue with splashed water from overhead irrigation or rain. Short distance disease spread is achieved through wind driven rain or wind-borne spores. The pathogen may move longer distances on infected plant material or through contaminated equipment. The disease spreads rapidly in production nurseries due to existence of favorable environmental conditions and the presence of susceptible hosts.

Free water on tissue or high relative humidity is required for infection to occur. Under favorable environmental conditions, a disease cycle can be rapidly completed within a week. The pathogen can survive over a wide range of temperatures, but 77 degrees Fahrenheit is optimum for its growth.



Figure 1: Light brown to dark brown spots or lesions on the leaves. (Photo by: S.M. Douglas, CAES, University of Kentucky)



Figure 2: Enlarged leaf spots with zonate appearance caused by boxwood blight. (Photo by: S.M. Douglas, CAES, University of Kentucky)



Figure 3: Dark brown to black cankers form on the stem. (Photo by: S.M. Douglas, CAES, University of Kentucky)

An integrated disease management approach is needed for effective management of boxwood blight. In nursery settings, cultural practices that make the environmental conditions less conducive for the disease to develop and spread provide the best line of defense against boxwood blight. Start with disease-free plants and scout the plants for any suspicious symptoms on a regular basis. New boxwood plants that are introduced into the nursery from other sources must be kept in isolation for one to two months to monitor for development of disease symptoms.

Nursery producers also must follow proper sanitation practices in production houses while multiplying new plants from cuttings. Surface disinfection of tools and working benches helps reduce contamination of new plants. Production houses should stay free of any plant debris, and workers must follow good sanitation practices.

Proper spacing of containers in nursery beds helps improve good air movement to promote rapid drying of foliage. Overhead irrigation should be avoided because it provides free moisture on the leaves, which can allow infection to occur, and also helps disperse spores through splashing water. Nursery beds should be kept free of leaf debris to reduce sources of pathogen inoculum. Infected plants must be contained in plastic bags immediately and then removed from the nursery to avoid spore dispersal. Do not discard infected plants in cull piles.

Similar cultural practices should be followed in landscapes and home gardens to manage boxwood blight. Preventive fungicides used in conjunction with cultural practices provide effective disease management.

Contact your local LSU AgCenter county agent or consult the LSU AgCenter's Disease Management Guide for current information on use and selection of fungicides for boxwood blight. Accurate identification of the pathogen is required for best results. If you suspect boxwood blight, please contact Dr. Raj Singh at 225-578-4562 or by email at rsingh@agcenter.lsu.edu before collecting and submitting any samples.



Figure 4: Defoliation of infected plants in containers in a nursery. (Photo by: V.L. Smith, CAES, University of Kentucky)



Figure 5: Spores produced on the underside of infected leaves. (Photo by: S.M. Douglas, CAES, University of Kentucky)



Figure 6: Spores produced on infected stems. (Photo by: S.M. Douglas, CAES, University of Kentucky)

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