

# Kansas Plant Pest Alert

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## Boxwood Blight

### What is it?

Boxwood blight is a destructive disease caused by the fungus *Calonectria pseudonaviculata*, first detected in the United States in 2011. It first was detected in Kansas in 2014, and again in 2019 and 2020. It attacks boxwoods as well as pachysandra, sarcococca, and other species in the family Buxaceae. It causes severe defoliation and lesions on leaves and stems, devastating nurseries and planted landscapes.



The most common symptoms of boxwood blight are brown leaf spots with dark borders and black streaks on the stems. Photo by Jennifer Smith, KDA.

### Symptoms

The first symptom to develop appears as light brown leaf spots with dark borders, which may coalesce and form brown patches. The most characteristic symptom is black streaks on green and woody stems. These symptoms in conjunction may defoliate the plant, causing a blight. In conditions of high humidity, boxwood blight causes white growth on the underside of the leaf. When on pachysandra, the leaf spots are usually yellow or light brown.

### How is it different from Volutella blight or winter damage?

Boxwood blight can easily be confused with Volutella blight and winter damage. However, there are a few ways to tell them apart. While winter damage and Volutella cause leaf bronzing, boxwood blight does not cause such bronzing. Damage due to winter damage shows up in December-March, whereas boxwood blight develops in the spring and fall during moderate temperatures. Both boxwood blight and Volutella blight cause stem cankers, but Volutella blight causes bark to become loose on the woody branches. Boxwood blight also causes defoliation whereas leaves of a plant affected by Volutella blight frequently stay on the plant. Lastly, Volutella blight develops pink fungal growths on the underside of the leaves, whereas boxwood blight causes white growth on the underside of the leaves.



In severe cases, boxwood blight can cause complete defoliation of a boxwood bush. Photo by Jennifer Smith, KDA.

### Disease Development

The fungus survives by multiple methods. It produces mycelium in infected leaves and stems. It also produces fungal spores, which can be disseminated by wind-driven rain as well as irrigation water. In addition, it produces resting spore structures called microsclerotia, which can remain viable in the soil for several years. Both fungal spores and microsclerotia may be disseminated by pruning tools, equipment, vehicles, cloth, and shoes that were not sanitized properly. However, the most common long-distance means of spread is via infected plants transported over long distances. High humidity and wet leaves are required for spore germination and infection. Overhead irrigation, heavy rains, and heavy dew will keep leaves wet, which favors disease activity. This pathogen's ideal temperature range for development is 41-86 °F, with optimal temperature 75-77 °F.

### Best Management Practices

Inspect plants on arrival, and hold the plants in an isolated area for at least four weeks to allow time for symptoms to develop on plants that may be carrying the disease. Monitor both new and established plantings. Avoid overhead irrigation and promote good air circulation between plants. Disinfect pruning tools in between plants using 70% alcohol or 10% bleach solution. Some fungicides may be used against the disease but are preventative, not curative. If boxwood blight has been found, destroy the plants and any debris by disposing in trash, not composting. Remove any debris from the area by raking, sweeping, and vacuuming. Don't re-plant boxwood in the area. If you suspect your boxwood has boxwood blight, send a sample to the Kansas State University Plant Diagnostic Lab for diagnosis and confirmation.