



The Plant Doctor's LANDSCAPE TIPS

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BOXWOOD DIEBACK

INTRODUCTION:

Boxwood, *Buxus sempervirens*, is a widely used shrub in landscapes throughout the Midwest. Boxwood is considered a desirable plant because it is an evergreen that adds color during the drab winter months in the northern states; it is also relatively free of serious diseases and insect problems compared to other shrubs commonly used in our landscapes. However, boxwood is susceptible to a number of diseases when conducive environmental conditions exist. Two of the most common diseases are incited by the fungi, *Phomopsis* sp. (species) and *Phoma* sp., which cause leaf spots and dieback. These two fungi are somewhat related in the Mycology world, and they produce similar reproductive structures for propagating themselves. Either fungus may cause severe dieback on boxwood.

SYMPTOMS AND DIAGNOSIS:

Initial symptoms of boxwood dieback generally include tiny tan-yellow spots on the foliage. As the disease continues to develop, the entire leaf may turn brown. Stem cankers may also develop but may not be conspicuous. In severe cases, whole sections of the plant or the entire plant may succumb (Photos 1 & 2). Eventually, tiny dark fungal reproductive structures may become evident on the foliage; these may be seen with the unaided human eye (Photo 3). A magnifying device will help diagnose the disease by better visualizing these reproductive structures known as pycnidia. These pycnidia release thousands of microscopic fungal spores that help the fungal spread when they become moistened with water from precipitation or from irrigation. Moisture is the key component for infection, fungal reproduction and spread to other foliage or other plants. The disease may cycle many times during the summer as long as favorable conditions prevail. The fungus overwinters in the dead or declined plant tissue.

BOXWOOD DIEBACK MANAGEMENT:

Boxwood Dieback is dependent on favorable environmental conditions for infection and spread. Moderate to warm temperatures enable the fungus to thrive. Probably the most important component for disease development is moisture. Hence, moisture management is vital for proper disease management. Frequent rains or frequent overhead irrigation will encourage disease development. As with many other diseases on landscape plants, irrigation should be kept to a minimum on established landscape plants. When occasional irrigation is warranted, do so early in the day when foliage and stems will dry quickly. Drip or soaker irrigation is better than overhead irrigation. Irrigation may not be necessary on cloudy days when transpiration is less than when compared to sunny days.

To help recovery of plants affected with dieback or to help prevent disease development, occasional fungicide applications may be advisable. Many broad-spectrum fungicides may be effective but the benzimidazole class of fungicides generally provides better control of this type of fungal pathogen. Benzimidazole fungicides include T-Methyl G, Cleary 3336, etc. Fungicides applications should not be necessary under low-moisture conditions and when irrigation is properly managed. 🌱

For more information, please feel free to email me at robertsd@msu.edu or contact a professional plant health care provider. The author, MSU or MGIA do not endorse any particular products. If using pesticides, be sure to read and follow label directions.



Photo 1: Whole plants and sections of this boxwood hedge (foreground) are infected with dieback incited by the fungus, *Phomopsis*. Although there is viability in the lower stems, these plants may be difficult to rejuvenate to good health.



Photo 2: The aggressive nature of the disease in this landscape is probably due in large part to the very wet spring of 2009. Complicating the damp spring is that lawn (overhead) sprinklers were used to water the flowers and other herbaceous plants in this nice landscape.



Photo 3: Examination of the foliage and stems will usually reveal pycnidia (note tiny blots on foliage), the reproductive structure of the fungi, *Phoma* and *Phomopsis*. These reproductive structures enable the fungus to spread and infect new foliage and new plants.



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Development of Landscape Tips was sponsored by MSU and MGIA.