Susceptibility of Commercial Boxwood Taxa to *Cylindrocladium buxicola*©

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INTRODUCTION

The fungus *Cylindrocladium buxicola* that causes boxwood blight was first discovered in the United Kingdom in the mid-1990s. It causes severe blight disease on boxwood (*Buxus*), and is now widespread throughout most of Europe in commercial nurseries, landscapes, and native stands of boxwood. Plants develop spots on the leaves and stems, with leaves abscising, initiating from the bottom of the plant. Plants usually do not completely die, but their appearance is ruined. In October and November 2011, this fungus was found for the first time in the USA on several English and American boxwood samples collected from one county in north central North Carolina, and in multiple counties in Connecticut. It has also been found in Maryland, Massachusetts, New York, Ohio, Oregon, Pennsylvania, Rhode Island, and Virginia, as well as British Columbia and Ontario, Canada. Most likely there are other locations where this disease exists, but have not yet been documented.

The disease can seriously impact the appearance and aesthetics of boxwood because the foliage typically becomes blighted. Young plants can be killed by the pathogen. Symptoms of box blight include: dark or light-brown, circular leaf spots often with darker margins; dark stem cankers (streaks); straw- to bronze-colored, blighted foliage; and leaf drop. Leaf spots may grow together to eventually cover the entire leaf. Under high humidity, white fuzzy masses (visible to the naked-eye) consisting of large numbers of spores may be observed on infected stems and leaves, especially on the undersides. Sometimes only the lower stems become infected, leaving the tops green; in those cases, the plant may appear top-heavy. However, often the entire plant becomes affected. Blighting and defoliation can occur suddenly with complete leaf loss under warm [18 to 27°C (64 to 80°F)] and humid conditions. Growing plants under shade favors disease development.

While the full host-range of this fungus is not yet fully defined, there appears to be levels of tolerance to this fungus in some commercial boxwood taxa. Other members of the boxwood plant family Buxaceae, including *Pachysandra* species, are also susceptible. Therefore the following study was conducted to determine the susceptibility of commercially available boxwood taxa.

METHODS

Susceptibility to box blight (*Cylindrocladium buxicola* = *Cylindrocladium pseudonaviculatum*) was evaluated for 23 taxa of boxwood (*Buxus* spp.) at the Mountain Horticultural Crops Research and Extension Center in Mills River, North Carolina during Summer 2012. Disease assessments were performed based on a modified Horsfall-Barratt scale including percent leaf area diseased and percent stem streaking.

RESULTS

The graph shown below indicates a wide range in susceptibility of *Buxus* taxa to the boxwood blight pathogen; however *B. sempervirens* types were more susceptible in general. A 2011 publication reported 'Justin Brouwers' to actually fall within the *B. sempervirens* cluster. The taxa listed as tolerant had minimal lesion development caused by *C. buxicola*. This is possibly due to plant genetics, as well as physical features of the plant, such as more open and upright leaf canopies. *Buxus sempervirens* 'Suffruticosa' (English boxwood) and *B. sempervirens* 'American' (common or American boxwood)

were especially susceptible. It is important to note that some boxwood taxa are limited in their optimal plant hardiness zones. Hence, it is important to know the specific growing requirements for each taxon before recommending them in your area.

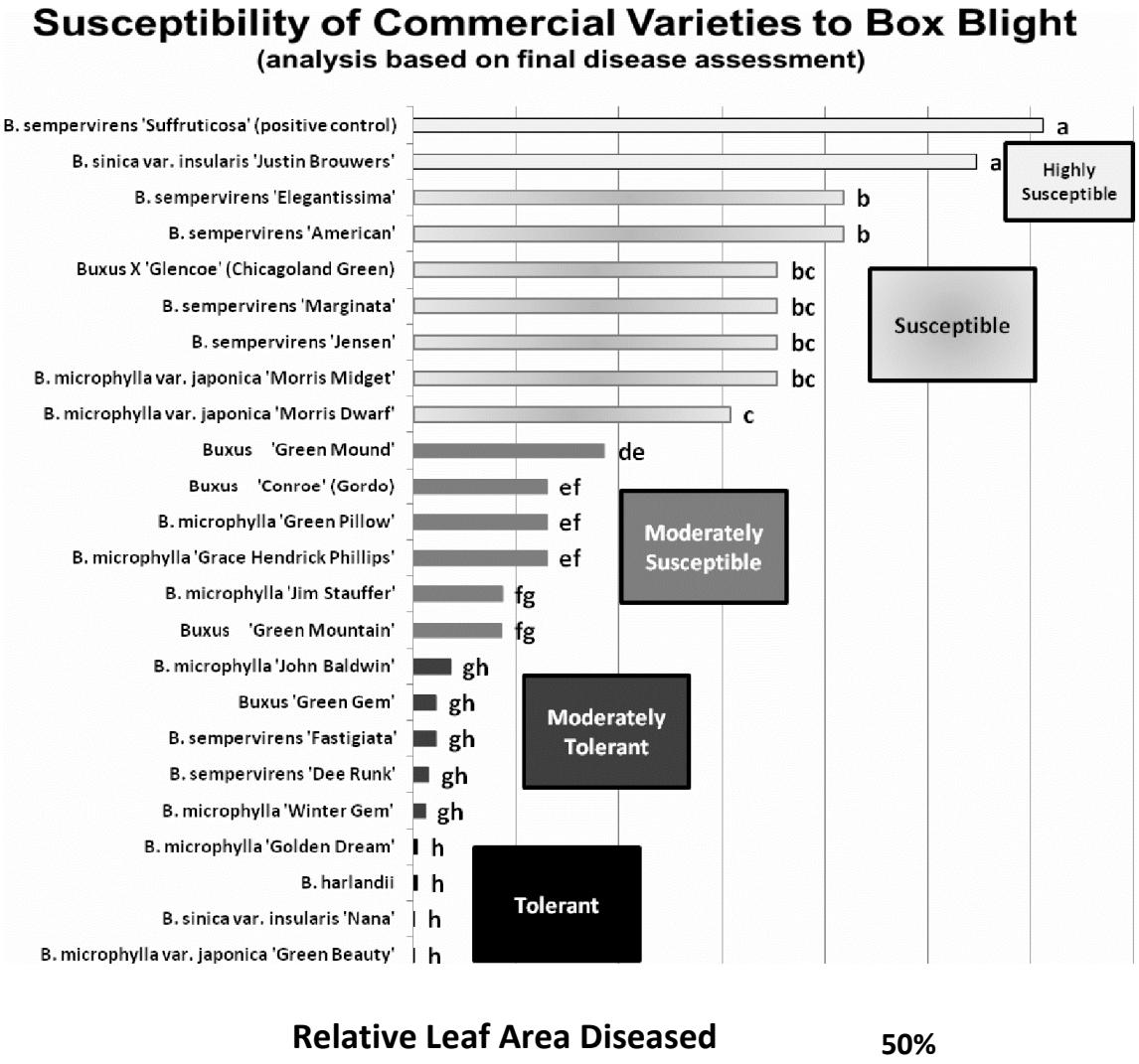

Fig. 1. Susceptibility of commercial boxwood taxa to boxwood blight (*Cylindrocladium buxicola*).