

Significance to the Horticulture Industry

Boxwood Leafminer and Boxwood Blight

Field Performance of Buxus Cultivars and Selections Against Boxwood Leafminer and Boxwood Blight. Keith S. Yoder, Robert A. Dunn, J. Bennett Saunders, Ted R. May, Michael D. Yanny, Chuanxue Hong and Holly L. Scoggins. *Journal of Environmental Horticulture* 40(4): 129-142

Boxwood, particularly in the Eastern United States, are one of the most popular ornamentals grown for landscape use because of their clean geometric shapes, year-round deep green foliage, and deer resistance. Nurseries choose cultivars based on their insect and disease resistance, attractiveness, grower friendliness, and other factors. Attractiveness and grower friendliness can be quite subjective, but insect and disease resistance are usually measurable. Boxwood leafminer, *Monarthropalpus flavus*, and boxwood blight, *Calonectria pseudonaviculata* are serious problems that can cause defoliation, disfigurement, and possibly death of susceptible boxwood and require management to maintain plant appearance and survival. Host resistance to both of these problems is the best solution for long-term management. Of 146 cultivars in leafminer trials and 75 cultivars and selections in blight trials with Saunders Brothers Inc., seven cultivars showed resistance/ low susceptibility to both blight and leafminer: cultivars 'Peergold', 'Cole's Dwarf', 'SB 108', 'SB 300', and 'Wee Willie' plus selections SB17 and 9-00-174. Other cultivars tested have resistance to one or the other, and may be useful in regions where that particular issue is not present, or have traits useful in future boxwood breeding programs. We leave it to the nursery or garden grower to subjectively evaluate attractiveness and grower friendliness.

Economic Benefits of Plants

An Update of the Literature Supporting the Economic Benefits of Plants: Part 1 – Methods of Valuing Benefits. Charles R. Hall and Macy Fetchel. *Journal of Environmental Horticulture* 40(4): 143-148

This article is the first of a series that provides a review of the substantial body of peer-reviewed research that has been conducted regarding the **economic benefits** of green industry products and services. A previous series documented the health and well-being benefits including emotional and mental health benefits, physiological health benefits, the benefits that plants provide to society at large and the role they play in addressing critical societal issues, and an overview of resources available for green industry firms to find more detailed information on these plant-related health and well-being benefits. Industry firms should be armed with the economic benefits information described in this new series to strategically incorporate them into both industry-wide and firm-level marketing messages that highlight how local and regional economies are affected in order to enhance the perceived value and relevance of green industry products for municipal leaders and gardening and landscaping consumers in the future.

Japanese stiltgrass control

Comparison of Torching and Glyphosate Applications for Japanese Stiltgrass (*Microstegium vimineum*) Control. Geoffrey Payne, Jim Evans, Ethan Murdock, and Jeffrey Derr. *Journal of Environmental Horticulture* 40(4): 149-153

Japanese stiltgrass is an invasive species that invades shady, moist sites. Torching plots in April followed by a glyphosate application in August for two years reduced Japanese stiltgrass stand in spring and summer but this weed recovered completely two years later. Applying glyphosate twice per year, in May and September, or torching in May and August, gave excellent Japanese stiltgrass control during the growing season, but it recovered the year after treatments ended. Treatments will need to be maintained for over three years if eradication of Japanese stiltgrass is the goal.

Phytophthora Susceptibility

Evaluation of annual and herbaceous perennial plants for susceptibility to Phytophthora root and crown rot in the Southeastern United States. Ella R. Reeves, Michelle S. Henson, Suzette R. Sharpe, and Inga M. Meadows. *Journal of Environmental Horticulture* 40(4): 154-163

Eighteen cultivars of annuals and twenty-one cultivars of herbaceous perennials performed well in this study and have been recommended as an economically and environmentally sustainable management solution for *Phytophthora*-infested landscape beds in the southeastern United States. These results provide valuable information to growers, landscapers, and homeowners. The opportunity to advertise plants as being tolerant to *Phytophthora* root and crown rot may increase sales of these varieties and, therefore, increase profits. Additionally, the reduction of pesticide usage to prevent this disease will provide savings for landscapers and homeowners and may decrease the environmental impact of disease management. In order to strengthen recommendations, future work should re-evaluate these cultivars in additional locations in the Southeast and with additional exposure to other isolates of *Phytophthora* known to cause root and crown rot. Additionally, more cultivars should be evaluated using similar methods.

Submist Propagation System

Propagation of Herbaceous and Woody Perennials in Submist and Overhead Mist Systems. Stephanie E. Burnett and Bryan J. Peterson. *Journal of Environmental Horticulture* 40(4): 164-169

Submist systems, which apply water to the bases of cuttings, show promise as an alternative to overhead mist that reduces the amount of water used in propagation. Four plants, bluestar, panic hydrangea, sweetgale, and ninebark, may be propagated in either overhead mist or submist. Threadleaf coreopsis and purple smoke false indigo did not form high quality roots unless they were propagated in overhead mist. The submist system used in this study used 86% less water compared to overhead mist; it may be an option to reduce water use in propagation for plants that form roots readily in this system.