BBIG Boxwood Blight Insight Group

Newsletter

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FEATURED NEWS

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(June to August 2025)

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This will be the final version of the BBIG Newsletter. Additional work by project collaborators will be published using a new format. Thank you all for 5 years of outstanding contributions!

Extended effect of triazole fungicides: a way to circumvent the spray coverage problem on boxwood

by Jay Pscheidt, Oregon State University, Corvallis, OR

Although a number of different fungicide classes may be brought to bear against boxwood blight, growers, landscape gardeners and arborists would all tell you that management of *Calonectria pseudonaviculata* (*Cps)* is still very challenging. If you turn your back for just a minute (OK, maybe a week to 10 days) when the environment is favorable, disease can resurge and spread, defoliating plants severely. Many things contribute to management problems, including the density of the boxwood canopy. Fungicides that are highly systemic can help. Another strategy is to use methods of application that circumvent this problem by improving coverage.

In Oregon, Warneke et al. conducted spray coverage trials on experimental field-planted boxwood and at two nurseries. Coverage was compared at various rates for an intelligent air blast sprayer, an over-the-row boom sprayer, a cannon sprayer and a customized air-assisted boom sprayer, using water-sensitive cards. Coverage on the boxwood varied from 0.03%-47.2%, 0.2%-7.1%, 0.8%-3.0%, and 0.4%-4.3% on cards facing towards the inside of the boxwood canopy and 4.3%-100%, 0.9%-16.8%, 0.3%-17.3%, and 1.6%-21.6% on cards facing towards the sprayer when using an air blast sprayer, cannon sprayer, over-the-row boom sprayer, and air-assisted over the row boom sprayer, respectively.

Air blast application to nursery-grown boxwood for spray coverage evaluation

It was impossible to get good coverage on heavily sheared plants or on cultivars with a tight growth habit: none of the sprayers or rates could compensate for that basic difficulty. Areas of poor spray coverage could be refuges for the pathogen and contribute to the spread of boxwood blight from nursery to nursery or to landscapes. High volume solutions will help to counter the spray coverage problem. Drenches offer another strategy that could help to

protect plants for long periods, by side-stepping the leaf surface coverage issue. Flutriafol, for example, has been detected in boxwood leaves one to two years after a single drench to small potted plants, so it may have the potential to be a valuable tool in maintaining boxwood health.

In another recent study at Oregon State University, Sacher and Pscheidt used detached boxwood leaves to measure effectiveness of different fungicides and different application methods over time. They compared 6 triazole fungicides: flutriafol, myclobutanil, propiconazole, prothioconazole, tebuconazole, and triflumizole, all of which are in FRAC Group 3. Container-grown 'Green Velvet' were used to compare foliar sprays and drenches of all the fungicides. Field-grown plants of 'Winter Gem' were used to evaluate drench treatments with flutriafol as well as sprenches with both flutriafol and propiconazole. Leaves were collected from different levels of the canopy and challenge-inoculated with *Cps* at different times after treatment.

When treated plants were compared to non-treated controls, it was apparent that all treatment styles and all materials gave some benefit again to the disease. Leaf position affected the level of treatment effectiveness, but effective materials reduced disease severity at all locations within the canopy and regardless of application method. In the container-grown plants, control lasted up to 12 weeks whether plants were sprayed or drenched. Treatments with tebuconazole as a spray or flutriafol as a drench were the most effective. Results of treating every other plant in the field were relatively disappointing: effectiveness with flutriafol was sporadic, and propiconazole benefit was noted only for a few weeks.

Triazoles have value as treatments for boxwood blight, functioning well in spite of the plants' dense canopies. Further studies should focus on the dynamics of triazole fungicides in field-grown plants, to better understand why treatments were less effective than observed in container-grown boxwood.

ADVISORY PANEL SPOTLIGHT

Mr. Mark Sellew is the president of Pride's Corner Farms in Lebanon, Connecticut, one of the largest nurseries in the Northeast. Interview conducted by Nathaniel Westrick of the Connecticut Ag Experiment Station, New Haven, CT

Born and raised in Darien, CT, a suburb of New York City, Mr. Sellew earned a degree in horticulture from Cornell University before returning to Connecticut to help his father with what was then a small, greenhouse tomato operation. That modest beginning soon evolved into a thriving nursery business that today spans more than 500 acres and serves customers across the eastern United States with a diverse inventory containing thousands of plant varieties.

With over four decades of experience in the nursery industry, Mr. Sellew has become a vocal advocate for regionally adapted plant production and sustainable landscape practices. He believes that regional nurseries like Pride's Corner play a crucial role in supporting healthy local ecosystems by growing plants acclimated to regional climates and cultural conditions. His business philosophy centers on making it easy for landscape professionals and homeowners alike to access high-quality, site-suitable plants, and his passion for plants and people continues to drive innovation at Pride's Corner.

One of Mr. Sellew's most notable contributions to the industry is the founding of the *American Beauties* native plant brand, now the leading branded native plant program in the Northeast. What began as a personal commitment to ecological stewardship has since grown into a nationally licensed program involving multiple growers across the U.S. The brand emphasizes ecologically valuable native species—particularly those beneficial to pollinators—while adhering to strict standards, such as avoiding neonicotinoids and limiting cultivars to selections that preserve ecological function. Plants like Mountain Mint and Butterfly Weed, once overlooked, are now among the nursery's top sellers.

Mr. Sellew's role as an advisor on the USDA's Boxwood Blight Insight Group (BBIG) Advisory Panel reflects both his industry leadership and his long-standing commitment to plant health. Nominated by fellow nurseryman Bennett Saunders, Mr. Sellew brings to the panel a grower's perspective grounded in hands-on experience and commercial foresight. He has been deeply involved in adapting nursery production to address boxwood blight, including transitioning Pride's Corner to the NewGen line of disease-resistant boxwood cultivars and eliminating highly susceptible cultivars from the company's offerings. He is also keenly attuned to emerging threats like the box tree moth, which he describes as "the next big thing" facing the industry.

Throughout his career, Mr. Sellew has embraced both challenges and change. He has weathered extreme weather events, shifting labor dynamics, and plant disease outbreaks, and continues to emphasize the importance of resilient business practices. He credits his success in part to a life-long curiosity about plants, a passion sparked during his time at Cornell by a beloved woody plants professor. He sees increasing demand from gardeners and landscapers for native and ecologically valuable plants as an encouraging trend that reflects a broader cultural shift toward sustainability.

When asked what advice he would give to those entering the nursery and horticulture industries today, Mr. Sellew is candid: "It's not a business for the faint-hearted." But he's also optimistic. He sees particular promise in the native perennial sector, where fast-growing plants and rising consumer demand create real opportunity for skilled and forward-thinking growers.

Outside of work, Mr. Sellew is an avid hiker and mountain biker. He lives in Glastonbury, Connecticut, and spends time cultivating a native pollinator garden at home. Among his favorite plants is Mountain Mint, which he describes as a magnet for native bees and butterflies. His appreciation for native species extends beyond business, it is personal and rooted in a lifelong love of the natural world.

Reflecting on his involvement with BBIG, Mr. Sellew credits the group's research and outreach with helping to maintain the viability of boxwood in American landscapes at a time when its future looked uncertain. Looking ahead, he hopes that continued collaboration between scientists and industry leaders will yield the next critical breakthrough: a boxwood that can withstand the box tree moth.

FEATURED RESEARCH

Boxwood Blight Research and Extension efforts in Connecticut by Srikanth Kodati, University of Connecticut, Storrs, CT, and Nathaniel Westrick, the Connecticut Ag Experiment Station (CAES), New Haven, CT

Research and Extension efforts in Connecticut focused on the **etiology and management of boxwood blight**, a major threat to ornamental horticulture. The research team investigated epidemiological factors of disease development, including the effects of temperature, cultivar susceptibility, and leaf wetness duration. Results showed that infection requires at least five hours of leaf wetness, with rapid increases in disease severity between 12–15 hours, and optimal infection conditions between 21–25 °C. Conidial survival studies demonstrated that spores in sticky masses can persist up to nine days under a wide range of humidity levels, emphasizing the importance of tool sanitation and careful pruning practices even in dry conditions. These findings were used to refine disease prediction models and update best management practices (BMPs) for growers.

The CAES Team also explored **novel management strategies** beyond traditional fungicides, including the use of anti-desiccants and copper-based nanoparticles (Cu-NPs). Anti-desiccants such as Wilt-Pruf and TransFilm were found to reduce infection by interfering with spore adhesion, while Cu-NPs at moderate concentrations (50 ppm) suppressed disease development. On the other hand, fungicide trials revealed differences in the duration of protection among products, with some combinations extending efficacy up to 26 days post-treatment depending on cultivar. Integration of these approaches—cultural practices, resistant cultivars, anti-desiccants, nanoparticles, and fungicides—offers more sustainable and effective tools for managing boxwood blight. Collectively, these strategies aim to safeguard boxwood and protect the ornamental plant industry.

The CAES Team photo before James LaMondia (first on the left)'s retirement and Srikanth Kodati (second from the left)

EXTENSION HIGHLIGHTS

Overall Extension Accomplishments from June to August 2025 by Margery Daughtery, Cornell University, Riverhead, NY

August is not traditionally a time of high extension activity, as the nursey industry and educators alike fit in long-delayed vacations and seek mental and physical relaxation in the mountains or at the seashore before school resumes. BBQs are more likely than seminars. But good things nonetheless happened this August on the BBIG Extension front, as this time was used to develop a new educational channel for the Spanish-speaking community. **Luisa Santamaria** (Oregon State University) worked with **Nicholas Leas** at the Horticultural Research Institute to expand the offerings at www.boxwoodhealth.org to include a pull-down tab on the homepage labeled "Spanish," where resources in that language have been gathered. There are fact sheets, a poster, and videos available, under the headings 'Diagnóstico y Síntomas', 'Monitoreo y detección', 'Manejo y prevención' and 'Material educativo'. This effort comes at a time when AmericanHort has also made a more concerted effort to deliver information in Spanish. Now BBIG continues to spread the word about boxwood blight and its detection and management en Inglés, and also to reach out with the story of "El tizón de boxwood en viveros de producción commercial" and other more directly comprehended materials for this important audience. Many thanks to **Martha Sleeper** (Everde Growers) and **Alejandra Feliciano Rivera** (AmericanHort) for their help with editing items before they were posted! Luisa will continue to add to the Spanish content of the website through October.

A new bilingual poster was just made available by Luisa—with it, you can teach yourself Spanish versions of familiar boxwood blight concepts. Check out the updated link to the poster published through OSU Extension Communications, at the end of August. And here's a fun fact from Luisa: if you are talking to a Spanish-speaker about boxwood, call it boxwood: they are likely to be bewildered by the translation: 'boj'. . . it's not common parlance in the trade.

Another big effort underway in the past month has been the development of a new version of Best Management Practices for Boxwood. **Jerry Weiland** is heading up a large and opinionated subcommittee of BBIG members who have volunteered to help with the rewrite: **Fulya Baysal-Gurel**, **Luisa Santamaria**, **Nina Shishkoff**, **Jim LaMondia**, **Jay Pscheidt**, **Margery Daughtrey** and **Chuan Hong**. BBIG is collaborating with **Jennifer Gray** at the Horticultural Research Institute to incorporate up-to-date information developed over the past 5 years—a major 'deliverable' of the NIFA SCRI project. The BMPs are receiving final revisions and will be available soon.

Our series of BBIG Research Webinars will be continued with the October 23 (1:00 pm Eastern) presentation by **Jerry Weiland** on "Herbal Distancing: Keeping Boxwood in Your Nursery Free from Blight". This webinar will be of special interest to the nursery industry, as it focuses on Dr. Weiland's research, which has led to guidelines for plant protective cultural practices. A future webinar is also being planned on flutriafol drench effects against boxwood blight.

A notable achievement of the BBIG Team is the regular publication of two reporting bulletins: the BBIG Monthly and the BBIG Newsletter. As the name suggests, the BBIG Monthly is published each month, and it provides news events and listings of research and extension products. During this reporting period, editions were released in June, July, and August. The BBIG Newsletter is published quarterly and offers a more in-depth overview of team members' activities and achievements, with the most recent issue appearing in May 2025. Together, these publications clearly showcase the breadth and impact of the BBIG Team's accomplishments. The Monthly and the Newsletter are both archived at boxwood health.org.

PROJECT MEETING BRIEF

Three monthly Project Leadership Team Meetings were held on June 11, July 09, and August 13, respectively. In addition to planning for the monthly digests, quarterly newsletter and meetings, the Leadership Team discussed 1) plans for completing the project, 2) need for no-cost extensions for some project groups, and 3) a BBIG focus issue of PhytoFrontiers – Reclaiming Boxwood from the Blight. The Spanish tab is active and continues to be improved. Margery Daughtrey is working with other project directors to dress up the site, hoping to add images to enhance the look of the page. An additional topic of importance was the preparation of the 2025 BBIG Annual Report.

BBIG Project Directors, Associates, and Collaborators gathered in Honolulu, Hawaii during the **2025 Plant Health – Annual Meeting of the American Phytopathological Society**, celebrating what has been accomplished together over the past 5 years.

Final BBIG Advisory Panel Meeting was held on September 05, 2025. **Nathaniel Westrick and Srikanth Kodati of the Connecticut Agricultural Experiment Station** provided a presentation on their copper nanoparticle research titled ***Etiology and management of boxwood blight***. Additional topics included BBIG overall impact assessment, Understanding boxwood/*Cps* interaction and implications, the Spanish tab of the BBIG website, BMPs for industry, and Lynn's new book, as well as plans for the upcoming year for those that requested the no-cost extension.

ANNOUNCEMENT

Jerry Weiland of USDA-ARS in Corvallis, Oregon will present a webinar titled ***Herbal Distancing: Keeping Boxwood in Your Nursery Free from Blight***, scheduled for October 23 at 1:00PM.

PUBLICATIONS

Refereed Journal Articles

1. Daughtrey, M., Gray, J., Calabro, J., and Hong, C. X. 2025. Fighting against invasive species through global and stakeholder partnerships - a case study of boxwood blight. Plant Disease: First Look at https://apsjournals.apsnet.org/doi/10.1094/PDIS-01-25-0210-SC.

2. LaMondia, J. A., Cowles, R. S., and Shishkoff, N. 2025. The effects of sanitizers on *Calonectria pseudonaviculata* and *C. henricotiae* conidia and microsclerotia viability. Journal of Environmental Horticulture 43(2):83–90 open access at https://doi.org/10.24266/0738-2898-43.2.83.
3. Sacher, G. and Pscheidt, J. 2025. Detached leaf assays reveal long-term efficacy of the systemic fungicide flutriafol against boxwood blight. Plant Disease: First Look at https://apsjournals.apsnet.org/doi/abs/10.1094/PDIS-11-24-2508-RE.
4. Li, X., Hemmings, G., Omolehin, O., Tseng, H.T., Taylor, A., Taylor, C., Kong, P., Gouker, F., and Hong, C. 2025. Mycobiome of low maintenance iconic landscape plant boxwood under repeated treatments of contact and systemic fungicides. Scientific Reports 15, 30150

RECENT PRESENTATIONS

Professional Conference Presentations

1. Daughtrey, M. L., Luster, D. G., Calabro, J., Gray, J., Hall, C., Weiland, J. E., Baysal-Gurel, F., Gouker, F., Kong, P., Crouch, J. A., LaMondia, J., Pscheidt, J., Santamaria, L., Shishkoff, N., Snover-Clift, K., Westrick, N., Brindisi, L., and Hong, C. X. 2025. Fighting a great fight against boxwood blight. Plant Health 2025 – Annual Meeting of American Phytopathological Society in Honolulu, HI, August 2 to 5.
2. Hong, C. X., Kong, P., Brand, T., Guarnaccia, V., Ioos, R., Daughtrey, M., and Luster, D. 2025. Ever-expanding international collaborative research safeguards boxwood crops and plantings. Plant Health 2025 – Annual Meeting of American Phytopathological Society in Honolulu, HI, August 2 to 5.

Extension Presentations

1. Daughtrey, M. 2025. Research and news on boxwood blight, beech leaf disease and laurel wilt. Plant Science Day. Long Island Horticultural Research & Extension Center, Cornell University, Riverhead, NY, July 17.
2. Daughtrey, M. 2025. Studies on dogwood, boxwood, beech and impatiens. Long Island Agricultural Tour for Northern Neck Virginia Growers. Cornell University LIHREC, Riverhead, NY, July 22.
3. Daughtrey, M. 2025. Plant disease research on nursery crops. Soil Health Field Day for Spanish-speaking Workers, Cornell Cooperative Extension of Suffolk County. Cornell University, LIHREC, Riverhead, NY, July 25.

PROJECT DIRECTORS

Chuan Hong (Project Leader), Virginia Tech, Virginia Beach, VA
Margery Daughtrey (Extension Leader), Cornell University, Riverhead, NY
Douglas Luster (Research Leader), USDA, ARS, Foreign Disease & Weed Science Research, Ft. Detrick, MD
Charles Hall, Texas A&M University, College Station, TX
Jerry Weiland, USDA, ARS, Horticultural Crops Disease and Pest Management Unit, Corvallis, OR
Fulya Baysal-Gurel, Tennessee State University, McMinnville, TN
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Karen Snover-Clift, Cornell University, Ithaca, NY

ADVISORY PANEL & LIAISON TO AMERICANHORT

Jill Calabro (Chair), Sr Product Development Manager, Valent USA Corporation, Walnut Creek, CA
Lynn Batdorf, Boxwood Cultivar Registration Authority, International Society for Horticultural Science

Frank Collier, Owner, Pleasant Cove Nursery, Rock Island, TN
Michael Gaines, President, CW Arborists, Ltd., Sagaponack, NY
Laura Gladwin, Plant Health Manager, Everde Growers, Forest Grove, OR
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