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Article available online at: <https://www.hriresearch.org/article/boxwood-health-check>

**Boxwood Health Check-Up**

***Latest on Boxwood Blight and New APHIS Box Tree Moth Action***

**WASHINGTON, DC and COLUMBUS, OH—March 4, 2020—** The Horticultural Research Institute is invested in helping the industry understand the complex nature of boxwood health. New [boxwood blight best management practices](https://www.hriresearch.org/sites/default/files/BoxwoodBlight/HRIBoxwoodHealthBMPs-V3-2020.pdf) for landscape management were released last month in tandem with updated best management practices for production. HRI continues to guide research, monitor results, and provide an expanding toolbox of resources on boxwood health directly to the industry.

Boxwood blight continues to cause producers and landscape managers headaches. Reports of the disease continue to rise as scouting prowess increases in our industries and weather conditions (warm, wet/humid conditions, 60-82° F) continue to favor disease development. Researchers are making headway at unraveling boxwood blight’s secrets.

Some of the latest areas of research currently underway includes:

* Longevity of chlorothalonil fungicide applications, modeling fungicide resistance, and looking at fungicides that induce boxwood’s natural resistance, such as acibenzolar. Dr. Sara Villani, North Carolina State University
* Possible biocontrol agents, such as *Trichoderma* *koningiopsis*, *Pseudomonas* sp., and *Burkholderia* sp. Dr. JoAnne Crouch, USDA ARS and Dr. Ping Kong, Virginia Tech
* Development of a rapid, equipment-free diagnostic assay. Dr. Xiao Yang and Dr. Doug Luster, USDA ARS
* Population changes (in term of genetics), Dr. JoAnne Crouch, USDA ARS
* Continuing evaluation of cultivar tolerance and susceptibility. Dr. Jim LaMondia, Connecticut Agricultural Experiment Station, Dr. Marc Cubeta, North Carolina State University, Dr. JoAnne Crouch, USDA ARS, and Dr. Nina Shishkoff, USDA ARS
* Surveys of boxwood production in Oregon, Dr. Jerry Weiland, USDA ARS

It is important to remember, though, that the risk to boxwood does not rest solely in boxwood blight.

**New Action by APHIS**

Early this month, USDA APHIS issued a federal order amending entry requirements for *Buxus*, *Euonymus*, and *Ilex* entering the US from Canada due to the emerging risk of box tree moth. These plants, including propagative material, must now be accompanied by a phytosanitary certificate with an additional declaration certifying that the plants have been produced in an area recognized by Canadian Food Inspection Agency (CFIA) as free of box tree moth or the shipment has been inspected and declared free of this pest. APHIS has also made pheromone traps available to state departments of agriculture wishing to monitor for box tree moth in 2020.

**Box Tree Moth**

Box tree moth, *Cydalima* *perspectalis*, is the latest insect pest to trouble boxwood production. It is native to eastern Asia and has made its way to North America. A photo enthusiast in the Toronto, ON area first noticed in August 2018 what she thought was a melonworm moth in a pollinator garden. Upon closer inspection, she realized it was not a melonworm moth, and her entomologist friend (who happens to be the author of the Peterson Field Guide to Moths of Northeastern America) identified it as box tree moth. This was the first detection in North America. CFIA eventually confirmed the new invasive pest find and deployed traps and a management plan for 2019. Traps were placed throughout southern Ontario, targeting residential areas with boxwood. According to Jennifer Llewellyn with the Ontario Ministry of Agriculture, Food, and Rural Affairs, traps tested positive for box tree moth in over three hundred residences in the Toronto metropolitan area, mostly in the Etobicoke.

Folks in Ontario remain optimistic. Llewellyn commented, “In all of my 21 years as the provincial Nursery and Landscape Specialist in Ontario I have experienced the threat of various invasive pests. This is the first time that we have discovered an invasive pest where there was already an effective pheromone lure in place, effective biological insecticides and known life cycle and behavior information thanks to the amazing research efforts in Europe. For all these reasons, I am hopeful that through awareness, monitoring and education we have a good chance to manage box tree moth while supporting a thriving boxwood industry.”

As Llewellyn indicated, foundational research from Asia and the EU already exists to help us (in North America) get a jump on box tree moth so that we are prepared and ready for when it makes its way here. The EU first reported box tree moth in 2007 in Germany. It spread quickly from there – throughout all of the EU within ten years – primarily through the plant trade. Box tree moth can fly an estimated six to twelve miles per generation, with anywhere from two to five generations per year expected in the US. Only about two generations per year are observed in Ontario. However, movement of infested plant material by humans is the main form of spread.

Box tree moth overwinters as larvae that emerge when temperatures warm in the spring. Females lay about 400-800 eggs over her lifetime on leaf undersides, and the lifecycle from an egg to an adult takes about 45 days. Again, human-mediated movement is the likeliest way this pest is spread long distances. Host material includes Buxus, live or dead plants and greenery. Asian researchers have implicated Euonymus and Ilex as two other hosts; however, researchers in the EU have not confirmed this.

As in Ontario, many researchers from the EU are confident that box tree moth can be easily managed but scouting and identification will be key. Once infested, gardens have shown signs of remediation. We are fortunate in North America that native boxwood forests (which can harbor the insect) are nonexistent, and many commercial pesticides available here are likely effective at control. *Bacillus thuringiensis*, in particular, has shown strong efficacy, in addition to pyrethroids. Some systemic insecticides look to be good candidates as well, such as chlorantraniliprole; however, efficacy data may not be available yet. For more information on box tree moth, view an [informative webinar](https://www.youtube.com/watch?v=2Fmuk3HXF80) from the Ontario Ministry of Agriculture, Food, and Rural Affairs, featuring Jennifer Llewellyn.

HRI supports research directly related to boxwood health and leverages these funds to help protect the industry. We further support research funded through the USDA ARS’s Floriculture and Nursery research Initiative and USDA APHIS’s PPA7721 (formerly Section 10007). Directing needed research like the kind being conducted on boxwood health is a prime example of how HRI fulfills its mission to improve the productivity and profitability of the horticultural industry. To learn more about boxwood research results and to access to resources on boxwood health, visit [HRIresearch.org](http://www.hriresearch.org).

*The Horticultural Research Institute (HRI), founded in 1962, has provided more than $8 million in funds to research projects covering a broad range of production, environmental, and business issues important to the green industry. Nearly $14 million is committed to the endowment by individuals, corporations, and associations. For more information about HRI, its grant-funded research, or programming, visit www.hriresearch.org or contact Jennifer Gray at 614.884.1155.*

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