THE PURDUE
LANDSCAPE REPORT

Issue: 23-11
July 25, 2023

In This Issue

Boxwood Browning, Blights, and Cankers – 2023 Update

(Abrahamson Todd W, abraha15@purdue.edu)

In the last five years, we have received 233 samples from Indiana, alone, with concerns ranging from boxwood leafminer to Volutella dieback and cold damage (Figure 1, 2, 3). Often, we find multiple problems on any given sample, and very frequently we see *Volutella* in association with dark cankers of stems that appear to have had some amount of cold injury earlier in the season.

Year	Number of Boxwood Samples (In Indiana)
2019	72
2020	32
2021	39
2022	25
2023	65 – as of July 25th Expected to surpass 2019

Figure 1: Cold injury leading to individual and sections of branches of boxwoods dying back. Secondary infection by Volutella was confirmed by lab testing.

Figure 2: Tip damage due to cold temperatures

Figure 3: Bark Splitting and sloughing due to cold injury on the stem

In 2023, we are on our way to seeing a record number of boxwood samples in the months of June and July compared to recent years, with the primary diagnosis being Volutella canker (Figure 4) and cold damage (see https://www.purduelandscapereport.org/article/cold-injury-during-

a-very-mild-winter/). Joe Boggs has a great write-up of his observations, which mirror our own, for the state of boxwoods this year in the Ohio State University Buckeye Yard and Garden Line (https://bygl.osu.edu/index.php/node/2198).

Figure 4: Individual boxwood branch showing symptoms of Volutella blight

Figure 5: Bare stems and stem dieback due to boxwood blight. Some leaf spots are present on the foliage, but there are a large number of stem lesions also visible on the plant.

We are also seeing an uptick in Colletotrichum Dieback samples, where symptoms of stem dieback look very similar to Volutella and winter injury. An important point to note is that with all of the issues mentioned above, the foliage is retained on the leaves for extended periods of time (but they do eventually fall off). Leaf spotting and leaf drop symptoms are more suggestive of boxwood blight (Figure 5). Many of the samples we have received were due to concerns about boxwood blight, caused by *Calonectria pseudonaviculata*, but there have only been two landscape cases of boxwood blight in the state.

This is encouraging, but we always recommend to evaluate any boxwood plants that you are intending to purchase for leaf spots, external stem lesions, and leaf drop. Along with our favorite mantras in the green industry, “Right Plant, Right Place,” comes “Start Clean, Stay Clean,” avoid purchasing any sickly plants, especially anything on the bargain or reduced-price shelves, since you do not want to bring anything unwanted home.

If you are concerned about leaf drop and suspect you may have boxwood blight, or have stem dieback issues in boxwood, and want help determining the cause of the problem, we recommend submitting a sample to the diagnostic lab. Please see our website below, or reach out via email:

PPDL-samples@purdue.edu

https://ag.purdue.edu/department/btny/ppdl/

Selected References

Colletotrichum dieback
https://www.ncipmc.org/communications/pest-alerts/boxwood-dieback/

https://www.purduelandscapereport.org/article/other-boxwood-issues/

Boxwood Blight
https://www.purduelandscapereport.org/article/boxwood-blight-be-on-the-look-out/

https://purdueplantdoctor.com/factsheet/tree-404

Volutella Canker/Blight
https://purdueplantdoctor.com/factsheet/tree-91

https://www.purduelandscapereport.org/article/volutella-blight-and-dieback-of-boxwood/

Chainsaw Safety, PPE

(Ben McCallister, bmccalli@purdue.edu)

I have lost count of the number of times I’ve witnessed people working with chainsaws in shorts, a tank top, and flip flops with maybe a pair of earbuds, and it makes me cringe every time. According to the CDC, over 36,000 chainsaw-related injuries a year are reported with annual medical costs of more than $350 million (Johnson, 2023). Wearing the proper personal protective equipment (PPE) can help prevent accidents and injuries (Fig. 1). PPE is there to protect you from head to toe and if you are investing in a chainsaw, it doesn’t take much more to invest in the proper PPE. Including a work shirt and pants, if you’re using a chainsaw you should wear protection for your head, eyes and ears, hands, legs, and feet, most of which can be found at your local hardware store or home center.

Protecting your head means using a helmet, not a baseball cap or bandanna. Depending on the type of work you're doing there is a risk of being struck by wood or branches or if kickback occurs, sending the chainsaw back towards your head. Safety glasses will help keep sawdust and other debris out of your eyes and should be stamped with Z87.1, showing they conform to ANSI safety regulations. Normal glasses and sunglasses are not rated for being struck and can shatter, sending broken lenses into your eyes. Ear protection can be in the form of plugs or muffs and should be rated to reduce noise to appropriate levels when worn properly.

Most modern chainsaws have built-in anti vibration technology to reduce fatigue, but having a nice pair of work gloves will still help to protect your hands and grip. Gloves will help protect against debris and are also good to wear for chainsaw maintenance. Although not about PPE, another note on protecting your hands when operating a chainsaw includes the proper use of the chain brake. Injuries can occur on the right hand because operators will remove it from the back handle to activate the chain brake with the palm of their hand and miss it, putting their hand on the still moving chain. Injuries on either hand can happen when one handing a saw while using your other hand to brace or manage what you are cutting and losing control. The chain brake is designed to be engaged by popping your left wrist forward while maintaining a grip with both hands on the handles.

To protect your legs some form of chaps or chap pants are needed. Prices can range from around $40 for a pair of wrap-chaps that can be worn over your work pants up to around $400 for a high-end pair of chap pants that are a stand-alone work pant replacement. Whichever you choose to wear, the protection should be from the top of your thigh to the top of your foot and wrap around your calf. Care should be taken to keep them clean from gas and oil and if they are ever damaged by a chainsaw, chaps should be discarded and replaced. Once the protective material has been damaged the safety has been compromised. Chainsaw boots are also available to protect your lower legs and feet but are expensive and can be heavy. A sturdy work boot should be worn at the very least while staying alert to how close the chainsaw is coming to you. And please, no open-toed shoes.

Whatever the task, if you are going to do your own chainsaw work, then I implore you to wear your PPE from head to toe. I know it's hot and can get uncomfortable, but all it takes is one mistake to send you to the ER. If you feel the job is beyond your capabilities you can always contact an ISA certified arborist at Find an Arborist through the treesaregood.org website.

Works Cited

Johnson, R. (2023, July 19). *Chainsaw Accidents Injury Stats: How Dangerous Are Chainsaws?* Retrieved from Sawinery: https://www.sawinery.net/chainsaws-injury-stats/

Recognizing and Managing Poison Hemlock

(John Woodmansee, jwoodman@purdue.edu)

Poison hemlock was introduced to North America as a garden/ornamental plant. It is a native of Europe, and it is a member of the *Apiaceae* (parsley) family.

Purdue experts Bill Johnson and Marcelo Zimmer wrote about poison hemlock in a Purdue *Pest & Crop* newsletter.

They wrote that poison hemlock can be noticed very early in the spring every year, as it is typically one of the first weeds to green up, usually in late February to early March if temperatures are favorable. They said the largest threat of this weed is the toxicity of its alkaloids if ingested by livestock or humans, but it can also reduce the aesthetic value of landscapes and has been reported to creep into no-till corn and soybean fields as well.

Poison hemlock. Photo: Purdue University

Purdue Extension's fact sheet on poison hemlock states that it can also be found along roads, streams, trails, ditches, forest edges, and waste areas

(https://mdc.itap.purdue.edu/item.asp?Item_Number=FNR-437-W).

The Purdue experts said that poison hemlock is a biennial weed that exists as a low-growing herb in the first year, and bolts to three to eight feet tall in the second year, when it produces flowers and seed. It is often not noticed until the bolting and reproductive stages of the second year. Poison hemlock is often confused with wild carrot, but can be distinguished by its lack of hairs and purple blotches that occur on the stems.

The experts pointed out that poison hemlock contains five alkaloids that are toxic to humans and livestock, and it can be lethal if ingested. They warn that the plant's alkaloids may also be absorbed through the skin, so if you find yourself hand-pulling poison hemlock, it would be a good idea to wear gloves. All parts of the plants contain the toxic alkaloids with levels being variable throughout the year. Symptoms of toxicity include nervousness, trembling, and loss of coordination followed by depression, coma, and/or death. Initial symptoms will occur within a few hours of ingestion.

For history buffs, the Greek philosopher Socrates was sentenced to death by hemlock poisoning.

Cases of poisoning due to poison hemlock ingestion are rare as the plants emit a mousy odor that makes it undesirable and unpalatable to livestock and humans. Consumption and toxicity in animals usually occur in poorly managed or overgrazed pastures where animals are forced to graze poison hemlock because desirable forage is lacking.

The Purdue experts said control of poison hemlock with herbicides is most effective when applied to plants in the first year of growth, or prior to bolting and flowering in the second year. The closer to the reproductive stages, the less effective the herbicide.

"In roadside ditches, pastures, and waste areas, herbicides containing triclopyr (Remedy Ultra, Garlon, many others) or triclopyr plus 2,4-D (Crossbow, Crossroad) are most effective in controlling poison hemlock," they said. "Other herbicides that provide adequate control when applied at the proper timing are dicamba (Clarity, many others), metsulfuron-methyl (Escort XP), metsulfuron-methyl plus dicamba plus 2,4-D (Cimarron Max) and clopyralid plus 2,4-D (Curtail)." They caution users to pay attention to pre-plant intervals when these herbicides are used in the spring.

Find the above-referenced article at: https://extension.entm.purdue.edu/newsletters/pestandcrop/article/poison-hemlock-2/. Find Purdue Extension's factsheet on poison hemlock at https://www.extension.purdue.edu/extmedia/FNR/FNR-437-W.pdf, which contains more detailed management considerations. Additionally, refer to Purdue University Weed Science's "Guide to Toxic Plants in Forages," available online at Purdue Extension's *The Education Store*, at: www.edustore.purdue.edu.

Purdue Landscape Report © Purdue University - www.purduelandscapereport.org
Editor: Kyle Daniel | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907