Issue: 19-07
May 21, 2019

THE PURDUE LANDSCAPE REPORT

In This Issue

When you prune it, don't paint it!

(Lindsey Purcell, lapurcel@purdue.edu)

Tree wound dressings contain chemicals which inhibit the "healing" process.

Many times, when our trees are injured, such as during pruning, we want to help manage the wound to facilitate quick healing. Typically, this means the application of a tree wound dressing. How do you determine if you should apply a wound dressing and what type?

Tree wound dressings have been around for decades and was frequently used by arborists, fruit tree growers and tree owners. However, research has confidently proven that these chemical bandages are not good for your tree and will actually slow natural wound closure. Tree wound dressings do not prevent decay (Collins 1934, Marshall 1950, Shigo and Wilson 1977, Mercer 1979, 1982, Bonneman 1979, Dooley 1980), and are of limited benefit for wound closure (Neely 1970, McQuilkin 1950, Young and Tilford 1937). Many arborists have known this for a long time and have stopped using them, but there are still many of those who care for trees that are greatly uninformed and not current with best management practices.

Why are wound dressing not recommended? First, a lesson on tree biology and the tree recovery process. Trees isolate damage from an injury by forming wound wood in the damaged area, such as a pruning cut. This highly lignified tissue forms at the edge of the wound and gradually seals off the pruning cut or any other injury by forming a specialized wall around the wound to help reduce the spread of decay. This helps prevent wood damaging decay organisms from establishing itself in the tree leading to serious health issues.

Wound dressings, even if used for cosmetic reasons can prevent closure of pruning wounds.

Poor pruning practices cannot be remedied with any type of wound dressing.

So, although the seemingly legitimate advertisements on the wound dressing packaging make claims such as these:

“A clean, easy, simple way to aid in healing cuts and protecting tree wounds, pruned-edges and graft unions of roses, trees, and shrubs”

“Insure your trees, shrubs, and vines against decay, insects, and fungi in any kind of weather”

“An artificial bark for treatment of wounds…made of ALL NATURAL biodegradable materials”

Proper pruning cuts allow the tree to seal off the damage from decay-causing organisms.

The reality is these petroleum-based products do not inhibit decay but limit the oxidative processes necessary to seal the wound. It has been thought that a wound dressing can be used to prevent wood rot and the entrance of decay organisms.. Actually, tree wound dressings seal in moisture and decay which can make problems even worse.

There may be some benefit for wound treatment with certain diseases such as Oak Wilt with a pesticide application to the wound. However, if pruning is done to susceptible trees when they are in dormancy, the chance of infection is greatly reduced, and wound treatment is unnecessary and should be avoided. The best treatment for wounds especially from pruning, is a proper cut using the proper tools. If you are pruning trees prone to disease such as Fireblight, sterilize pruning tools to help reduce the spread to other plants. Help your tree heal from required pruning with good cuts and good choices. Avoid the application of wound dressings for faster recovery.

For more information on pruning, see Tree Pruning Essentials, FNR-506-W,

https://extension.purdue.edu/extmedia/FNR/FNR-506-W.pdf

Other Boxwood Issues

(Janna Beckerman, janna@purdue.edu)

Although most people are understandably concerned about boxwood blight, boxwood does suffer from a number of diseases, including Volutella blight and Macrophoma leaf spot. Unfortunately, boxwood also suffers from a stem decline, caused by *Colletotrichum theobromicola*. The following was written by Dr. Raj Singh, LSU.

Boxwood Stem Decline by **Dr. Raj Singh Available on line at:**
https://www.lsu.edu/agriculture/plant/files/PPCPNewsletter_January2015.pdf and

https://apsjournals.apsnet.org/doi/10.1094/PDIS-09-14-094

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Boxwood (*Buxus* sp.) is an important landscape shrub in Louisiana, the south and the nation. Several cultivars are commercially available, and its vibrant green color and evergreen growth make it a popular ornamental. Boxwoods are used as stand-alone specimens at the entrances to homes and businesses. They are also grown as low, clipped hedges around homes and commercial landscapes and have become the top choice ornamental for new developments across Louisiana.

In 2011, the Plant Diagnostic Center received diseased boxwoods from commercial and private landscapes that exhibited symptoms indicative of a well-known root rot disease of boxwood caused by *Phytophthora* species. Symptoms include random dieback of twigs with light tan colored foliage. Affected leaves do not defoliate and tend to stay attached to the branches. Root and crowns of affected plants look normal (Figure 1).

Figure 1: Boxwood infected with boxwood decline showing light tan foliage with normal root system (inset: bright black discoloration of stem under bark).

The infection also causes a bright black discoloration of the stem immediately under the bark (Figure 1). This bright, black discoloration extends all along the infected twigs and differs from discoloration of the crown region caused by Phytophthora root rot.

Several attempts to isolate or detect *Phytophthora* sp. from the roots and crowns of the infected plants failed. Symptomatic tissue taken from the transition zone of healthy and dead twigs was plated onto potato dextrose agar and resulted in consistent isolation of a *Colletotrichum* sp. (Figure 2.) The pathogenicity tests produced similar symptoms on artificially inoculated boxwoods after three months. After further evaluation, *Colletotrichum theobromicola* was confirmed as the causal agent of the boxwood decline by amplifying the internal transcribed spacer region.

Currently, boxwood decline has been confirmed from Alabama, Louisiana, North Carolina, South Carolina, and Virginia, and is suspected to be present in Indiana, Mississippi, New York and Tennessee. Because boxwood decline is a recently discovered disease, effective control measures and diagnostic tools have not yet been developed.

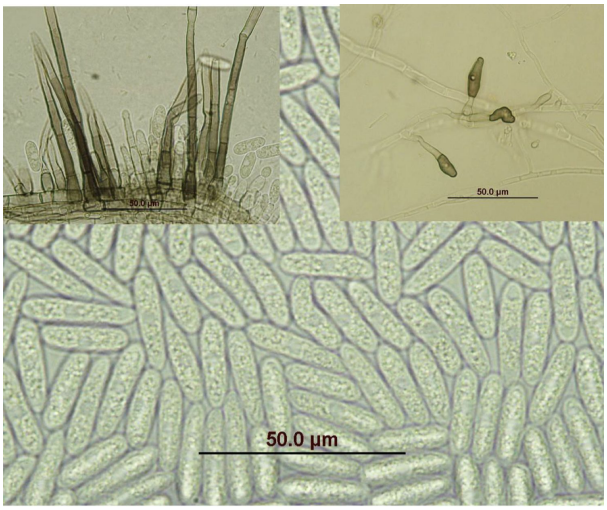

Figure 2: Conidia of Colletotrichum theobromicola (inset: setae and appresoria).

Due to slow disease development, it will take some time to determine which fungicides
are effective in managing decline. The timing of fungicide application also will be a crucial factor in disease management. In the meantime, landscapers, nursery producers and homeowners are recommended to follow good cultural practices and create an environment that will decrease
the spread and development of the disease. In landscapes where the disease is already present, surface disinfection of pruning and cutting tools is important to reduce the spread of the disease. Removing dead and dying twigs and avoiding unnecessary injury also is important to avoid infection.

It is too soon to determine the overall impact
of boxwood decline on boxwood industry in Louisiana and the nation. Boxwood is a specialty crop in Louisiana's nursery and landscape industry, and a very important woody ornamental. The total value of boxwood is not known in Louisiana, but according to the 2010 USDA National Agricultural Statistics Service the wholesale market value of boxwood was estimated at $103 million annually. According to 2013 Louisiana Agriculture Summary, there are 730 nursery operations in Louisiana producing a gross farm value estimated at $155 million. While some nurseries specialize only in boxwood, most of them are involved with boxwood as wholesale traders or retailers. The disease impact also extends to landscape architects who design landscape installation and maintenance companies.

Spotlight on Weeds: Purple deadnettle

(Aaron Patton), (Leslie Beck) & *(Kyle Daniel, daniel38@purdue.edu)*

Biology: Purple deadnettle (*Lamium purpureum*) is a common winter annual broadleaf weed found throughout the US. It is closely related to another winter annual broadleaf, henbit (*Lamium amplexicaule*). Both have vibrant purple flowers that can been seen now in lawns, landscapes, and fields. To see more about henbit, refer to this article from last spring: https://www.purduelandscapereport.org/article/spotlight-on-weeds-henbit-lamium-amplexicaule/

Figure 1. Purple deadnettle is a winter annual that flowers in early spring.

Identification: Purple deadnettle is a winter annual meaning that it germinates in the fall, survives the winter as a small seedling, until spring when it flowers, develops seeds, and then dies when temperatures rise in late spring and early summer. Purple deadnettle blooms are mainly visible in April although you can find it blooming earlier and later depending on the area it is growing and the temperatures. Purple deadnettle is a member of the mint family and has a characteristic square stem. Purple deadnettle flowers are light purple in color and are small and tubular in shape. Purple deadnettle leaves are triangular in shape with shallow lobes. Typically, the upper leaves are more purple-red in color than the lower leaves.


Figure 2. Purple deadnettle is in the mint family, thus has square stems.

Cultural control: Purple deadnettle mainly occurs in soils that are disturbed during the fall when it germinates. If you only have a few purple deadnettle plants, you can usually pull them by hand.

Biological control: Some organic herbicides are available. Among the postemergence organic herbicides, the most common are pelargonic acid (Scythe) and acetic acid (5 percent or greater solutions). Other products that contain medium-length fatty acids and clove oil (eugenol) show some promise; however, these organic postemergence herbicides are nonselective and can

injure actively growing desirable plants in the lawn and landscape, so their use should be limited to direct spot treatments. The bottom line is that most organic postemergence herbicides have limited use in turf and are better suited to weed control in parking lots, fence rows, and other bare ground applications. Many new organic products contain the active ingredient iron HEDTA (FeHEDTA). Multiple applications of this product are required for control. FeHEDTA containing products injure plants less (can actually make them darker green), but their efficacy for weed control is yet to be well documented.

Chemical control: Purple deadnettle can be controlled using preemergence or postemergence products. Though a preemergence herbicide program should be your primary chemical control strategy, there are control options for common chickweed that include both pre- and postemergence options. Preemergence herbicides such as Gallery 75 (isoxaben), Pendulum (pendimethalin), Barricade (prodiamine), Sureguard/Broadstar (flumioxazin), Snapshot (trifluralin and isoxaben), and Dimension (dithiopyr) Postemergence control can be achieved with repeat applications of glyphosate and glufosinate.

Figure 3. A patch of purple deadnettle with the characteristic purplish new growth near the flowers.

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