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THE PURDUE LANDSCAPE REPORT

In This Issue

PPDL Case Studies

(Tom Creswell, creswell@purdue.edu)

Purdue's Plant and Pest Diagnostic Lab (PPDL) receives more than 2000 samples for diagnosis each year. We'll highlight some of the more interesting cases in the Purdue Landscape Report in brief case studies like this.

PPDL Case Study #1: White Fungi on Crabapple Branch

Earlier this year a landscaper submitted several photos of a crabapple he had been treating for apple scab and borers. He noticed white, fan-shaped fungi growing on the bark of a still-living branch (Fig. 1). At first glance this is surprising because most fungal fruiting bodies arise from dead wood. After obtaining additional photos showing the fungus close up (Fig. 2) we could identify it as *Schizophyllum commune,* which is reported to occur on hundreds of species of trees and is one of the most common fungi found on wood.

Figure 1. – Crabapple trunk showing white fungal fruiting bodies of Schizophyllum commune.

Figure 2. Close view of Schizophyllum commune on crabapple trunk showing 'toothed' edges of the fruiting bodies.

S. commune is a sap rot (a.k.a. canker-rot) fungus; a wound invader that spreads from an initial infection point to colonize tissue around the wound, eventually killing additional sapwood and bark. The rate of spread is linked to the extent of the wounding and overall tree vigor; as influenced by stress factors such as drought stress, defoliation from insects or disease; or root problems. In this case the crabapple was weakened by repeated defoliation due to apple scab and attack by borers. The branch

will gradually die if the fungus spreads to kill the vascular tissue around the branch but it may survive for several years.

Affected wood should be removed before the fungus spreads to larger branches and the main trunk. Rapid loss of branch strength is another reason for removal of infected branches, especially on large branches that may be a hazard if they fall. While all fungal decay weakens tree branches, the sap rot fungi do so more rapidly because they attack from the outside in. This causes more decay of wood area (as viewed in cross section) and loss of strength than a heart rot fungus working in the middle of a branch or trunk.

Fig. 3. Irpex lacteus fruiting structures. (Richard Gardner, UMES, Bugwood.org)

Prevention and Treatment: Prevention depends on maintaining tree vigor and avoiding wounds. Since the fungus is inside the wood there are no effective fungicide treatments.

Might be confused with: At a distance, the fruiting bodies of *Schizophyllum commune* are similar to other fungi that produce numerous small, white fruiting structures on the wood surface, such as *Irpex lacteus* (Fig. 3) or *Sarcodontia pachyodon*. On closer examination, the toothed margin of the fan structure distinguishes it from other similar fungi.

Spotlight on Weeds: Dandelion

(Kyle Daniel, daniel38@purdue.edu)

Dandelion (*Taraxacum officinale*)

Figure 1. Dandelion with flower and lobed leaves.

Figure 2. Dandelion seedling.

Figure 3. Dandelion flower and leaves.

Family: Asteraceae

Life cycle: Perennial

Reproduces: Seed

Flowers: 1-2” diameter yellow disk and ray flowers on long stalk.

Leaves: Simple, lobed (variable), wavy margins (variable), 3-10” long originating from a basal rosette

Seedlings: Dicotyledon that is smooth, yellow-green and lack hairs.

Comments: A very prominent tap root that can vegetatively propagate. The flower stalk originates from the basal rosette.

Cultural and Mechanical Control:

- Cultivation (if practical)

Chemical Control:

Preemergence:

- Dichlobenil (Casoron)
- Isoxaben (Gallery)
- Indaziflam (Marengo/Specticle)
- Oxyfluorfen and pendimethalin (OH2)
- Oxyfluorfen and oryzaline (Rout)
- Trifluralin and isoxaben (Showcase and Snapshot)
- Flumioxazin (Sureguard/Broadstar)

Postemergence:

- Glyphosate (many trade names)
- Bentazon (Basagran T/O)
- Sulfosulfuron (Certainty)
- Glufosinate (Finale)
- Clopyralid (Lontrel)

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process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not constitute an endorsement, recommendation, or certification of any kind by Purdue University. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer. Always refer to the label prior to making any pesticide application.

Winter Injury Could Cause a Reduction of Flowering on Perennial Trees and Shrubs

(Kyle Daniel, daniel38@purdue.edu) & *(Rosie Lerner, rosie@purdue.edu)*

Winter of 2017-18 was pretty harsh compared to most years. Much of central and northern Indiana experienced 13 or more days well below 0º F, while southern Indiana had 4- 5 days just a few degrees below 0º F. In addition, gusty winds contributed to further injury by desiccation of buds and twigs.

The consequences still remain to be seen. While some spring flowering trees and shrubs may perform admirably this season, some species will have few or no blooms at all, particularly in the northern half of the state. In addition, some plants may be late to leaf out leaving us concerned that they died overwinter.

Some shrubs such as forsythia may flower only on the lower branches, where snow cover and leaf litter provided good insulation (Fig. 1). But for many specimens, there may be no flowers at all. A recent check of buds on forsythia plants on the Purdue West Lafayette campus revealed significant flower bud damage, evidenced by a brown center in the bud (Fig. 2).

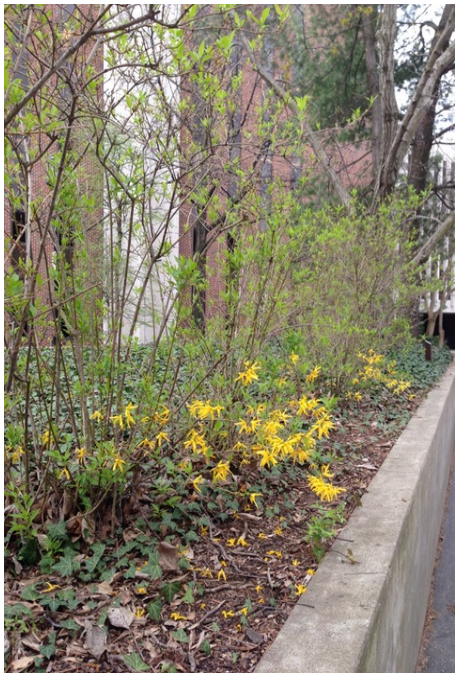

Figure 1. Forsythia blooms survived only on lower branches. Photo: Rosie Lerner, Purdue Extension

Figure 2. Brown center of forsythia bud indicating cold injury. Photo: Bruce Bordelon, Purdue Extension

Many roses have experienced considerable dieback, some nearly to the ground (Fig. 3). Some of these roses will still be able to bloom on new twigs that develop later this spring. It is recommended to prune out the dead wood on the roses (Fig. 4).

Figure 3. Winter dieback on roses. Photo: Rosie Lerner, Purdue Extension

Figure 4. Prune to remove winter dieback on rose twigs. Photo: Rosie Lerner, Purdue Extension

For other plants such as magnolia and lilac, our bud checks look pretty good, but there's still more weather to get through before we know for sure (Fig. 5). Marginally cold hardy plants that have performed well the past several years may experience significant dieback due to the extreme low temperatures.

Figure 5. Magnolia bud immediately prior to bud break. Photo: Kyle Daniel, Purdue Extension

While it is still possible that these plants may continue to show effects of the harsh winter, most should recover and return to normal blooming next year – assuming reasonable weather. Some plants may break bud and show no symptoms of cold injury, but later will develop drought symptoms. When this occurs, it is usually indicative of root freezing injury.

We recommend conservative pruning to remove only dead branches and conserve as much foliage as possible, so that plants can maximize leaf area for photosynthesis to aid recovery. This can be performed after foliage bud break.

Being proactive, by informing your clients of this possibility, is advisable so that they aren't caught off-guard when some of their plantings don't bloom as normal.

If you suspect another problem to your plants, or to confirm cold injury, you can submit samples to the Purdue Plant and Pest Diagnostic Lab: https://ag.purdue.edu/btny/ppdl/Pages/default.aspx.

Avoid Pesticide Spills and Contamination by Properly Disposing of Old Containers of Unused Products

(Cliff Sadof, csadof@purdue.edu)

Spring is a good time to get rid of old containers of pesticide products.

As the month of March draws to a close, many home gardeners and green industry professionals are starting to prepare for the next growing season. While many concentrate on new planting ideas and gathering new supplies, it is important to use this time to think about what to do with some of the materials left over from previous gardening years. Although pots can be washed and sterilized, and soil and fertilizer can be used from year to year, some pesticides begin to lose their effectiveness after one or two seasons. This problem is can be made worse if products are kept in outdoor sheds that heat up in the summer and freeze in the winter.

Simply leaving the old containers of pesticides will not make the disposal problem go away. Older products can sometime rot the container and create an even larger mess when they spill into your storage area. DUMPING your concentrated pesticides in the soil, down the drain, or in the landfill during regular trash collection is both DANGEROUS TO THE ENVIRONMENT AND ILLEGAL.

So, now would be a good time to make some room in your storage area by collecting any pesticide that is more than two years old and taking them to your local solid waste management facility. Indiana is fortunate to have a statewide network of solid waste management districts.

The Indiana Department of Environmental Management maintains a directory of facilities that process the household wastes of residents in every county. https://www.in.gov/idem/recycle/files/hhw_collection_directory.pdf Although these facilities do not process business wastes free of charge, they can be a great resource for helping you find a facility to safely dispose of old pesticides.

The Office of the Indiana State Chemist participates an annual "Clean Sweep" program that provides guidance and resources about when and where to dispose of pesticides. http://www.oisc.purdue.edu/pesticide/clean_sweep.html

The following guidelines offered by Ed White of the Office of the Indiana State Chemist can help you avoid pesticide disposal problems in the first place:

- Only purchase as much product as you can reasonably use in one or two seasons
- Read the label carefully to determine how much pesticide product is required to treat your intended target area. There is no point in buying a GALLON jug of product if you only need TWO TABLESPOONFUL to treat the front and back of your property.
- Read carefully the STORAGE and DISPOSAL section of the label when you are done with the product for the season or want to get rid of EMPTY PESTICIDE CONTAINERS. Some products may specify KEEP FROM FREEZING on their labels. Such products don't store well in an unheated garage or shed. Once chilled or frozen, the active ingredient may fall out of solution and form a solid layer on the bottom of the container. After this happens, the solid layer of active ingredient usually WILL NOT go back into solution.
- Dry, granular formulations such as combination weed and feed products often do not "overwinter" well in a shed or garage. The products will often absorb moisture from the

atmosphere and set up into a hardened mass or lump that won't work in your lawn spreader next spring/summer. If you must store weed & feed products over winter, consider overpacking the original bag/package with a double layer of plastic trash bags to try to exclude moisture.

For more information on safe pesticide use for homeowners see the link to this bulletin.

https://ppp.purdue.edu/wp-content/uploads/2016/08/PPP-109.pdf

Now is the Time to Identify Callery Pear

(Kyle Daniel, daniel38@purdue.edu)

It's that time of the year. Starting in the southern portions of the state and gradually moving north, trees, shrubs, and flowers are beginning to break bud, showing the flowers that have been protected all winter long. One of the first trees that you will notice, increasingly out of place more each year, is callery pear. You probably know callery pear by their cultivar names, such as 'Bradford', 'Cleveland Select', 'Aristocrat', etc.

Figure 1. Callery pear close to bud break in West Lafayette, IN on March 26, 2018.

Figure 2. Callery pear fruit in late summer.

Bradford pear was a staple specimen in landscapes for decades. For many years the trees never produced fruit, but once other cultivars were introduced to the landscape, cross-pollination allowed fertilization to occur and fruit was thus produced. We will further examine the biology and history of how this occurred in a future article.

The current status and outlook of callery pear is not positive. This species has become highly invasive in many areas around the Midwest, escaping into woodlands and reclamation areas. One of the positive attributes in the landscape, adaptability in growing conditions (i.e. too wet or too dry soil conditions), is a major factor in the invasiveness of the callery pear. Also, the escaped plants tend to grow extremely fast and produce viable fruit at a very young age, which exacerbates the invasiveness of this species.

While driving along the highway, you'll be able to easily identify the callery pear in flower in the next couple of weeks. This white, flowering tree is unmistakable in early spring. Use this time of flowering to identify for eradication efforts this year on your and your client's properties.

Figure 3. Invasive calllery pear flowering in wild area.

Figure 4. Callery pear in flower in a landscape.

There are many alternative species that can be utilized in place of callery pear. Many of your clients may request callery pear in their landscapes. Educate your clients on the many problems with callery pear, including the life expectancy and invasive nature of this species.

Figure 5. Fruit set on callery pear. Photo: Rosie Lerner, Purdue Extension.

For alternative options to the callery pear, and other invasive ornamental plants, take a look at this bulletin from Purdue Extension:
https://www.extension.purdue.edu/extmedia/ID/ID-464-W.pdf

Purdue Extension information on the invasiveness of callery pear:
https://www.youtube.com/watch?v=yvnd13TJUJc

Indiana Invasive Species Council:
http://indianainvasivespecies.org/

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