

THE PURDUE LANDSCAPE REPORT

In This Issue

- [Online Learning Opportunity](#)
- [Oedema Is a Corky Quirk](#)
- [Cut Your Losses to Borers](#)
- [Weeping Cherry Problems 2020](#)

Online Learning Opportunity

(Kyle Daniel, daniel38@purdue.edu)

The Purdue Landscape Report Team is excited to offer you an online learning opportunity on Wednesday, August 19th at 12:00 pm (Eastern) via Zoom and Facebook Live. This is part of our on-going, biweekly series. The topics and speakers will vary each session, so check out the newsletter every two weeks to find out what follows the next day. You'll have two ways to attend each session, which you can find below. During each session you'll be able to interact with the speakers by asking questions to the speakers on Zoom and Facebook Live.

We look forward to continuing this series and hope you will join us Wednesday at noon!

We'll be presenting information on the following:

Tom Creswell will address late season leaf diseases

Rosie Lerner will be discussing the new Rainscaping Series

Kyle Daniel will give tips on alternative options for replacing glyphosate in your weed control program

Here is the link to participate via Zoom:

<https://purdue-edu.zoom.us/j/96123071072>

Here is the link to follow along on Facebook Live:

<https://www.facebook.com/PurdueLandscapeReport>

Oedema Is a Corky Quirk

(Rosie Lerner, rosie@purdue.edu), (John Bonkowski, jbonkows@purdue.edu) & (Tom Creswell, creswell@purdue.edu)

Plants that experience extremes in soil moisture may develop spots on their leaves, called "oedema" (also spelled "edema"). The spots may first appear as a blister or raised spot, particularly on the undersides of leaves, but may occur on the top side as well as on the stems. Eventually, the blister develops a rust-colored, cork-like scab.

Some species of plants are more susceptible to oedema and is most commonly seen in the greenhouse on ivy-leaf geraniums but

also on pansies, jade, and other thick-leaved plants. Oedema can also occur outdoors on landscape plants, notably English ivy, bayberry, hibiscus, yew, and boxwood.



Cactus



Myrica



Succulent



Ficus



Ivy-geranium



Jade

Oedema occurs when a plant takes up more water than it is losing water through transpiration. When plants have been subjected to overly dry conditions followed by abundant moisture, the plant cells take on too much water too rapidly, causing them to burst, which then dry out and create characteristic corky tissue. The blisters may also appear when soils are abundantly moist, coupled with cloudy, humid weather. Transpiration is slowed in high humidity.

Oedema spots do not spread and is not really considered harmful to the plant. But the resulting corky tissue will remain unsightly. On thinner leaved plants the dead tissue may dry and fall away leaving a "shot-hole" appearance. So while this may not cause significant damage to plant health, it could impact marketability of plants in the garden center or client satisfaction in the landscape.

Subsequent foliage should not be impacted as long as water relations improve. To prevent oedema from occurring, avoid extremes in watering practices. Consistent irrigation frequency and landscape mulch will help avoid extremes in the soil moisture supply.

Cut Your Losses to Borers

(Cliff Sadof, csadof@purdue.edu)

Healthy plantings of pines and spruces provide visual screens and lush backdrops that frame outdoor living spaces and provide refuges from the wind. Boring insects can destroy these living shelters by killing trees and turning them into brown skeletons of their former selves. Protect your trees by learning how to recognize early signs of decline to save trees while they are still healthy. Use proper planting and irrigation practices to help your trees thrive in summer and winter. Insecticides that target borers on their way in and out of the tree are tools of last resort.



Yellow leaves do not automatically mean your tree is dying.

It is normal for evergreen trees to lose older needles in the spring and fall. The yellow pine needles will be replaced by a healthy green canopy as the summer progresses.



Progressive discoloration of dying pine trees.

Progressive yellowing and browning is typical of pine trees declining due to borers. This photo provides a great visual example of how the problem can spread from sick to healthy trees. The tree on the left with brown needles is completely dead. The yellowing tree in the center is also dying and too late to save. The yellowing older needles on the tree to the right is a normal pattern of needle loss. Remove the declining two trees before borers start flying from the dying trees to protect the healthy tree on the right.



Pine shavings on a branch left from pine sawyer beetles are a sign that your tree may already be dead.

By the time fine wood shavings accumulate on branches and at the base of a tree, the tree can no longer be rescued. Insect borers have already eaten most of the living tissue beneath the

bark that moves water and nutrients throughout the tree. At this point, large sections of the bark can be separated from the trunk in sheets.



Bark removed from pine tree with shavings reveals grub of the pine sawyer beetle.

Dying pine trees harbor and nurture the grub stage of pine sawyer beetles, bark beetles and other borers. If dying infested trees are left standing in the landscape these insects will eventually spread to nearby pine trees and kill them. These borers are especially attracted to trees that did not get enough water in during drought periods.

How to manage borers?

Keep your plants irrigated during the season. This is especially important for new plantings that can become water stressed and attract borers. Be careful not to over water and make conditions favorable to prevent fungal root rots. An inch of rain per week is usually enough. Focus your irrigation efforts on the base of the trees to prevent foliar diseases. Providing adequate spacing between trees can also help reduce fungal leaf infections but don't expect any miracles with [Colorado blue spruce](#). These trees are too susceptible to disease to expect them to live long in Indiana.

When you remove dying pines and spruces to remove borers, be sure to dispose of the borer-infested wood as soon as possible. This means moving them far away from your property before borers emerge. Technically, you can burn, chip or bury the wood. Legally, however, there are local restrictions on burning and digging. Be sure to follow local ordinances. Call the local utility service (811) before you dig to avoid buried gas and other utility lines.

After you have removed the dying trees, treat the trunk of adjacent trees that are apparently healthy with an insecticide to kill borers as they fly in or out of tree trunks and limbs. Some of these trees may already have borers, in them, but too few to harm tree health. Proper timing of insecticide treatments in mid-April or late August can prevent additional injury and allow trees to recover. Several insecticides like permethrin are commonly

available. Soil applications of imidacloprid can also help.

For more information about particular borers and their control please see our bulletin on [Borers of pines and other needle bearing evergreens](#) For photos of the different kinds of borers their injury and control get the FREE Tree or Shrub doctor app at [PurduePlantDoctor.Com](#).

Weeping Cherry Problems 2020

(Tom Creswell, creswell@purdue.edu)

This spring the PPDL received several samples, calls and emails related to dying weeping cherry trees (Fig. 1, 2, 3). Reports of this phenomenon came from as far away as Missouri. Ornamental cherry trees (and related *Prunus spp.*) are susceptible to multiple problems, including southwest injury (Fig. 4) Botryosphaeria dieback/canker (Fig. 5), bacterial canker and borers that attack the main trunk (Fig. 6). However, the main cause for so many weeping cherry trees dying this spring seems to be linked to environmental conditions in 2019 and 2020.



Figure 1



Figure 2



Figure 3



Figure 4

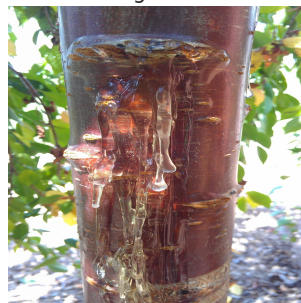


Figure 5



Figure 6

- Extreme weather patterns last year may have caused many trees to enter winter dormancy in a stressed state. In 2019 we had prolonged spring rains that caused soil saturation and root damage to many plants; followed by extended dry summer weather. Trees that had a reduced root capacity were unable to take up enough water and may have been especially stressed. See this article for further discussion:

<https://www.purduelandscapereport.org/article/feast-or-famine-landscape-plants-are-struggling-due-to-precipitation-extremes>

- Temperatures in northern Indiana in Fall 2019 were moderate, with day temperatures generally staying in the 40s or 50s until November 10-13, when we had sudden lows of 19F and 5F and highs of 19F and 29F. Several cities had a record lows during this period. This very rapid drop to temperatures, normally experienced in January or February, caused freeze damage to some trees that were not yet fully dormant.

- Then in spring 2020 we had late spring freezes/frost events that caused further damage to many trees and shrubs. Some shade trees were completely defoliated after having developed fully expanded buds or leaves. It took a long time for them to recover. It's likely that cherry trees were similarly affected. Although many trees recover well following frost events, those already under stress may struggle to push out a second set of leaves.

All these problems taken together likely made preexisting conditions like diseases or insect damage worse. Weakened trees never leafed out in the spring while others pushed out a flush of spring growth then suddenly died as the weather warmed. Keep in mind that when a weeping cherry dies it may produce side shoots from the main trunk. These will be of a standard cherry tree, not the weeping form and if allowed to grow they will

produce a lop-sided tree that will not look like the original.

It is not usually possible to determine the precise reasons why a tree has died but we can often identify disease and/or insect problems affecting living trees with a set of [good photos](#) of the tree submitted through our [online upload site](#), and the right kind of physical samples.

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