

THE PURDUE LANDSCAPE REPORT

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Purdue Landscape Report: Virtual Live

(Kyle Daniel, daniel38@purdue.edu)

Please join us Wednesday (September 16th) for our bi-weekly, live educational series. The event will take place at 12:00 pm (Eastern) on Zoom

at <https://purdue-edu.zoom.us/j/96190839031> or on

Facebook Live

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

The following speakers and topics will include:

- Costs of Applying Plant Growth Regulators (PGRs) for Shrub Maintenance-Ariana Torres
- Plant Selections You'll Live to Regret-Tom Creswell
- Manganese Deficiency in Maples*-Kyle Daniel

*If time permits

Tree wounds and healing

(Lindsey Purcell, lapurcel@purdue.edu)



Mechanical damage to trees and other wounding attracts insects and increases disease risk.

Trees are incredible survivors in spite of the challenges from pests of all kinds, including us! They are vulnerable to injuries such as mechanical wounds from lawn equipment, vehicles and ice. Pruning results in an intentional wound which is of importance

to consider. Tree owners and managers need to prune trees to maintain aesthetic characteristics, remove infected limbs, reduce risk, or improve structural stability. Proper pruning practice and understanding tree wounds can minimize the impact of creating wounds on trees.

Wounds attract pests due to the phytochemicals dispersed from exposed tissue. When tree tissue is damaged or wounded, the newly uncovered tissue is exposed and that is when to expect an attack. Insect pests are drawn to trees in distress, feeding on the tissue and weakening the tree. Diseases affecting trees will introduce enzymes into the cells, digesting living tissue responsible for food and water translocation (phloem and xylem) or structural support resulting in unhealthy, unsightly, or unsafe trees.

Wound wood Formation

Trees attempt to close wounds by sealing or compartmentalizing the affected area, naturally.



Pruning cuts will develop callus tissue on the exposed tissue giving rise to wound wood.



Tree trunk damaged by construction equipment developing wound wood around the edges to eventually seal the wound.

Wounding of trees during the growing season results in the formation of callus tissue which develops over the wound surface or parts of it. This callus tissue is an unorganized group of

important parenchyma cells. As the callus develops and grows, wound wood develops which hopefully will cover the exposed tissue quickly and efficiently.

Wound recovery rates vary widely for different tree species. The speed of recuperation is greatly affected by developmental environmental conditions, vigor and health of the tree. Some trees may never completely close their wounds due to their genetic capacity or perhaps inadequate resources to keep the tree vigorous. However, numerous studies reveal that faster wound closure results in fewer health issues for the tree. Quick healing is always better!

A healthy tree will seal wounds faster and the same for younger trees as well. Trees that are planted in well-drained, quality soils, with good texture, structure, and containing adequate nutrition levels, grow in a way that favors the healing process. Thus, when planting trees, homeowners should be aware of the effects of site selection, soil quality, and other site factors that may impact tree growth.



Complete wound closure improves tree health and slows decay.



Wound dressings slow closure and can prevent healing.

Faster closure

There are few ways wound closure can be hastened, or at least not inhibited. First, it is essential to avoid limiting oxygen availability to the wounded tissues. Oxygen is necessary for proper recovery. For example, painting a wound with any kind of material that interferes or impedes oxygen will slow or even prevent wound closure by poor callus formation. Wound treatment with petroleum-based products is not recommended. In fact, research indicates any type of wound dressing can slow the healing process. There is one exception for treating wounds. This is in areas where oak wilt disease occurs, wound paints may be useful in preventing insect spread of the oak wilt fungal pathogen.

Basically, the best way to help insure proper wound closure and quick and effective sealing of the tissue is a proper pruning cut and preventing damage whenever possible.

Find a professional

Be sure to always hire an insured, tree care professional, preferably and [ISA Certified Arborist](#) with the experience, expertise, and equipment to provide proper tree care. Require proof of liability insurance to protect yourself as well.

Another easy way to find a tree care service provider in your area is to use the "[Locate Your Local Tree Care Industry Association Member Companies](#)" program. For more information refer to the publication [Trees and Utilities at the Purdue Education Store](#).

Find an ISA Certified Arborist in your area by visiting the [Trees are good website](#).

Lawn Jelly? Star Jelly? Nostoc by any other name is just as slimy.

(Tom Creswell, creswell@purdue.edu)

This very slimy substance (Fig. 1) has many common names, was once classified as an algae but is now known as a Cyanobacterium. It is worse in areas that are frequently wet, such as low areas in lawns or on frequently irrigated golf courses (Fig. 2) or along walkways in nurseries where it can create a slipping hazard. However, it can show up in a wide range of locations, including on driveways and in parking lots. Nostoc will dry out during periods without rain, which can make it somewhat easier to scoop up and remove the blackened material (Fig 3).



Figure 1



Figure 2



Figure 3

Management:

- Improve drainage where practical.
- Avoid using too much fertilizer, especially phosphates, on lawns nearby. Phosphate fertilizers can increase the growth of the algae and Cyanobacteria. Do a soil test and apply only enough fertilizer to keep the lawn healthy.
- When Nostoc is dry pick up what you can, bag and dispose of it. (Raking may spread it further)
- When working around Nostoc take care to clean shoes and tools afterward to avoid moving it to new locations.

There are limited options for chemical control of Nostoc in turf and little research has been done on the topic. Homeowners can try Bayer Moss and Algae Killer, Safer Brand Moss and Algae Killer, and Garden Safe Moss and Algae Killer Concentrate (or

other similar products that contain potassium salts of fatty acids). Remove what you can first then treat when the area is moist and the green material is soft. Because Nostoc produces copious amounts of slime, it is difficult for treatments to penetrate into the living parts of the blobs and several repeat treatments may be needed. This type of treatment is usually only temporary. The best permanent solution is to reduce moisture and excess phosphorus that promote growth of this slimy mess.

For more photos and background information:

<https://bygl.osu.edu/node/1258>

For management in the nursery:

<https://pnwhandbooks.org/plantdisease/pathogen-articles/pathogens-common-many-plants/bacteria-other-prokaryotes/management>

and: <https://edis.ifas.ufl.edu/ag430>

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