

THE PURDUE LANDSCAPE REPORT

Tree wounds and healing

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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](#).

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