

Tree Response to Pruning Wounds
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Release: Week of March 21, 2022

We are in the season for shade and fruit tree pruning. Have you ever wondered what happens to a tree when it is wounded?

Pruning is wounding. And while some pruning has already been done, March and well into spring is considered the best time to prune. This is because a trees wound response is fastest at this time.

Pruning is often needed to remove dead or damaged branches in trees and to train young trees to develop good structure. However, have a specific goal in mind when pruning or avoid wounding the tree.

When wounded, trees create a protection zone to prevent decay from spreading. This zone is made up of four chemical barriers and wound wood. The four walls of defense within the tree help prevent decay from spreading vertically, towards the stems center, around the trunk, or outward into new wood.

Wound wood is callus tissue that forms to close the wound from the outside. It often looks like a donut as it forms. The zone of protection is referred to as compartmentalization of decay in trees or CODIT.

We can aid wound response by pruning during the correct season, not removing too much at one time, pruning proactively so large branches do not have to be removed creating large wounds, and making correct pruning cuts without using wound dressings.

Younger trees and healthy trees, as well as certain types of trees, respond better to wounds than older or stressed trees and certain species. And a trees response to wounding uses extra energy reserves.

For this reason, avoid pruning during stress periods such as drought or pest attack; and don't prune too much at one time, even on healthy trees. The rule of thumb is not to remove more than 25 percent at any one pruning.

Where the pruning cut is made on a branch is a major factor in how well the tree responds to wounding. The zone of protection is where a branch attaches to the trunk or another main lateral or scaffold branch.

At this point, there is a branch bark ridge and branch collar. The ridge is an area on top of the branch where it attaches to the trunk or main branch and it appears the bark has been pushed upward. The collar is beneath the branch at the point of attachment and appears as a slightly swollen area.

The branch bark ridge and collar are part of the trunk and at this location is the most efficient wound response. Whenever pruning, prune back to the ridge and collar but do not remove them. In other words, do not make a flush cut with the trunk and do not leave a branch stub.

Some types of trees are better at wound response than others. Examples include oak, elm, linden and hornbeams. When training these trees for structure as they grow, branches are best pruned when four inches or less in diameter.

Trees not as effective at wound response are more likely to have decay set in. Examples are maple, birch, poplar (cottonwood) and crabapple. Branches on these trees are best pruned when two inches or less in diameter when training for structure.

And know that wound dressings or tree paints interfere with a trees natural response. They reduce oxygen from reaching the wound and can hold moisture in the wound. Do not treat wounds with these products.

Prune at the best time of year, but not during stress periods. Prune at the correct location on the branch and don't remove too much at one time. If this is done, most healthy tree will seal wounds effectively.