University of Kentucky
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Extension Notes

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HORTICULTURE

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How To Handle Trees With Snow or Ice Loads

We're approaching that part of winter where we have a pretty decent chance of a snow/ice event in Pulaski Co. We always learn from these events, we even learn about trees. Let's go over some ways to help trees get through a snow/ice event.

Don't shake ice and snow off the branches. When tree or shrub branches bend over, resist the urge to go out and knock the ice or snow off. Woody plants can tolerate a certain amount of bending. Mother Nature seems to do a fair job of restoring the form for most trees suffering this type of stress.

When the ice first forms on the branches, the stems are not yet frozen. As temperatures drop after branches have bent over, the water in the xylem vessels freezes. Xylem, also known as "wood" is responsible for the upward conduction of water and mineral elements from the soil to the stems and leaves. If we remove the weight of ice quickly allowing the branch to spring back up, ice inside the frozen xylem shatters, rupturing the cell walls.

Breakage of the xylem vessels is aggravated even more by the vigorous shaking needed to get the ice to fall off. While the plant may spring back into a more upright habit, the plant pays the price in the hot, dry summer months that follow. With many of the xylem vessels shattered, the plant is unable to move enough water from the roots to the foliage. Leaf scorch and twig death are the result.

However, in situations where a bent over stem is almost certain to break, it is better to damage some of the xylem rather than to allow the central leader of a tree to break. Damaged xylem would need to be dealt with later.

BETTER SOLUTION: If ice and snow removal is absolutely necessary it is always better to use cold water from a water hose to melt the ice than to shake the branch. In most situations, water from a hose is warm enough to melt some of the heavy load. Never use hot water because it will damage the plant you are trying to protect. Small shrubs often recover rapidly if broken branches are simply pruned to the ground and allowed to sprout back.

Dealing with damaged trees. What to do when trees are damaged depends on many factors. Tree failure in an ice storm can range from broken branches to broken trunks and uprooted trees. Some species break under ice loads more frequently than other species and the way a tree breaks varies with the type of tree. Once a tree has failed, it is more likely to fail again in the future.

If the tree has suffered extensive damage and presents a threat to a play area, home or driveway, it may be better to remove it now and avoid the potential for future problems. If only a side branch has broken it can generally be removed without increasing the risk of future failures. While a gap may remain, it is better to have a slightly defective tree than to be without any tree.

Anytime you have a tree removed, replace it with stronger-wooded species like oaks, ginkgo, bald cypress, Kentucky coffeetree, blackgum, or hemlock.

It is not feasible or desirable to remove every damaged tree. Tree owners need to be prepared to remove the most damaged trees that present the highest risk for causing future property damage and to provide mitigation for those that can be saved. Of those that receive restoration pruning, some will be destined for removal in the future as replacement trees reach sufficient size to function in the landscape. Advice from a professional arborist is valuable, but the ultimate decision to remove a tree must rest with the tree owner.

Tree species differ in their reaction to ice loads. River birches, silver maples, ornamental pears, white pines, willows and many other species suffer disproportionally more damage from an ice storm. These species grow rapidly, reproduce early and are relatively short lived. Other trees like the bur oak are long lived. They invest their energy reserves in slower growth that is more durable with reproduction starting at a later age.

Many of us want “instant” trees in the landscape, so we plant trees that grow rapidly, but are more vulnerable to breaking apart in an ice storm. Mother Nature is just showing us the error of our ways. We have planted our home landscapes and urban areas with too few species that grow too rapidly. Yes, river birch, pears, silver maple and willows are attractive, but, we certainly over use them.

If a tree must be removed or heavily pruned, remember that using a chainsaw is an extremely dangerous activity. Use caution. Or hire someone but only if they are insured.

For more information, call the Pulaski County Extension office at 679-6361 and request publications that will help you get started with seed starting and growing vegetables. Become a fan of Pulaski County Horticulture on Facebook and/or follow @hortagentbeth on Twitter or kyplants on Instagram. You can also watch videos on Pulaski County Horticulture YouTube channel.

River birch bending in the ice storm of 2009 (photo from http://www.wlky.com/weather/2009-ice-storm-anniversary/24145746)