

2009 12 09 Alamosa Trees

by Marilyn Loser

How trees survive winter and how you can help: Part 1

Trees and shrubs have a tough time in our Alamosa winters. Cold temperatures and wind are the two most obvious dangers. The daily temperature extremes ranging from warm, sunny afternoons to long, dark, below-zero nights also take their toll.

Fewer winter hours of sunlight prevent trees and shrubs from photosynthesizing as much as during the summer; hence, they are less able to make food. Of course, deciduous trees drop their leaves in winter, but evergreens don't. Cold temperatures prevent sap from circulating, slowing plant growth. And if the ground is frozen, it prevents the roots from taking in water. This doesn't sound too bad. If a tree could just shut down, become dormant like a hibernating bear, and wake up at just the right time in the spring, all would be well.

Unfortunately, trees can't amble off and find a cozy cave. They're stuck; branches open to whatever Mother Nature sends their way. Residential trees, often alone in the landscape, don't have the protection a forest tree typically enjoys.

As discussed in a previous column, trees prepare for winter by sending energy from the leaves to the roots, then dropping their leaves. Trees also form new buds, then stop or slow their growth. Some trees actually produce more sugar in their sap during the winter to prevent sap from freezing. We enjoy a distilled form of this antifreeze as maple syrup.

I used to think fertilizing my trees in the fall by spraying the leaves would give them winter nourishment. I cringe at my ignorance as I write this. What I was actually doing was stimulating leaf growth just when the tree was trying to slow it down.

Some people suggest using a fall fertilizer that helps the roots, which may not go dormant over the winter. Since roots are below ground and mostly in the top 18 inches of soil, they are more protected from the elements than the above-ground portion of trees.

You can do your part to help trees survive Alamosa winters. After leaf fall, ensure the soil within the tree's drip line is moist. Moist soil holds more heat than dry soil; frost penetration will be deeper and soil temperatures colder in sandy or dry soils. Especially around newly planted trees, ensure there are no cracks or holes in the back-filled soil. Any openings allow cold air to penetrate into the root zone. A 4-6 inch layer of mulch adds additional insulation, reduces water evaporation, and helps keep soil temperature more constant, reducing frost heaving and cracks caused by repeated soil freezing and thawing.

Bark can suffer frost cracking (or sun scald) when there are rapid fluctuations in temperature. This is characterized by elongated, sunken, dried, or cracked areas of dead bark, usually on the south or southwest side of a tree. Cambium is the layer of active cells between the inner bark and the wood of a tree. On cold winter days, the sun can heat up bark to the point where cambial activity is stimulated. When clouds or buildings block the warming sun, bark temperature drops rapidly, killing active tissues.

Young trees, newly planted trees, and thin-barked trees (cherry, crabapple, honey locust, linden, maple, mountain ash, and plum) are most susceptible to sun scald. Trees that have been pruned to raise the lower branches, or transplanted from a shady to a sunny location are also sensitive because the lower trunk is no longer shaded. Older trees are less subject to sun scald because the thicker bark can insulate dormant tissue from the sun's heat ensuring the tissue will remain dormant and cold hardy.

Sun scald can be prevented by wrapping the trunk with a commercial tree wrap, plastic tree guards, or any other light-colored material. The wrap will reflect the sun and keep the bark at a more constant temperature. Put the wrap on in the fall and remove it in the spring after the last frost.

The next column will continue this discussion. Visit us online at <http://www.alamosatrees.net> or at the new blog <http://www.alamosatrees.net/blog>

*“Thus having prepared their buds against a sure winter the wise trees stand sleeping in the cold.”*

In Winter Trees by William Carlos Williams