Trees That Thrive in the Valley Need Cold-hardiness PLUS

by Marilyn Loser

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Tree cold-hardiness is a relative term. While researching this column I turned up articles on cold-hardy palms and bananas. I mean really, can you imagine a palm tree in the center of Cole Park?

I consider my garden on the west side of Alamosa to be in United States Department of Agriculture hardiness zone 3 or 4 and the more sheltered downtown areas to be in zone 4. Hardiness zones are defined by climatic conditions, largely based on a plant's ability to withstand minimum zone temperatures. Zone 3 is listed as having minimums from -40 to -30 degrees F and zone 4 from -30 to -20 degrees F.

Also, it's important to realize that the San Luis Valley has longer periods of cold compared to other parts of Colorado. Alamosa, Monte Vista, and Center average about 96 frost-free days a year while Colorado Springs and Denver average about 153, according to the Western Regional Climate Center.

Cold hardiness is significant, but there's a lot more to it. A tree's ability to 1) endure extreme temperature fluctuations within a short time span [say from 1 to several days]; 2) withstand drying, winter winds; 3) thrive at 7,500+ foot altitudes; 4) tolerate drought; 5) and grow in low quality soil is also crucial.

1) Extreme temperature fluctuations: In the SLV, trees are usually dormant in January. However, during February and March we often have intermittent warm spells that can bring trees out of dormancy, encouraging their sap to run and buds to begin opening up.

If temperatures plunge to freezing and cells can't push the moisture out, they freeze and burst, damaging the tree. Buds may also freeze and never develop. I've especially noticed the damage to my forsythia the last few years as we've had frequent early warm spells

Rapidly growing trees have higher internal moisture content than slower-growing, more solid wood species. Therefore, they are usually the most severely injured in such freezes, according to Colorado State University Extension Service bulletin 7.220.

2) Drying, winter winds: Evergreens are especially prone to this assault. If the temperature is above freezing the tree needles try to carry out photosynthesis which releases moisture into our dry, windy atmosphere. The tree has no way to replenish the water supply from the frozen ground and dry air. Providing wind protection by screening or bundling small trees helps alleviate this problem.

Last winter was particularly dry in Alamosa. Usually, as the soil begins to thaw in the spring I find it moist about 5-6 inches down. Mine was bone dry in un-mulched areas to a depth of 12 inches. Mulching the area under deciduous tree crowns with 3-4 inches of bark mulch can help mitigate ground evaporation.

3) High altitudes: Some trees just don't do well at our elevation. Higher altitudes mean thinner air. Low air pressure affects human lungs; I certainly notice this when trying to scramble up a hill around here. Likewise, a tree's vascular system is less effective with less air pressure – some species are better adapted than others.

Altitude works in conjunction with other factors and it can be hard to find altitude ranges for North American Trees.

Also, maximum altitude recommendations may be misleading. For example, I visited one website that said Hackberries may grow "as high as 7,000 ft." Yet, Alamosa has several hardy specimens of these drought- and wind- tolerant trees that were planted in recent years.

4) Drought tolerance: Given Alamosa's water rate increase and climate change predictions of less precipitation in the southwest, this aspect is becoming increasingly important. "Drought tolerance" doesn't mean these trees never need to be watered. They certainly need regular water during the first few years to get established. Depending on planting location and precipitation, they may need auxiliary water every year.

5) Low quality soil: My yard ranges from sand to clay and originally had little organic matter mixed in. In fact, I used to refer to it as 'dirt', rather than 'soil'. Arborists do not suggest just adding good soil to the planting hole. Tree roots need to extend well beyond the hole (remember, healthy tree roots extend out at least as far as the edge of the canopy and are mostly in the top two feet of soil). Look for trees that tolerate Colorado's alkaline soil. In addition, consider amending the soil in the entire growing area by adding compost or other soil enhancers.

Talk to the informed folks at a Valley greenhouse, garden center, or nursery, to hear their recommendations. Each year they seem to add new species and varieties that they feel will thrive in our challenging environment. Visit AlamosaTrees.net for more info.

"To exist as a nation, to prosper as a state, and to live as a people, we must have trees." Theodore Roosevelt