

## Many area trees damaged by drought; solutions offered

Written by Linda Langelo, Golden Plains Area Extension

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Everywhere one looks in the Golden Plains area, as well as across the state of Colorado, there are species of evergreen trees where the entire tree is browning and losing needles or the tips are browning.

Austrian Pines and Colorado Blue Spruce trees seem to be most effected in the Golden Plains. Neither Austrian Pines nor Colorado Blue Spruce trees are native to the altitude of the plains. They have adapted to this environment up until this extreme drought.

The trees which have had no supplemental water during the winter or during the extended drought period last summer and fall have been the trees showing the symptoms of greatest stress. Many windbreaks have lost trees, again, especially the Austrian Pines and Colorado Blue Spruces.

According to Nebraska Extension, one year of drought causes three years of setback in the landscape. With the record heat from last summer and the sparse precipitation, it has resulted in weakening the plants in local landscapes and then predisposing them to environmental injury.

This spring the area is revisiting temperatures that have been equal to the 1950s. If trees have their buds swollen or have begun to emerge at this time, then freezing night temperatures with these spring snows will destroy the young growth.

Even more importantly, if a plant does not get an adequate moisture level, then there is a loss of photosynthesis, and in turn, food production for the plant to store in their root systems.

Remember, plants are the only living beings that make their own food. They have to have adequate proteins and enzymes in their root systems to intake water and nutrients. When plants lose the ability to do that, their health depends on the already stored food reserves. Eventually, the plants run out of energy, just as people do, because they have no more energy to uptake what they need.

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The results of freezing during this spring with lower-than-normal temperatures are becoming evident in more than just evergreens. The freezing temperatures can cause twig dieback and in deciduous trees can defoliate a tree and cause it to re-foliate.

On arborvitae, this causes a gold/brown color. In spruce trees, this can cause the needles to turn tan or brown and stay attached. If there is some flexibility with the branch that has the attached needles, then there is the opportunity for the tree's survival.

What is the answer for conserving water during drought and beyond? As trees die, people should plant more drought-tolerant species.

Some of these species are in the Plant Select® program. Plant Select® trees to consider are Russian Hawthorn, Seven-Son Flower and Clear Creek® Golden Yellowhorn.

A smaller tree that does well in the area is a Russian Hawthorn, *Crataegus ambigua*. This tree will stay in the height range of 12-24 feet with a width of 6-12 feet. It requires moderate to xeric water. It will grow in soils that have sand, clay or loam. This tree has an attractive bark, foliage and flowers. The fruit which is eaten by birds is a red fruit in the fall. The leaves have a golden color in fall.

The Seven-Son Flower, *Heptacodium miconioides* is another small tree with a height ranging from 12-20 feet with a width of 8-15 feet. The water requirement is moderate. The soil requirement is sandy or loam soil.

The best attraction for this tree is the fragrant white flowers that bloom late in summer and then the persistent cherry-red sepals in the fall. This is a fast-growing tree. This is an unusual member of the honeysuckle family which is very adaptable in a wide range of climates.

Lastly, another Plant Select® tree, Clear Creek® Golden Yellowhorn, *Xanthoceras sorbifolium* 'Psgan' will grow to a height of 18-22 feet and a width of 10-15 feet. The water requirement is moderate to xeric. The soil requirement is garden loam, clay or sandy soil. This has white flowers with yellow centers that turn maroon. The leaves are ferny. The tree/shrub develops into

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a vase-shaped habit. This is especially hardy. This strain was developed at Green Acres Nursery in Golden. This is a fast-growing tree.

What are some of the tips to help preserve the trees area residents do have? First, place the drip line at the end of the branches instead of keeping it up against the trunk of the tree as the tree matures. The trees have absorption roots out by the ends of the branches. Their function is to absorb water and nutrients. By placing the drip line up against the trunk, people are encouraging roots that will not serve much for absorption or for the best structural support.

Secondly, as trees die in windbreaks, think about removing them. Tree roots spread two to three times the height of the tree, and the closer together they are, the more they are in competition with each other. There has not been enough snow cover over the past two winters to provide adequate moisture to all the trees in the windbreaks.

Lastly, I recommend watching the weather pattern this summer and giving the trees supplemental water during an extended drought. The downside to this is that if everyone is doing this and irrigating their crops, this depletes the Ogallala Aquifer even faster. So I strongly recommend changing over to more drought-tolerant species when the opportunity presents itself.

For more information, visit [www.ext.colostate.edu](http://www.ext.colostate.edu) .

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