

# TEXAS A&M AGRI LIFE EXTENSION

**Wichita County  
Agriculture News**  
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Wichita County Extension Office  
600 Scott Ave, Suite 200  
Wichita Falls, TX 76301  
940-716-8610

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- *Articles on care of stressed trees*
- *Conserving water and tree care*
- *YouTube on watering tips*
- *YouTube on vertical mulching*



### Vertical Mulching of Trees

\*\*particular good in compacted soil  
\*\*can provide slow release nutrients

<https://www.youtube.com/watch?v=PALLOQVTRKg&list=PL88jbC2GiaFXllPnuQa1pHFN9x1aD6ln9&index=59>

### Tips on Watering Trees

#### **DO IT NOW**

\*\*find your screw driver

\*\*slow, deep soaking is best

<https://www.youtube.com/watch?v=bHsNwpPzK2U&list=UUKwh0XS1EhVYqxU>

Trees and shrubs have been dealing with some real challenges. There are some things included in this newsletter that will help improve tree health. Also, be watching for a follow-up newsletter on **pruning, tree selection and planting...BUT DON'T PLANT UNTIL THE FALL!**

A handwritten signature in black ink, appearing to read "David Gray".

### **I THINK BORERS ARE KILLING MY TREE**

Most trees usually die from a combination of different stresses. One of the biggest stresses in Texas is drought. When that happens, stress builds up and secondary pests or diseases can attack trees.

Secondary pests and diseases are those that attack a tree that is already stressed by something else, such as a drought or winter storm. Hypoxylon and most boring insects are considered secondary pests and diseases, with the exception of the emerald ash borer, which attacks both healthy and stressed ash trees.

**When a tree is already stressed ... insects and diseases will increase — not only during the time of drought, but for years after a drought or other large stressor event has ended.**



*Courtney Blevins, Texas A&M Forest Service urban forester*

The Rolling Plains is known for harsh environmental conditions. A few simple, but very important practices can improve the chances of your plants recovering, or extend the life of a healthy one.

### Mulching

- \*\*apply it 3-4 inches deep. More is not better.
- Hardwood mulch is recommended.
- \*\*apply mulch to the drip line or just beyond.
- \*\*do not place mulch against the trunk.

### Watering

- \*\*target the tiny feeder roots at the drip line.
- \*\*SLOW, DEEP SOAKING at the drip line is the best method. Use a soaker hose, or move the end of a water hose. It could take several hours, but the deeper the moisture goes, the less often you need to water.
- \*\*water trees until soil moisture is approximately 12 to 18 inches deep. Use a screwdriver or rod to see how deep it will penetrate. This indicates the depth of adequate soil moisture.
- \*\*over watering is as harmful as under watering.
- \*\*newly planted /young trees need to be checked weekly, especially if there is limited or no rainfall.
- \*\*check moisture inside the root ball, not just in the surrounding soil.
- \*\*mature trees don't usually need watering, except possibly during extended drought.
- \*\*irrigation bags often don't provide enough moisture to reach beyond the drip line

### Fertilization— Not recommended

- \*\*fertilizing increases stress on trees, as this signals the plant to grow at a time when heat and wind can be a problem and providing adequate water is difficult

### Borer Treatment

- \*\*treatment is not recommended as borers typically attack only unhealthy trees.
- \*\*if you treat, imidacloprid (active ingredient) is recommended each year about February.

### Pruning

- \*\*cut at the correct location of the branch for proper healing
- \*\*make 3 cuts on a large branch to prevent damage to the trunk
- \*\*pruning can be done any time of year except for oaks. DON'T prune them in February until June if there is a risk of oak wilt disease. Pruning paint is rarely needed, except for oak trees.

<https://agrilife.org/treecarekit/planting-tree-maintenance/how-to-prune-a-tree>

### Going Above and beyond

- \*\*vertical mulching can improve aeration. See <https://www.youtube.com/watch?v=PALLQQVTRKq>
- \*\*if you feel your tree may warrant injection treatments you need to find a certified arborist. You can find one at [www.treesaregood.org](http://www.treesaregood.org)



Dr. Kim D. Coder, The University of Georgia, 9/99

*Compiled from excerpts by Peggy Scarlot,  
Wichita County Master Gardener, Aug. 2018*



Summer has provided a number of hot and dry weeks for people and trees. The combination of drought and harsh site conditions provided in parking lots, along streets, on open squares, and surrounding pavement have led to a number of tree symptoms. The old term “heat stroke” fits trees where heat loads have been extreme and caused problems.

**Temperatures:** Trees have optimum growing conditions across the range of temperatures from 70oF to 85oF. Hot temperatures can injure and kill living tree systems. **A thermal death threshold is reached at approximately 115 degrees F.** Tree temperature usually runs just at or slightly above air temperature. Trees dissipate heat by long-wave radiation, convection of heat into the air, and transpiration (water loss from leaves). Transpiration is a major mechanism for dissipation of tree heat loads. Without transpirational cooling, more ineffective means are used to dissipate heat like heat radiation to surroundings and wind cooling. Trees can dissipate tremendous heat loads if allowed to function normally and with adequate soil moisture. Unfortunately, hot temperatures greatly increase dryness of the air which cause leaf stomates to close because of rapid water loss, and so can limit transpirational cooling. When transpiration is limited by hot temperatures and the tree is surrounded by non-evaporative surfaces (hard surfaces), leaf temperatures may rise above the thermal death threshold.

**Keeping Up:** Associated with rapid water loss and temperature increases in the leaves, is a delay or time lag in water absorption by the roots. **Leaves can lose water much faster than the roots can absorb water.** The difference between water loss from the tree and water gain through root absorption, can initiate many problems. The water shortages of the day are corrected as completely as soil water content allows by water uptake at night. Night uptake by roots can amount to 20-40% of tree water needs. Water shortages and heat buildup are especially critical in the leaves. Wilting is the first major symptom of water loss excesses and heat loading.

**Hot Air:** Wind also decreases the protective boundary layer resistance to water movement and can lead to quick dehydration

**Hot Water:** Water and temperature in trees are closely bound together in biological and physical processes. Water shortages and heat buildup are especially critical in the leaves. Wilting is the first major symptom of water loss excesses and heat loading.

**Hot Soil:** **In full sunlight, soils can reach 150oF.** Excessive heat loading causes large amounts of water to be transpired, and can generate heat lesions just above the ground / tree contact juncture (root collar -- stem base area). Heat lesions are usually first seen on the south / southwest side of stems. The more dysfunctional and disrupted growth functions become the easier it is to develop further stress problems.

**Additional Stress:** Nitrogen fertilizers can damage trees under large heat loads. Heat stress problems make trees more susceptible to pests and other environmental problems. Heat injury includes scorching of leaves and twigs, sunburn on branches and stems, leaf senescence and abscission, acute leaf death, and shoot and root growth inhibition. Loss of defensive capabilities and food supplies allow some minor pests to effectively attack trees.

**Treatments for heat stroke in trees include:**

- A) Reflection and dissipation of radiative heat using colorants and surface treatments around landscapes and on trees;
- B) Block or channel advected heat away from trees and soils;
- C) **Utilize well-designed and constructed active shade structures in the landscape (e.g. arbors and trellises)**
- D) Use of low-density, organic, surface covers, mulches or composted materials which minimize water loss
- E) Cessation of any nitrogen fertilizer applications in or around trees
- F) Prevent or minimize any soil additions which increase salt index
- G) Be cautious of pesticides
- H) Minimize green-wood pruning
- I) Establish better tree-literate design and maintenance practices which deal with heat problems and monitor other stresses. **(treat causes not symptoms!).**

## CONSERVE WATER WHILE HELPING YOUR TREE

APPLY 3-4 INCHES OF MULCH. **Un-mulched soil may lose twice as much water to evaporation as mulched soil.**

DON'T IRRIGATE LAWNS DURING THE DAY. Daytime sprinkler irrigation can require 30 percent more water than night irrigation.

USE SOAKER HOSES IF POSSIBLE. Sprinklers can account for a 50 percent or greater loss of water in a desert climate.

MEET THE PLANT WATER NEEDS. **Applying only half of the water needs of a plant only penetrates the top half of the root zone.** Use a screwdriver or rod to check the depth of moist soil.

FOOD FOR THOUGHT.

Two year old pecan trees may need 54 gal/wk

4-7 year old pecan trees may need 224 gal/tree/wk

**A mature pecan tree may need 1000-1400 gal/wk .**

<https://aggie-horticulture.tamu.edu/earthkind/drought/efficient-use-of-water-in-the-garden-and-landscape/>



*clip art*



## TIPS ON REDUCING FIRE RISK FOR YOU

<https://texaswildfirerisk.com/>

\*\*Improve your home's chance of surviving a wildfire event.

\*\*Learn how to make your home more fire resistant with home hardening techniques.

\*\*Fire resilient landscaping

## THANK YOU FIRE FIGHTERS!

Be sure to thank a fire fighter. Our municipal and especially volunteer departments have been challenged all spring and summer and they have saved thousands of acres and untold numbers of houses from fire. And it appears they are facing many more days of fire risk.

*The Texas A&M AgriLife Extension Service provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation, or gender identity.*