

Bell County Master Gardeners  
Tip of the Week  
By Gary Slanga  
“How Do Trees Handle Drought?”

There have been many questions about how this drought is affecting trees. We see many trees with leaves that have started turning brown much earlier than is normal. The question that I hear the most is, “Are my trees going to die?” That is not an easy question to answer. So let’s talk about how a tree deals with a drought.

The one element most important for tree life and health is water. During a drought, hardwood trees display many symptoms and have priorities for dealing with this lack of water. The first sign of stress from lack of water is wilting. This can be temporary, where the tree recovers over night and looks normal in the morning, or permanent, where the tree recovers only if water is added to the soil. Prolonged permanent wilting can, in extreme cases, kill a tree.

Other signs of water stress are curling leaves, which is an attempt by the tree to reduce water loss through evaporation at the leaf surface. Evaporation increases as temperature increases, so our 84 days of temperatures over 100 °F did not help the situation. At the same time the pores (stomata) that allow water to escape through the leaf are closed. If the pores are closed, carbon dioxide cannot get in and photosynthesis stops. The tree stops growing. Over a prolonged period this will kill a tree.

In technical terms a tree handles a lack of water in this order: awareness of a lack of water at the root zone, adjusting water flow through vascular tissue, closing leaf pores (stomata), producing more root tissue that can absorb water, using stored food while current food production stops, isolating damaged root areas, and finally dropping foliage.

Some trees will hold their brown leaves during the dry period. In these trees, water is necessary to initiate the leaf shedding procedure. So after receiving some water it will shed its leaves. You can see where this might cause concern for a tree owner who thought watering would help his tree (and it will) only to see it lose all its brown leaves thereafter. The topic will be discussed further in a following article.

Have any questions about gardening in Central Texas? Contact [ask.bcmga@gmail.com](mailto:ask.bcmga@gmail.com)