



TREE NEWS

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YOU CAN USE

CONTRIBUTING AUTHORS

DROUGHT STRESS IN LANDSCAPE TREES

Well, summer is upon us... high temperatures along with high humidity levels can leave us feeling as though this time of year is unbearable. Fortunately for us, we can get up, go inside, grab a drink, and cool off in conditioned air. The same cannot be said for our landscape plants.

Since plants lack the ability to move to optimal climatic conditions, it is imperative that we understand how heat, humidity, and drought stress can affect our woody shrubs and trees. Keeping an eye on local weather patterns can go a long way in helping us to understand and reduce drought stress (and subsequent plant loss). Here in Knoxville, recently, we have had adequate rainfall, but it has seemingly been a “feast or famine” year. Early spring (January, February, and March) brought adequate rainfall amounts; however, April lacked our minimal goal of 1” of rainfall per week (only 2.81” total for the entire month); by May we continued this trend (only 2.85” total for the entire month); and it was not until June that we got back into an adequate rainfall range (5.65” total for the entire month). Certainly, we can’t say there hasn’t been adequate rainfall thus far this year, but the consistency of rainfall can sometimes fail to fulfill our landscape plants’ needs.

Since a plant’s water needs will vary by species, unfortunately, there is no single blanket answer to cover a question we are often asked... “How much should I water my trees”? Further complicating matters is that as our plants mature, their evapotranspiration rates also increase—particularly when the weather is sunny, hot, and windy. These combined environmental factors can culminate in the desiccation of plant material, subsequent wilt, plant stress, and eventual loss of the plant if not corrected. Instead, the best response to this question is to simply feel the soil down at a depth of 6-9”. Look for adequate moisture, but not excessive water accumulation in this area. If the soil is cool and moist, you can skip watering; if dry, it is probably time to add water!

Drought stress in plants can manifest itself in many ways:

- Wilting of the entire plant
- Leaf scorch (e.g., leaf margins, leaf tips, or leaf interiors begin to discolor—turning yellow or brown after prolonged periods of drought)
- Defoliation
- Cracking of soils within the root zone
- Canker development and/or flagging of limbs

To summarize, observe your plants daily during our hottest summer months. By matching plant species to their site and maintaining high levels of cultural competency (e.g., planting properly, utilizing organic mulches, pruning correctly, managing insect pests, and supplementally watering when needed), we allow our plants a better opportunity to not only survive periods of prolonged drought but thrive through them!



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