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## **Heat and Drought**

How are you holding up to the heat? Think about that question and how much water you have been drinking to keep yourself hydrated. The human body is composed of between 60 and 70% water, depending on the age. Now compare that to some plant species which may hold between 70 and 95% water.

In the past few weeks the above normal temperatures have compounded issues in plants that were already present do to a lack of water. When water is scarce, providing water to plants can correct the issue. When excessive temperatures are added, then watering may not provide quick results. The plant problems caused by heat compound each day as high temperatures persist.

Plants will respond to excessive heat by sacrificing leaves. Leaf scorch, leaf drop and plant dieback are natural responses to severe weather conditions. In each case the most expendable part of the tree is being sacrificed as recourse to save the tree.

As leaf tissue disappears, there is nothing left to photosynthesize (produce food). For annual plants this will be the end of the line. For perennial plants it is hard to say what will happen. Thin leaved trees that lack drought tolerance such as birch, dogwood, maples, willows and star magnolia are losing or have lost their thin leaves already. Because leaves are being lost in July instead of September, the plants may not have enough stored energy to come back in spring.

A healthy, well established plant has 50 to 80% of its mass below ground. As the ground heats up and becomes hard and cracked, this below ground mass can be damaged as well. During extreme weather, when the leaves are brown, don't forget that the roots are still alive and need water. Irrigation is important. When watering smaller plants or large trees remember to concentrate on the drip line (the area where rain water runs off the above leaf canopy). Irrigating for long periods of time allows water to penetrate deeply into the soil. If the soil is too hard then water will run off the soil as irrigation starts. If this occurs water in short bursts until the soil begins to absorb the irrigation and then water deeply. A 50 foot soaker hose for 20 minutes on most domestic water supplies will provide 2 inches of water.

If water consumption is a concern then concentrate irrigation on plants that provide the most benefit in the landscape instead of watering every plant. You may want to consider that a tree provides shade to a house and yard, filters water runoff, reduces soil erosion, reduces the electric bill in the summer by helping to cool a house, reduces the heat bill in winter by providing a wind break and improves air quality. An oak tree with a trunk diameter of 10 inches provides \$74 dollars in savings every year. As the tree grows the money saved each year will increase. Spending a little money now on water may pay back as soon as this winter by saving money in other areas.

Protect perennial plants if possible and reap the benefit in years to come. Check out the National Tree Benefit Calculator for savings on other trees. <http://www.treebenefits.com/calculator/>

Sources for this article: Cerny, T et al., Efficient Irrigation of Trees and Shrubs. Publication HG-523. Utah State University Extension. June 2002; Powell, M. A. Drought-Tolerant Plants for North Carolina Landscapes. AG 508-3. North Carolina Cooperative Extension Service. March 1996.

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