



Drought Stress



This spring (1999) is the third consecutive season that Frederick County has experienced a drought. Most people are not aware of how dry things are because the night time temperatures are comfortably cool during spring and fall. I am very surprised to be writing about drought once again, but it is very dry and the time to water is now.

Prolonged drought stress predisposes plants to pest problems. A plant under drought stress is in a weakened state and its defenses are low. Insects and diseases take advantage of the situation and add to the plants' stress. The result is often observed the following season with pest damage that seemed to appear overnight when in reality the problem started the previous season during or following the drought. The solution is to avoid prolonged drought conditions through watering.

Identifying drought conditions is not always easy. Outward signs on deep rooted plants typically are not obvious. Many variables play a part in reaching drought conditions.

These include:

- lack of natural rainfall
- soil type
- air temperature & humidity
- wind conditions
- sun exposure
- plant type

Trees can obtain water longer during drought conditions than shallower rooted shrubs and flowers. To simplify things remember that lawns require the most water in a landscape. Annual and perennial flowers planted in full sun are next, shrubs follow, and trees are the least needy. Drought injury in trees will start in the uppermost branches first and work its way down if drought conditions persist. In trees especially, symptoms will not appear for 6 to 9 months after the drought was experienced.

When temperatures soar and natural rainfall diminishes begin to observe your landscape often or daily for drought stress. Find a plant to use as an indicator. Lawn areas in the sun next to walks and driveways show signs of heat stress early. Certain annual flowers planted in full sun (impatiens, begonias) are also good indicators of drought. When the indicator plants show signs of drought apply water to relieve them and pay attention to the results. Indicator plants require water more frequently than the rest of the landscape. Plan on watering the entire landscape within a few days.

The following tips will help conserve water as you irrigate to avoid drought stress:

Mow lawns higher during the hot summer months, a height of 2½ - 3" is best.

Control weeds, they compete with the desirable plants for water.

Maintain 2 - 3" of mulch in flower beds to reduce evaporation; cool soil; and control weeds.

Water infrequently, slowly and deeper. Frequent light watering encourages shallow root growth and weeds. Water for a longer duration less often.

Water in the morning, before 11:00 a.m.. As much as 40% of the irrigation water can be lost to evaporation during the heat of the day. Watering in the late day and night promotes fungal diseases.

Direct water to the plants. Avoid overspraying sidewalks, driveways and streets.

Repair leaks. Leaking hoses and irrigation pipes waste water by not applying it to the needed area.

Through identifying drought stress and observing the results of watering you will get a "feel" for the particular needs of your landscape. The constant observation can also alert you to developing pest problems *before* they become very damaging. When the high temperatures and lack of rainfall persist for more than a week, you will see drought stress if you look for it.

For more information about horticulture or the Master Gardener Program in Frederick County, call the Frederick County Office of the Maryland Cooperative Extension, 301- 600-1596, or visit <http://www.frederick.umd.edu/>. Our mission is to educate Maryland residents about safe, effective and sustainable horticultural practices that build healthy gardens, landscapes and communities.