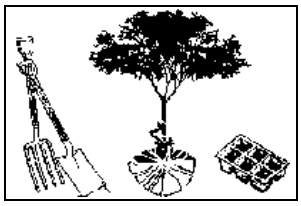
UMASS EXTENSION

Hort Notes



An educational newsletter with research-based information for businesses and individuals involved in selling, planning, designing, servicing, and enjoying landscapes and gardens.

Volume 12, Number 8
June 11, 2001

Current Monitoring Checklist: http://www.umassgreeninfo.org/fact_sheets/ipmtools/500_599_GDD.html
PLANT PHENOLOGY for June: ***BETWEEN 500 - 599 GROWING DEGREE DAYS***

2001 Drought Effects on Trees

The University of Massachusetts has released an alert on the 2001 spring drought and its effect on trees in New England. Following a winter that left a lot of plants suffering from winter kill and a late frost in May, we had a spring drought that is creating serious challenges for woody vegetation. The National Weather Service predicts that the country will continue to have normal to above normal temperatures with normal to below normal rainfall. For many regions of New England, this means a continuation of drought conditions with no relief in sight!

The lack of rain and high temperatures this spring is creating hardships for trees and other vegetation. Water is required for all biological processes of plants, trees, and even people. When there is an adequate supply, water seeps down through the soil, gradually saturating each layer. Trees depend on water and moisture in the upper layers of soil – usually the top 6 to 18 inches where the root system is located. Water that seeps beneath the upper layers eventually becomes available for use by people as well water. In severe drought conditions, more water is required to keep the upper layers of soil moist.

The first sign of water stress in large shade trees is a flagging, or wilting, of foliage. It can be difficult to notice. Next, the leaves become “scorched” as they gradually curl, become dry at the edges, and begin to die. Eventually, trees will drop their leaves in an attempt to “save” themselves. It is important to remember that defoliated trees are weakened, but not dead. Many stressed trees are subject to attack by secondary organisms and proper arboricultural care will be required if these trees are to survive.

What can we do?

Apply 2 to 3 inches of mulch around trees. This conserves soil moisture and keeps soil temperature cool. Water trees in the evenings. Lower temperatures result in less evaporation and better conservation of water. This means more water for the trees!

Do a soil moisture test. Remove a small amount of soil near the roots of a tree and squeeze. If you can form a sticky ball, the soil is too wet. If it breaks like chalk, it is too dry. If the trees need watering, use proper watering techniques. Light sprinkling only settles the dust and evaporates quickly in the sun. Give the plants a weekly, deep soaking with a lawn sprinkler, allowing the water to seep at least 12 – 18 inches down. This helps the water to get below competitive grass roots, and reach the tree's deeper roots.

When irrigating, the amount of water should be based on the soil texture:

Sandy soil - 1 inch of water is required to penetrate to 18 inches
Loam soil - 2.5 inches of water is required to penetrate to 18 inches
Clay soil - 4 inches of water is required to penetrate to 18 inches

In fact, if you water in too shallowly, the tree's roots could turn upward in a search of the lightly sprinkled water. When the soil then dries, the new, shallow roots will be killed more readily. Over-watering can be just as bad as under-watering. Do not water if there has been adequate rainfall. Let the soil get somewhat dry between watering to avoid "drowning" your trees.

If most of your work is landscaping or turf and you are not a trained arborist with the proper equipment, then please sub-contract out the tree work or consult with a Certified Arborist. It will be a lot safer and cost effective in the long run. For additional information on how to professionally maintain your clients trees contact the Massachusetts Arborist Association at (508) 653-3320 or the National Arborist Association at (800) 733-2622.

With some municipalities already implementing water bans, you might want to obtain a copy of the newly released book *Water Right: Conserving Our Water, Preserving Our Environment* published by the Turf Pro-ducers Foundation. The 68 page book presents scienti-fically based information about the environmental, social and economic benefits of landscape water use compared to the small amount of water landscapes require. It also addresses how landscapes can conserve and enhance water quality. Copies of the booklet can be obtained for $5.00 from the International Turf Producers Foundation, 1855-A Hicks Rd., Rolling Meadows, IL 60008.

H. Dennis P. Ryan III, Arborist
UMass Dept. of Natural Resources Conservation

Questions from You

Q. Along with the many recent instances of Rhododen-drons turning brown in the landscape, I

am noticing that a great number of Arborvitae appear to be dying. What's going on?

A. Good question! A number of landscapers and nursery staff have reported that Arborvitae 'Emerald Green' and also 'Dark American' did not survive this past winter. Some of the plants were planted last fall, others had been in the ground 2 to 3 years. In most cases, the plants were watered on a regular basis last summer and fall. Again, like the "Rhododendron situation", it is likely that the "Arborvitae problem" is caused by some unusual combination of weather, site, and environmental factors, like "The Perfect Horticultural Storm", and not by insects or disease. It has also been reported that Spruce, Taxus, Boxwood and Holly in many areas are also turning brown. Again, we believe this is due to winter injury. Plants damaged by winter injury may be predisposed to this injury if prior stress conditions were present. When diagnosing the cause of this winter browning, it is important to note other factors:

- Is the plant planted at the correct depth? Not too deep and not too high.
- Were the newly planted plants watered after planting and through the drought of last fall?
- Are the plants located in a windy or exposed site?
- Were the plants in good condition, not stressed, prior to planting?
- Were the rootballs of adequate size?

P.S. If anyone else has noticed large numbers of plants not surviving the winter, please contact the UMass Extension Landscape and Nursery staff in your region: **Berkshires** (Ron Kujawski, 413-528-1208); **Amherst, Central Massachusetts** and the **Northeast** (Dan Gillman, 413-545-3208, or Bob Childs, 413-545-1053); **Southeastern Mass**. (Deborah Swanson, 781-293-3541); **Cape Cod and the Islands** (Roberta Clark, 508-375-6692) or post your report on The Greenboard (see below).

Q. Does the UMass Landscape and Nursery Program have a web site for Green Industry professionals?

A. Indeed we do! At **www.umassgreeninfo.org**. The site offers information on upcoming educational programs, fact sheets, calendar of events, etc. One of the interesting features of the website is **The Greenboard**. The Greenboard provides an opportunity for you and other Green Industry professionals to ask or answer Green Industry related questions and to report landscape observations and pest outbreaks. Many of the questions are answered by the UMass Extension Landscape, Nursery and Urban Forestry team, but questions are also often answered by industry peers.

One of the questions recently asked was about managing Hemlock Woolly Adelgid and Bob Childs, Entomologist, provided the following answer: *"The Hemlock Woolly Adelgid (HWA) can be a very serious pest if left untreated. The two currently popular (and effective) methods are 1) horticultural oils and 2) imidacloprid (sometimes generically referred to as Merit* (a trade name for one product). With oil sprays, entire coverage is essential for proper control. I tend to recommend this treatment first whenever such applications are possible. Be advised that 1-2 applications (1-3 months apart) may be necessary. This option is usually less expensive than imidacloprid. Imidacloprid may also require two treatments and may not be 100% effective. It works best as a systemic pesticide (inside the plant) and can be administered by either applying it*

directly to the soil around the plant or by direct injection into the trunk with specialty products via professional application. There is version of Merit available now to home owners, but it is so new that I currently am not aware how effective it would be for large trees, or how expensive it is. The product name is Advanced Garden Tree and Shrub Insect Control* and is 1.47% imidacloprid active ingredient (produced by Bayer). Hemlocks under other stresses may succumb within 3 years of infestation of the HWA. Right now, many of our hemlocks are experiencing severe drought stress. Regular watering of drought stressed trees is advised. Avoid fertilizing trees that are infested with HWA, especially avoid applying nitrogen; it only encourages the adelgid. Avoid fertilizers that have a high salt content during these drought times."*

Deborah C. Swanson
UMass Extension Educator - Landscape, Nursery and Urban Forestry

---

HORT NOTES is a horticultural newsletter published bi-weekly from March through October by UMass Extension. Subscriptions are $15.00 (18 issues) per year. Make check or money order payable to *University of Massachusetts*, and mail it to *HORT NOTES*, French Hall, 230 Stockbridge Rd., UMass, Amherst, MA 01003-9316. When writing to request a change of address or to renew a subscription, please include the mailing label.

Kathleen M. Carroll, UMass Extension Educator
Landscape, Nursery and Urban Forestry Program Coordinator