

Drought-Stressed Trees Need Water, Not Fertilizer

NEWARK, Del. — The present drought is just one more to add to the list of droughty springs and summers that have occurred in the Northeast since the late 1970s. Lack of water has become a chronic problem throughout the region. Trees — in the landscape and growing wild — are among the casualties.

"Most people are careful to water new plantings when rainfall is short," says University of Delaware extension horticulturist Sue Barton, "but they often forget about established trees and shrubs. These may not show visible signs, even though they're suffering from drought stress."

"Eighty percent of the root system of most trees and shrubs is in the top 12 inches of soil," Barton

says. "When those 12 inches are dry, the plants can't get the water they need for growth and survival. So when it doesn't rain enough, do your plants a favor and supply that water."

According to the horticulturist, most plants require about one inch of water a week — or 2/3 gallon per square inch of ground. A 10-foot-by-10-foot area (100 square feet) requires 66 gallons.

A soaker hose is an efficient way to water landscape plants. Made of porous canvas or perforated plastic, it attaches to the end of a regular hose and can be laid in a circle around trees or among shrubs. Water oozing from this device will soak deeply into the root zone without wasteful run-off. Be sure to soak the soil thoroughly,

as a light sprinkling may do more harm than good.

"Continual stress makes trees more susceptible to disease and insect damage," Barton explains. "We're seeing two obvious examples of drought stress right now — maple dieback and dogwood decline. Many trees of both species are already suffering from fungus diseases; the lack of water has doubly stressed them."

Many dogwoods are infected with anthracnose (dogwood decline). The maples are probably suffering from either ceratocystis (sap streak) or verticillium wilt. Watering diseased trees during dry spells can prolong their lives, though those with verticillium will eventually die regardless of the care they get. Healthy trees are

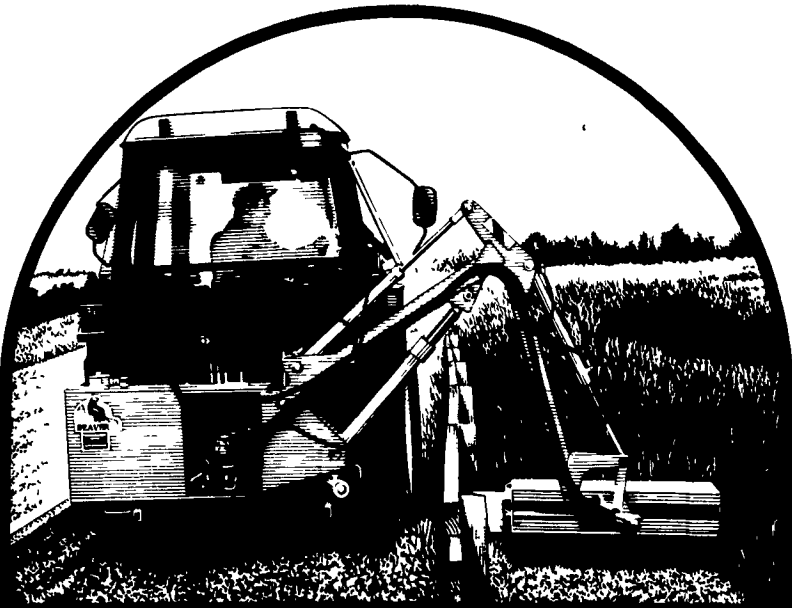
also suffering from drought now and must have water to remain in vigorous condition.

Fertilizer is often recommended as a cure for stressed trees, Barton says. And although this can help maintain the vigor of otherwise healthy trees, it can't save those suffering from verticillium wilt. In fact, recent research at the University of Delaware Agricultural Experiment Station indicates that some forms of nitrogen favor growth of this fungus.

Carolyn Sanford, a university master's student in plant science, and her advisor, Dr. Allen L. Morehart, have shown that applying fertilizer — particularly ammonium nitrate — to verticillium-infected yellow poplars enhances rather than halts the

spread of the fungus. (The verticillium fungus lives in vascular tissue and is spread through water conducting tubes in the tree.) Based on their findings, Sanford and Morehart have concluded that it's best to withhold fertilizer from trees suspected of having this disease.

The current loss of many dogwoods in the Northeast to dogwood decline is also drought-related, Barton says. However, these trees can sometimes be saved. To help dogwoods recover she recommends pruning out dead wood and giving them up to 1 inch of supplemental water a week during dry spells. Clearing out turf under the tree canopy and applying several inches of mulch to conserve moisture for their shallow root system will also help.



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IH 47-S	IH 820-16	IH 1460	IH 4R 3 pt.		Grove 16'
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Papec 180	Fox FA			McConnell 16x7	
Fox 1000	JD 2RV'			JD FB	
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NI 506		761 Hay PU	729 A Shel.	IH 401, 12'	
IH 2050A		767 Har.	727 Husk.	BH 10'	
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		713 Plat.	720, 2RW	IH 470, 12'	
		734, 3RW	730, 4RW	IH 37, 8'	
		844, 4RW	725, 3RN	IH 47, 13'	
		735, 3RN		JD KBA 8'	
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MH Table w/Pipe		JD 1440, 4RW, no-till, dry			
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