

# Drought Countermeasures to Help Trees

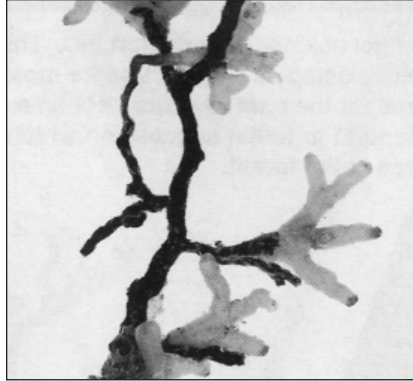
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**H**ere we are again, faced with another year of drought, where water is scarce and extremely precious to our trees. In fact, according to National Weather Service records, this has been the fourth driest spring ever.

More and more species are beginning to express symptoms of stress and damage. More and more trees are having to be removed as drought damage accumulates to the point of death or disfigurement. It is time, I believe, to begin to strategize how we can get them through periods of drought. Tactics that have been employed for years by the drier Western states are looking to be necessary in the Midwest, as well. Who knows if watering bans or restrictions will be imposed, or if wells will hold out? We need to conserve our water resources so that every drop counts!

These measures include:

- **Choosing trees with greater drought tolerance.** Drought tolerant tree selection may pay big dividends over the years.
- **Minimizing turf areas.** Turf is greedy for water and its roots secrete allelochemicals that diminish or inhibit tree root growth, further reducing the tree's drought tolerance.
- **Utilizing and expanding mulch areas over tree root zones.** Mulch is very efficient at conserving soil moisture and making the most of both rainfall and any supplemental watering that can be given. More feeder roots develop under mulch, making trees more efficient at collecting available moisture.
- **Efficient Irrigation.** Watering should be done in the early morning or in the evening to reduce losses due to evaporation. Drip irrigation systems are the most water conserving, followed by the weeping style of soaker hose. Overhead watering wastes the most, particularly if a lot of fine mist is produced. Time between waterings is very important. Since mulch conserves water so well, be sure to check the soil first to see if moisture has been diminished as much as you thought. When drought wears on for weeks, it is important to at least break up the *length* of the worst dry times with an occasional soaking, to delay injurious severe wilting and tissue death in the branching as well as the fine roots. Get to know the water requirements of your tree collection and



*Fine roots and mycorrhizae are essential for good tree health.*

rotate watering among them to reduce symptoms of stress when they show it. Occasionally rotate water to other trees that may *not* show obvious symptoms yet, but will be accumulating unseen damage nonetheless. Don't delay watering too long because of overly-optimistic weather forecasts. Develop a sense for the amount of time between waterings that your trees can withstand (this will often be different for every

tree). Some hints that the landscape gives are the color and limpness of tree leaves, presence of leaf edge browning, and turf going dormant in tree root zones. Consider using Wachtel as a way to break long dry periods with a strategic watering.

- **Inoculate tree root systems with beneficial Mycorrhizae.** These are symbiotic fungi that enable root systems to have more extension and efficiency. When roots are aided by mycorrhizae, they can extract more water out of drier soils and lessen the effects of drought. They are added in spore form by soil injection with water into the root zone. This is a major tool in aiding trees dealing with drought.

- **Cambistat application to the base of the tree.** Cambistat is a tree growth regulator that gently slows the growth of the tree. It reduces the total leaf area, thereby reducing water loss. The leaves develop a thicker waxy cuticle (coating) and the "skin" (epidermis) is thicker and is more densely covered with fine hairs. These features further reduce water loss. Some energy is reallocated from shoot growth to fine feeder root growth. This increase in fine roots improves the root to shoot ratio, improving the root's capability to supply moisture to the leaves and reducing water stress. All three effects together make for a more drought tolerant tree. This is another major tool in preparing trees for drought.

There are several ways to make our efforts, water resources and money stretch further, enabling more trees to survive the rigors and hardships of drought. It requires awareness of the situation and constant monitoring, but pays off with more trees to enjoy, shading our homes and yards, and fewer dollars spent having to remove them and planting replacements. You can count on Wachtel as your tree care resource.