

# DROUGHT



MINNESOTA DOCUMENTS

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## AND THE URBAN LANDSCAPE :

Methods for coping with hot, dry weather

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### COPING WITH DROUGHT

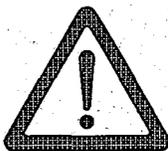
With drought conditions now a fact of life for most Minnesotans, it has become important for urban gardeners to adjust their gardening techniques to cope with limited water supplies and unusually hot weather. The information in this publication is designed to help you establish a gardening management program that will minimize drought related damage to your lawns, gardens and landscape plants.

### SET WATERING PRIORITIES!

Unfortunately, sprinkling bans or voluntary water conservation efforts may mean some plants will have to be denied normal watering. A basic strategy in minimizing damage is to establish watering priorities; decide which plants will be first to receive available water.

One way to decide is to consider which plants are least valuable to you, reserving limited water supplies for the most valuable. Another way is to base your priorities on which plants need watering most.

If you base your watering priority system on need, as a general rule priority should be given to young trees and shrubs first, flower and vegetable gardens second, and lawns last:



TOP PRIORITY

**YOUNG TREES AND SHRUBS** -- Because they have not yet developed deep root systems, young trees and shrubs depend on frequent surface watering for survival. If allowed to die, they are expensive to replace and take a long time to grow. In addition, there are several tree species that are susceptible to drought-related injury even when mature. These include birch, elm, ironwood and oak.

**NEWLY SODDED OR SEEDDED LAWNS** -- Because they are struggling to become established and the cost of replacement is high, lawns seeded or sodded last fall or this year should be watered regularly.



MID PRIORITY

**FLOWER AND VEGETABLE GARDENS** -- Gardens need water but their needs are relatively modest, particularly if you keep them well mulched. Mulching holds moisture in the soil.



LOW PRIORITY

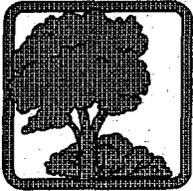
**LAWNS** -- If necessary, you can stop watering your lawns with minimal long-term damage. When water is withheld, lawns will become dormant. Most dormant lawns will revive in reasonable condition when the rains return or when sprinkling is resumed on a regular basis as long as they haven't been damaged by foot traffic.

# FACTS AND TACTICS

Once you've decided on a watering strategy -- your watering priorities -- you should familiarize yourself with drought-specific gardening facts and use gardening tactics expressly designed for hot, dry conditions. For example, the fact is that sprinklers waste water by allowing spray to evaporate before it hits the ground. A good garden watering tactic is to conserve water by laying your hose at the base of individual plants, instead of using sprinklers.

Below, you'll find both facts and tactics you can use in your home drought management program. Again, establishing priorities can be helpful so, we've highlighted especially important tactics by labeling them with our "top priority" symbol.

## TREES AND SHRUBS



When stressed by hot, dry conditions, birch trees are particularly susceptible to bronze birch borers. These insects tunnel into the tree's bark and eventually kill the tree.



Birch trees prefer moist, shady environments. When used as ornamental trees away from these natural conditions, birches are often weakened -- and susceptible to insects -- even in normal weather.



**Assure regular, thorough watering. Ideally, soak weekly to depth of 8 to 10 inches. Area above the roots should be mulched with 4 to 6 inches of organic mulch.**



When stressed by drought, maple trees can die within a single growing season when struck by a disease called Verticillium wilt.



**Plants with only some symptoms can be saved or their life prolonged if they are watered, fertilized in the spring with nitrogen and pruned of dead and wilting branches.**



Drought conditions can be dangerous for elm trees. Bark beetles searching for stressed trees can infect them with Dutch elm disease. Dutch elm disease is fatal to the tree.



**Maintain tree health with regular watering.**



Young and newly planted trees and shrubs have shallow root systems and are totally dependent on moisture that works its way down from the surface. Young plants are easily damaged without watering.



Evergreens are particularly sensitive to moisture stress. Without adequate water, needles will show signs of drying and will suffer winter burn later.



**Soak trees well, once weekly. Water sufficiently to soak soil to a depth of 8 to 10 inches (you can check moisture depth with a trowel), or lay hose at tree base and trickle for several hours. Use wood chips or other organic mulch around base of young trees and shrubs to keep soil cool and moisture in.**



Continued drought stress will weaken trees, making them vulnerable -- and susceptible -- to pathogens and insects which normally would not harm them.



Drought-stressed trees and shrubs are less able to tolerate defoliating insects such as caterpillars, sawfly larvae and beetles. Feeding primarily in early and late summer, large numbers of these insects can damage young, or unhealthy trees and evergreens, or any of the drought-susceptible trees (elm, oak, birch, ironwood).

**FACT**

Drought-stressed trees are particularly susceptible to cankers caused by fungi. Cankers are localized infected areas on woody portions of the tree.

**TACTIC**

Maintain plant health with regular watering. Control insects with insecticides on young or unhealthy trees and evergreens, or any of the drought-susceptible trees (elm, oak, birch, ironwood).

**FACT**

Drought conditions encourage unusually large populations of aphids and spider mites on trees and shrubs. While not normally harmful to healthy plants, large numbers of them can damage recently transplanted trees, stressed trees and evergreens.

**TACTIC**

Maintain plant health with regular watering. Control insects by regularly dislodging them with water spray from hose nozzle. Use insecticide on heavy infestations if tree is recently transplanted, unhealthy or an evergreen, an elm, birch, oak or ironwood.



**FACT**

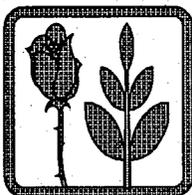
Ironwood and oak are susceptible to attack by the two-lined chestnut borer when subjected to drought-stress. Infested trees can slowly die over several years following a severe drought.



**TACTIC**

Maintain tree health with regular watering. Avoid foot traffic under the tree. Mulch area several feet out from the tree's base.

**FLOWER AND VEGETABLE GARDENS**



**FACT**

Strawberry plants infected with black root rot are more susceptible to drought. Symptoms include wilting and scorching, poor runner production and general decline.

**TACTIC**

Check poorly growing strawberry plants for small roots, lack of feeder roots, dead or stubby root ends. Remove weak, infected plants.



**FACT**

Mulch slows surface evaporation, helping keep soil uniformly moist. It also holds down weeds and protects soil from compaction caused by the impact of sprinkler water.

**FACT**

Some diseases weaken garden plants, reducing flower or fruit production but not killing them. Hot, dry conditions may allow a disease to win out, killing the plants.

**TACTIC**



Avoid stressing garden plants. Apply mulch to flower and vegetable gardens. Use grass clippings, straw, shredded leaves or newspapers, or old carpeting (plastic works, but heats up the soil under it).

**LAWNS**



**FACT**

When deprived of water for long periods of time, healthy lawns become dormant, rather than die. Dormant turf turns brown, appearing dead, but usually turns green again when rains resume or sprinkling is re-started.



**FACT**

It takes extra energy for lawns to return from a dormant state. Lawns can be seriously weakened if watered irregularly, causing them to repeatedly enter into and return from dormancy.





**TACTIC**

Decide to water regularly and thoroughly or allow your lawn to go dormant -- one or the other. However, if the lawn was newly sodded or seeded last fall or this year, or it consists primarily of elite "golf course" types of bluegrass, you should continue to water regularly.



**FACT**

Lawns under stress due to hot dry weather may be damaged by the application of fertilizer and/or herbicides.

**TACTIC**

Don't fertilize or apply herbicide to lawns in hot, dry weather unless they're green and growing actively due to regular, thorough watering. Wait until fall to deal with weeds.



**FACT**

Mowing lawns too closely may contribute to drought stress. Longer grass blades reduce evaporation of water from surface of soil and provide shade for roots and new growth.



**TACTIC**

Set mower blades high during hot, dry weather; 2 1/2 to 2 3/4 inch blade height is suggested.

**FACT**

Lawns are most susceptible to disease when blades remain wet for long periods of time, so evening watering should be avoided, if possible. Sprinkling lawns in the middle of the day wastes water because of water evaporation.

**TACTIC**

The ideal time to water lawns is in the early morning hours, so blades can dry quickly.

**FACT**

Under typical conditions, most healthy lawns require one thorough soaking every week. Lawns in sandy soil drain faster and normally need twice weekly watering. When it's hot and dry, you'll need to water more frequently.

**FACT**

Healthy lawns need water when grass takes on a dull, blue or gray-green color, or if grass blades fail to spring immediately back after someone walks on lawn.

**TACTIC**

Soak lawns thoroughly to about 5" depth (check with a trowel to gauge watering time). Do not water more frequently to lesser depth because light watering encourages shallow root systems which are more susceptible to moisture and heat stress.

**FACT**

Power raking to remove thatch creates slits in the soil allowing it to dry out, even in normal weather.

**TACTIC**

Do not power rake or aerate during hot, dry weather. Wait until temperature drops and rain resumes in autumn.

**NEED MORE INFORMATION?**

We've attempted to provide enough information to help you quickly and effectively deal with the problems presented by drought conditions. If you need additional information or details, ask an experienced nursery person, your local County Extension Agent or, if you live in the Twin Cities, call the Dial U Insect and Plant Information Service, a program of the Minnesota Extension Service, University of Minnesota. Dial U experts offer thoroughly researched, personalized answers to your gardening questions. Experts are available during the summer, Monday - Friday, 9 - 5 at 1-976-0200. A \$2 fee is added to each caller's phone bill to help defray the cost of this non-profit program.

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