



Landscape and Lawn Care

R.A. McNeilan, J.L. Green, and N. Goetze

EM 8374 • Reprinted July 1992

During a severe drought, when the use of water supplies is restricted, homeowners become concerned that their plants may die. By developing watering priorities, and by planning for effective use of available water, you can provide some measure of insurance against plant loss to drought.

You might set these priorities:

Trees. As trees increase in size, they become increasingly valuable. Give mature trees top priority to receive a deep root watering weekly during droughty conditions.

Shrubs. Shrubs in good health and good form—that have been established for several years and are contributing significantly to the overall landscape picture—should be second to trees in priority. New shrub plantings of relatively low initial cost or old, overgrown, misplaced shrubs may not be of such great value. If you value new landscape material, give it a high priority for watering during the first growing season.

Perennial plantings. Maintain plantings of rare perennial plants or plants of high initial cost and give them a high priority. Their water requirements compared to trees and shrubs are relatively low.

Annual bedding plants. If you want to maintain annuals, you'll need to emphasize mulching (see "Mulch to conserve water").

Lawns. Many varieties of grass are relatively drought-resistant—they may look bad under drought conditions, but they'll survive.

A drought year may be the one when plants that you placed in the wrong locations fail to survive (azaleas on the south side of a

building, for example). Previously weakened or diseased plants may also perish.

Use conservative methods

Where to apply. Water uptake by the plant occurs primarily at the root tips and through the fine root hairs immediately behind the growing root tip. Very little water or fertilizer is taken up through the older, discolored portion of the root.

The growing root tips and root hairs are located primarily beneath the drip line (imagine a circle on the ground that follows the edge of the plant canopy). Apply your limited water to these root zones *only*. For example, adjust a hose to discharge a small amount of water and place it at the edges of the plant.

Better yet, try subirrigation: Punch holes in the bottoms of juice or coffee cans; insert these (or pipes) around the plant's edges; push them down to the root zone, where the majority of root hairs are located. Apply water through these open columns directly to the root zone, where most active uptake will occur. This will greatly reduce evaporation and unnecessary wetting of surrounding soil.

When to apply. The most effective time to minimize evaporation losses and plant diseases is *very early* morning, preferably before sunrise.

What to use. Avoid irrigating ornamental plantings with a sprinkler. Much of the water may be lost to evaporation before it reaches the ground surface.

Subirrigation (the cans or pipes outlined above) conserves the most water.

"Drip," "trickle," and other "microsource" methods of irrigation can reduce water loss and requirements by as much as 50% compared to overhead sprinkler irrigation.

Use waste water?

A question frequently asked is, "Can I use waste water, even if it contains detergents and soap, to irrigate my plantings?" According to the Oregon Department of Environmental Quality, *no untreated waste water may be used to irrigate plantings*. "Treated water" is defined as water that has been run through a municipal waste water treatment plant.

Mulch to conserve water

Choose the right mulch for your purpose. A mulch that will reduce soil temperature, decrease surface moisture evaporation, and decrease weed competition for available moisture will diminish water depletion and evaporation from the upper 6 to 8 inches of soil.

Tests show that merely shading the bare soil will reduce evaporation as much as 30%. Mulch will reduce evaporation by as much as 70%—and promote a more uniform moisture supply in the upper layers of the soil.

Mulching materials may be classified as plastic film and organic. A combination of plastic film mulch covered with up to 2 inches of

Revised by Ray A. McNeilan, Extension agent (home and urban horticulture), Multnomah County; James L. Green, Extension ornamental horticulture specialist; and Norman Goetze, Extension agricultural program leader, emeritus, Oregon State University.



organic mulch is very effective in lowering soil temperatures, controlling weeds, and maintaining good soil structure.

Plastic film mulches. Don't use clear plastic film—it allows the sun's rays to enter the soil, producing soil temperature increases of 10°F or more. Soil temperatures may become so high as to kill plant roots. High soil temperatures increase water requirements of the plant and increase moisture loss due to evaporation.

Clear plastic film may allow weeds to become a problem underneath the film. In general, clear plastic is not recommended unless you apply an organic mulch like bark over it to eliminate sunlight.

Black plastic film excludes sunlight transmission and, therefore, doesn't cause as large a temperature increase as the clear film does. Excluding light also prevents weeds from growing underneath the film.

Note: Before you apply any plastic film mulch, make sure your soil is damp. Do not mulch dry soil.

Organic mulches. Apply organic materials with a small particle size (like sawdust) only to a depth of 1 to 2 inches, to avoid excessive compaction and to allow air exchange between the soil and the atmosphere.

You can apply coarse or fluffy materials that don't readily decompose or compact (like bark chips) 3 to 4 inches thick.

Apply mulch evenly—don't pack it around the stem or trunk of the plant. When the mulch is thoroughly wet, pull it back a few inches from the stem or trunk so there is free air circulation to the base of the plant.

Lawn clippings may be used as mulch after they have become dry. Thick layers of fresh grass clippings may mat down, get slimy and smell bad during decomposition, and decrease air circulation to the soil. Apply $\frac{3}{4}$ to 1 inch in a layer at a time to avoid this. **Don't** use grass clippings if you've treated the lawn with a weed-killer.

Leaves, previously composted, are more satisfactory. Noncomposted leaves, like fresh grass clippings, may compact and produce heat during decomposition.

Sawdust and barkdust. Redcedar sawdust and bark (unleached) reportedly contain materials poisonous to plants. Other wood sawdust and bark make an effective mulch.

Conifer needles make a light, airy, attractive mulch. Pine needles are moderately acid; they're desirable for use as a mulch for acid-loving plants (azaleas, blueberries, etc.).

Bark chips are one of the most desirable organic mulching materials. They're long-lasting and not easily compacted.

There are numerous other materials that you might use as mulches if they can insulate the soil—and thereby reduce soil temperature, reduce surface moisture evaporation, and control weeds.

Don't stimulate excessive plant growth

Fertilize lightly. Heavy fertilizer applications increase the salt concentration around the plant roots and make it more difficult for the plant to use whatever moisture might be in the soil.

Overfertilization may also stimulate new, lush growth that increases the plants' demand for water. If water is already limited, this increased water demand will make the plants more susceptible to drought.

Don't heavily prune trees or shrubs. Heavy pruning during late winter or spring stimulates new, lush growth and increases the plant's susceptibility to drought damage.

In the spring, do only corrective pruning—remove dead or diseased branches. You'll reduce water use if you prune off leaf surface during the summer.

If soil moisture is extremely short, you might consider careful, selective removal of leaves, however, do it in such a way that inner, shaded leaves won't be sunburned.

Here's help. A good source of information on water conservation is Ortho's *Weather-Wise Gardening* (Western edition). The sections on "Mulches as Modifiers" and "Drip/Trickle Irrigation" are especially appropriate. It's available at most garden shops.

Lawn care

Lawns can probably be allowed to go dormant from drought for the summer. They will renew themselves when the fall rains begin. Drought-stressed lawns can be seriously damaged by heavy use. Avoid traffic as much as possible.

Western Oregon. In the spring, as rains are still occurring, plan to toughen the grass to withstand a long, dry summer. In mid April, apply a commercial fertilizer containing nitrogen (3 to 4 parts), phosphorus (1 part), and potassium (2 parts) at a light to normal rate. Don't use heavy rates of fertilizers when you expect summer drought conditions.

Eastern Oregon. Withhold the first fertilizer until the lawn turns green, after the breaking of the winter dormancy. See Extension Circular 1287, *Fertilizing Home Lawns*, for more information.



Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

Oregon State University Extension Service offers educational programs, activities, and materials—without regard to race, color, national origin, sex, age, or disability—as required by Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. Oregon State University Extension Service is an Equal Opportunity Employer.