

FACT SHEET

LAWN WATERING

R. L. Duble, A. C. Novosad and W. E. Knoop*

Watering is one of the most basic practices in lawn maintenance. One only has to look at the scorched lawns during the summer droughts to appreciate the need for lawn watering. It also can be a major factor in the cost of lawn maintenance. Many homeowners in Texas estimate over 30 percent of the municipal water consumption is for watering lawns. As water becomes more costly, it will become more important to use good watering practices.

Factors Affecting Water Use

Soil type, grass species and management influence the amount and frequency of supplemental water required for lawns.

Sandy, coarse-textured soils absorb water at a much faster rate than finer textured soils but retain less moisture. Sandy soils require more frequent applications of less water due to low moisture retention. In contrast, heavy clay soils retain more moisture and require less frequent waterings. Clay soils absorb water very slowly; thus, water application rates should be slower and extended over a longer period. The infiltration rate and water retention of a loam soil is between that of a sandy soil and a clay soil.

Grass species and management practices largely determine the amount of supplemental water required for lawns. Grasses with good drought tolerance should survive without watering. They will become straw-colored and dormant during extended dry periods. With the first significant rainfall or with watering these grasses will recover. Grasses with moderate or poor drought tolerance will not survive extended droughts without watering.

Table 1. Classification of common turfgrasses with their degree of drought tolerance

Good	Moderate	Poor
Buffalograss	Bermuda Zoysia	St. Augustine Centipede Kentucky bluegrass Tall fescue

*Extension turfgrass specialists, The Texas A&M University System.

Management also influences the amount of water needed to maintain a healthy green lawn. Frequent fertilization and close mowing tend to increase the amount and frequency of watering required. Applications of soluble nitrogen fertilizers during late spring and summer months significantly increase water use. Spring and fall fertilizer applications meet most grass requirements without significantly increasing watering needs. When lawns appear yellow because of iron deficiency, apply iron sulfate or iron chelate to make the grass green without increasing water needs.

During hot, dry conditions raise mowing heights to reduce watering needs. Grass mowed at 2 to 3 inches maintains a deeper root system than grass mowed at 1 to 1½ inches. Watering needs are reduced with more effective use of water in the soil. Mow St. Augustine, bluegrass and tall fescue lawns at 3 inches during summer months. Do not mow bermudagrass and zoysia higher than 2 inches.

Thatch, an organic layer between the soil and the green leaves, can slow water movement into the soil and cause excess runoff. Thatch accumulation results from heavy fertilization, improper mowing practices, overwatering and frequent pesticide use. Aeration and thatch removal increase water penetration and reduce runoff. Under some conditions wetting agents (surfactants) improve water penetration in a heavily thatched lawn.

Water movement into the rootzone is even more difficult when compaction occurs. Aeration of compacted soils once or twice per year helps break up the compacted layer and improves water penetration. In soils containing high levels of sodium salts, gypsum has aided water penetration. Soil test information available through county Extension agents can reveal the presence of high levels of sodium.

When to Water

Timely applications of water are required for effective and efficient water use. Apply water just as the grass begins to discolor and wilt. Most grasses take on a dark, dull appearance and the leaf blades begin to fold or roll when the grass goes into water stress. Grass under water stress also shows evidence of

tracks after someone walks across the lawn. If dry conditions persist, the grass wilts, then turns yellow and straw-colored. As a practice, observe that portion of the lawn that usually wilts first. Water the entire lawn when this area shows signs of stress.

When water is applied also influences the effectiveness of watering. Early morning is considered the best time to water. The wind is calm and the temperature is lower, thus water loss from evaporation is low. Early morning watering helps to wash dew off of leaves which reduces the incidence of diseases. Late evening is considered the worst time to water as grass which remains wet throughout the night is more susceptible to disease.

How Much Water

Apply enough water to a lawn to wet the top 6 to 8 inches of soil. Light, frequent applications of water produce weak, shallow-rooted turf highly susceptible to stress conditions of heat and drought. The application of 1 inch of water on most soils will adequately wet the soil. Less water is required on a sandy soil (figure 1). The time required to wet the soil to this depth depends on the type of sprinkler used, the water pressure available and the rate at which water moves into the soil.

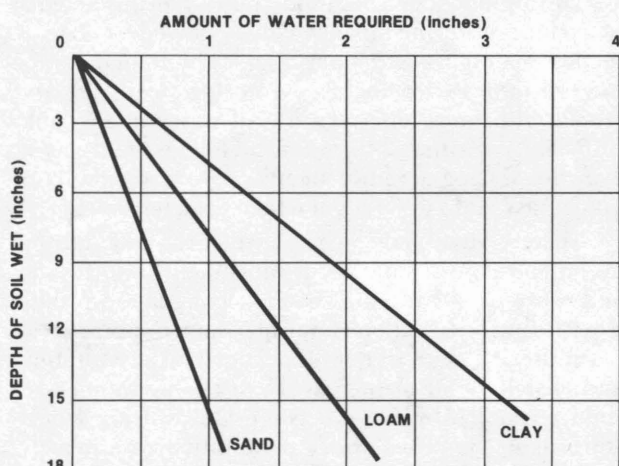


Figure 1. Water applications.

Be sure water is applied uniformly to the lawn. Uneven applications result in dry spots throughout the lawn. To check the distribution pattern of a sprinkler, place three to five empty cans of the same size in a straight line going away from a sprinkler. After operating the sprinkler for a period, measure the amount of water in each can. The variation between measurements provides an estimate of the uniformity of application. The amount of water applied also can be estimated from these cans.

In some soils, especially heavy clay soils, it is difficult to move water down to a depth of 6 to 8 inches.

Do not apply water to these soils to the point of runoff. If the sprinkler is applying water faster than the soil will absorb it, either move the sprinkler to a new location or turn it off to allow the water to soak into the soil. Move the sprinkler back to the previous location and apply additional water. By repeating this procedure several times the rootzone can be wetted thoroughly.

To determine the depth of water penetration, use a garden spade or a sharp probe to push into the soil. The probe will move into the soil very easily where it is moist. The probe becomes harder to push when it hits dry soil.

Water Quality

Water quality is another important consideration when watering lawns. In some areas of the state water is high in total salts. Select a turfgrass with good salt tolerance if salty water is a problem. It also is important to thoroughly wet the soil during each application. Light, frequent applications of water high in salts result in an accumulation of salts near the surface. Thorough watering helps move the salts below the rootzone of grasses.

Summary

The key to success in watering home lawns is to condition the grass to get by on as little supplemental water as possible. A lawn can be conditioned to go longer between applications of water. To do this develop a deep-rooted turfgrass.

Several simple rules follow for developing a deep-rooted turf which can withstand drought conditions:

- Select an adapted drought tolerant grass.
- Water as infrequently as possible. Water at the first sign of wilt.
- Apply adequate water to wet the soil 6 to 8 inches deep.
- Do not apply water to the point of run-off.
- Aerate the lawn so water can penetrate to the proper depth if soil becomes compacted or crusted.
- Avoid late evening waterings.
- Use a sprinkler which applies an even distribution of water at a rate of about $\frac{1}{4}$ to $\frac{1}{3}$ inch per hour.
- Raise mowing height $\frac{1}{2}$ to 1 inch during summer months.
- Avoid soluble nitrogen fertilizers during summer months.
- Prevent buildup of thatch.

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