

## Watering A Lawn

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Water is essential for all living organisms, including grass. Water is necessary for many plant processes but it is especially important for transpiration—the evaporation of water from the leaf surface which allows cooling of the plant. Green grass is about 90% water.

During normal summers in Michigan, rainfall is not sufficient to keep a lawn green. Grass then becomes dormant, turns brown and growth stops. The lawn normally recovers when adequate moisture becomes available. If a prolonged drought occurs, some plants will be killed.

There are both advantages and disadvantages in allowing a lawn to go dormant.

Advantages are:

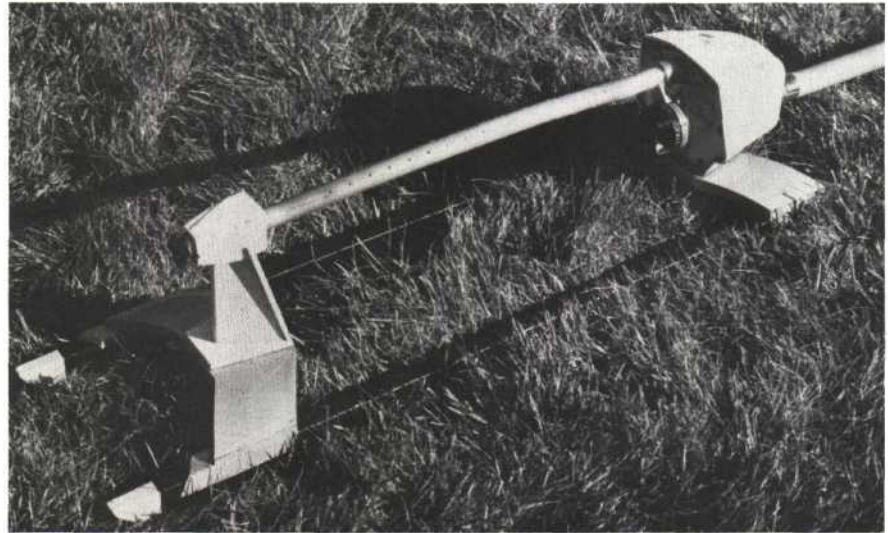
1. Reduced mowing and fertilizing as growth slows or ceases.
2. Minimal costs for water and irrigation equipment.

Disadvantages are:

1. More weeds due to lack of competition.
2. Slow recovery from additional stress such as traffic, disease or insect attack.
3. Aesthetics—a brown lawn is less attractive than a green lawn.

As summer approaches, you should determine whether watering will be practical. Plans should be made for watering if a dense, green, vigorous lawn is desired.

If the lawn is to be watered, decisions must be made on how often, how much, and when to water. A given watering program cannot be applied to all lawns. Varying soil types, exposure, slope, weather conditions, and availability and cost of



Two types of sprinklers that can be attached to a hose are the oscillator type (top) and the rotary impact (bot.).

water and equipment must be considered. The following guidelines will help to maintain a desirable lawn quality, and avoid wasting water.

### When to Water

The best time to water is early morning so that the lawn will have water during the heat of the day.

Watering at mid-day is not harmful, but is less efficient because evaporation is often high, and wind conditions may cause uneven water distribution. Reduced water pressure may also be a mid-day problem.

Another efficient time for watering is in the evening or at night. Although wet conditions lasting through the night have been thought to increase disease problems, this is

usually not a concern on home lawns. For many homeowners, the evening is the most practical time to water, though water pressure may be low at this time.

## Irrigation Equipment

A vast array of watering systems and equipment is available. Selection should be determined by:

1. Budget
2. Lawn area (size)
3. Quality of lawn desired
4. Convenience

A hose and a spray nozzle are the least expensive. However, this approach is suitable only for small areas or light applications because uniform coverage is difficult with hand watering. Approximately two hours are normally required to apply an inch of water to a 1000 square foot area.

A sprinkler attachment is the usual choice for most homeowners. Most sprinklers are a variation of either a rotary or wave-form (oscillator) design. Such equipment is reliable and readily available at a reasonable cost. A drawback on large lawns is that timing the application of each area and moving the hose can be inconvenient. For narrow sites and steep slopes, a soaker hose is a suitable choice. This will avoid wasting water on driveways and sidewalks, although considerable time will be needed to apply the water.

The most convenient and effective method of watering is provided by an underground sprinkler system. For best results, the system should be designed and installed by a trained specialist. Manual or automatic controllers can be used to activate the system, and periodic checks should be made to insure proper performance. An underground system is relatively expensive but frequently adds to the value of a homesite.

## Water Frequency

For best results, start watering before grass dormancy develops.

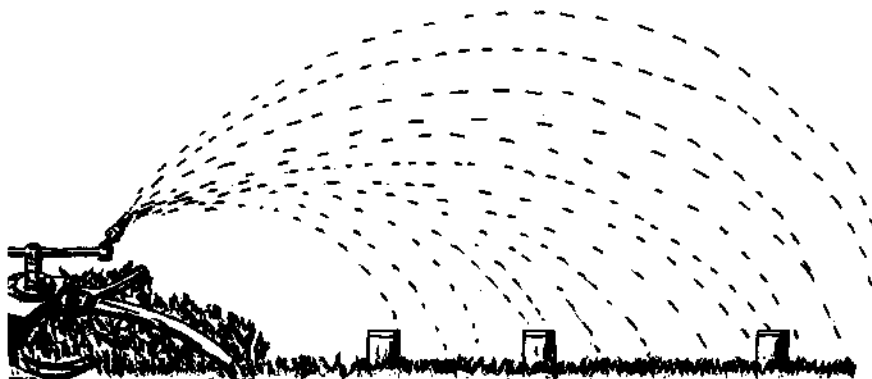


Figure 1. Placing cans randomly in the watering area can determine the delivery rate of the sprinklers.

Look for signs of wilting. A dark, blue-green color and footprints that persist for some time are signs that a lawn needs water. Once a watering program is started, it should be continued throughout the dry period. If a lush, fertilized lawn is not watered, and no rain occurs during hot weather, serious thinning and slow recovery can result.

When wilting is observed, apply enough water to wet the soil throughout the entire root zone. For bluegrass lawns on non-compacted, porous soils, this zone is usually 4 to 8 inches deep. Since lawngrasses require 1.0 to 1.5 inches of water per week, watering, plus rainfall, should supply this amount. An application of 640 gallons of water on 1000 square feet of lawn equals one inch.

Soil characteristics and natural rainfall determine the amount of water needed and the frequency of application. For example, a sandy, porous soil will hold no more than .5 inch of water in a six inch depth. If this amount of water is applied twice per week, the water lost from the root zone is fully replaced. A clay soil holds about one inch of water in the normal root zone. This can be replaced by a single, gradual application of one inch of water.

To determine the delivery of a sprinkler system, place cans of equal height randomly in the watering zone. When the water reaches the desired level in the cans, the sprinkler may be shut off and moved to the next area. This approach will insure that the entire

root zone is moistened (Fig. 1).

The amount of water applied and the frequency of application is important. Avoid frequent, light waterings, as this practice promotes shallow rooting. Deep watering will promote the development of an extensive root system. Excessive watering results in wasted water and fertilizer, and may increase weeds and disease problems. Bentgrass, annual blue grass and rough bluegrass may also increase in over-watered lawns.

## Special Considerations

Some areas in a lawn may dry more quickly than others. South and west exposures, sandy areas, slopes and areas near buildings, curbs and sidewalks are common examples. These areas may need more frequent watering to meet the needs of the grass, whereas low spots, north exposures, and shady areas may not need watering as frequently. Grasses with poorly developed root systems caused by compacted soil, insect damage or *Fusarium* blight also need special attention. These conditions result in shallow rooting. The result is a reduced reservoir of soil moisture and nutrients available to the grass plants. To compensate for this problem, more frequent watering at reduced application rates will be required. A lawn infected with *Fusarium* blight may require daily watering to prevent moisture stress, but always apply enough water to wet the root zone.

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