

Watering Lawns



Water is essential for living organisms, including grass. Water is necessary for many plant processes but it is essentially important for transpiration – the evaporation of water from the leaf surface that cools the plant. Remember that green grass is about 90% water. During normal summers in Michigan, rainfall is not sufficient to keep a lawn green and growing. High temperatures, high humidity, and lack of rainfall will take their toll on turf quality. Grass then becomes dormant, turns brown and growth stops. The lawn normally recovers when adequate moisture becomes available. If there is a dry period with no rain for 3 to 4 weeks and the turf is not being irrigated (watered), it is a good idea to irrigate turf with about $\frac{3}{4}$ to one inch of water to prevent the crown of the turf plant from drying out and dying. This irrigation probably won't result in the turf greening back up and resuming growth, but should ensure that it doesn't die. There are both advantages and disadvantages in allowing a lawn to go dormant.

Advantages Are:

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

Disadvantages Are:

- More weeds due to lack of competition
- There is a slow recovery from additional stress such as traffic, disease or insect attack. Watering will greatly reduce the

damage from destructive insects. Moist soil and thatch will reduce populations of chinchbugs and webworms while the added vigorous growth will offset damage by moderate grub populations.

- Aesthetics – a brown lawn is less attractive than a green lawn

Determining whether watering is practical is an individual choice. Plans should be made for watering if a dense, green, vigorous lawn is desired.

If a 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, availability, cost of water, equipment, and local regulations must be considered. The following guidelines will help to maintain a desirable lawn quality and avoid wasting water.

When to Water

Current recommendations are to irrigate turf between 10am and 4pm. Ideally the best time to water is in the morning so 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. Another efficient time for watering is in the early evening. 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.

Irrigation Equipment

A vast array of watering systems and equipment is available.

Selection should be determined by:

- Budget
- Lawn Area (size)
- Quality of lawn desired
- 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 site 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 with 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. 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. 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 sixinch depth. Applying more than .5 inch of water in a single application will waste water and leach nutrients from the root zone. Excessive watering will also increase invasion by some difficult to control weeds, such as bentgrass and annual bluegrass. Turf requires 1.0 to1.5 inches of water per week. Recent research indicates that daily watering with applications of 1/5 to1/4 inch of water produces the best quality lawn. This research contradicts the often quoted technique of "water infrequently but heavily to promote deep rooting." Daily watering promotes a consistently moist thatch and soil environment that deters insects, promotes desirable microorganisms, and cools the lawn. Also, grass naturally become shorter during the summer months, and heavy, infrequent watering often places much of the water below the root system. 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.

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 “patch” diseases 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.

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