

Anderson's Seed and Garden, Inc.

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"Our Seeds Succeed"

Watering Your Lawn Efficiently

As we all know, water is a valuable resource. Did you know 61 % of all our water use is used to water our landscapes? Our lawns are often the heaviest users of this precious (and expensive) resource. Therefore we have the responsibility to make sure that we are watering our lawns in the most efficient way possible. Here are some tips on how to accomplish this worthy goal.

Learning how much and how often to water our lawns is an art that comes with experience. Having a better understanding of your soil; learning key signs when to water and knowing the efficiency of your irrigation system can give you a good start. Let's begin by discussing how much water your grass needs. On average, turf usually requires 1 to 1.5 inches of water per week for normal maintenance conditions. Of course this will depend on your local environmental conditions such as heat, humidity, and soil type but these numbers will give you something to start with.

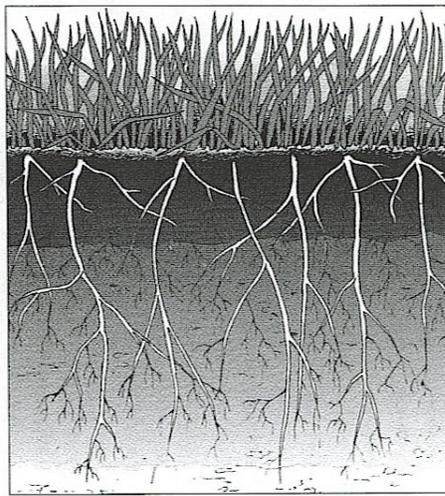
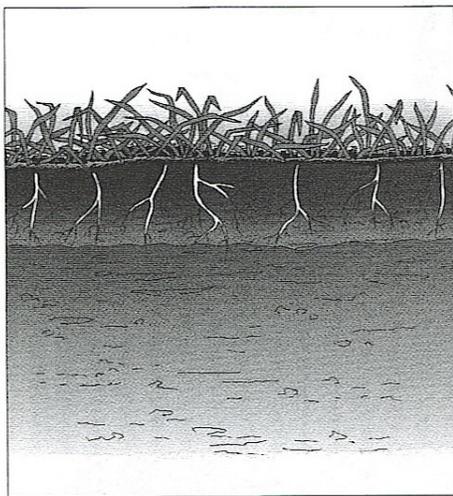
How Soil Type Affects our Watering

Knowing the type of soil that you have is a good step in creating an efficient irrigation program. Soils are typically made up of three mediums: sand, silt and clay. Often we have a mix of some sort of these three types. The more sand there is, the more drainage you have, and the faster your soil will dry out. This will mean that you may need to water more often, with shorter watering cycles. A soil heavy in clay has bad drainage and often cannot soak up water very quickly but dries out slower. A clay-loamy soil is the best type for proper rooting and drainage. If your soil is not corrected before you plant your lawn, it's very difficult to change it later. But for most of us, this is the case, and here are a few ways to help improve your soil structure.

Compaction can restrict rooting of grasses that would normally develop a deep, extensive root system. Aeration in the fall is the one of the best ways to open up air pockets for better drainage, and to allow oxygen in our soils for better microbial activity. Adding humate (a naturally occurring fossilized organic matter), greatly improves our soil structure by increasing the cohesive forces of very fine soil particles (clays) and promotes drainage and water intake. Humate also has a high water holding capacity which is very beneficial in sandy soils.

How often should you water? Many homeowners make the mistake of watering several times a week at short intervals, when in fact they are actually creating a shorter root system! Plant roots only grow **where there is water!** If we water for short periods of time, thus keeping the water in the upper portions of our soil, the roots will stay that short and thus stress out when there is a shortage of water. The rule of thumb for most turf is **deeply and infrequently!** We recommend you water twice a week, adding .5 - .75 inches of water each time. Timing for this amount will be discussed later.

LIGHT WATERING PRODUCES SHALLOW ROOTS.
HEAVY WATERING PRODUCES DEEP ROOTS.



Watering Your Lawn Efficiently

Signs of When to Water Your Lawn

Your lawn will tell you when it needs to be watered, don't just water every Tuesday and Saturday (unless you don't have a choice). Water only when your lawn needs it. Here are some sure signs that you can use to know if your lawn needs watered. Grass blades will roll up lengthwise to conserve moisture. At the same time, they will start to slightly lose their green color, and have a grayish cast. Thirsty plants also lose their resiliency, so if you walk across a lawn in need of water, the grass will not spring back, and your footprints will remain visible. This may sound like you are letting your lawn stress too much between waterings, but the long-term effect of this slight wilting is a thickening of the cuticle (the outer layer of a grass blade, kind of like a skin) and the development of a more extensive root system. Another effective way for determining water needs is to take a long bladed pocket knife or screwdriver and trust it into the ground. Dry soil will resist the penetration. At first, make sure to poke at the soil right after you water and everyday after that so you get used to feeling what a well watered soil should feel like when penetrated with your screwdriver or knife.

Water Saving Tips

We cannot control how much water our grass actually uses, but we can control, to some extent, the efficiency of that use. Here are some water saving tips:

Proper mowing can greatly increase your root mass and depth. Mowing higher during periods of stress will actually promote a stronger, deeper root system that can access deeper water resources. The extra leaf tissue also helps to shade the crowns of the plants during hot, dry weather.

Proper fertility management can increase your grasses root system. Grass that is deficient in nitrogen, iron, magnesium or any of the other nutrients that affect chlorophyll formation, will not undergo photosynthesis enough to supply their roots with the carbohydrates they need to grow and survive. Properly fertilized turf will be much more efficient at using available water.

Water early in the morning! Watering during the day (between the hours of 10am and 6pm) is a huge waste to evaporation. You should also not water at night. Excessive water in the canopy of your grass blades can lead to disease problems down the road. If you water at night, your blades do not dry out quick enough. Watering in the morning allows for lower evaporation, and quicker drying time.

Control your weeds! Pull or spot-spray weeds to eliminate them and prevent them from competing with your grass for moisture.

Use water retaining products! Humate and a product called Zeolite have an amazing water holding capacity that can greatly increase the time between waterings. Ask an Anderson associate more about these products and how and when to apply them.

Water Auditing

Now that we have a better understanding of our soil, signs of water needs, and water saving tips, let's focus on knowing how long to water your lawn to achieve that 1-1.5 inches per week! As we now know, timing will be different for every type of irrigation system whether you have to drag hoses, or have a sophisticated underground irrigation system, BUT the calculations are the same. Don't worry, just grab a calculator and a ruler, and we'll tell you just what to do.

First you need to determine how efficient your sprinklers are. To do this, collect several containers of the same size, such as tuna fish cans. Place these cans at equal distances from all your sprinkler heads in a grid like pattern over your lawn. Run your sprinklers for 10 minutes. When this is done, measure the depth of water in each cup and record those numbers (if the measurements are too small, run your sprinklers for longer). Average all the measurements. Then take the lowest 25% of the numbers and average those. For example, if you placed 12 cups around, then take the lowest 3 measurements and average those. Now take your Low Average ÷ Total Average then multiply by 100. This number will give your Distribution Uniformity (DU) percentage. 80% is a good target, but anything less than 70% will indicate that you need to adjust your sprinklers for better uniformity.

Now let's take these numbers and figure out how much water your system puts out in inches/hour. Take your Total Average ÷ running time (10 min or other). Then multiply by 60. This will give you your Application Rate in inches/hour. But as we figured out earlier, your system is not uniform, so we must take this into account. Take your Application Rate ÷ Distribution Uniformity. This is a fairly accurate number you can go by to determine how long you need to run your sprinklers to get 0.5 to 0.75 inches. For example, if you came up with your Application Rate as being 1.25 inches per hour, and you determine .5 inches is how much you want to water, $0.5 \text{ in.} \div 1.25 \text{ in./hr}$ then multiply by 60 to put it into minutes. In this case you would need to run your sprinklers for 24 minutes to put out 0.5 inches of water with your particular sprinkling system. See, wasn't that easy? Now you know exactly how much you need to water to achieve a certain depth.

In conclusion, our water is a very precious resource, and if we can use these tips on how to make our irrigation system more effective by understanding our soil; knowing signs of water needs; applying water saving strategies; and measuring the exact time it takes to water your lawn, you can more effectively help in the great goal of water conservation.