COUNTRY CLUB LAWN

A healthy lawn with less water

Good quality lawns require special care and management. The correct grass species, adequate soil fertility, sunlight, and water are all important components needed to grow and maintain a healthy, vibrant lawn. Many lawns are now irrigated, and while this can be positive, it can also create serious problems if not done properly.

Grass plants grow in the soil; specifically, the grass roots grow in the pore space within the soil. In an ideal situation, the pore space would be 50% of the volume of the soil and would be half filled with air and half filled with water, both of which the roots need to live and grow. Under conditions of excess moisture, such as after a heavy rain or irrigation cycle, most of the pore space is filled with water, therefore air for the roots to respire is lacking. After some time, the excess moisture drains out of the root zone and the proper balance of air to water in the pore space is again achieved. During extended wet periods or because of overwatering, roots do not have the oxygen they need and the grass plant is weakened. This makes the plant more susceptible to wear and abrasion damage, fungus disease, weed encroachment, and general turf decline.

Damage can also occur from continual, light applications of water. This scenario could cause excess soil moisture and the above-stated problems, but it will also weaken the grass plant in another way. Roots of lawn grasses grow 6 - 12 inches deep and can remove nutrients and water from the soil to this depth. Frequent, light applications of water give the roots no incentive to grow deep. Shallow-rooted grass has less root zone area for nutrient and water uptake and is more susceptible to drought damage than a healthy, deep-rooted lawn. Excess water or irrigation also leaches nutrients and fertilizer beyond the root zone where it is of no use to the grass plant and can degrade the groundwater.

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One of the major problems associated with overwatering is an increase in fungal diseases on the turfgrass. Fungus disease needs three components to be a problem: the fungus organism, the host plant, and the proper environmental conditions. The fungus is always present in the soil and the grass plant is a given. The environmental conditions of proper temperature and moisture are also needed. We can't control the temperature or the rainfall, but we do control the irrigation of the lawn. Watering every day supplies the moisture needed for the fungus disease to actively grow and damage the turf plant.

Golf courses irrigate frequently, and they certainly grow good grass. However, greens, tees, and fairways on the golf course differ from your lawn in two major ways. First, the grass species used in these areas require more water than the grass species best suited to a home lawn. Second, the grass is cut much lower than your home lawn; this restricts the depth of the root system and light, frequent irrigation is needed to keep moisture in the reduced root zone. Irrigating the home lawn like a golf course is not beneficial for the grass and the turf quality will suffer.

Deciding exactly how much water your lawn requires is a difficult decision. Each site has a few variables that influence the amount of irrigation needed. The type of soil is a major consideration. Clay soil holds more moisture and needs less irrigation, while sandy soil will need more irrigation. The type of grass species is important. Kentucky Bluegrass or Perennial Ryegrass need a bit more moisture than Red Fescue. Many lawns are a mixture of all three grass species and this further complicates your decision. Lawns in low areas or shaded areas generally need less irrigation, while lawns in high, windy areas with a southern exposure need more irrigation. Because of these factors, one specific answer as to how much irrigation is required is not possible.

A mature, healthy lawn needs between 0.7" and 1.0" of water per week during the summer, less in the spring and fall. This moisture can occur naturally from rainfall or it may come from irrigation. During cool, cloudy weather, 0.7" of water per week should be sufficient. During hot, sunny, windy periods, 1.0" of water per week may be needed. Generally, a home lawn will not need to be irrigated in the spring or fall in Maine or New Hampshire as rainfall is usually adequate. During the summer period of late May to early September, irrigation may be needed to supplement rainfall. Use a rain gauge to monitor what Mother Nature gives us for free and use your irrigation system to add enough water to achieve the totals per week listed above. Modify these suggested rates to suit the special conditions of your site.

To apply the correct amount of irrigation, you must know the application rate of your sprinklers. The application rate can easily be determined by placing a few widemouth tin cans across your lawn. Operate the irrigation system for a given time, say 30 minutes. Measure the depth of water collected in each can and calculate the average amount. This is the application rate for 30 minutes. Adjust your application time to meet your irrigation needs for the week. For instance, if the average amount measured was 0.25" in thirty minutes and you want to apply 0.5" this week, operate your sprinkler system for sixty minutes.

Perennial lawn grasses have the capability to become dormant during extended summer drought periods. They stop growing and turn straw brown but are still alive and will recover when moisture and cooler temperatures return. Don't start to irrigate a healthy, mature home lawn until a summer drought period begins. Then, if dry conditions persist, irrigate a few times per week to add the moisture needed to supplement rainfall.

Home lawns should be watered infrequently and deeply to avoid the many problems associated with overwatering. The turf will be stronger, healthier, and have fewer pest problems when it receives the right amount of moisture. Potable water is a scarce resource that you can help conserve while growing a better lawn and reducing your water bill.

(This article was written by Charles Ravis, Agronomist. Charles received his B.S. degree with a specialization in Turfgrass Management from Pennsylvania State University. He is a certified golf course superintendent and has managed the Augusta Country Club for the past 19 years. He also operates a lawn and golf course consulting service called "Country Club Lawns".)