YARD

Lawn care no. 7.202

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Quick Facts...

Proper watering can promote a deeply rooted, healthier turf.

Grass species and health, soil conditions, and weather conditions should guide irrigation practices; not the number of days between watering.

Mow bluegrass, ryegrass, fescue, and wheatgrass lawns year-around at a height of 2 to 3 inches. Buffalograss and blue grama lawns can also be mowed at this height, but also do well if unmowed.

Core cultivation is an essential management tool for all lawn areas, especially those that are thatchy or subject to high traffic.

Introduction

Before establishing a lawn, consider the desired quality, what the lawn will be used for, and how much time and money the homeowner is willing to invest in the lawn. A relatively inexpensive soil test can be conducted through the county Extension office to determine the chemical and physical condition of the soil. Any required soil amendments can then be added easily during establishment. The use of high quality sod or seed helps to ensure a satisfactory lawn.

Watering

Many factors influence turfgrass irrigation requirements, and no two lawns are exactly alike. A healthy, high-quality bluegrass or ryegrass lawn may require up to 2.25 inches of water per week under hot, dry, windy summer conditions, but may require much less when the weather is cool and/or cloudy. Turf-type tall fescue may perform well with less water than a bluegrass lawn, if it is able to produce a very deep root system. In many instances, however, tall fescue lawns require as much water as the typical bluegrass lawn to look good. Buffalograss and blue grama lawns can remain green for weeks without watering, even during the hottest summer weather.

Shady lawns, and areas protected from the wind, require less water over the course of a growing season than more exposed turf areas. However, the roots of mature trees and shrubs are efficient competitors for water. You may have to water more in mature landscapes where the roots of many plants are competing for water. Healthy turf, encouraged by proper mowing, fertilizing, and cultivation practices, uses water more efficiently.

Application. Each time you water the lawn, apply enough water to moisten as much of the turfgrass root zone as possible. For this reason, it is important to use a soil probe or shovel to determine what the average rooting depth is in your lawn. If the roots seem to grow down 6 inches deep, it is best to irrigate so that the soil is moistened to that depth. If the soil is mainly clay, apply 1 to 1.5 inches of water to moisten the root zone to a 6-inch depth. The surface 6 inches of a sandy soil can be moistened by as little as 1/2 inch of water. Obviously, it is important to know not only how deeply the turf roots grow, but also to what depth your irrigation water penetrates. Water can be wasted by watering too deeply (especially on sandy soils), and allowing the water to percolate past the root zone.

Frequency. Based on the above information, grass that grows on sandy soil must be irrigated more frequently than the same turf growing on clay or loam soils. Even after a thorough watering, sandy soils hold little plant-available moisture. They require more frequent irrigation with smaller amounts of water. Conversely, turf growing on a loamy-clay soil can be irrigated less frequently, with

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larger quantities of water. The ability to water less frequently results in more efficient water use (decreased evaporative losses) and can reduce the number of weeds that appear in the lawn.

With most soils, do not attempt to apply all of the required irrigation water in a short period of time. If applied too quickly, water often will run off of thatchy turf, from sloped areas, or from turf growing on heavy clay and/or compacted soils. In these cases it is more effective to apply a portion of the water and move the sprinkler (or switch to another station) to water another section of the lawn. This allows water to infiltrate into the soil, rather than run off to another section of the lawn. Come back an hour or so later and apply the remainder of the water. Core cultivation (aeration) can resolve some infiltration problems by reducing thatch and compaction. Wetting agents may enhance water movement into the soil but they should not be considered a cure-all; especially when compaction or thatch are problems.

A sure sign that turf requires irrigation is the appearance of wilt. One symptom of wilt is called “footprinting”; the appearance of footprints in the lawn that do not disappear within an hour. This symptom is soon followed by actual wilting, where the turf takes on a grayish or purple-to-blue cast. If only a few of these spots regularly appear in the same general location, you may spot water in order to delay watering of the entire lawn by perhaps a day or so. These indicator spots help the homeowner predict when watering of the entire lawn is necessary.

A hardened or toughened lawn, attained through less frequent, deep irrigation, often withstands minor drought and generally has fewer disease problems. It is important, however, that the turf not be allowed to become overly drought-stressed between waterings. This weakens the turf and makes it more susceptible to insect and disease damage, and weed invasion.

Check with your local water department before you water between 10 p.m. or midnight to 8 or 9 a.m. Some city ordinances prohibit irrigation during these hours to avoid the waste of water that occurs when sprinklers are left running in the same place throughout the night.

During extended dry periods from late fall to spring, it may be necessary to water every four to six weeks if the ground is thawed and will accept water. Pay particular attention to exposed slopes, sites with shallow soil, and south- or west-facing exposures.

Time of day. The most efficient time of the day to water turf is in the late evening and early morning hours (between 10 p.m. or midnight to 8 or 9 a.m.). It generally is less windy, cooler, and more humid at this time, resulting in decreased evaporation and more efficient use of the water that is applied. Water pressure is generally better and this results in optimal distribution patterns. Contrary to popular belief, watering at this time does NOT encourage disease development.

Mowing

The two most important facets of mowing include **mowing height** and **frequency.** The minimum height that any lawn should be mowed is 2 inches. The preferred mowing height for all Colorado species is 2.5 to 3 inches. Any less than 2 inches can result in decreased drought and heat tolerance, and higher incidence of insect, disease, and weeds. Mow the lawn at the same height throughout the year. There is no reason to mow the turf shorter (scalp) during the late fall.

Mow the turf frequently enough so that no more than 1/3 of the grass height is removed at any single mowing. If your mowing height is 2 inches, mow the grass when it is 3 inches tall. It may be necessary to mow a bluegrass or fescue lawn every three to four days during the spring when it is actively growing, but only once every seven to 10 days during those times of the year when its growth is slowed by heat, drought, or cold. Buffalograss lawns may require mowing once every 10 to 20 days, depending on how much it is watered during the summer. If weather or another factor prevents mowing at the proper time, raise the height of the mower temporarily to avoid scalping the grass. Cut the grass can be cut again a few days later at the normal mowing height.

You should allow grass clippings to fall back onto the yard, unless they are used for composting or mulching elsewhere in the landscape. The grass clippings decompose quickly and provide a source of recycled nutrients and organic matter for the lawn. Mulching mowers can do this easily. Side-discharge rotary mowers also will distribute clippings effectively if the lawn is mowed at the proper frequency. Grass clippings do **NOT** contribute to thatch accumulation. If herbicides are applied to the lawn, do not use clippings in the vegetable or flower gardens. Keep them on the lawn.

Thatch

Thatch is a tight, brown, spongy, organic layer of both living and dead grass roots and stems that accumulates above the soil surface. Interactions between environmental and soil conditions and management practices (irrigation, mowing, fertilization), influence the rate and extent of thatch accumulation. Thatch tends to be a problem on Kentucky bluegrass, bentgrass, and fine fescue lawns. It is rarely a problem with tall fescue, wheatgrass, bromegrass, or buffalograss. Grass clippings do not contribute to thatch accumulation and should be returned to the lawn during mowing to recycle the nutrients contained in them.

Check mowing equipment for sharpness and adjustment frequently during the season. Sharpen rotary mower blades every fourth mowing; especially when using rotary mowers on fescue or ryegrass lawns. A dull mower blade will shred and fray the leaf blades instead of cutting the blade cleanly. The result is a brown-colored, unattractive lawn. Similarly, check reel-type mowers for proper blade-to-bedknife adjustment before each mowing to avoid shredding and tearing of the grass leaves.

Take measures to slow the accumulation of thatch when the thickness of the thatch layer (measured by removing a small piece of turf, including the underlying soil) exceeds 1/2 inch. The thickness of the thatch layer can increase quickly beyond this point, making it difficult to control later on. As the thatch layer thickens, it becomes the main rooting medium for the grass. This predisposes the turf to drought stress and/or winterkill and increases the possibility for insect, disease, and weed problems. Also, fertilizers and pesticides applied to a thatchy lawn work less effectively.

Power Raking. This method of thatch removal has been used for years. Light (shallow) power raking may be beneficial if done frequently. Deep power raking of a thatchy lawn can be damaging, and often removes a substantial portion of the living turf. Used properly, power raking of wet, matted turf can speed spring green-up of the turf by encouraging air movement into the root zone and warm the turf. Compost the thatch and organic material to kill any living grass plants that might be present before it's used as a mulch or soil amendment.

Core Cultivation/Aerating. This is a more beneficial management technique than power raking. It helps improve the root zone environment (by relieving soil compaction) while controlling thatch accumulation. Soil compaction, in fact, is one of the factors that contributes to thatch accumulation. Plugs of thatch and soil 2 to 3 inches long (the longer, the better) are removed by the aerating machine and deposited on the lawn surface. A single aeration using a machine equipped with 1/2 inch diameter tines will remove about 10 percent of the thatch from a lawn if enough passes are made over the lawn to result in an average 2-inch spacing between holes.

Disposing of the cores left on the lawn is a matter of personal choice. From an agronomic perspective, it may be advantageous to allow the cores to disintegrate and filter back down into the lawn. Mingling soil and thatch may hasten the natural decomposition of the thatch. The little fluffs of thatch and turf that remain can be collected and composted. Depending on soil type, core disintegration may take a few days to several weeks. Irrigation helps wash the soil from the cores and dragging a piece of cyclone fence or an old metal door mat can speed the process. Running over the cores with a rotary mower can be effective, but the blade can dull. Many commercial companies that perform core cultivation will break up the cores with a power rake. If the cores are removed from the lawn, compost them before they are used as a mulch or soil amendment.

Fertilization

Nitrogen is the most important nutrient for promoting good turf color and growth. Do not overstimulate the turf with excess N, especially during the spring and summer. Table 1 suggests nitrogen application programs for various lawn species. To obtain a high-quality, water-resistant turf with greater pest resistance, follow the suggestions in the Table 1. Over-fertilization can contribute to thatch accumulation and increased mowing requirements. Avoid under-fertilization of bluegrass and ryegrass. These species can become unhealthy if not fertilized properly. Turf that does not respond to nitrogen fertilization may be deficient in other nutrients (phosphorus, iron) and require a soil test to determine which nutrient(s) are deficient.

Balanced or complete fertilizers (containing various amounts of phosphorus, potassium, iron, and sulfur) are a good safeguard against a potential nutrients deficiency. These nutrients are recycled if grass clippings are returned during mowing. If you remove clippings, this type of fertilizer is appropriate.

Table 1: Fertilizer application schedule for established Colorado lawns.

Turfgrass Species	Mid-March to April*	May to mid-June	July to early August	Mid-August. mid-September	Early Oct. to early Nov.**
	(nitrogen application rates are in pounds of nitrogen per 1000 square feet of lawn area)				
High Maintenance					
Bluegrass/Ryegrass	1/2-1	1	not required	1	1-(2)
Low-Maintenance					
Bluegrass	½	1/2-1	not required	1	(1)
Turf-Type Tall Fescue	½	1/2-1	not required	1	(1)
Fine Fescue	½	1/2-1	not required	1/2-1	not required
Buffalograss/Blue Grama/Bermudagrass	Apply no N	1/2-1	1/2-1	Apply no N	Apply no N

* The March-April nitrogen application may not be necessary if you fertilized late (September to November) the previous year. If spring green-up and growth is satisfactory, delay fertilizing until May or June.

** When grass is still green

- Optional N applications shown in (); use extra nitrogen applications where a higher quality turf is desired or on heavily-used turf.
- Make the final fall nitrogen application (October-November) while the grass is still green and at least two to three weeks before ground begins to freeze in your area.
- Do not fertilize turf on very sandy soils after late September, because nitrogen can leach into groundwater during the winter months. Use slowly-available nitrogen fertilizers (sulfur-coated urea, IBDU, and natural organic-based fertilizers) on sandy soils throughout the year to reduce the potential for leaching losses.
- Nitrogen application can often be reduced by 1/4 to 1/3 when grass clippings are returned to the lawn during mowing because nitrogen contained in the clippings is recycled into the lawn as they decompose. Grass clippings do not contribute to thatch accumulation in lawns.

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