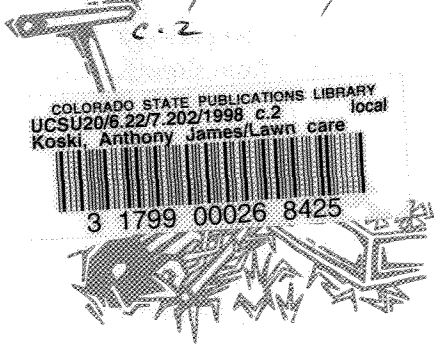


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# YARD

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## Lawn Care

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by T. Koski and V. Skinner <sup>1</sup>

### Quick Facts...

Proper watering can promote a deeply rooted, healthier turf.

Let grass species and health, soil conditions, and weather conditions dictate irrigation practices, not the number of days between waterings.

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

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

Before planting a lawn, decide on the desired quality, how the lawn will be used, and how much time and money you are willing to invest. Have your soil tested. Contact your Colorado State University Cooperative Extension county office for information on soil testing. Soil amendments can easily be added before planting. High quality sod or seed also helps ensure a satisfactory lawn.

### Watering

Many factors influence lawn water requirements, and no two lawns are exactly alike. A healthy, high-quality bluegrass or ryegrass lawn may need up to 2.25 inches of water per week under hot, dry, windy summer conditions. It may require much less when the weather is cool or cloudy. Turf-type tall fescue may perform well with less water than a bluegrass lawn, if it can grow a deep root system. In many cases, however, tall fescue requires as much water as bluegrass 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 growing season than more exposed turf. However, the roots of mature trees and shrubs also need water. You may have to water more in mature landscapes where the roots of many plants compete for water. Healthy turf, encouraged by proper mowing, fertilizing and cultivation, uses water more efficiently.

### Application

Each time you water the lawn, apply enough water to moisten as much of the root zone as possible. Use a soil probe or shovel to determine what the average rooting depth is in your lawn. If the roots grow down 6 inches deep, water so the soil is moistened to that depth.

If the soil is mainly clay, apply 1 to 1 1/2 inches of water to moisten the root zone to a 6-inch depth. A sandy soil can be moistened to 6 inches by as little as 1/2 inch. It is important to know not only how deep the turf roots grow, but also how deep your irrigation water penetrates. Watering too deeply, especially on sandy soils, wastes water and allows it to percolate past the root zone.

### Frequency

Based on the above, grass that grows on sandy soil must be watered more often than the same grass 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 larger quantities of water. Watering less often means more efficient water use because of less loss to evaporation. It can also reduce the number of weeds that appear in the lawn.



With most soils, do not apply all the water in a short period of time. If applied too quickly, water often runs off of thatchy turf, from sloped areas, or from turf growing on heavy clay or compacted soils. In these cases, it is more effective to apply only 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 soak into the soil rather than run off. An hour or so later, apply the rest 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 a wilted appearance. One symptom is "footprinting," footprints on 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 such spots regularly appear in the same general location, spot water them to delay watering the entire lawn for another day or so. These indicator spots help predict when the entire lawn needs watering.

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 to weed invasion.

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

### Mowing

The two most important facets of mowing are mowing height and frequency. The minimum height for any lawn is 2 inches. The preferred mowing height for all Colorado species is 2.5 to 3 inches. Mowing to less than 2 inches can result in decreased drought and heat tolerance and higher incidence of insects, diseases and weeds. Mow the lawn to the same height all year. There is no reason to mow the turf shorter in late fall.

Mow the turf often enough so 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. You may have 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 when growth is slowed by heat, drought or cold. Buffalograss lawns may require mowing once every 10 to 20 days, depending on how much they are watered.

If weather or another factor prevents mowing at the proper time, raise the height of the mower temporarily to avoid cutting too much at one time. Cut the grass again a few days later to the normal mowing height.

Let grass clippings fall back onto the lawn, unless they are used for composting or mulching elsewhere in the landscape. Grass clippings decompose quickly and provide a source of recycled nutrients and organic matter for the

*Check with your local water department before you water at night. Some city ordinances prohibit irrigation during these hours to avoid the waste that occurs when sprinklers are left running in the same place all night.*

lawn. Mulching mowers can do this easily. Side-discharge rotary mowers also 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. The interactions among environmental conditions, 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, brome grass or buffalograss. Grass clippings do not contribute to thatch accumulation and should be returned to the lawn during mowing to recycle the nutrients they contain.

Measure thatch buildup by removing a small piece of turf, including the underlying soil. Try to slow buildup when the thatch layer exceeds 1/2 inch in thickness. The thickness can increase quickly beyond this point, making it difficult to control later. As the thatch layer thickens, it becomes the main rooting medium for the grass. This predisposes the turf to drought stress or winter kill 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 often. 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 by letting air move into the root zone and warm the turf.

Compost the thatch and organic material to kill any living grass before it's used as a mulch or soil amendment.

## Core Cultivation or Aerating

This is more beneficial than power raking. It helps improve the root zone by relieving soil compaction while controlling thatch accumulation. Soil compaction, in fact, is one factor that contributes to thatch buildup.

Aeration removes plugs of thatch and soil 2 to 3 inches long (the longer, the better) and deposits them on the lawn. A single aeration using a machine with 1/2-inch diameter tines removes about 10 percent of the thatch if enough passes are made to achieve an average 2-inch spacing between holes.

Disposing of the cores is a matter of personal choice. From a cultural perspective, there may be an advantage to allowing 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. 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 can dull the blade. Many commercial companies that perform core cultivation break up the cores with a power rake. If the cores are removed from the lawn, compost them before using them as a mulch or soil amendment.

*During the season, regularly check mowing equipment for sharpness and adjustment.*

*Sharpen rotary mower blades every fourth mowing, especially when mowing fescue or ryegrass lawns. A dull mower blade will shred and fray leaf blades instead of cutting them cleanly. The result is a brown, unattractive lawn.*

*Check reel-type mowers for proper blade-to-bedknife adjustment before each mowing to avoid shredding and tearing the grass leaves.*

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## 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.

Overfertilization can contribute to thatch buildup and increased mowing requirements. Avoid underfertilization of bluegrass and ryegrass. These species can become unhealthy if not fertilized properly. Turf that does not respond to nitrogen fertilizer may be lacking in other nutrients, such as phosphorus or iron. Get the soil tested to determine which nutrient(s) are deficient.

Balanced or complete fertilizers contain various amounts of phosphorus, potassium, iron and sulfur. They are a good safeguard against a potential nutrient deficiency. If you leave clippings on the lawn, these nutrients are recycled from the clippings. 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 <sup>1</sup>	May to mid-June	July to early August	Mid-August to mid-September	Early October to early November <sup>2</sup>
(nitrogen application rates are in pounds of nitrogen per 1,000 square feet of lawn area)					
High Maintenance					
Bluegrass/Ryegrass	1/2-1	1	not required	1	1-(2)
Low-Maintenance					
Bluegrass	1/2	1/2-1	not required	1	(1)
Turf-Type Tall Fescue	1/2	1/2-1	not required	1	(1)
Fine Fescue	1/2	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

<sup>1</sup> The March-April nitrogen application may not be needed if you fertilized late (September to November) the previous year. If spring green-up and growth is satisfactory, delay fertilizing until May or June.

<sup>2</sup> 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 the ground begins to freeze in your area.
- On very sandy soils, do not fertilize turf after late September. Nitrogen can leach into groundwater during the winter months. Use slow-release 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. Nitrogen and other nutrients contained in the clippings are recycled into the lawn as they decompose. **Grass clippings do not contribute to thatch accumulation in lawns.**

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