

Basic Lawn Care & Don't Bag It!

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The three most important aspects of lawn care are proper fertilizing, mowing and watering. Other factors, such as core aeration and thatching must also be considered.

FERTILIZING

Current recommendations are to apply no more than three pounds of actual nitrogen per 1,000 square foot per season. Application may be broken down into two or three applications per season. Use a balanced fertilizer with a ratio of 3:1:2 nitrogen, phosphorus and potassium if possible. To understand the timing of lawn fertilization, it is important to understand the seasonal growth pattern of a grass plant. In the spring, grasses are coming out of winter dormancy and begin rapid growth using stored energy reserves from last year. Grasses that are over-fertilized with nitrogen in the spring will spend too much of those energy reserves on leaf growth and will not have enough left over to take them through summer's heat and drought stress. All that is needed in the spring is to supply the grass with just enough nitrogen fertilizer to prevent it from becoming chlorotic (very light green to yellow in color).

As temperatures rise in the summer, leaf and root growth start to slow. Over-fertilization at this time could be very detrimental to the health of the grass and even cause areas to die. Avoid fertilizing during the summer except to prevent chlorosis. Very light applications and use of a slow release fertilizer will help keep the grass green in the summer without burning or damaging the lawn.

As temperatures cool and hours of light per day diminishes in late summer to early fall, grasses begin preparing for winter by sending their energy reserves to their rhizomes and roots. A fertilizer application at this time will help the plant maximize energy production and most of the energy will be sent to storage instead of being used for leaf growth.

Fertilizers can be divided into two major groups, fast release and slow release. This refers to how quickly the nitrogen is released and made available to the plant. You may also have heard about organic vs. inorganic fertilizers. This refers to the chemical composition of the fertilizer. It is important to understand that the term "organic" means the fertilizer contains carbon in the chemical structure. Organic fertilizers include natural materials such as sewage-based products like Milorganite®, animal by-products like manures and bone meals, and plant by-products like corn gluten meal. There are also synthetic organics like urea which is very common in the agricultural industry, but less so in the turf industry because of its very fast release and high burn properties. There are, however, also many forms of urea that have been developed to slow its release and lower its burn potential.

MOWING

Leaving grass clippings on the lawn is a very beneficial practice. The recommended mowing height for bluegrass lawns is 2 1/2"-3" high. The leaf blade is the food factory and mowing shorter than this causes stress to the lawn and depletes the root system of energy. Taller grass also helps shade the soil, slowing the drying out process. It encourages deeper roots, giving the plants more staying power during drought periods and helps suppress weeds by preventing the seed to soil contact necessary for germination. The clippings act as a constant source of slow release fertilizer as well as supplying additional moisture to the lawn. You can cut back on the amount of nitrogen fertilizer when leaving clippings on the lawn. The two exceptions to the blade height and bagging suggestions are the first mowing in the spring and the last mowing in the fall. It is recommended to mow a little shorter, no less than 2", and to bag the clippings at those times to help discourage lawn diseases. Mow often enough that it is not necessary to remove more than 1/3 of the leaf blade at one time. If you're leaving piles or rows of grass, you are not mowing often enough. Alternate mowing patterns to prevent wear patterns, and to encourage grass blades to stand up straight. Keep mowing blades sharp at all times.

WATERING

Installing automatic sprinkler systems in the home landscape has become increasingly popular over the past few years. If timed properly, they are an immensely convenient and time saving method of watering. On the other hand, setting the system to water often and shallowly can be detrimental to the lawn.

Watering should be done before 2:00 pm in sunny areas of the yard, and before noon in shaded areas. Early morning is an ideal time to water. This allows leaf surfaces to dry off completely before nightfall, helping to decrease the development of insect and disease problems. Water deeply and less often to promote deep roots. Apply between 1"-1 1/2" of water weekly, depending on weather conditions, soil type, and landscape terrain (slopes, etc.). Soil should be moistened to a depth of about six inches. To test sprinkler output, place empty tuna fish cans or cat food tins along the water arc to see how long it takes your sprinkler to put down this amount of water. Output is greater the farthest point from the sprinkler head. (You can allow the cans to fill 1/4" or 1/2" and multiple accordingly.) One application a week may be all that is necessary, or you can divide the time into two or three applications per week. Also, take into consideration the areas where sprinklers overlap an area, and that sprinkler output varies. During hot weather, increase the water to 2" per week and apply more frequently if necessary. Visual clues that the lawn needs watering are when the grass begins to take on a blue-green color or has lost its spring, leaving an imprint behind when walked upon.

THATCH

Thatch is not caused by leaving grass clippings on the lawn, as is commonly believed. It is an accumulation of dead and partly decomposed leaves, stems and roots above the soil surface but below the green leaves. Up to 1/2 inch of thatch is beneficial, acting as natural mulch, insulating the soil, reducing water evaporation and soil compaction, and increasing the lawns spring and wear tolerance. Too much thatch serves as a barrier preventing air and moisture from moving into the root zone of the plants, causing the turf to dry out much too rapidly. This provides a haven for insects and disease. If thatch is over 1/2 inch, power raking in early spring is advised. Power Raking is commonly used to remove excessive layers of thatch, but do so with caution. Deep power raking can cause excessive damage to a lawn and even remove large amounts of living grass. Frequent, shallow power raking may be more beneficial.

AERATION

Core Cultivation/Aeration is the preferred method for managing thatch. Aeration involves using a machine with hollow tines that penetrate the lawn and remove soil cores. The benefits of core cultivation include relief of compaction, improved air movement into the soil, improved water infiltration and improved root growth. Additionally, the soil cores, if left on the surface, will mix with and help break down thatch. Make sure the ground is moist before aerating to ensure maximum depth penetration of the tines. Dragging the cores with a piece of chain-link fence helps break and mix them into the lawn. Soil cores can also be broken up with a rotary mower. Over time and with irrigation, the cores will wash into the lawn.

When to Aerate and How Often? Most home lawns should be core cultivated at least once each year. The best time of the year is either in the fall or the spring when soil temperatures are ideal for root growth. Fall is the preferred time since the aerification holes will not be exposed to excessively hot temperatures during the summer and any weed seeds that were exposed with the soil cores are less likely to compete with the grass. Do not core cultivate during the summer due to excessive heat and drying.

Don't Bag It!

Recycle Your Grass Clippings

W. M. Colt, R. Rynk, S. Bell, and W. J. Johnston

Grass clippings have been banned from landfills by approximately half of the states in the United States and it may be only a matter of time before Idaho follows suit. Regardless of bans, however, there are no good reasons to collect and dispose of lawn grass clippings.

In the collection system, grass clippings are a costly nuisance. Yet when recycled at home, grass clippings are a resource of valuable plant nutrients and organic matter for your soil. The best way to manage grass clippings is to leave them on the lawn. Grass clippings left to decompose (in place) will improve your turf. By following the steps in the "Don't Bag It!" lawn care program you can have a healthy lawn while spending less time and less money maintaining it.

Why Recycle Grass Clippings?

Grass clippings are too valuable to waste! When left on the lawn, properly mowed grass clippings filter down to the soil and decompose rapidly, usually within a few weeks. During the breakdown process, the clippings feed soil organisms, recycle plant nutrients, and contribute organic matter to the soil. As a result, water is conserved and less fertilizer is needed.

Grass clippings contain about 4 percent nitrogen (N), 0.5 percent phosphorus (P), 2 percent potassium (K), plus small amounts of other plant nutrients. As much as 50 percent of the N that you apply as fertilizer is removed when grass clippings are collected. Research at the University of Missouri shows that grass clippings can supply 25 percent of a lawn's total fertilizer needs. A study conducted by the University of Connecticut found that the N from grass clippings began showing up in the growing grass within 2 weeks. By the end of

the third year of the study, researchers estimated that about one-third of the N found in grass came from previously recycled clippings. Annually, this could add nearly 2 pounds of N to each 1,000 square feet of lawn.

In Idaho, grass recycling studies have not been undertaken to determine the reduction in annual N on turf; however, it is clear from other university studies that the amount of N applications can be reduced in the first 2 years. Research is underway to determine long-term effects of recycling grass clippings on turfgrass N levels.

Grass clippings only become wastes when they are collected and taken to the landfill. As they decompose in landfills, the nutrients they contain are not only wasted, but they also contribute to landfill leachate and groundwater contamination. Grass clippings typically comprise 10 to 20 percent of the solid waste collected by communities on a year-round basis. During the summer months, grass clippings can account for nearly half the weight of the waste collected in some communities! Curbside collection of grass clippings increases trash, handling, and hauling costs, while burying grass clippings reduces available landfill space.

The "Don't Bag It!" Program

The "Don't Bag It!" program is a set of lawn care procedures intended to help sustain a healthy lawn without removing grass clippings. The program involves proper mowing, water management and nutrition management. It was developed in Texas and has been adopted in many states. Besides reducing the amount of grass clippings in the waste stream, the "Don't Bag It!"



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program allows you to have a beautiful lawn while spending less time and less money maintaining it.

Mowing and Mowers

The first factor in the “Don’t Bag It!” lawn care program involves mowing practices that promote healthy grass. Lawns are usually most healthy when mowed correctly with the grass clippings left on the lawn.

The height of your lawn greatly influences the performance of your turf. Cutting lawns too short weakens the grass plant and makes it more susceptible to diseases, pests, and weeds. On the other hand, when you set your mower at a higher cutting height, the grass plant produces a deep efficient root system that reduces the need for watering (fig. 1). Taller mowing helps to shade out many weeds.

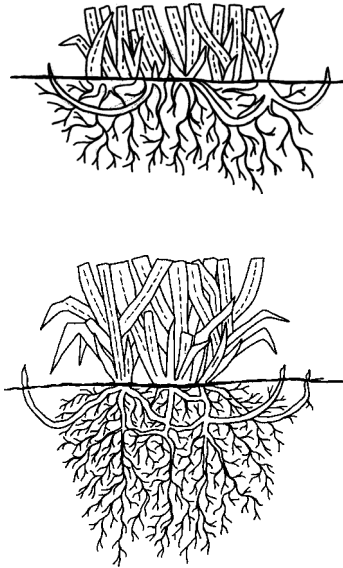


Fig. 1. A comparison of turfgrass mowed at two heights: the closer mowed turfgrass (top) has less roots and uses water inefficiently, (bottom) the higher-mowed turf-grass has a more extensive root system and is more drought

Grass clippings normally contribute little to thatch¹ buildup.

How high and how often you mow your lawn will depend on the grass species, environmental conditions, and the desired maintenance level. For cool season grasses, prevalent in Idaho, set your mower to a height of 1 to 3 inches. As a general rule, mow

frequently enough so that no more than one-third of the grass blade is removed at one mowing (see table 1). This may mean mowing every 5 days instead of waiting a full week. Although you will be mowing more frequently, you will spend less time doing it. Several studies have shown that it takes 30 – 38 percent less overall time to mow often and leave clippings than to mow weekly and bag the clippings.

With proper mowing, clippings will be short enough to quickly decompose. Avoid mowing when the grass is wet as this produces clumps that smother the lawn and clog the mower. If this occurs, or if grass becomes excessively long in between mowings, you have three options: (1) mow over the clippings a second time only if small sections of the lawn are wet or overgrown, (2) sequentially remove one-third of the grass blade then wait a day. Remove one-third again to get down to the desired height over several mowings, (3) bag or rake the clippings to use as a mulch, a soil additive, or an ingredient in your compost pile (see *Other Choices* section for more information).

When the lawn is heavily diseased, removing clippings can help decrease the population level of disease organisms. Clippings can still be used for compost.

Any type of mower can be used in a “Don’t Bag It!” program. A mulching mower has an extra blade that finely chops and distributes clippings across the lawn surface. Mulching mowers promote faster decomposition, but they are not necessary. In most cases, you can use common rotary mowers simply by removing the grass catcher.²

Regardless of mower type, the key to a quality cut is keeping the mower blade sharp and properly adjusted. Dull mowers use more gasoline, give the lawn an undesirable frayed appearance, and can allow leaf diseases to get started. Mower blades require sharpening at least every second mowing season for bluegrass lawns, and at least once per year for tall fescue or perennial ryegrass lawn.

¹Thatch is a layer of living and dead organic material that can develop between the true soil surface and the crown or base of the plant. Plant parts that may contribute to this layer are roots, rhizomes, and grass stolons.

These parts are high in lignin, a material used for cell walls. Grass clippings do not contain a great deal of lignin so they decompose quickly. Thatch is most often caused by overfertilizing and overwatering. If your lawn has more than 1/2 inch of thatch, the lawn should be dethatched. The waste material this generates may be composted. Try to identify and change the maintenance practices that led to thatch accumulation. (For more information, see CIS

731 *Thatch in Lawns*.) ²Be cautious about removing the grass catcher from any lawn mower. Because many mower bagging attachments affect safety, it is very important to understand the manufacturer’s guidelines before you consider removing the attachment. Refer to your owner’s manual or consult your equipment dealer to be sure.

Safety attachments or adapter kits are available for some mowers that cannot be safely operated without the grass catcher. Always keep hands and feet away from the cutting blades of any mower while in use and remove the sparkplug wire as a double protection before servicing the blade on a mower, even if the machine is turned off.

	Approx. mower height setting (inches)	To remove 1/3 of the grass blade, mow when or before grass reaches about this height (inches)
Kentucky bluegrass	1.0-2.0	1.5-3.0
Perennial ryegrass	1.0-2.0	1.5-3.0
Tall fescue	2.0-3.0	3.0-4.5
Fine leaf fescue	1.0-2.0	1.5-3.0

Water Management

The second factor in the “Don’t Bag It!” lawn care program is water management. Water lawns when they need it, not on a set schedule. Lawns watered too frequently tend to develop shallow root systems, subjecting them to moisture stress on hot summer days. The amount of water to be applied largely depends on the soil type. As a general rule, water deeply and infrequently.

The key is to wet the root zone and then allow it to dry down some before irrigating again. When watering, match the rate of water delivery through the sprinkler with the rate the soil absorbs the water. The best time to water is early morning. This reduces fungal diseases and prevents unnecessary water loss to high winds and evaporation.

Compacted soils should be core aerified. Cores of soil about the size of an index finger are removed mechanically, promoting easier water, fertilizer, and air movement. Core aerifying increases decomposition of the grass clippings and enhances deep root growth.

Nutrition Management

The third factor in “Don’t Bag It!” lawn care is nutrition management. Fertilize your lawn to provide uniform, moderate growth throughout the growing season. A properly fertilized lawn will produce a healthy, dense stand of turf that will reduce weed competition and recover quickly from wear, insects, or disease.

Apply 75 percent of your fertilizer in the fall— between late September and late November—but at least 2 to 3 weeks before the ground freezes and while the grass is still green. Late season fertilization favors root growth, provides a greener fall and winter lawn, and allows your lawn to green up earlier in the spring. Fertilizing in the fall avoids a lot of the mowing chores brought on by spring fertilization, which favors top growth.

Even a moderate fertilizer application in the spring means more frequent mowing— up to twice per week—and can produce a weak, poorly rooted turf. Use only light amounts of fertilizer in the spring if really necessary; or better yet, consider using a slow-release fertilizer, such as sulfur-coated urea, urea formaldehyde, or an organic fertilizer, that gradually makes nutrients available to the grass. Cool season grasses (Kentucky bluegrass, tall fescue, and perennial ryegrass) are usually not fertilized during the summer when they go semi-dormant. Remember, your turf will need perhaps 25 percent less fertilizer if you leave the clippings on the lawn.

Other Choices for Recycling Grass Clippings

Usually the easiest and best way to handle grass clippings is to leave them on the lawn. Sometimes, this is not desirable, such as when the grass is mowed long. Fortunately, there are other good methods to recycling grass clippings at home, including using them as a mulch or soil additive in gardens, or as an ingredient in a compost pile.

Do not use grass that has been treated with weed killers as a mulch or incorporate it into garden soil as these could harm your desirable plants. Leave herbicide-treated clippings on the lawn or compost them. Be particularly cautious when the long-lasting herbicide called dicamba (Banvel) has been used. Most herbicides used on grass break down in the compost pile. Dicamba is an exception. Compost made with dicamba-treated grass should be used only for lawn applications. A better alternative is to leave dicamba-treated grass clippings on the lawn.

Mulching

Grass clippings can serve as a garden mulch to discourage weeds, retain soil moisture, and reduce erosion. The grass eventually decomposes, adding organic matter and plant nutrients to the soil. Place

grass mulch around plants in layers of about 1 inch and allow it to dry before you add more clippings. Thicker applications of clippings can become slimy and matted, impeding air and water movement into the soil.

Soil Incorporation

Incorporating grass clippings directly into the soil captures more of the N and organic matter than mulching, though without the benefits of a surface mulch. As the grass decomposes, nutrients gradually become available to the garden plants. After collection, work 2 to 3 inches of clippings into the top 6 to 12 inches of soil. Do not use clippings containing a large amount of mature grass or weed seeds. These will eventually sprout weeds in the garden.

Home Composting

Grass is a good ingredient for a backyard compost pile. Grass clippings decompose rapidly and provide both moisture and N, which are often lacking in backyard composting piles. Compost piles begin to heat soon after grass clippings are added. The resulting higher pile temperatures destroy more weed seeds and plant diseases and generally speed the composting process.

There are a few cautions to observe when composting grass clippings. Rapidly decomposing

grass quickly consumes oxygen from the surrounding pile. Oxygen-carrying air cannot penetrate grass clippings very well because grass clippings tend to stick together forming clumps and mats. Consequently decomposition occurs without oxygen, which promotes offensive odors. The remedy is to mix grass clippings with other drier materials that are bulky and decompose more slowly.

In general, grass clippings should make up no more than one-half (by volume) of the material in the pile. Watch a compost pile containing a large proportion of grass and then turn it if the pile begins to compact or emit an odor. When you add grass clippings to an existing compost pile, turn them into the pile within 24 hours.

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Portions adapted from the “Don’t Bag It!” program developed by Texas A&M.

Further readings

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