

# Don't Bag It!

## Recycle Your Grass Clippings

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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, proper water management, and nutrition management. It was



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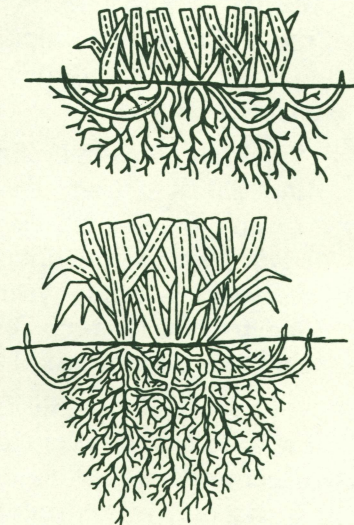
developed in Texas and has since been adopted in many other states. Besides reducing the amount of grass clippings in the waste stream, the "Don't Bag It!" program allows you to have a beautiful lawn while spending less time and less money maintaining it.

## 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 also helps to shade out many weeds. Grass clippings normally contribute little to thatch<sup>1</sup> 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, which are prevalent in Idaho, set your



**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 resistant.**

<sup>1</sup>Thatch 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.*)

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 any 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 to 38 percent less overall time to mow often and leave the clippings than to mow weekly and bag the clippings.

With proper mowing, clippings will be short enough to quickly decompose within the lawn. 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.<sup>2</sup>

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 lawns.

<sup>2</sup>Be 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.

**Table 1. Recommended mowing heights.**

	<b>Approx. mower height setting (inches)</b>	<b>To remove <math>\frac{1}{3}</math> of the grass blade, mow when or before grass reaches about this height (inches)</b>
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 mainly 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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