

MU Guide

“Don’t Bag It” Lawn Care

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Many homeowners believe grass clippings need to be removed to have a healthy, vigorous lawn. By following the steps in the “Don’t Bag It” lawn care program, you can have a beautiful lawn without collecting your grass clippings.

“Don’t Bag It” lawn care facts

- Yard wastes, such as leaves, grass clippings and branches, have been banned from Missouri landfills since January 1, 1992, and nationally since March 1995.
- Yard waste accounts for approximately 20 percent of all waste materials.
- Up to 25 percent of your lawn’s total fertilizer needs are supplied by clippings left on the lawn.
- Clippings contain 80 to 85 percent water and decompose quickly.
- MU research shows clippings do not contribute to thatch problems.
- Average mowing time can be reduced by 30 percent when grass clippings are not bagged.
- Besides saving time, you also save money by not having to purchase bags or pay for extra trash removal.

Clipping management and thatch

Although turfgrass experts tell us that returning grass clippings to the lawn is an accepted part of lawn maintenance, many people still believe grass clippings cause thatch. Thatch is a layer of undecomposed or partially decomposed grass roots, stems, crowns, runners and lower shoots that build up between the soil surface and actively growing green turf. Grass clippings contain 80 to 85 percent water and decompose more quickly than other grass plant parts.

Research at MU and other universities indicates that grass clippings do not contribute to thatch. However, it is important to understand that if a thatch layer greater than $\frac{1}{2}$ inch is already present, clippings can further speed its formation.

A lawn that has a thatch layer that is more than half an inch thick should be dethatched before you begin recycling grass clippings to the lawn. Dethatch cool-season lawns (Kentucky bluegrass, tall fescue,

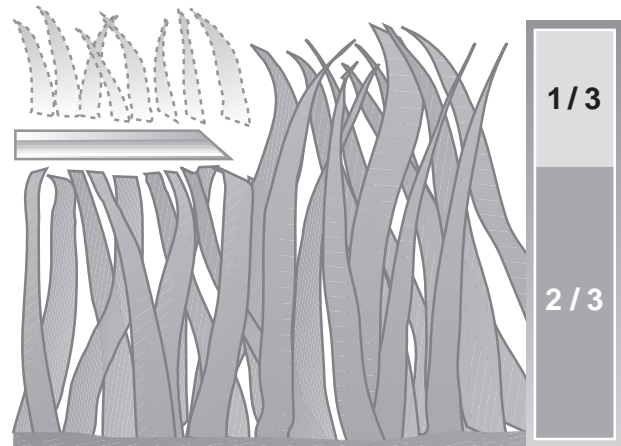


Figure 1. Mow your lawn frequently so that you do not remove more than one-third of the total plant height.

perennial ryegrass) in early fall and warm-season lawns (zoysia, Bermuda) in early to mid summer. Thatch is best removed by power raking, verticutting or coring. For more detailed information on thatch, refer to MU publication G 6708, *Thatch: Enemy of Lawns*.

“Don’t Bag It” in three easy steps

Step 1: Mowing

Returning clippings to the lawn usually means mowing more than once a week during the few weeks of rapid growth in spring and early summer. Grass clippings should be less than 1 inch, or no more than one-third of the total plant height, to ensure rapid decomposition (Figure 1). Mowing more frequently is not as much extra work as you might think, because lawns mowed at the proper height cut more easily and quickly. Mowing infrequently damages the lawn by removing too much of the plant at one time. When mowed regularly, clippings filter down through the grass, decompose rapidly and recycle nutrients back into the soil.

For cool-season grasses (Kentucky bluegrass, tall fescue, perennial ryegrass), the “Don’t Bag It” lawn care plan recommends that mowers be set at $2\frac{1}{2}$ to $3\frac{1}{2}$ inches. When you set your mower at a high cutting

height, the grass plant produces a deep and efficient root system that can reduce the need for extra water. Taller mowing also helps to “shade out” many weeds. Simply remember to set your mower at a tall setting so clippings fall easily into the lawn.

Warm-season grasses, such as zoysia and Bermuda, should be mowed at 1½ to 2½ inches. In the spring (before green-up), warm-season lawns should be mowed at a low setting on your mower. This dead leaf and stem tissue should be removed from the lawn. Mowing at a low setting in spring increases the green-up rate, reduces thatch accumulation and allows for easier and more uniform mowing during the growing season. As the season progresses, mowing height should be adjusted upward so that by September you are mowing at 2 to 2½ inches. Warm-season lawns should be left tall (2 to 2½ inches) in the fall. Raising your mower height throughout the growing season will result in a thick, vigorous turf.

Clippings should be uniformly distributed rather than deposited in clumps. Mowing the lawn when the grass is dry and using a properly sharpened mower blade will spread clippings evenly. Dull mower blades increase injury to grass plants and give the lawn an unsightly brown appearance. Mowing when the lawn is under drought or heat stress can also injure grass plants.

Be cautious about removing the bagging attachment from any lawn mower. Because many mowers have bagging attachments that affect mower safety, it is very important to understand manufacturer guidelines before considering removal of the bagger attachment. Some manufacturers have adapter or converter kits that can be purchased to change from a bagging mower to a nonbagging type.

Never assume your mower is still safe to operate after removing the bagging attachment. Refer to your owner’s manual or equipment dealer.

Mulching mowers do an excellent job of working grass clippings into the canopy of the lawn for a pleasing appearance. Their action (blade design) chops clippings and speeds their decomposition. Mulching mowers force homeowners to mow more frequently, because they do not operate easily in tall grass.

In autumn, it is not always necessary or even desirable to remove all fallen tree leaves. Instead, increase mowing frequency to mulch leaves back into the lawn. This practice recycles essential nutrients that were mined by deep tree roots back to the soil surface, making them available to shallow, fibrous turfgrass and tree roots. University research has shown that mulching tree leaves into lawns has no detrimental effects on thatch or soil pH. Of course, there are some limitations of this practice. Avoid mulching leaves into the lawn when leaves are wet or when deposition is so large (more than a 2-inch-high layer) that turf-smothering clumps are left on the lawn.

Step 2: Fertilizing

Fertilize your lawn to provide uniform, moderate growth throughout the growing season. A properly fertilized lawn will have a healthy, dense stand of turf that reduces weeds and recovers quickly from insect or disease injury.

Remember, soil testing is recommended every three years. Select a lawn fertilizer based on soil test results. Without a soil test, use a lawn fertilizer with an approximate ratio of 1:1:1 to 2:1:1 or 3:1:2 (nitrogen: phosphorus: potassium). For example, a 3:1:2 fertilizer would have a label analysis of 21-7-14. Contact your local University Extension center for information on soil testing. Consult MU publication G 6954, *Soil Testing for Lawns*.

The number of fertilizer applications you make will depend on how you want your lawn to look, the type of grass, and soil type. Typically each fertilizer application should supply 1 pound of nitrogen per 1,000 square feet of turf.

Cool-season grasses. Fertilize cool-season grasses at the following maintenance levels:

- Low maintenance: October, May.
- Average maintenance: September, October, May.

September and October are the most important times to fertilize cool-season grasses. Fertilizing at this time will prolong the green color into the winter months and encourage root development and thickening of the turf.

Early spring fertilization, especially with high rates of nitrogen, can result in a flush of green growth and rapid clipping production. It may be necessary to mow more frequently until growth slows. While the lawn may look beautiful for awhile, the plants’ energy reserves are depleted by this rapid shoot growth. Consequently, the lawn is less tolerant of summer stresses. Early spring (March-April) fertilizer applications should only be made if the lawn has not been fertilized since the previous spring.

Fertilizing should be done in late spring (May) after the spring growth surge is over.

May applications should be made using fertilizer products that contain 30 to 50 percent of the nitrogen in a slow-release form. Examples of slow-release forms of fertilizer include sulfur-coated urea, urea formaldehyde, IBDU, natural organic fertilizers or any other slow-release or slowly soluble nitrogen material.

Note: When applying crabgrass preventer in early spring (mid-March to mid-April), it is best to purchase a material that does not contain a fertilizer. The fertilizer will result in excessive top growth. For more information on fertilizing cool-season grasses, consult MU publication G 6705, *Cool-Season Grasses: Lawn Maintenance Calendar*.

Warm-season grasses. Fertilize warm-season grasses when the grass is actively growing. These grasses are dormant and turn golden brown during the cooler part of the year.

- Average maintenance: May-August.

Zoysia should be fertilized during the warm months — May through August. Early spring (March/April) fertilization benefits weeds and promotes premature top growth before the roots begin to grow. Late fertilization (after September 1) may delay the natural dormancy before winter.

The May application should be made using fertilizer products that contain 30 to 50 percent of the nitrogen in a slow-release form. For more information on fertilizing zoysia, consult MU publication G 6706, *Establishment and Care of Zoysiagrass Lawns*.

Step 3: Watering

Good lawn care practices can save water and prepare turf for dry summer months. Taller mowing and proper fertilization result in a deep and efficient root system that reduces the need for additional water.

For cool-season lawns to remain green and actively growing during the driest part of the summer, about 1 to 1½ inches of water are needed per week from irrigation or rainfall. Most hose sprinklers deliver ¼ to ½ inch of water per hour. Match the output of your sprinkler to the infiltration rate of your soil type. Putting on more water than the soil can absorb wastes water. Lawns watered too frequently tend to develop shallow root systems.

The best time to water is early morning. Less water is lost by evaporation, and disease incidence is reduced.

When managed properly, warm-season grasses require up to 50 percent less water than cool-season grasses to maintain a green, actively growing lawn during summer months in Missouri. For additional information, see MU publication G 6720, *Home Lawn Watering Guide*.

When to collect clippings

Leaving grass clippings on the lawn is highly recommended; however, there are times when clippings may need to be collected:

- When the lawn is diseased, removing clippings can decrease the population level of disease organisms.
- If the lawn must be mowed when wet or if the grass is excessively tall, clippings will mat together and may not be evenly distributed. The lawn may be damaged under clumps of clippings.
- If your lawn mower is unsafe to operate without the bagging attachment, you should continue to collect grass clippings.

Ways to use grass clippings

Mulching. A layer of grass clippings can provide an effective mulch around garden plants and between rows of flowers, vegetables and small fruits. Mulching

Benefits of mulches

- Control weeds.
- Conserve soil moisture.
- Reduce soil erosion.
- Improve water penetration into the soil.
- Protect against extreme heat and cold.
- Increase organic matter in the soil over time.

helps to reduce weeds, conserve moisture and modify soil temperature. However, care should be taken to avoid mulching too thickly. Excessive mulch can inhibit moisture and oxygen penetration into the soil and may produce offensive odors. Apply no more than a 1-inch layer of clippings at a time. Total mulch depth should not exceed 3 to 4 inches. Clippings from lawns treated with a herbicide or herbicide/fertilizer combination should not be used immediately as a mulch. For example, clippings from a lawn treated with 2,4-D should not be used as a mulch until the chemical has broken down (see Table 1). For additional information on mulching, see MU publication G 6960, *Mulches*.

Composting. As additions to a compost pile, grass clippings are excellent because of their relatively high nitrogen content (Figure 2). However, they should not be the only compost component. Because of their tendency to mat, grass clippings are difficult to compost if they are layered too thickly. A pile of grass clippings can produce a foul odor because of a lack of oxygen. Mixing grass clippings with carbon-containing materials such as leaves or sawdust will ensure efficient composting. For a detailed discussion of composting, refer to MU publication G 6956, *Making and Using Compost*.

Table 1. Persistence of some common herbicides in soil.

Common name	Trade names	Longevity in soil (months)
Benifin	Balan	4–8
Glyphosate	Roundup, Kleenup	<1
2,4-D	(many formulations)	1–2
MCPP	(many formulations)	1–2
Dicamba	Banvel	3–12

Source: *Composting and Mulching: A Guide to Managing Organic Yard Wastes*. C. Rosen, N. Schumacher, R. Mugaas, and S. Proudfoot. 1988. St. Paul, Minn.: University of Minnesota, Extension Service, Department of Soil Science.



Figure 2. Composting your yard wastes results in an abundance of healthy fruits and vegetables from your garden, a safer environment, less money spent on fertilizers and bags, and more time to enjoy what you are creating.

Composting grass clippings that contain clopyralid residues. Clopyralid is a widely used herbicide for control of invasive, noxious and other hard-to-control broadleaf weeds. In response to reports of clopyralid residues remaining in compost, manufacturers of clopyralid products may make changes in the herbicide label, limiting its use until

further research is completed. Possible changes include limiting use of clopyralid products to nonresidential turf areas such as golf courses and requiring professional herbicide applicators to notify property managers not to compost clippings from treated grass.

The persistence of herbicide residues in compost is mainly due to incomplete composting. To reduce the probability that residues will persist in grass clippings through the composting process, mulch for several mowings before collecting clippings. Follow the suggestions in MU publication G 6956, *Making and Using Compost*, to ensure complete composting of all parts of the compost pile.

For further information

See the following MU publications:

- G 6700, *Cool-Season Grasses: Lawn Establishment and Renovation*
- G 6705, *Cool-Season Grasses: Lawn Maintenance Calendar*
- G 6706, *Establishment and Care of Zoysiagrass Lawns*
- G 6708, *Thatch: Enemy of Lawns*
- G 6720, *Home Lawn Watering Guide*
- G 6725, *Grasses in Shade: Establishing and Maintaining Lawns in Low Light*
- G 6750, *Home Lawn Weed Control*
- G 6954, *Soil Testing for Lawns*
- G 6956, *Making and Using Compost*
- G 6958, *Grass Clippings, Compost and Mulch: Questions and Answers*
- G 6960, *Mulches*

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