

LAWN CLIPPING MANAGEMENT

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During summer months, 20-30 percent of residential wastes consist of grass clippings. Not only does this greatly increase the cost of waste disposal, but also packs landfills with valuable organic materials that are 100 percent recyclable. As of January 1, 1990 it is illegal to dispose of lawn clippings with household waste in the Twin Cities metro area, and will be illegal in the rest of the state after January 1, 1992.

Grass clippings are primarily grass leaves (and some stems) that have been cut off by mowing. While commonly referred to as "yard waste," clippings provide several benefits when left on the lawn: they shade the soil surface and reduce moisture loss due to evaporation. In addition, decomposing grass blades are a valuable source of plant nutrients such as nitrogen, phosphorus, and potassium (often abbreviated N,P, and K when purchased commercially).

Clipping Production

Grass clippings will always be a part of lawn care. Because lawns grow at different rates depending on environmental conditions and management practices, it is important to tailor mowing, fertilizing, and watering to meet plants' needs, yet avoid excessive growth. Grass clippings less than one inch in length filter down to the soil surface and decompose relatively quickly. Longer clippings have a tendency to remain above the lawn where they appear unsightly and can shade or smother the grass beneath. These clippings need to be removed to avoid both unsightliness and lawn damage.

Clipping Management

Bagging clippings is a practice that became popular during the 1950's when bagger attachments were designed for rotary mowers. The practice of leaving clippings on lawns is not

new, however. It has long been practiced on golf course fairways, parks, athletic fields, and other high quality turfs. In nearly every instance, proper lawn care can greatly reduce or eliminate the need to collect clippings.

Thatch—A common reason for collecting grass clippings is the fear (unwarranted) that they may contribute to thatch production.

Thatch is a layer of undecomposed or partially decomposed organic matter that builds up between the soil surface and the actively growing green vegetation. A thatch layer will develop if organic matter is produced faster than it is decomposed by micro-organisms. However, grass clippings decompose rapidly and contribute very little to thatch accumulation. For more detailed information, refer to "Thatch Control in Lawns and Turf," University of Minnesota Extension publication AG-FS-1123.

Mowing—Regular mowing with a sharp mower is essential for reducing the need to collect clippings. It is important to mow often enough so that no more than one-third of the vertical grass height is removed with each cutting. For example, if the desired height is two inches, cut the grass when it is no more than three inches high. Removing only one-third of the green growth is particularly important when using a "mulching" or "recycler" type mower (discussed later).

Recommended mowing heights for Minnesota lawns are given in the following table. Cutting the grass regularly at these heights will allow you to leave clippings on the lawn most or all of the time. Increasing the mowing height by 1/2 inch during the summer can improve the lawn's ability to tolerate stress.

MOWING HEIGHTS

Kentucky bluegrass:	
Common varieties (such as Aquilla, Monopoly, Nassau, Newport, Nugget, Park, Ram I, Rugby, and Sydsport)	1½-2½ inches
Improved varieties (included in most sod; most varieties not listed above)	¾-1½ inches
Fine Fescue grasses	1½-3 inches
Perennial ryegrass	1-2 inches
Bluegrass/fescue mixture	1½-2½ inches
Bluegrass/ryegrass mixture	1-2 inches

To leave grass clippings, it will be necessary to mow more than once a week for the few weeks of rapid growth in the spring and summer. Mowing more frequently is not as much work as it may appear, because lawns mowed at the proper height cut much more easily and quickly.

It is also important to continue mowing at the desired height throughout the fall until growth ceases. There is a temptation to quit mowing when tree leaves drop or snow begins. The weather is usually warm enough for continued grass growth until early November. Lawns that are too tall at that time frequently become matted down during winter. This condition can lead to disease and other damage in spring.

Mowing infrequently damages the lawn by removing too much of the plant at once. A substantial amount of stem tissue is removed, while proper mowing primarily removes leaves. Because of their toughness, stems left on the lawn can contribute to thatch accumulation. When mowed regularly, clippings filter down into the grass, decompose rapidly, and recycle nutrients back into the lawn.

It is important that clippings be uniformly distributed rather than deposited in clumps. Accomplish this by mowing the lawn when the grass is dry and by using a properly sharpened mower. 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.

Because many rotary-type mowers have bagging attachments that affect mower safety, it is essential to understand manufacturer guidelines before considering removal of the bagger attachment. Often, a special attachment is required to enable safe mowing without a bag. Be sure to make appropriate adjustments or use a "mulching" type mower.

A "recycler" or "mulching" mower is a rotary mower that cuts clippings into small pieces and redistributes them uniformly back into the lawn for decomposition.

Watering—Some watering, in addition to rainfall, is required in most years to maintain a green lawn throughout the summer. Specific irrigation requirements vary depending on rainfall, as well as soil and environmental factors. One inch or less of water per week is generally sufficient in cool or warm weather, with 1-2 inches per week needed during hot or windy weather. Most lawn sprinklers apply about one-fourth

to three-eighths inch of water per hour. You can easily check your sprinkler output by placing a straight sided can on the lawn and measuring the depth of water after one hour. Excessive watering can lead to disease and other undesirable conditions. As with heavy applications of nitrogen early in the spring, this can weaken the lawn and diminish the benefit of applied fertilizers. Refer to "Watering Lawns and other Turf," University of Minnesota Extension publication AG-FS-2364.

Fertilization—A wide variety of fertilizers are available for use on lawns. Refer to "Fertilizing Lawns" and "Preventing Pollution Problems from Lawn and Garden Fertilizers" University of Minnesota Extension publications AG-FO-3338 and AG-FS-2923, respectively.

Late summer and fall are the most important times to fertilize lawns. Early spring fertilization, especially with high rates of nitrogen, can result in a flush of green growth and rapid clipping production. This may necessitate collecting clippings until growth slows. Also, though the lawn may look beautiful for a while, the plants' energy reserves are depleted by this rapid shoot growth (reserves are quickly lost during the first few mowings). Consequently, the lawn is less able to tolerate summer stresses. Spring fertilizer application can be important if the lawn has not been fertilized since the last spring, or if "winter kill" has been severe. Then it is best to wait until after the spring flush in growth (mid to late May) to fertilize.

Fall fertilization allows nitrogen to be absorbed by the grass while vertical growth is slow. This promotes green-up in the spring without stimulating excessive shoot growth and the need to collect clippings.

Lawns that are watered regularly will benefit from three applications of nitrogen (usually abbreviated as "N") fertilizer at a rate of ¾ to 1 pound for every thousand square feet of lawn to be covered. Because the nitrogen content varies depending on the type, or "grade," of fertilizer purchased, the correct amount of fertilizer product to apply will vary as well. Fortunately, reputable fertilizer products generally provide this recommended rate on the label. (For more detailed information on calculating fertilizer rates, refer to "Fertilizing Lawns," mentioned earlier.)

The recommended timing of these three applications is roughly 8/20-9/20, 10/10-10/31, and 5/20-6/20. Fertilizer products containing broadleaf herbicides can be used for the June and August/September applications. For moderate, even growth, nitrogen fertilizer products should contain 30-50 percent of this nutrient in a slowly releasing form. (Examples include sulfur coated urea, urea formaldehyde, IBDU, or natural organic fertilizers.)

For best timing, it is recommended that crabgrass preventer be applied in April or early May separate from fertilizer. Also, if grass clippings are collected, an additional nitrogen application (in late September) may be beneficial to compensate for nutrients removed in clippings.

For a lawn that is rarely watered, a single application of nitrogen (1 pound per thousand square feet of lawn) is recommended in early to mid-September. If desired, a mid-October application can substantially improve turf quality the following year.

Only a soil test can determine the need for other nutrients, primarily potassium and phosphorus. Check with your county extension office on how to obtain a soil test.

Alternatives to leaving clippings

While leaving clippings on the lawn is recommended whenever possible, there are a few instances when this is not recommended.

- Where the lawn is heavily diseased, removing clippings can decrease the population level of disease organisms.
- If the lawn must be mowed when wet, clippings will mat together and may not be evenly distributed. The lawn may be damaged under clumps of clippings.
- If the grass has become too tall (more than one-third to one-half of the vertical height is removed by mowing).
- If your mower is unsafe to operate without a bagging attachment.

Where clippings must be collected, mulching and composting are two good alternatives to putting them in public landfills.

Mulching—Grass clippings can provide an effective mulch around garden plants and between rows of flowers, vegetables, and small fruits. Mulching helps to reduce weeds, conserve moisture, and modify the 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.

Composting—Composting involves mixing grass clippings (as well as other plant materials) with soil to allow microorganisms to decompose them. Clippings can be composted in the backyard, or at a municipal composting site.

Composting requires aeration, moisture, and enough time to avoid foul odors. As additions to a compost pile, grass clippings are excellent because of their relatively high nitrogen content. They should not be the only compost component, however. Due to their tendency to mat, grass clippings are difficult to compost if they are layered too thickly. For a detailed discussion of composting, refer to "Composting and Mulching: A guide to managing organic yard wastes," University of Minnesota Extension publication AG-FO-3296.

Remember—A dense, healthy lawn reduces pollution potential, cools the environment, filters dust and pollen out of the air, and contributes to aesthetically pleasing surroundings. Appropriate lawn care will increase these benefits to you while reducing waste problems.

Other lawn publications available through the Minnesota Extension Service include:

The Home Lawn (AG-MI-0488)

Controlling Lawn and Turf Insects (AG-FO-1008)

Patch Diseases of Lawns (AG-FS-3034)

Weed Control in Lawns and other Turf (AG-FS-1137)

Renovation (AG-FO-3914)

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