

THE IMPORTANCE OF MOWING

Mowing is one of the most important cultural practices for maintenance of a healthy turf. Proper mowing height increases turfgrass density and promotes deep root growth, both of which lead to a stronger turf that is more competitive against weeds and better able to persist under environmental stresses.

Two important components of mowing are cutting height and frequency. Both of these factors depend on the turfgrass species, utility of the grass, cultivar, and the level of lawn quality desired. Other important considerations are clipping disposal, mowing equipment and mowing safety.



▲ **Figure 1.** St. Augustinegrass (on the left) has coarse leaf blades and requires a higher height of cut. Bermudagrass (on the right) has much finer leaf blades and can be mowed at much lower heights.

MOWING HEIGHT

The optimum cutting height is determined by the growth habit and leaf width of the turfgrass species. Grass species that have fine textured (narrow) leaf blades and that grow horizontally can usually be mowed shorter than an upright-growing grass with coarser (wider) leaf blades. For example, bermudagrass and creeping bentgrass are mowed at low heights because of their numerous narrow leaf blades and low growth habit (**Figure 1**). In contrast, St. Augustinegrass is mowed at higher heights because it has coarse-textured leaf blades.

Turfgrass undergoes physiological stress with each mowing event, particularly if too much leaf tissue is removed (**Figure 2**). Scalping, or removal of too much shoot tissue at one time, can produce long-term damage to the turf. This can leave turf susceptible to other stresses such as insects, disease, drought, and sunscald. Mowing also influences rooting depth, with development of a deeper root system in response to higher mowing heights. Advantages of the deeper root system are greater tolerance to drought, insects, disease, nematodes, temperature stress, poor soil conditions, nutrient deficiencies and traffic. Repeated mowing below the recommended heights for each

species is a primary cause of turf injury and should be avoided. It is also important to not mow at higher than the recommended heights, as this may result in increased thatch.

MOWING FREQUENCY

Mowing frequency is determined by the growth rate and the utility of the grass. The growth rate is influenced by grass species, time of year, weather conditions, and level of management. In the south, grass may need year-round mowing, while many parts of the country only mow in spring, summer and fall. Grass that receives repeated athletic use will need more frequent mowing to reduce potential injuries and to improve the playing surface, while low maintenance lawn areas would need less frequent mowing. Some species, such as bahiagrass, often require mowing for seedhead removal rather than for leaf blade reduction.

Grass should be mowed often enough so that no more than 1/3 of the blade height is removed per mowing (**Figure 3**). For example, if recommendations call for a 2" mowing height, the grass should be mowed when it gets to 3" in height. It is important to always leave as much leaf surface as possible so that photosynthesis can occur, particularly in a grass that is subject to environmental or site stresses.

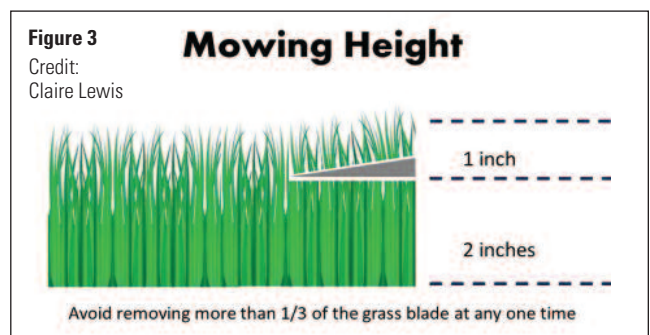


Figure 3
Credit:
Claire Lewis

CLIPPING DISPOSAL

The function that the grass serves will often determine whether clippings are left on the ground or removed. Grass clippings contain nutrients and organic matter that is broken down by soil microbes. The nutrients can be taken up by the turf and reused and the organic matter will contribute to the soil. Because they are readily decomposed by microbes, clippings do not generally contribute to thatch. On some surfaces, such as athletic fields and golf greens, clippings are generally not desirable and are usually bagged. In these cases, the clippings can be composted.

To avoid pollution of water bodies, it is extremely important to blow any grass clippings left on sidewalks, driveways, or other hard surfaces back onto the grass. These clippings contain nutrients that could contribute to water pollution if they go down a storm drain or blow into a water body, so be sure to not leave them on these surfaces.

MOWING EQUIPMENT

Mowers are available in a wide variety of sizes and styles with many features. The two basic types are reel and rotary mowers, with variations of these available for specialized or utility uses. Reel mowers use a scissors-like action to cut the leaf blades and are used on grasses that require a low height of cut. They are suited for use on high maintenance, fine-bladed grasses such as those found on golf courses and athletic fields where a precise clean cut is desirable. Reel mowers require higher maintenance than other mowers.



▲ Figure 4. Reel mower



▲ Figure 5. Rotary mower

Lawns can be mowed with either reel or rotary mowers, depending on grass species and recommended height of cut (Figure 4). Rotary mowers can be obtained as push or self-propelled models. Front, side, and rear-clipping discharge models are also available. A gasoline or electric engine is used to turn the horizontally-mounted mower blade. The grass blade is cut on impact with the mower blade. Most rotary mowers cannot mow lower than 1 inch and are best used for mowing heights above 2 inches.

Mulching mowers are modifications of rotary mowers (Figure 5). These are designed to cut leaf blades into very small pieces that decompose more quickly than leaf blades cut by conventional mowers, providing nutrition and organic matter to the soil environment. The mower blades are designed to create a mild vacuum under the mower deck until the leaf blades are cut into small pieces. Mulching mowers do not have the traditional discharge chute like most rotary mowers.

Electric mowers are another option that some prefer for reduction of noise and CO₂ losses. Improvements in recent years in these mowers have increased their power and durability. They come in cordless and with cord models.

Regardless of what type mower is used, keeping blades sharp is very important for the health of the turf. Ragged, torn leaf blades are not only unsightly but also contribute to poor growth and further injury.

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GOOD MOWING PRACTICES

Follow these best practices for safe mowing:


- Pick up all stones, sticks and other debris before mowing to avoid damaging the mower or injuring someone with flying objects.
- Never mow wet turf with a rotary mower because clippings can clog the machine. Mow only when the turf is dry.
- Sharpen the mower blade frequently enough to prevent tearing of leaf blades.
- Mow in a different direction every time the lawn is cut. This helps prevent wear patterns, reduces the grain (grass lying over in the same direction), and reduces the possibility of scalping.
- Leave clippings on the ground. If clumping occurs, rake or use a leaf blower to distribute them.
- Check your mower every time it is used. Follow manufacturer's recommendations for service and adjustments.
- Adjust cutting height by setting the mower on a driveway or sidewalk and using a ruler to measure the distance between the ground and the blade.
- Never fill a mower engine with gasoline when the mower is hot.
- Always wear durable closed shoes when mowing the lawn – no sandals or flip flops.
- Sweep up any clippings left on paved surfaces to avoid potential water pollution. ■

Table 1. Suggested mowing heights for warm and cool season grass species.

Turfgrass Species	Optimal Mowing Height (inches)
Warm Season Grasses	
Bahiagrass	3.0 - 4.0
Bermudagrass (Use Dependent)	0.5 - 1.5
Centipedegrass	1.5 - 2.0
St. Augustinegrass	2.5 - 4.0
Zoysiagrass (Coarse types)	2.0-2.5
Cool Season Grasses	
Creeping Bentgrass	0.2-0.5
Kentucky Bluegrass (Cultivar Dependent)	0.75-2.5
Perennial Ryegrass	1.5-2.0
Tall Fescue	1.5-3.5


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