

time also increases turf rooting, therefore, reduces watering needs and stresses imposed by increased nematode activity. In fall, mowing height may also need to be raised to reduce the chance of low temperature damage during winter (north Florida) and to provide cushion for grass crowns in winter when bermudagrass is dormant.

Mowing frequency

Mowing frequency is often a compromise between what is best for the turf and what is practical for man. Growth rate of the grass should determine frequency of cut. Growth rate is influenced primarily by the amount and source of nitrogen fertilizer applied and by season or temperature. Higher amounts of either result in faster top growth and an increased mowing frequency needed. By raising the mowing height, frequency of cut is reduced and this helps compensate for faster growing turf. The traditional rule is to mow often enough not to remove more than one-third of topgrowth at any one time. Removing more than one-third of topgrowth at any one time decreases recuperative ability of plants due to extensive loss of leaf area needed for photosynthesis. This reduction in photosynthesis (food production) can result in weakening or death of a large portion of the root system since carbohydrates in roots are then used to restore new shoot tissue. Consequently, root growth may stop for a period since the regeneration of new leaves (shoots) always takes priority over sustaining roots for food reserves following severe defoliation. However, when one-third or less of shoot growth is removed during one mowing, enough carbohydrates are available to simultaneously sustain shoot and root growth without significantly reducing either. As an example, a golf course rough maintained at 3 inches does not need to be mowed as frequently (once every 10 to 14 days) compared to a golf green mowed at 1/4 inch which requires daily mowing to prevent more than one-third of the height being removed at any one period (0.08 inch). In order to determine the one-third rule, managers should mow the grass when it reaches 50% higher than the desired mowing height. For example, a golf course fairway maintained at 1.0 inch should be mowed back to 1.0 inch when it reaches 1.5 inches. One-third of 1.5 inches equal to 0.5 inch removed. Table 2 lists typical mowing heights and the resulting frequency need during active growing periods to maintain turf within the one-third rule of thumb mowing frequency.

Table 2. Typical mowing frequencies needed for given height to remove one-third of the leaf surface.

Desired height (inches)	Height reached above the desired before mowing	Approximate frequency (days)
≤1/4	3/8	daily
1/2	3/4	2-3
1	1 1/2	4-5
2	3	7-10
3	4 1/2	10-14

If turf becomes excessively tall, it should not be mowed down to the intended height all at one time. Severe scalping that may result can stop root growth for extensive periods. Tall grass should instead be mowed at frequent intervals and the height gradually reduced with each mowing until the desired height is reached. If the one-third rule is excessively violated, the turf usually results in gradual thinning and a disappointing reduction in turf quality.

Mowing equipment

Mowing equipment has continued to increase in sophistication since mowing began with a scythe. The first reel mower was developed in 1830 by Edwin Budding, a textile engineer, who adapted the rotary shear that was used to cut carpet nap. Early mowers relied on hand or animal power to operate them. In the early 1900's, gasoline powered units became available followed by diesel powered units. Today there is a vast array of mower types, sophistications, and costs available. When choosing a particular model, several considerations should be examined first.

1. The terrain to be cut. Is it smooth and level which are more conducive for reel mowers to be used or is the terrain rough, hilly, swampy or wooded? These conditions may be more suited for a rotary or flail mower.
2. The size of the area. With the ever increasing costs related to labor, it is more practical to buy the largest mower available to perform the job in the shortest amount of time. There are, of course, limits to this. For example, a weight limit or size limit restricts the type of mower that can be used in high maintenance areas such as golf greens or for those areas requiring trimming types of mowers.