

Mowing Strategies

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Mowing is the most basic of the turfgrass cultural practices. The resultant removal of a significant portion of the leaves is by nature a continuing, externally imposed stress on the plant. As the mowing height is lowered within the cutting height range for a given low-growing turfgrass species, the following morphological and physiological responses occur: **decreased leaf blade width, decreased carbohydrate synthesis and storage, decreased root growth rate, decreased total root production, decreased rhizome/stolon growth, and increased shoot density.** An increased mowing frequency of low-growing turfgrasses has similar effects, with the negative impacts being not as great as is the case of lower cutting heights.

The specific cutting height selected for a turfgrass area can strongly affect the general health of the turf and the specific turfgrass species that becomes dominant on a long-term basis. **The primary criteria to be considered in selecting a cutting height for a given area include the (a) specific turfgrass species and cultivar involved, (b) effects on the physiological and morphological conditions of the turfgrass, and (c) purpose for which the turf is to be utilized.** The cutting height selected for certain uses has much greater negative effects than would normally be desirable. An example would be putting and

bowling greens, where the requirements of the game far outweigh the major negative effects on turfgrass morphology and physiology. The preferred cutting height range and mowing frequency range suggested for sports fields, golf course fairways, and high-quality lawns are shown in the accompanying table.

The removal of an excessive quantity of green leaf surface area at any one mowing can result in what is described as **scalping**, in which a stubbly, brown appearance occurs on the turf. Visually this adverse mowing stress results in a temporary thinning of the turf, with turf recovery being significantly slowed if the apical meristems in the individual grass shoots are removed. **An even greater negative factor is that the hormonal control within the plant activates carbohydrate partitioning in which the available carbohydrates move to the shoot meristematic area to promote replacement of the green leaves.** Typically in this process the roots will turn brown and essentially die back to the meristematic areas in the crowns and lateral stem nodes. Replacement of this root system may not occur until after significant recovery of the green shoots is achieved, which may be in the order of 2 to 3 weeks duration. During this period the turf is prone to certain environmental stresses, such as drought. In addition, rhizome or stolon growth will cease for the interim period. 

Species-Specific Mowing Practices Suggested for Sports Fields, Golf Course Fairways, and High-Quality Lawns. (Irrigated unless otherwise noted)

| Turfgrass Name | | Cutting Height (hard surface setting) | | Mowing Frequency Per Week* |
|----------------------|--------------------------------|---------------------------------------|----------|----------------------------|
| Common | Scientific | inch(es) | mm | |
| annual bluegrasses | <i>Poa annua</i> | 0.44–0.75 | 7/16–3/4 | 3–5 |
| bentgrasses | <i>Agrostis</i> spp. | 0.38–0.63 | 3/8–5/8 | 3–5 |
| bermudagrasses: | <i>Cynodon</i> hybrids | 0.44–0.63 | 7/16–5/8 | 3–5 |
| not irrigated | <i>C. dactylon</i> | 0.63–1.0 | 5/8–1 | 1–2 |
| fine-leaf fescues | <i>Festuca</i> spp. | 0.75–1.0 | 3/4–1 | 1–2 |
| Kentucky bluegrass: | <i>Poa pratensis</i> | 0.75–1.0 | 3/4–1 | 2–4 |
| not irrigated | <i>Poa pratensis</i> | 1.0–1.25 | 1–1 1/4 | 1 |
| kikuyugrass | <i>Pennisetum clandestinum</i> | 0.38–0.63 | 3/8–5/8 | 3–5 |
| perennial ryegrass | <i>Lolium perenne</i> | 0.5–0.88 | 1/2–7/8 | 2–4 |
| seashore paspalum | <i>Paspalum vaginatum</i> | 0.44–0.63 | 7/16–5/8 | 2–5 |
| tropical carpetgrass | <i>Axonopus compressus</i> | 0.5–1.0 | 1/2–1 | 2–3 |
| zoysiagrasses | <i>Zoysia</i> spp. | 0.5–0.75 | 1/2–3/4 | 2–3 |

* Frequency interval shortens as the nitrogen (N) or irrigation levels increase.