Turfgrass Series

Mowing: how high and how often?

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Suitable mowing heights

The height to which a given grass can be mowed is directly related to its ability to produce enough leaves to stay alive and healthy. Some creeping grasses with fine leaves, such as bermuda and zoysia, when properly fertilized and watered, are able to produce adequate leaf surface at mowing heights well below 1 inch. Species with larger leaves and elevated stolons and crowns, such as St. Augustine grass should be cut above 3 inches and centipedegrass, must be cut to 2-3 inches.

Mowing height is directly correlated with growth of the root system, and higher mowing promotes both greater total root mass and greater rooting depth (Figure 1).

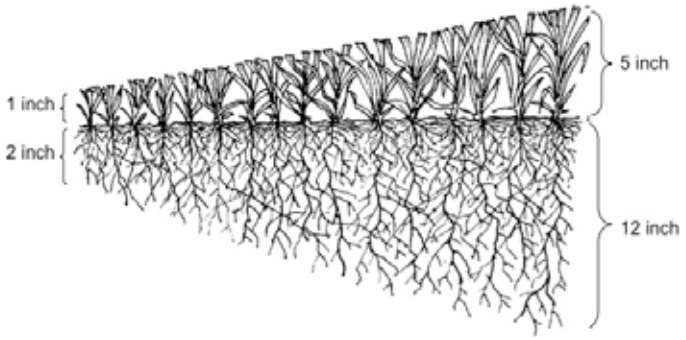

Figure.1. The Greater mowing height reduces shoot density but favors deep rooting.

Larger numbers of deep roots increase the turfgrass's ability to draw water from deeper soil zones, and a larger root system overall promotes absorption of nutrients from the more fertile topsoil. As mentioned before, mower's knife cuts through the stems, which stimulate their branching and enhance turf density. If turf is mowed too high, too few stems are cut, so stems branch less and grow more vertical. As a result, turf density decreases, and the soil surface may even become exposed. Bare soil creates very favourable conditions for germination of weed seeds and may results in severe weed infestation.

Suitable mowing frequency

Mowing infrequently allows the grass to grow so tall that any subsequent mowing removes too much leaf area. Removal of more than 40-50% of total leaf area results in severe physiological shock to the plant, greatly restricting growth (Figure 2). The plant must use all its reserves to repair the damage and to build lost leaf tissue. All these resources are used at the expense of the roots, causing a major portion of the young roots to die and interrupting the growth of others.

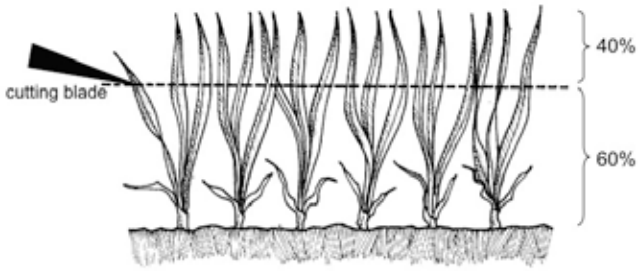

Figure 2. About 40% of the leaf area should be removed at any one mowing.

Unlike mowing height, mowing frequency cannot be specified on the basis of turfgrass species or variety. Only the growth rate determines mowing frequency. Because only 40% of the leave area should be removed at any one mowing, mowing frequency generally increases as mowing height is lowered. For example, if bermudagrass grows 1/8 inch per day, a golf green cut to 3/16 inch should be mowed when

its height reaches 5/16 inch, that is, daily. The same bermudagrass on the fairway, maintained at a height of one inch, should be mowed when its height reaches 1 1/2 inch, that is, every four days.

On Guam, centipedegrass and St. Augustine grass residential lawns need about weekly mowing. Well established zoysia grass without irrigation grows so slow that two or three mowings per year are often sufficient.

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