A PRACTICAL RESEARCH DIGEST FOR TURF MANAGERS

TURFGRASS TRENDS

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BACK TO BASICS

Mowing
Its Impact on Turfgrasses

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No activity is more synonymous with turf management than mowing. Turf is defined as a grass sward subjected to close regular mowing so it can serve an aesthetic or utilitarian function. The greatest single expense in maintaining a high quality turf is often the cost of mowing and mowing equipment. However, for all its importance to turf maintenance, mowing is rarely viewed as a significant management variable. To what extent can the turf manager adjust mowing frequency, height, and timing so as to maximize turf quality? This Back-To-Basics article will attempt to answer this question.

Mowing, along with fertilization and irrigation, is regarded as one of the three primary cultural practices in turf management (Turgeon 1999). However, mowing is unique in often being regarded as negative or harmful to the well-being of grass. Turgeon (1999 p. 150) states the problem as follows: "From a purely botanical standpoint, mowing is detrimental to turfgrasses. It causes a temporary cessation of root growth, reduces carbohydrate production and storage, creates ports of entry for disease-causing organisms, temporarily increases water loss from cut leaf ends, and reduces water absorption by the roots." There is evidence to support all of these negative consequences from mowing but this does not necessarily mean that a regularly scheduled partial defoliation is harmful to turf or constitutes a true stress. I will return to this argument later.

Mowing Height and Turfgrass Morphology

Partial defoliation is nothing new to turfgrasses. Most of our grasses have come to us from open grasslands where grazing animals and wild fires regularly defoliated them. These grasses evolved under conditions of periodic defoliation and adapted by responding in a positive manner. Mowing tends to stimulate tillering and this results in a thicker turf with more shoots per square foot. Mowing also removes culms that have been induced to flower and begin to elongate. The apical meristem is removed and the culm dies so the stand remains largely vegetative as basal tillers are promoted (Hull 1998).

Some years ago, K.M. Sheffer and colleagues (1978) at Pennsylvania State University compared the morphologic responses of 62 Kentucky bluegrass cultivars to three mowing heights: 0.5, 1.0 and 2.0 inches. In general, they observed blade angles increased (leaves became more horizontal) as cutting height was lowered. However, Kentucky bluegrasses vary considerably in their leaf blade angle and the tendency toward a more horizontal leaf blade with lowered cutting height was only a few degrees. A more significant impact of mowing height was on tiller number (Fig. 1). Although for this part of the study, only a

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