

Irrigation and Turfgrass Species. It must be recognized that turfgrass species vary in their inherent ET rate and root system depth. For example, hybrid bermudagrass has a relatively low ET rate and a good genetic potential for deep rooting, especially during midsummer heat stress. In contrast, creeping bentgrass has a relatively high ET rate and a much poorer genetic potential for rooting, especially when root zone temperatures exceed 80°F (27°C).

Due to these inherent characteristics a bermudagrass should not have to be watered nearly as frequently or in as large a quantity as bentgrass, including putting green cultural conditions. Where bentgrass would require daily irrigation, a hybrid bermudagrass would require irrigation at only 3- to 4-day intervals, depending on the evaporative demand of the atmosphere.

An improper irrigation strategy can negate this advantage of the bermudagrass. For example, if daily, high rates of water application are practiced early in the growing season which result in a root zone environment that impairs rooting, it may necessitate daily irrigation throughout the midsummer to avoid turfgrass wilt caused by a lack of root system. A more appropriate irrigation strategy is at less frequent intervals of every 3 days early in the growing season that will encourage deeper, more extensive rooting. This may avoid the need for a daily irrigation regime during the peak evaporative demands of midsummer. An additional benefit to this irrigation strategy is a less favorable environment for disease development and more favorable surface playing conditions for turfs used on sporting facilities.

Note: Anaerobic conditions caused by a water saturated soil are especially detrimental, with the first negative plant response being a loss of the critical root hairs, which constitute over 80% of the water and nutrient absorbing surface area of the grass plant. The plant functional loss cannot be observed with the naked eye, as the root hairs can only be seen with the aid of a microscope.

NEW PUBLICATION AVAILABLE:

1995 Rutgers Turfgrass Proceedings, Rutgers University. 146 pages.

This proceedings is divided into two sections. The first section contains ten papers of lectures presented at the 1995 New Jersey Turfgrass Expo. The second section contains five technical papers of research conducted by the turfgrass scientists at Rutgers University. Included are performance evaluations for a broad range of cultivars and near-release selections of five cool-season turfgrasses: bentgrasses (*Agrostis* spp.), fine-leaf fescues (*Festuca rubra* and *longifolia*), Kentucky bluegrass (*Poa pratensis*), perennial ryegrass (*Lolium perenne*), and tall fescue (*Festuca arundinacea*). This research report is a must for anyone involved in specifying or selecting specific cultivars of cool-season turfgrasses for seeding or sodding turfed areas.

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