

Site-Specific Management

Toro continues to sponsor research aimed at developing sensing technology that will tell us what is right or wrong about our turf. Currently, we are using a special instrument to measure spectral radiance from the turf canopy. We are looking for unique spectral signatures that will tell us about the water, nutrient, or disease status of the plant. Sensors are just one part of site-specific management that, in combination with global positioning satellites (GPS), geographic information systems (GIS), and variable rate technology (VRT), will enable turf managers to better manage the variability that exists on their site.

Creeping Bentgrass Cultivars for Putting Greens

Several new creeping bentgrass cultivars are now commercially available without much scientific research to warrant their selection and use on putting greens, especially in Michigan. This prompted us to conduct an experiment to evaluate five of these newer cultivars (A-4, G-2, L-93, Providence, and Putter) compared to Penncross at Crystal Downs CC in Frankfort and at the HTRC. The cultivars were planted in fall 1997 at Crystal Downs and spring 1998 at the HTRC. Preliminary results have shown that G-2 ranked the highest in terms of overall turf quality. A-4, L-93, and Providence also exhibited good turf quality.

Kentucky Bluegrass Cultivars for Golf Course Fairways

Kentucky bluegrass would be desirable on tees and fairways throughout many golf courses in Michigan provided that it could withstand low heights of cut that are typically applied to creeping bentgrass. The objective of the study was to evaluate 14 Kentucky bluegrass and 2 creeping bentgrass cultivars under a half-inch mowing height. The Kentucky bluegrass cultivars evaluated were: Abbey, Arcadia, Ascot, Cobalt, Coventry, Fairfax, Liberator, Limousine, Midnight, P-105, Rambo, SR 2109, Unique, and Wildwood. The creeping bentgrass cultivars evaluated were Penncross and Princeville. The experiments were established in June 1998 at the HTRC and Forest Akers golf course in East Lansing. It is too early in the experiment to evaluate cultivar tolerance to the 0.5-inch mowing height. However, we were able to gather information on the relative establishment rate and divot recovery among the cultivars. Preliminary results indicated that Arcadia, Cobalt, Liberator, Midnight, and Rambo established most quickly among the bluegrass cultivars. However, all of the bluegrass cultivars established much slower than the bentgrass cultivars. Fairfax, Liberator, Midnight, Rambo, and Unique demonstrated the fastest recovery from divoting among the bluegrass cultivars.

Localized Dry Spot

Wetting agents were evaluated to determine the effectiveness of single vs. multiple applications for season-long control of localized dry spot and improved turf wetting. Plots were established on an annual bluegrass-creeping bentgrass fairway grown in dune sand at Crystal Downs CC. Cascade, Primer, Lescro Flo, and two experimental products were included in this study. Quality differences between plots either did not exist or were masked by heavy rainfall that occurred prior to the rating dates. Cores were taken several times during the study to determine the re-wetting speed of the turf at various depths (thatch, 0-3 cm, 3-6 cm). At the thatch depth only Primer provided an improved re-wetting time as compared to the control. However, Cascade, Lescro Flo, and Primer were effective at reducing re-wetting times of the cores at the 0-3 cm and 3-6 cm depths.

Preemergence Crabgrass Control

Preemergence control of crabgrass and other summer annual grasses is a standard component of many turfgrass management programs. There are many preemergence herbicides and herbicide-fertilizer combinations available. Most of these products provide adequate season-long control in Michigan. Warm soil temperatures contributed to an early flush of crabgrass during this spring. Extremely dry conditions followed until mid-summer. Much of the crabgrass that germinated in the spring died before the rains of July. A second crop of crabgrass was evident by mid-August. On the whole, crabgrass pressure in 1998 was light. All of the preemergence products included in our 1998 trial provided acceptable control of crabgrass. We continue to recommend long residual products such as dithiopyr (Dimension) or prodiamine (Barricade) in areas where a history of heavy crabgrass pressure exists.