

Evaluation of Warm-Season Grasses for Putting Greens

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PROJECT DURATION: Five years

TOTAL FUNDING: \$90,000

SUMMARY TEXT

With the increased interest in the use of bermudagrass on greens, a project was developed to evaluate three warm-season grass species on USGA specification putting greens at eleven locations across the southern and mid-western U.S. Trial sites include university locations (7) and golf courses (4). The trial parameters dictate a higher mowing height and a less intensive management regime as compared to typical ultradwarf bermudagrass management, while targeting green speeds of 9-10 feet.

The trial consists of twenty-eight total entries, with fourteen bermudagrass, eleven zoysiagrass and two seashore paspalum entries. Trials were planted anywhere from mid-June to mid-August 2013. The bermudagrass and seashore paspalum entries established very quickly in 2013, while the zoysiagrass entries were much slower to establish, with ground cover was no more than 50-60% for any entry by the end of 2013.

The winter of 2013/14 was historically cold across much of the U.S., breaking records for low temperatures, snow/ice amounts and duration in many locations. Even though protective covers were utilized, winter damage was significant. Therefore, NTEP and the cooperators at Fayetteville, AR, Bloomington, IN, Lexington, KY and Richmond, VA agreed to replant damaged entries (28, 14, 7 and 1 entry, respectively). The winter of 2014/2015 was also severe in some locations, but no more replanting was allowed.

Data was collected by cooperators on initial establishment in 2013 and in some cases, 2014. Data was also collected on turfgrass quality, genetic color, leaf texture, fall color, density, ball roll and at some locations, winter survival. Data was analyzed separately based on location and also species.

Bermudagrass and zoysiagrass performance differed based on location, as well on as the experimental selection or cultivar. Several bermuda entries, including *MSB-285*, *MSB-264*, *Sunday* and *JK 110521* showed improved establishment and turf quality over the standard

cultivar *Tifdwarf*. Entries such as *08-T-18*, *OKC-13-78-5* and *OKC-16-13-8* also performed well with good turf quality at several locations. Significant variation was also noted in genetic color, density and fall color retention ratings among bermudagrass entries. At this point in the study, ball roll speed measured at six sites showed only one site (Richmond, VA) with ball roll reaching the 9-10 foot threshold.

Zoysiagrass use on putting greens is only recently being considered in the U.S. A limiting factor is that most entries required the entire 2014 growing season to fully cover their plot area. However, several new zoysiagrasses appear to have potential for use, particularly under this lower input regime. *LIF*, *DALZ 1305* and *DALZ 1038* are three of the entries that produced good turf quality, if not better overall than *Diamond*, the standard cultivar. In addition, turf quality of some zoysias compares favorably to bermuda. Despite these initial encouraging results, it is too early to determine if the 9-10 foot green speeds can be achieved with these new zoysia experimentals.

Seashore paspalum use has been increasing, due to its superior salt tolerance. To date, however, the two entries of seashore paspalum demonstrated little performance differences.

SUMMARY POINTS

- 28 entries, including bermudagrass, zoysiagrass and seashore paspalum were planted at eleven trial locations across the southern and mid-western U.S. Entries of the same species were planted in separate blocks to facilitate the management differences needed among the species.
- Bermuda entries were the fastest to cover, followed by the seashore paspalum entries. Zoysia plots in many cases, took most of the 2014 growing season to achieve 100% coverage.
- The winter of 2013/14 damaged entries at four locations, requiring NTEP to resend, and cooperators to replant some or all entries at those sites.
- Bermuda, zoysia and seashore paspalum entry performance varied based on trial location. Several bermuda entries established faster, achieved higher turf quality, with better density, fall color ratings and ball roll speeds than standard cultivars.
- Several zoysia entries produced turf quality similar to bermuda. However, ball roll speeds were not yet comparable to most bermuda entries. There was no significant difference in performance among the two seashore paspalum entries.