Evaluating Bermudagrass for Putting Greens

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Goals:

- *Evaluate new bermudagrass cultivars in comparison with TIFGREEN and TIFDWARF on both a USGA green and a native sandy loam soil.*
- *Evaluate management practices including mowing height, irrigation and topdressing frequency.*

Cooperators:

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Bermudagrass *(Cynodon dactylon)* is the best adapted species for putting greens in the warm humid regions of the United States due to its superior heat tolerance and recuperative ability under low mowing heights. To date, limited effort and resources have been expended to identify or develop bermudagrass cultivars with the quality of creeping bentgrass *(Agrostis palustris)*.

Soon after TIFGREEN was released, distinct *offtypes* appeared in greens throughout the Southeast. Although TIFDWARF was the dominant cultivar released, others, such as PEE-DEE and TIF TURF were said to be distinctly different from TIFDWARF. Although TIFDWARF was the only one of the offtypes to become established in the trade, there is considerable evidence that it is not the only variant existing originally, or at the present time.

Turf managers have continually reported the occurrence of variants within TIFGREEN and TIFDWARF greens. In many cases attempts have been made to interest researchers in testing these strains of grasses, which are said to exhibit superior performance under conditions of excess moisture, heavy traffic, or poor soil structure common to the Southeast. To date, there has been little or no evaluation of these unique ecotypes to determine their value. Thus, the objective of this research was to evaluate bermudagrass cultivars or TIFGREEN or TIFDWARF ecotypes on both a USGA green and a native sandy loam soil.

A 5,000 ft^2 USGA-type golf putting green was constructed in August of 1993 at the Auburn University Turfgrass Research Unit.

This putting green, along with a similarly sized native soil putting green, were used for evaluation of 12 bermudagrass cultivars. These cultivars consisted of 8 selected ecotypes of TIFDWARF or TIFGREEN, plus four experimental lines: T596 and TW72, from GA, and 2747-OK and 2474-OK, from Oklahoma. Oklahoma State grasses were African bermudagrasses, *Cynodon transvaalensis.*

TIFGREEN or TIFDWARF ecotypes were collected from various sources, including selected golf course greens. Bermudagrass cultivars were sprigged into native soil and USGA putting greens on April 14-15, 1994, using a Ryan aerifier at a 6-inch plug spacing. Twelve cultivars were planted in 4 blocks, with cultivars arranged in a completely random design within each block in each putting green. Each cultivar main block was 3 feet wide and 25 feet long.

All plots were irrigated and mowed uniformly. Sand topdressing was initiated in the summer of 1994 with monthly topdress applications of 1/3 yard/1000 ft^2 per month. Plots were evaluated for percent ground cover during grow-in, fall color (Nov), seedhead production (fall and spring) and spring greenup.

Putting green type affected percent cover at both evaluation dates (19 May and 21 June). There was no difference in percent cover among bermudagrass cultivars grown on the same type of putting green. Percent cover was greater in the native (96%) than USGA (85%) putting green, when measured on June 21. It may be that ecotypes selected from native putting greens were more adapted to rapid growth on native soil rather than USGA putting greens.

Bermudagrass cultivars grown on the USGA putting green were usually darker green than when grown on the native putting green. The two Oklahoma *C. transvaalensis* bermudagrasses were significantly paler than any of the other cultivars. TIFDWARF, T596 and a TIFDWARF ecotype (from green #10, Mobile) were greener than other cultivars.

The only bermudagrass ecotype to produce fall seedheads was the selection from green #10 at Mobile. This grass produced seedheads on both the USGA and native putting greens. Turf quality was severely impacted. In the spring, seedhead production was affected by both green type and bermudgrass selection. When averaged over type of green, the Lakewood and 2747-OK cultivars produced significantly more seedheads than any other grass. Only the Mobile #10 and TW72 selections did not produce spring seedheads. When averaged over all grasses seedhead production rating on the USGA putting green was 4.7 and seedhead production rating on the native putting green was 3.5.

Both putting green type and bermudagrass selection affected spring greenup. Greenup ratings on the USGA putting green were higher, with an average greenup rating of 5.2. Grasses on the native putting green had an average greenup rating of 4.4. When averaged over green type, the 2747-OK selection had the significantly lowest greenup (rating of 2.6) of any of the grasses.