

# Evaluation of Ultradwarf Bermudagrass Cultural Management Practices

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## Objectives:

1. To evaluate the effects of verticutting, topdressing, and nitrogen:potassium ratios on the three most popular bermudagrass ultradwarfs in Florida (TifEagle, Champion, and Floradwarf).

**Start Date:** 2001

**Project Duration:** 3 years

**Total Funding:** \$32,480

There is great interest in improved putting surfaces in Florida, a state that leads the nation in numbers of golf courses and rounds of golf played annually. Ultradwarf bermudagrasses have been developed for better putting performance and are being planted in new and reconstructed greens. We have conducted cultural management research on ultradwarfs to support recommendations for golf course superintendents.

Thanks to the great support of the Florida turfgrass industry, we initiated in late September, 1999, an ultradwarf cultural management research trial in south



Cultural management treatments included light topdressing frequency (weekly vs bi-weekly) and shallow verticut frequency (3.4 mm setting weekly versus bi-weekly).

Florida at the Ft. Lauderdale Research and Education Center. The United States Golf Association has provided funds for the past three years to continue the research project. This project was designed to identify the optimal cultural practices for best performance of three popular ultradwarfs and help identify management recommendations of these grasses under southern Florida conditions.

The grasses were selected based upon their usage in Florida: Champion, Tifeagle, and Floradwarf. The grasses were planted into an existing USGA green soil mix on a site nearby the Otto Schmeisser Research Green at the University of Florida's Fort Lauderdale Research and Education Center in southern Florida.

Cultural management practices evaluated included fertilizer two N rates (30 and 60 g N m<sup>-2</sup>; 6 and 12 lbs N 1000 ft<sup>-2</sup>) and 3 N:K ratios (1:1, 2:1, and 1:2). Beginning in April of 2001, and continuing thereafter through 2003, the fertilizer component was changed to 60, 90, and 120 g N m<sup>-2</sup> (12, 18, and 24 lbs N 1000 ft<sup>-2</sup>) and the N:K ratios were reduced to 1:1 and 2:1 in order to evaluate a greater range of N rates.

Other cultural management treatments were light topdressing frequency (weekly vs bi-weekly) and shallow verticut frequency (3.4 mm setting weekly vs. bi-weekly). There were four replications of each treatment. The daily mowing height was set at 3.0 mm to 3.4 mm (0.13-0.14 inches).

Because of the number treatments (288 plots), the size of the new green was approximately 930 m<sup>-2</sup> (1/4 acre). Evaluations were based upon visual turfgrass quality ratings, visually apparent disease ratings, thatch ratings, turf leaf blade clippings, and shoot counts. Significant treatment effects were observed for all parameters.



As exemplified by both TifEagle and Champion (above), the new bermudagrass ultradwarfs have greater shoot density than older bermudagrass varieties.

## Summary Points

- Increasing N up to 18 lbs/1000 ft<sup>2</sup> improved turfgrass quality on several rating dates. However, higher N rates did not increase turf quality during summer climatic stress periods.
- Increasing N rate significantly increased clipping weight.
- Tifeagle provided the highest turfgrass quality during most ratings in southern Florida. Floradwarf and Tifeagle were similar in ratings prior to the most intense portion of the southern Florida summer weather period.
- Champion had the most shoots and Floradwarf had the least shoots.
- Clipping weight was greatest for Tifeagle and least for Champion.
- Careful management is needed especially during summer stress periods when frequent verticutting can reduce turfgrass quality.
- Topdressing had little affect on turfgrass performance in year three.
- Increased verticutting decreased thatch depth.
- There were varietal differences for fairy ring.
- Champion had the highest disease-like symptom ratings in late summer compared to either Floradwarf or Tifeagle. Floradwarf's rating was higher than Tifeagle. Tifeagle had the lowest disease-like symptom ratings.