

# 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 ultradwarfs in Florida (TifEagle, Champion, and Floradwarf ).

Start Date: 2001

Project Duration: 2 years

Total Funding: \$21,228

Florida leads the USA in numbers of golf courses and with over 66 million rounds of golf played annually, there is great interest in improved putting surfaces. New ultradwarf bermudagrasses have been developed for better putting performance and are being planted in new and reconstructed greens. However, there is little research information on ultradwarfs from which to base sound cultural management recommendations for golf course superintendents.

In late-September, 1999, we initiated an ultradwarf putting green research trial in south Florida at the Ft. Lauderdale Research and Education Center. This project was designed to identify the optimal cultural practices for best performance of three popular ultradwarfs: Champion, Tifeagle, and Floradwarf. The grasses were planted into an existing USGA green soil mix on a site nearby on the Otto Schmeisser Research Green at the



A drop spreader was used to topdress the plots.



Three cultivars, two topdressing rates, and six N:K ratios. Each treatment combination was replicated four times.

University of Florida's, Fort Lauderdale Research and Education Center in south Florida.

Cultural management practices evaluated included fertilizer two N rates (30 and 60 g N/m<sup>2</sup> which translated to 6 and 12 lbs. N/1000 sq. ft. and three N:K ratios (1:1, 2:1, and 1:2). In April of 2001, the fertilizer component was changed to 60, 90, and 120 g N/m<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 replication of each treatment. The daily mowing height ranged from 3.0 mm to 3.4 mm (0.13-0.14 inches) during the period. Evaluations were based upon visual turfgrass quality ratings, visual disease ratings, thatch ratings, and shoot counts.

## Summary Points

### Summer Observations

- Tifeagle and/or Floradwarf provided the highest turfgrass quality during summer stress months in south Florida.
- Nitrogen rate and more frequent verticutting provided higher turfgrass quality early in summer.
- Weekly topdressing provided higher turfgrass quality.
- Higher disease (melting out/decline) ratings were noted during the summer for Champion and on some dates Floradwarf compared to Tifeagle.
- There was less disease (melting out/decline) noted for the middle N rate.
- More frequent verticutting resulted in higher disease (melting out/decline) ratings while one frequent topdressing resulted in lower ratings.
- Floradwarf had more fairy rings.
- More frequent verticutting decreased fairy rings while more frequent topdressing increased fairy ring ratings.

### Winter Observations

- Champion had higher turfgrass quality than Floradwarf on both rating dates and higher turfgrass quality than Tifeagle one rating date during the winter, 2001.
- Increased N improved turfgrass quality in winter ratings, and it was determined that low N did not provide acceptable year-round quality turfgrass.
- Verticutting frequency did not affect turfgrass quality in winter, while more frequent topdressing slightly improved winter turfgrass quality.
- Less frequent verticutting resulted in greater shoot counts for Floradwarf and Champion, while TifEagle shoot counts were unaffected by verticutting frequency.
- N resulted in slightly greater shoot counts.
- Thatchmeter measurements were higher for Champion and for the greater N rate.