

Management of New Dwarf Bermudagrasses

Richard H. White
Texas A&M University

Objectives:

1. Determine the effects of vertical mowing, topdressing, and nitrogen fertility on performance, thatch development, fall and spring overseeding transition, and turf quality of five dwarf bermudagrasses.

Start Date: 2001

Project Duration: 2 years

Total Funding: \$21,156

New dwarf bermudagrass varieties have the potential to provide excellent putting quality on golf greens in the southern United States. Cultural practice recommendations for the new varieties continue to evolve.

Research at Texas A&M University continues to study thatch accumulation, shoot density, and performance of dwarf bermudagrass cultivars planted in April, 1997. The effects of topdressing and vertical mowing in conjunction with nitrogen fertilization were assessed (See table). The entire experiment was overseeded with *Poa trivialis* each fall.

Shoot density and thatch depth were deter-



Thatch and disease management appears to be the major challenges in the culture of the new dwarf bermudagrasses.

mined in June and October each year. When data were combined and analyzed across all years of the study, thatch depth was greatest and shoot density was least in June than in October for all grasses. These data indicated that *Poa trivialis* contributed to thatch accumulation during periods when cultivation treatments were

not applied. This observation may explain why few differences in thatch depth were observed among cultivation treatments.

Specific cultural practices contributed to the least thatch and greatest shoot density across all sampling dates within individual cultivars with less influence of nitrogen than expected. Shoot density was less in spring than fall, as expected. During the last two springs, transition was poor, and less than 5 shoots cm⁻² were observed in June, 2002 for Champion, Floradwarf, and Miniverde compared with 10 to 15 shoots cm⁻² for Tifdwarf and Tifeagle.

The treatments used in this study have not effectively controlled thatch accumulation in any cultivar, and more aggressive cultivation including core aeration is likely required to prevent excessive thatch accumulation. The results of this study indicate that unique cultural programs will be required for each cultivar.

Cultural Practice

Cultivar	Nitrogen	Cultural Practice	
		Vertical Mowing	Topdressing
<u>Least Thatch</u>			
Champion	6 to 18	either	infrequent
Floradwarf	6	either	either
Miniverde	6 to 18	either	infrequent
Tifdwarf	6 to 18	infrequent	either
Tifeagle	6	infrequent	either
<u>Greatest Shoot Density</u>			
Champion	6 to 18	infrequent	either
Floradwarf	6 to 18	either	either
Miniverde	10 to 18	either	either
Tifdwarf	6 to 18	infrequent	either
Tifeagle	6 to 18	either	either

Nitrogen applied at 6, 10, 14, and 18 lb per 1000 sq. ft. annually.

Vertical mowing treatments were 1) frequent, light every two weeks from May through September and 2) infrequent, severe in June and October.

Topdressing treatments were 1) frequent, light application of 0.02 inches every two weeks from May through September followed by a 0.20 inch application at overseeding, and 2) 0.15 inches in June and 0.20 inches at overseeding.

Cultural practice contributions to the least thatch and greatest shoot density in five bermudagrasses.

Summary Points

- Poa trivialis* contributed to thatch accumulation.
- The cultural practices used were not aggressive enough to adequately control thatch.
- Cultivar specific cultural programs will be required to maintain shoot density and control thatch in dwarf bermudagrasses.