

Best Management Practices for New Dwarf Bermudagrasses

Texas A&M University

Richard H. White

Start Date: 1998

Number of Years: 3

Total Funding: \$69,989

Objectives:

1. *Determine the performance, mowing tolerance, and pest resistance of 15 experimental and commercially available bermudagrass and one zoysiagrass on a golf green.*
2. *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.*

In general, *CHAMPION* produced acceptable quality, which increased with increasing N for winter, spring, and summer of 1998. When excessive thatch accumulated in the 683 and 878 kg N ha⁻¹year⁻¹ treatments in late summer 1998, scalping damage began to reduce the quality of *CHAMPION*. This trend continued in *CHAMPION* during spring 1999, and scalping occurred at all rates of N in summer 1999. This decline in quality is further evident in bermudagrass shoot density for fall 1999.

Quality of *MINIVERDE* and overseeded *MINIVERDE* tended to increase with N over much of the experiment, and achieved acceptable quality at the 292 kg N ha⁻¹year⁻¹ for most dates. *FLORADWARF* tended to have a significant response to N throughout the experiment, but rarely reached acceptable quality in this cultivar regardless of N applied.

Turf quality in *TIFEAGLE* and overseeded *TIFEAGLE* generally did not deviate far from a rating near minimum acceptable and demonstrated little response to increasing N.

TIFDWARF tended to have a strong response to N during the summer seasons, and thatch did not become a problem in this cultivar. Acceptable quality was generally obtained at 488 kg N ha⁻¹year⁻¹, but there was added benefit to increasing N up to the highest rate.

Judicious nitrogen management will be important in the management of all of these cultivars, but is more crucial in *CHAMPION*, *MINIVERDE*, and *TIFEAGLE*. Thatch accumulation was highly responsive to N in all three cultivars. Thatch became a severe problem in *CHAMPION* during the first summer of the experiment and showed the potential to affect *MINIVERDE* and *TIFEAGLE* similarly if there is continued use of high N rates.

Severe, infrequent compared with light, frequent vertical mowing reduced thatch in *FLORADWARF*, *MINIVERDE*, *TIFEAGLE* and *TIFDWARF*, but the subsequent reduction in turfgrass quality with the severe vertical mowing treatment may be too detrimental for golf course greens. In *MINIVERDE*, data suggest that the combination of frequent topdressing and frequent light vertical mowing reduced thatch while not decreasing quality. There were no significant topdressing main effects in any cultivar in relation to thatch depth. Both treatments did equally well in controlling the rate of thatch accumulation.