Management Practices for Golf Course Roughs, Fairways, and Tees using Buffalograss

University of Nebraska

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Start Date: 1998
Number of Years: 3
Total Funding: $75,000

Objectives:

1. *Develop fertilization, mowing, irrigation, and pesticide recommendations for new buffalograsses.*
2. *Evaluate effect of cultivation on buffalograss.*
3. *Evaluate management for wear and divot recovery on buffalograss.*
4. *Use quantitative measures of turfgrass quality and recovery.*
5. *Study population changes in seeded cultivars due to management changes.*

Sprig Establishment. Establishment of buffalograss has always been a major objective of the project. Great strides were made with buffalograss establishment since the project was first initiated. Initial studies in the 1980's indicated that pre-rooted plugs had an advantage in establishment over seeded varieties. However, present studies have shown that seeded varieties now establish as rapidly as vegetative plugs. These improvements are due to improved selections with faster germination and improved seedling vigor, and because of better production of seed by producers. Sprigging of buffalograss has also shown potential to provide very rapid establishment rates. The research project will focus on improving sprigging characteristics in addition to seed production.

Fertility and Mowing Effects on Buffalograss. At the Nebraska site, NE 91-118 and 378 had the highest quality ratings at the 2.5-cm mowing heights for years 1996 through 1998. *CODY* and *TEXOKA* had poor quality ratings at the 2.5-cm mowing height for all years. In 1998, NE 91-118, 378, and *CODY* had the highest quality ratings at the 5.1-cm mowing height. At the 7.6-cm mowing height, *CODY* and *TEXOKA* had the highest quality rating in 1997 but *CODY* and 378 had the highest quality ratings in 1998.

Several trends are evident for the study conducted from 1997 through 1998. First, turfgrass quality decreased from 1997 to 1998 for all cultivars at the 0, 2.4, and 5.0 g N m^{-2} rates. At 10 g N m^{-2}, NE 91-118 and 378 had higher quality in 1998 than in 1997. All cultivars had improved quality ratings in 1998 at the 20 g N m^{-2} rate. Quality ratings in 1998 were poor (i.e., < 6) for all cultivars at 0, 2.4, and 5.0 g N m^{-2} rates. At 10 g N m^{-2}, NE 91-118, 378, and *CODY* had good turfgrass quality. Management recommendations for 378 and NE 91-118 are 2.5 or 5.1 cm mowing heights and a nitrogen rate of 10 g N m^{-2} $year^{-1}$. Recommendations for *CODY* and *TEXOKA* are 5.1 or 7.6 cm mowing heights and a nitrogen rate of 10 g N m^{-2} year.

Buffalograss Resistance to Chinch Bugs. The development of turfgrasses with insect resistance offers an attractive approach for managing pests associated with buffalograss because it is sustainable, environmentally responsible, and fits well with its low

maintenance, reduced pesticide-input philosophy. Greenhouse experiments were conducted to determine the categories of resistance of 10 buffalograss cultivars or selections (*CODY*, *TATANKA*, '609', '315', '378', *TEXOKA*, NE84-45-3, NE91-118, NE86-120, NE86-61) screened previously for resistance to the chinch bug, *Blissus occiduus*. From these initial greenhouse screenings, *CODY*, *TATANKA*, and NE91-118 are resistant to *B. occiduus*. NE84-45-3 and '378' were designated susceptible. Although three selections are identified as chinch bug resistant, further evaluation is needed to determine the categories of their resistance (i.e., antixenosis, antibiosis, and/or tolerance)