

parents. In this planting eight outstanding female clones are surrounded by three outstanding male clones. This plan allows for random pollination by the males and seed collection from each female.

Buffalograss Seed Treatment Evaluation

Buffalograss seed is relatively expensive and is slow to germinate and establish. The major reason for this is that multiple seeds are enclosed by a very hard burr. The main objective of this evaluation was to determine if scarification in a Waring blender would enhance germination and establishment. Laboratory results showed the 2-second treatment germinating more rapidly and with higher numbers than the other five treatments. In the field study the 2-second treatment was superior to all treatments including the check, decreasing the initial germination time and producing more seedlings, providing an earlier developing and denser stand compared to the no treatment stand. This lends itself to greater ease in establishing a buffalograss turf. Plans are to work with Ag. Engineering to develop a method for similarly treating buffalograss seed in large quantities.

Buffalograss Establishment Study

The data collected from this study was used to determine whether there was a significant difference between plugs with an established root system (pre-rooted plugs, PRP) and regular plugs (non-pre-rooted plugs, NPRP). In general, the PRP treatment produced more stolons much sooner, established much more quickly, and had a better initial adaptation to transplanting (color measurement) than the NPRP treatment. These results could be very significant in a vegetatively propagated grass and open up a new way of marketing buffalograss.

Buffalograss Culture

Herbicide evaluation studies on buffalograss since 1983 have given the following results: (1) Buffalograss shows a decrease in tolerance to increased rates of 2,4-D and combinations of 2,4-D, MCPP and dicamba, and (2) Combination treatments had a synergistic effect when compared to 2,4-D, MCPP and dicamba treated individually.

UNIVERSITY OF NEBRASKA - Dr. Robert C. Shearman,
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Turfgrass Cultural Practices and their Interactive Effects on Rooting

1985 Grant - \$23,000 (Second year
of support)

UN-L Contributions

During the 1985 project period, the University of Nebraska made the following contributions to the joint research project by developing the following facilities:

1. An additional 18,000 sq. ft. of golf green research area, bringing the total research green area to approximately 46,000 sq. ft.
2. Completion of the Turfgrass Rhizotron Research facility with 40 root cells for rooting observations.
3. Irrigation scheduling research site with 20,000 sq. ft. of area divided into 24 individually controlled irrigation plots with tensiometers.
4. Addition of 3,500 sq. ft. to the Turfgrass Research Field Lab and Maintenance Facility.

Research Accomplishments

The following are accomplishments relating to the United States Golf Association support of this joint research project:

1. Developed a technique using neutron scattering to assess turfgrass depth and distribution of rooting, and to determine rootzone soil moisture extraction.
2. Developed a hydroponic method to screen differences in turfgrass rooting based on species, cultivar, and cultural practices. Verified responses of hydroponic system to those observed under field conditions.
3. Evaluated a nondestructive method for determining leaf area index (LAI) in turfs. Confirmed this technique on seven cool season turfgrass species.
4. Evaluated nitrogen and potassium effects on creeping bentgrass and Kentucky bluegrass turfs. The golf green evaluation with creeping bentgrass was further interacted with irrigation frequency. Potassium enhanced turfgrass rooting and drought avoidance in both species. Turfgrass wear tolerance was enhanced by potassium treatments and recuperative rate was enhanced by nitrogen in the creeping bentgrass evaluation which was conducted on a high sand content growing media.