

E. Buffalograss Seed Storage

Hulled buffalograss seed stored for three months had an overall 94% germination and at nine months, 92%. A germination test will also be made at 15 months.

F. Buffalograss De-hulling

A barley pearler was evaluated as a means of removing the multiple buffalograss caryopses from the burr. An average of 2.3 caryopses were obtained from each burr and germination was much more rapid for the excised caryopses.

G. Vegetative Establishment

Six studies using pre-rooted and non pre-rooted plugs demonstrated that vegetative establishment is improved using pre-rooted plugs. Spacing requirements, herbicide and fertilizer rates, and pre-rooting times were determined from these studies.

H. Buffalograss Rhizotron Study

No significant differences were obtained in root development of pre-rooted and non pre-rooted plugs in the rhizotron. Differences were possibly masked by environmental or soil factors.

I. Project Budget

During 1985-6 and again in 1986-7, we will be spending 10-15% more than the \$18,000 we receive from the USGA. This deficit spending is a problem, but more significant is the problem that all of this amount is going for salary, benefits and overhead. There are currently no funds available for plant collection, student labor or operating expenses. If this funding situation continues, the progress and accomplishments of the project could be negatively affected.

UNIVERSITY OF NEBRASKA - Dr. Robert C. Shearman
Principal Investigator

Turfgrass Cultural Practices and their Interactive Effects on Rooting

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The USGA has set goals of 50% reduction in turfgrass water use and 50% lower maintenance costs. Results from the irrigation frequency x potassium nutrition study conducted during 1986 demonstrated that decreasing irrigation frequency and increasing potassium nutrition levels resulted in equal or better putting green conditions than turfs receiving frequent daily irrigation. Snow mold [Typhula blight] incidence decreased with increasing potassium. A 60% reduction in

disease incidence was found between treatments of 4 and 8 lbs K/1000 ft²/ season. These results indicate a strong potential to reduce maintenance cost by manipulating irrigation frequency and potassium nutrition, particularly on sand growing media.

The interaction of turfgrass species root growth and distribution was investigated under drought stress conditions. Species were eliminated when root growth ceased and permanent wilt symptoms were expressed. Tall fescue, creeping red fescue, perennial ryegrass and creeping bentgrass produced roots to 1220 mm to 1520 mm. Rough bluegrass ranked intermediate in root production, but wilted very early in the drought stress cycle since approximately 50% of its rooting was in the upper 0 to 150 mm of the profile. Sixteen Kentucky bluegrasses were investigated for intraspecific responses in root growth and distribution, top growth, and amount of root growth supporting top growth. Cultivars were found to vary by as much as 50% to 56% in these characteristics. Ram I, Touchdown and Eclipse had high percentages of root growth supporting top growth.

Potassium nutrition studies on creeping bentgrass and Kentucky bluegrass demonstrated that drought avoidance characteristics increased with K nutrition. Wilting tendency decreased as K nutrition was increased from 0 to 8 lbs K/1000ft². Turfgrass wear tolerance increased with increasing K rates.

Studies were initiated in the JSA Turfgrass Rhizotron to investigate growing media and microenvironment. An ERDAS system was purchased to be used as a means to quantitate turfgrass root growth in the rhizotron and in other rooting studies. An additional 10,000 ft² of creeping bentgrass green area was established for research purposes. This additional green brings the total area to approximately 56,000 ft². A creeping bentgrass cultivar study was initiated September, 1986. Plots were designed to incorporate cultural practice on the replicated cultivar study.

NEW MEXICO STATE UNIVERSITY - Dr. Arden A. Baltensperger
Principal Investigator

Breeding Improved Seeded
Bermudagrass for Turf

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Partially as a result of findings from two Ph.D. studies, approximately 22,000 progenies were established in the greenhouse in the spring of 1986. These plants were subsequently selected for turf quality characteristics in both the greenhouse and field. An attempt is being made to improve several experimental strains for turf quality seed yield.