Germplasm Development for Buffalograss Varieties

University of Nebraska

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Start Date: 1998
Number of Years: 5
Total Funding: $125,000

Objectives:

1. *Acquire additional germplasm through collection and recombination of germplasm already in our collection.*
2. *Evaluate germplasm with superior turfgrass characteristics including mowing tolerance, color, length of growing season, insect resistance, establishment and recovery of vigor, sod strength, combining ability, and seed production.*
3. *Obtain inheritance data on important traits, conduct genome size and molecular marker analyses, and evaluate the impact of inbreeding and genetic diversity on variety development.*

Seeded Releases. Seed West has elected to leave the Native Turf Group (NTG). This was over a decision on who would market the new release NTG-5. NTG-7 and FW-3 are being evaluated at the John Seaton Anderson Turfgrass and Ornamental Research Facility. Charlie Rodgers of Seeds West has indicated that they would still like to market NTG-5. Terry Riordan is encouraging Seeds West and NTG to do this. It would mean $10,000 in royalties to the USGA.

Vegetative Releases. Patents have been approved for releases NE 86-61, NE 86-120, and NE 91-118. Publication of the crop registration should occur this winter in the Crop Science Journal. NE 86-61 has been named 'Legacy' and 35 acres are being produced by Todd Valley Farms at Mead, Ne. Legacy will be available in the northern United States next year.

Crenshaw Turf, Inc. Update. Crenshaw Turf is now part of Turfgrass America, Inc. along with Thomas Bros. Sod and Milberger Turf. Their goal is to be the premire supplier of proprietary southern turfgrasses, ie. bermudagrass, zoysiagrass, St. Augustinegrass, and buffalograss. This would include genetically enhanced turfgrasses.

Sales of buffalograss for 1999 are down, but they have indicated that this is due more to reorganization of the companies than lack of interest in buffalograss.

Summary of Breeding Work. Performance levels continued to improve with the establishment of a new breeding nursery in 1999. Numerous accessions in this nursery have exhibited increased establishment rate over commercially available cultivars. Newly released cultivars continue to show their superiority over older varieties with improved sod strength, color, turfgrass quality, and density. The establishment of six new crossing blocks in 1999 with selections exhibiting fairway type characteristics should provide germplasm with higher levels of turf quality and adaption to golf course management systems.

Seed Production. Buffalograss seed production has received major attention in 1999. To insure the successful use of buffalograss, seed production characteristics must be a major factor in the selection process. The buffalograss project has initiated a three-phase approach to provide high turf quality varieties with high seed yields. Phase one involves breeding of high yielding female lines with advanced male accessions that contribute to seed yield, seedling vigor, and turf performance characteristics. The second phase is the use of flow cytometry to identify crossing accessions of similar ploidy levels. The third phase is to explore chemical applications of plant hormones to enhance seed