

BREEDING, EVALUATION AND CULTURE OF BUFFALOGRASS

UNIVERSITY OF NEBRASKA
Lincoln, Nebraska

Dr. Terrance P. Riordan
Principal Investigator

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GRASSES DUE TO BE COMMERCIALIZED - The number 1 genotype throughout the country and in our research plots at the University of Nebraska was NE 84-609. This buffalograss is a southern type with good adaptation in the south and potential adaptation in the north. We are proceeding with developing a crop registration, a plant patent, and release of NE 84-609 for use in the southern United States.

COMMERCIALIZATION—SEEDED BUFFALOGRASS - An agreement has been received from a consortium of companies which includes Farmers Marketing Corporation, Yuma, Arizona; Arrow Seed, Broken Bow, Nebraska; and Johnston Seed, Enid, Oklahoma. This agreement calls for the development of a new seeded turf-type buffalograss using plant material from the University of Nebraska.

COMMERCIALIZATION -- VEGETATIVE BUFFALOGRASS - We have been contacted by Crenshaw/Douget, Inc., that has an interest in NE 84-609 for use in the Texas market. It is believed that an agreement will be received shortly from this company that may be worthy of consideration.

COMMERCIAL TESTING/EVALUATION - During 1990, the University of Nebraska will work with golf courses and sod producers in evaluating the performance and potential of vegetative buffalograsses in various locations. It will be our effort to make these planned releases available under agreement to individuals who would have the most positive effect on our project. We will be working with the United States Golf Association and the Golf Course Superintendents Association of America on this portion of the project.

BUFFALOGRASS VEGETATIVE INCREASE - Establishment of vegetative increase areas started in 1987 and has continued with additional material added each year. To-date, seventeen cultivars have been increased for a total of 83,000 ft². This area is used to provide plant material for advanced testing studies.

DEMONSTRATION & STUDY TOURS - Texas A&M Univ.; Milt Engelke - Dallas, TX: Plugs of several buffalograss selections [Prairie, Texoka, NE 84-409, NE 84-609, NE 84-315, NE 84-304 and NE 85-378] planted May 18, 1988 were observed at the Texas Agricultural Experimental Station in Dallas. Turf quality data values showed NE 84-609, NE 84-304 and Prairie as exhibiting good turf-type qualities. Prairie and NE 84-609 exhibited the best turf color throughout the season.

BUFFALOGRASS BIOTECHNOLOGY - After a great deal of preliminary experimentation, a breakthrough has been made on the buffalograss biotechnology project. Callus has been initiated from stolon tips of the female cultivars NE 84-609, NE 85-378 and NE 84-315. This is an important discovery for four reasons: [1] these three cultivars are projected as being patented in the early 1990's; [2] the explant utilized is clonal material; [3] stolon tips are easily handled and can be grown in an unlimited supply in the greenhouse; and [4] callus is being induced from the aesthetically pleasing female plant.

BUFFALOGRASS WATER USE RATES - Preliminary results show experimental varieties NE 84-315 and NE 84-409 along with the common variety Homes exhibited the lowest 48-hour water use rates at 10.33, 11.37 and 11.76 mm, respectively. Varieties NE 84-304, NE 84-609 and Texoka showed relatively higher 48-hour rates at 11.89, 12.61, 12.62 mm, respectively. All the varieties tested show a substantial water savings compared to the most commonly used turfgrasses which have water use rates ranging from 12 to over 20 mm per 48-hour cycle.

IMAGE ANALYSIS - The application of remote sensing and digital analysis, thereby decreasing processing time and increasing accuracy. Time and manual input by operator was reduced by 50% with the computer method. Processing of digital images by different operators was possible without loss of accuracy.

FAIRWAY MANAGEMENT STUDY - Observations of research plots since 1985 suggests that buffalograss could be used on golf course fairways with significant savings of water, fertilizer, pesticides and mowing. Results from studies indicate a savings of greater than 50% for water and fertilizer use. A study was initiated to evaluate buffalograss turfgrass quality and performance under modified fairway maintenance schedules and playing conditions.

MECHANICAL TURF PLUGGER FOR BUFFALOGRASS - A mechanical turf plugger was developed by retrofitting a Ryan GA 30 aerator plugging tines. The mechanical turf plugger was evaluated under field conditions to determine the adaptation of this method of plugging for extracting buffalograss [Buchloe dactyloides (Nutt.) Engelm.] plugs.

BUFFALOGRASS INSECT STUDIES - At the present time, studies are underway at the John Seaton Anderson Turfgrass Facility located at Mead, Nebraska, to secure a better understanding of mealybug biology, ecology, geographic distribution, seasonal abundance and injury potential in buffalograss.