

BREEDING AND DEVELOPMENT OF BENTGRASS

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The Bentgrass Breeding program is in its fourth year of operation. Excellent progress continues on the selection and evaluation for superior heat tolerance in both root and leaf tissue. A greater emphasis is being directed to field evaluation trials for seed production characteristics, and for root longevity and distribution. New field facilities were constructed in the spring of 1988 at Texas Agricultural Experiment Station (TAES)-Dallas to accommodate field testing for root depth and distribution, and longevity. Initial plantings were completed in May with destructive root sampling occurring throughout the summer to monitor root development. Attention is now directed to comparative studies with the greenhouse root tubes to validate the root tube selection procedure, as well as to examine the rate of root density, depth and distribution over time. Gradual dry down and prolonged induced drought stress will be initiated in 1989 and will aid in identifying those individuals with superior stress tolerance.

All hybridization work is completed in Oregon due to problems with floral initiation under Texas conditions. The Oregon field site is donated by Pick Seed West of Tenger, Oregon, along with a considerable degree of the labor, equipment and facilities. The initial plantings were made in 1985. We have continued to expand the total number of plants and the number of synthetics in production each year. Small quantities of seed were harvested from three synthetics, identified as Syn1-88, Syn3-88, and Syn4-88. Seed from each of the synthetics has been germinated and established as individual plants. Approximately 1500 plants of each of the synthetics will be vernalized in special conditioning chambers at TAES-Dallas, and then transferred to isolated field plantings in Oregon in January/February 1989. This will ensure production, and provide sufficient seed of each of the potential new varieties for entry into the 1989 USDA National Bentgrass Trials.

Cooperative research with Dr. Phil Colbaugh is identifying germ plasm within the breeding nurseries which have both Brown Patch and Pythium resistance. Some of these parental lines are included in the present synthetics in Oregon, others will be used extensively in future crossing endeavors during 1989 and beyond.

The excellent cooperation between the United States Golf Association and Bentgrass Research, Inc. has been instrumental in implementing the procedures necessary for timely development of a new bentgrass for the Golf Industry. Finally, appreciation is

extended to Pick Seed West for continued contributions and involvement with the seed production and hybridization program in Oregon. As a worthy closing note, Ms. Virginia Lehman passed her written and oral preliminary exams for a Ph.D. degree on 5 October, 1988 and anticipates completing her dissertation by the summer of 1989.