TEXAS A&M UNIVERSITY

Breeding and Development of Bentgrass

1990 Research Grant: $64,000
(Sixth year of support)

Dr. Milt C. Engelke
Principal Investigator

As a major milestone, three creeping bentgrass varieties developed by Texas A&M were submitted for release in 1990. The initial petition for release of Syn3-88 was filed in September, and Syn4-88 and Syn1-88 were filed in October, 1990. Foundation seed production fields were established for Syn3-88 (10 acres) and Syn4-88 (12 acres) in September of 1990. Foundation production of Syn1-88 will be planted in the spring of 1991 (~10 acres). The anticipated production cycle will permit certified production fields of Syn3-88 and Syn4-88 to be established in 1991, with the first commercial production to be harvested and available to the industry by the fall of 1992. Syn1-88 production cycle will lag behind by one year with first commercial production available in 1993.

Selection, hybridization, and advanced screening programs rapidly advance with the production of 14 new polycross populations and 24 single cross populations being produced in 1990. We presently have over 9000 individual plants established in the greenhouse for additional screening and evaluation. Emphasis over the next few years will be on the continued development of improved turfgrass characteristics into new varieties. While effective screening procedures are being developed, heritability work is being conducted for disease resistance mechanisms, drought and heat tolerance characters, and perennial root growth characters.

The leaf-stem hydration work completed by Dr. Virginia Lehman suggests that a very strong relationship exists between leaf water content and heat tolerance. This procedure will be used extensively, along with the flexible tube procedure which measures rooting depth, to screen root characters of bentgrass in the development of the next generation of superior heat tolerant varieties.

Assessment of genotype performance and germplasm screening continues in the greenhouse, field and laboratory. Superior plants are being identified and recycled into the breeding program. Invaluable cooperation continues from Pickseed West, with Dr. Jerry Pepin and Mr. Doug King.

(Please Note: This project is jointly funded through a grant from the USGA and Bentgrass Research, Inc. located in Dallas, Texas.)