

## BREEDING AND DEVELOPMENT OF ZOYSIAGRASS

TEXAS A&M UNIVERSITY  
Dallas, Texas

Dr. M. C. Engelke  
Principal Investigator

1988 Reserach Grant: \$40,000  
(sixth year of support)

The zoysiagrass breeding program is in its sixth year with the financial support of the United States Golf Association. Major Regional Field Trials were initiated as early as 1986, with cooperators from several states providing comparative evaluation of four experimental DALZ zoysia varieties with four commercially available zoysiagrass cultivars, including "Meyer," "Emerald," "Belair," and "El Toro." Additional trials have been established to evaluate sod production potential (Ferris, Texas), and under the Linear Gradient Irrigation System (LGIS) at Texas Agricultural Experiment Station (TAES) -Dallas. The first full moisture gradient will be applied to the experimental zoysiagrasses during 1989.

DALZ8501 and DALZ8502 have been identified for their superior regrowth and recovery ability due to highly rhizomatous growth characters. Neither of these clones have sufficient winterhardiness to fit the mid-continent states, based on regional trials conducted the past two years in that area. However, as they are grown further south, along the Gulf Coast States and in California, they demonstrate superior performance in winter color, density of stand, and quality of turf. Recognizing their primary area of adaptation is a crucial element in the development of all turfgrass varieties, trials will be established in Florida and Georgia in 1988/89. Both DALZ8501 and DALZ8502 are fine textured and highly rhizomatous selections. DALZ8502 has potential for use in the deep south for putting greens. It retains an excellent winter growth characteristic, has been identified as a low water user and has a relatively low nutritional requirement. Additional testing will be initiated for its potential use as a putting surface. Breeder/Foundation production fields (0.5 acres) of both DALZ8501 and DALZ8502 were planted on fumigated ground in June, 1988 with the assistance of the Texas Sod Producers Association. Both fields are in excellent condition going into the winter and should reach nearly full coverage by midsummer 1989. DALZ8501 will be further expanded to cover a full 20,000 square feet in early spring 1989.

Numerous selections have been identified in the Oriental Collection for turf quality, color retention, greenup, drought hardiness, seed production potential, and numerous desirable agronomic traits. Considering the cold susceptibility of DALZ8501 and DALZ8502, it will be necessary to concentrate on identifying and developing accessions with considerably more winter hardiness. Dr. Lin Wu, University of California - Davis, has completed the electrophoresis studies on the initial group of DALZ lines which

included DALZ8501 and DALZ8502. This information was presented in the spring report (Semiannual 1988) and will be used in conjunction with field performance data as documentation of plant variety release and plant patenting.