

BREEDING AND DEVELOPMENT OF ZOYSIAGRASS

TEXAS A&M UNIVERSITY
Dallas, Texas

Dr. M. C. Engelke
Principal Investigator

1987 Research Grant: \$40,000
(fifth year of support)

Major regional field trials were initiated with cooperators for 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 to determine water use requirements. A replicated management study will be planted in the Spring of 1988 to evaluate the optimum nutritional requirements and influence of mowing height/frequency on turf quality and persistence. The establishment rate of the experimentals show considerable promise, however, the primary reason for their selection is related to the high rhizome production, and their inherent ability to recover following sod harvest, or divot injury.

Numerous agronomic and biological characteristics are presently being assessed on the DALZ lines selected during 1985, including shade tolerance (Dallas), salinity tolerance (El Paso), water use requirements (Dallas and College Station), disease (Dallas and Carbondale, Illinois), sod traits (Dallas), nutritional requirements (Missouri), putting quality (Dallas), and general turf adaptation (Arizona, Oklahoma, Illinois, Missouri, California and Dallas). The database developed through cooperation with scientists at each of these locations will provide the basis for releasing and recommending the use and distribution of new varieties. Two of the DALZ lines may be increased under foundation field conditions (~0.40 ha during 1988) to provide sufficient planting stock for potential release in the early 1990's.

Selections have been made from open-cross progeny which were field planted in 1985 without the benefit of irrigation or fertilization. These plants will be advanced into replicated field management/ varietal evaluation trials to determine their agronomic strengths.

Twenty-seven plants from the Oriental collection have been selected for their seed production potential. Progeny from each of the clones will be evaluated for agronomic traits and seed production to identify superior parental clones for turf quality and seed production potential.