

Progress Report

Determining Heritability of Zoysiagrass Salt Gland Density and Salinity Tolerance

For this project, a graduate student was selected: Greg Wess. Greg is a new M.S. student in the Dept. of Plant Sciences, having received his B.S. from our department last spring. After consulting with turfgrass breeders, and perusal of the literature, it was decided to limit the main polycross study to a wide selection of *Zoysia japonica* types. This was decided, based on these recent findings from Sharon Anderson (Ph.D. student, Texas A&M U.):

- 1) Interspecific crossing between *matrella* and *japonica* types in zoysiagrass is possible, but often difficult and unpredictable.
- 2) Flowering requirements differ between species: *japonicas* behave as long day plants, while *matrellas* and *tenuifolias* tend to be day-neutral.

Due to the fact that a polycross nursery will be utilized to determine heritabilities, uniform cross-compatibility and simultaneous flowering among genotypes is necessary. However, in addition to the *japonica* polycross nursery, individual crosses will be attempted between several *matrella* accessions and the *japonicas*, and progeny evaluated for salt gland density.

Fifteen *japonica* genotypes have been selected, representing a broad range of salinity tolerance and salt gland density (previously determined from work at Texas A&M U.). These are: 'Crowne', K162, J2-1, K157, 'Palisades', 'Belair', 'El Toro', J3-2, J94-5, 'Korean common', JS23, P58, 'Sunrise', 'Meyer', and K12. These genotypes have been increased from single sprigs in a greenhouse (a slow process), and planting of the replicated polycross nursery will commence next month, with 10 replications per genotype. Growth is being accelerated by supplemental lighting and liquid fertilization. Flowering of the *japonicas* is expected in the late spring (Sharon Anderson, personal communication), at which time polycrosses will be made.