BREEDING AND EVALUATION OF SEEDED COLD TOLERANT BERMUDAGRASS

OKLAHOMA STATE UNIVERSITY
Stillwater, Oklahoma

Drs. Charles Taliaferro,
J.A. Anderson, M.P. Kenna
Principal Investigators

1987 Research Grant: $20,000
(Second year of support)

The work at Oklahoma State University in developing a cold tolerant, fine leaf, seeded turf-type bermudagrass has gone exceedingly well in 1987. Neither nature nor mankind has ever produced such a grass plant before but certain scientific break-throughs have been accomplished by Dr. Taliaferro in 1987 and the outlook is exciting. Oklahoma State research with pasture type bermudagrasses has been going on for more than 20 years. Now, due largely to USGA financial support, turf type bermudas are receiving major attention and chances of successfully breeding superior, cold tolerant types have never been greater.

In the past year, this research team has accomplished a three-fold increase in basic plant fertility; i.e., a three-fold increase in the florets setting seed while, at the same time, making improvements in leaf texture. A total of 2500 new F_1 progeny were established in field nurseries for evaluation in 1987. Approximately 100 of these have been selected for further turf trials in the spring of 1988.

A new, creative technique has been developed for the rapid screening of cold tolerance in new cultivars. This will enable a turnaround time of two days by one technique, three to four weeks by another vs. an entire winter of field testing by older methods.

Successful tissue culture regeneration of plants from immature inflorescences was also achieved. This is an important break-through in developing haploid plants and subsequent homozygous lines for production of uniform F_1 hybrid progeny.

Several genotypes are currently being screened in replicated turfgrass variety trials. Texture and turf quality are approaching that of 'Midiron' and U-3 bermuda. Rate of coverage from vegetative material for these genotypes was superior to 'Tifgreen,' 'Tifway' and 'Midiron.' Several plants from the breeding populations were identified as potential parents for use in synthesizing new seeded varieties. Seed from these crosses will be evaluated this year in Stillwater, Oklahoma, and increased for evaluation next year by outside cooperators.