UNIVERSITY OF GEORGIA - Dr. Robert N. Carrow
Principal Investigator

Cultivation Methods on Turfgrass Water Relationships and Growth Under Soil Compaction

1986 Grant - $5000 [first year of support]

Soil compaction can increase water use on recreational turfgrass sites by 25 to 50%, primarily by promoting light, frequent irrigation due to low water infiltration rates. Evaporation losses are enhanced by the moist soil surface in conjunction with an open canopy that is often warmer from solar radiation absorbed by the soil. Also, water losses may occur by greater runoff or leaching beyond the shallower root systems compared to noncompacted turfgrasses.

The primary cultural tool to help alleviate soil compaction is cultivation. During 1986, we initiated a research project to study the relative effectiveness of five cultivation techniques in alleviating compaction stress with particular emphasis on factors influencing water use efficiency. Since compaction affects water relations, each treatment/replication combination required a research plot that could be irrigated separately from all others. This system was installed and grassed with Tifway bermuda. Respective plots have been subjected to compaction several times and cultivation treatments applied twice. These treatments will be continued with intensive data collection in 1987 and 1988. In this joint project between the University of Georgia and USGA, all scientific equipment and technician support to be provided by University of Georgia has been obtained.

MICHIGAN STATE UNIVERSITY - Dr. Bruce Branham
Principal Investigator

The Effect of Seven Management Factors and their Interaction on the Competitive Ability of Annual Bluegrass and Bentgrass

1986 Grant - $15,000 [second year of three year study]

A three year study was completed in the fall of 1986 measuring the effects of five cultural practices on the competition between annual bluegrass and creeping bentgrass maintained under fairway conditions. The five cultural practices were irrigation [daily at 75% replacement of open pan evaporation [OPE], 3x/week at 100% OPE, and irrigation at wilt], clippings removed or returned, nitrogen fertility level [2 lb N/M/YR or 6 lb N/M/YR], plant growth regulator treatment [mefluidide 1/8 lb/A, fluriprimidol 1.0 lb/A and a control] and overseeding with 'Penncross' creeping bentgrass or no overseeding.