

Seedlots of 42 bentgrasses are being screened for resistance to two isolates for each of two newly recognized root-infecting fungi; Phialophora graminicola and Leptosphaeria korrae. These fungi cause summer patch and necrotic ring spot diseases, respectively. The resistance studies are conducted for an 8-week period in controlled-environment chambers. Percentages of plants which survive the test will be reported in early winter. Surviving plants from selected seedlots will be returned to the plant breeder from whom the seed was supplied; this may assist in development of selections with high levels of resistance. Methodology was also developed to conduct similar screening studies on vegetatively propagated bentgrasses. This research revealed the potential for further complexities to exist in the etiology of take-all patch of bentgrasses, which have been thought to be caused only by Gaeumannomyces graminis var. avenae. In New York, it is now also known that P. graminicola causes a hot weather form of take-all patch on bentgrasses, and this possibility was confirmed during the development of methods for this project, sponsored by the USGA Green Section. These new finds have relevance to the likelihood that certain disease management strategies will or will not be effective during summer. The project was terminated prematurely because the principal investigator moved to another position.

THE UNIVERSITY OF GEORGIA - Dr. Glenn W. Burton,
Principal Investigator

Bermudagrass Breeding -
Vegetative

1985 Grant - \$5000 (ongoing
since 1956)

Dr. Burton is one of the preeminent plant breeders in the world. He reports that Tifgreen II bermudagrass, released by him in 1983, has had good reception throughout the Southeast. One golf course in South Florida reported that Tifgreen II developed many more seed heads than Tifgreen and this is not desirable. However, there have been no similar reports from other southern golf courses to-date. During the severe winter of 1984/1985, Tifgreen II greens survived temperatures as low as 0° F. and 6° F. although some winter kill did occur where low temperatures persisted. Additional reports are sought.

Work is under way in developing a bermudagrass resistant to the fall armyworm. Dr. Burton is working cooperatively with a USDA entomologist in screening for resistance with the intention of developing a bermudagrass which will not require insecticide protection from this pest.

Important breeding for greater winter hardiness of bermudagrass continues. Contacts in South Africa, developed by Dr. James R. Watson, a member of the USGA Turfgrass

Research Committee, have sent, during the past year, specimens of Cynodon transvaalensis to Dr. Burton. One came from an elevation of 7000 feet above sea level and should carry an unusual amount of winter hardiness. These grasses may be the ones Dr. Burton has been so anxious to find in South Africa.

Cross pollinations between the winter hardy bermudagrass discovered by Dr. Burton in Berlin, Germany with the most winter hardy hybrid tested for several years in New Jersey were made. It is hoped a number of improved hybrids will develop from this cross. Seeds will be greenhouse planted this December for evaluation tests in the spring of 1986.

Irradiated dormant sprigs of Midiron bermudagrass (in 1984) have produced 67 promising mutants. These will now be field tested for winter hardiness on a golf course in Blairsville, Georgia where winter temperatures below 0° F. are common.

MICHIGAN STATE UNIVERSITY - Dr. Richard E. Chapin,
Principal Investigator

Turfgrass Information File

1985 Grant - \$68,000 (Third year
of ongoing support)

In the spring of 1984, the USGA and Michigan State University signed an agreement whereby the MSU Library would design and develop a bibliographic computer database to provide access to published materials reporting the results of research that affects turfgrass and its maintenance.

The original statement of purpose of the USGA Turfgrass Information File was to provide efficient and effective access to all published and processed materials reporting the results of research affecting turfgrass and its maintenance. Three goals were identified as necessary for the successful completion of the Project.

1. Michigan State University will continue to acquire, maintain, and preserve all appropriate printed and processed materials reporting on research related to turfgrass growth, development, and maintenance.
2. Bibliographic access to the turfgrass collection is provided by on-line access to the Project's retrieval system, supplemented by appropriate printed reports. The Turfgrass Information File is housed in an ALPHA MICRO computer, using STAR software. Both the hardware and software work well. By June 30, 1985, 6000 records were in the database.