

BERMUDAGRASS BREEDING -- VEGETATIVE

UNIVERSITY OF GEORGIA
Tifton, Georgia

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(ongoing since 1956)

Dr. Glenn Burton's work in the development of greater winter-hardiness in the 'Tif' type bermudagrass hybrids continues. The release of Tifgreen II in 1983 was an important step in this direction and continuing reports verify that this grass is definitely more winterhardy than Tifgreen (328). In 'side-by-side' plots with both grasses receiving minimal maintenance (one application of two pounds Atrazine per acre in the spring to eliminate some winter weeds and a March fertilization including adequate amounts of phosphorous and potassium and 100 pounds of nitrogen per acre -- for the entire year), Tifgreen II produced an excellent weed-free sod and showed greater ability to recover from severe cold than Tifgreen (328).

Dr. Bob Lynch, USDA entomologist, is exploring the possibility of producing army worm resistance in bermudagrass turf. Out of 500 bermudagrass introductions at Tifton, Georgia, mostly from Africa, at least one has been found with resistance. Army worms restricted to the foliage of this grass usually starve to death before they are able to reproduce.

In February and March 1987, Dr. Burton was in South Africa and found an opportunity to obtain Cynodon transvaalensis (bermudagrass) germplasm which had been growing primarily on golf courses at higher elevations. For years, he has been trying unsuccessfully to obtain just this type of winterhardy germplasm. Apparently it occurs only rarely under natural conditions. Dr. David Knox, University of Witwatersrand, gave some stolons of his best material to Dr. Burton and these were mailed to his laboratory at Tifton, Georgia. All but one survived the journey and were planted immediately under quarantine conditions. Unfortunately, the screen cage used to exclude insects in quarantine limited light conditions so severely that the new introductions could not and did not grow. In fact, they have almost died. They are now being carefully nursed back to life and only time will tell if they will make it for future breeding purposes.

Pollinations have been made using the most winterhardy selections from the Berlin, Germany bermudagrass cross with Cynodon transvaalensis in 1984. These selections were field-space planted during the summer of 1986 and out of that planting 64 of the best hybrids were selected. These were increased in a greenhouse last winter and field planted in June, 1987. They are now being grown with eight other known bermudagrasses for comparative purposes. One of these, Tifton 10 (selected by Dr. Burton in China in 1974) will probably be released next year as a superior common bermudagrass type with rapid rate of establishment and good winterhardiness.

Winterhardiness studies at the Blairsville (Georgia) Golf Course are continuing. Very low winter temperatures are possible here and in May 1987 4" plugs of various hybrid bermudagrasses were planted in a 25 x 50 foot plot of Penncross bentgrass. Included in the planting were the best crosses of Berlin X Cynodon transvaalensis, the Tif bermudas, Midiron and Vamont as well as mutants that Dr. Burton's associate, Dr. Hanna, has developed by irradiating dormant sprigs of Midiron bermudagrass. A similar trial area was also established on a golf course at Highlands, North Carolina. It is hoped these trial plots will prove to be a practical, effective method of screening for winterhardiness.