

Tifdwarf-A New Bermudagrass For Golf Greens¹

GLENN W. BURTON and J. EARL ELSNER²

Tifdwarf bermudagrass, superior for golf greens, will be officially released to qualified nurserymen as a feature of the 19th Annual Southeastern Turfgrass Conference, Tifton, Ga., in April, 1965. Like other improved grasses developed jointly by the U.S. Department of Agriculture and the Georgia Coastal Plain Experiment Station, it will be released only under the Georgia Crop Improvement Association or similar certification programs in other states. This will protect buyers who want to be sure they do not get a substitute.

Tifdwarf has been tested for three years at the Georgia Coastal Plain Experiment Station, Tifton, Ga., in comparison with Tifgreen (Tifton 328). In these comparisons, it has been equal, or superior, to Tifgreen on nearly every score. For the modern golfer demanding fast greens, Tifdwarf will be a real improvement. Its tiny leaves hug the ground so closely that a number of them are never cut by the greens mower. This characteristic helps it to tolerate a 3/16-inch cutting height much better than Tifgreen. Its softer leaves and fewer seedheads also contribute to its superior putting qualities.

Tifdwarf has a darker green color than Tifgreen and requires less fertilizer to make a comparable degree of greenness. Its purple basic plant color, which helps to keep it looking dark green in the summertime, becomes very noticeable when temperatures

drop in the fall. As a consequence, Tifdwarf turf takes on a purplish cast that may prove objectionable to some.

The winter-hardiness of Tifdwarf has been evaluated by Drs. A. A. Hanson and Felix Juska in the U.S. Department of Agriculture turf plots at Beltsville, Md. They found Tifdwarf a little more winter-hardy than Tifgreen.

When clipped daily except Sunday at 3/16-inch and 1/4-inch heights, Tifdwarf produced only about half as many clippings by weight as Tifgreen. These findings suggest that the amount of mowing could be less and, hence, labor costs might be reduced through the use of this variety.

A top-dressing experiment revealed that Tifdwarf will require much less top-dressing than Tifgreen to maintain an attractive, smooth putting surface. This could represent another substantial saving in maintenance.

Forms Sod Quickly

Tifdwarf, like most dwarfs, has smaller and shorter leaves, stems, internodes, and seedheads. As a consequence, Tifgreen will form a sod more quickly than Tifdwarf when both grasses are planted in 12-inch centers. A square yard of Tifdwarf sod, however, has many more stems and nodes than a square yard of Tifgreen sod. It is believed, therefore, that a square yard of Tifdwarf, shredded and broadcast on a given area, will form a sod as fast as a square yard of Tifgreen similarly planted on the same area. Once

¹Cooperative investigations at Tifton, Ga., of the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, and the University of Georgia, College of Agriculture Experiment Stations, Coastal Plain Experiment Station.

²Principal Geneticist, Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, and the University of Georgia, College of Agriculture Experiment Stations, Coastal Plain Experiment Station, Tifton, Ga., and Graduate Assistant, University of Georgia, Athens, Ga., respectively.

established, Tifdwarf has made a denser sod than Tifgreen in Tifton tests.

Tifdwarf appears to be equal to Tifgreen in disease resistance. Both are favorite food for insects, such as the sod webworm. But on golf greens with modern insecticides, insects can be easily controlled.

A fertilizer-factorial experiment currently under way suggests that a 4-1-2 ratio of $N-P_2O_5-K_2O$ will satisfy the nutrient needs of Tifdwarf with a minimum waste of plant food.

How did Tifdwarf originate? No one will ever know for sure. Several years ago, T. M. Baumgardner and Marion McKendree noticed a small circle (about 18 inches in diameter) of a finer grass growing in one of the greens at Sea Island, Ga., first planted to Tifgreen obtained from the Georgia Coastal Plain Experiment Station as a part of the evaluation program before it was released. They told us about it and kindly gave us a cup-cutter plug of sod for testing. About the same time, James B. Moncrief, Southeastern Agronomist for the USGA Green Section, brought us a plug from a test green planted about the same time on the Country Club at Florence, S. C. Both were planted at Tifton in a replicated evaluation test with Tifgreen and two other grasses as checks. It is from this test that we obtained much of the information reported here.

Cytological investigations have proven that Tifdwarf has the same chromosome number as Tifgreen ($2n=27$). Both grasses have many of the same characteristics. The anthers, stigmas, racemes, and panicles appear to be identical except for size. Since Tifgreen is completely sterile and never sheds any pollen, Tifdwarf could not be a seedling of Tifgreen. The dwarf bermuda from Sea Island, Ga. and Florence, S.C. appear to be identical.

A careful evaluation of all evidence indicates that Tifdwarf is a vegetative mutant that occurred in Tifgreen at Tifton before the first planting stock was sent out for early testing. The golf courses at Florence and Sea Island each got a sprig or two of this mutation. Its superiority to Tifgreen under golf-green maintenance allowed it to spread until it occupied an area about 18 inches in diameter on each green. Mr. Baumgardner reports that the tiny circle of grass on his course (that we are naming Tifdwarf) has, on several occasions, looked better than the Tifgreen around it, particularly when Tifgreen was in trouble.

Perhaps the exact origin of Tifdwarf is not too important. It has been isolated, purified, and named, and many of its superior traits have been established. Now the golf course superintendent and the golfer must determine if it is really better than Tifgreen. We think it is.

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