REGISTRATION OF IRFL 4655 MACROPTILUM ATROPURPUREUM GERMPLASM

GERMPLASM of Macroptilium atropurpureum (Mocino & Sessé ex DC.) Urb. (Reg. no. GP-102, PI 543311) was released in 1991 by the Florida Agricultural Experiment Station. The genotype IRFL 4655 was selected from germplasm collected in 1985 from southern Mexico at approximately 18°05' N, 95°51' W (near Isla, Veracruz).

A concentrated effort was begun in 1982 to evaluate the world’s available germplasm collections to develop a disease-resistant, high-yielding M. atropurpureum suitable for Florida growing conditions.

Four 2-yr, replicated, single-plant plot field experiments were begun in 1982, 1984, 1986, and 1988 to evaluate productivity, disease and insect resistance, and flowering patterns (2,3,4,5). Siratro was used in all experiments as the control cultivar.

Of 385 accessions evaluated, approximately 20% out-yielded Siratro. Accession IRFL 4655 significantly out-yielded Siratro in the 1986 to 1988 and 1988 to 1990 experiments (5). Accession IRFL 4655 was resistant to Florida’s race of rust [Uromyces appendiculatus (Pers.: Pers.) Unger var. crassitudineus J. Irwin (1)], although none of the entries evaluated were resistant to web blight (Rhizoctonia solani Kühn) (6). On a rust intensity scale of 1 = no lesions to 5 = plants severely affected, IRFL 4655 ratings ranged from 1.0 to 1.4 at different rating periods from the two experiments, while intensity of the disease on Siratro ranged from 3.0 to 4.0 (7). In growth chamber studies, IRFL 4655 was susceptible to an isolate of U. appendiculatus var. crassitudineus collected from infected plants near the IRFL 4655 collection site in southern Mexico (8). Also, IRFL 4655 is resistant to Phaeoisariopsis griseola (Sacc.) T. Kuan & D. C. Erwin (9,10). Resistance in HM1 was derived from Ripley and appears to be the same as the “race-specific tolerance” or root-resistance reported in Ripley and its grandparent, ‘York’ (4) × ‘Harper’ (2). It was selected from one of 330 F2-derived line in the F6 generation from the cross ‘Ripley’ (4) × ‘Harper’ (2). It was selected from one of 330 F2-derived lines. Selection was for agronomic characteristics, including early maturity (Maturity Group III or earlier, adapted to 39° to 41° N lat) (12), indeterminate stem termination, and moderate height. HM1 is an F2-derived line in the F6 generation from the cross ‘Ripley’ (4) × ‘Harper’ (2).

There were small or no differences in initial fall or spring flowering dates, general growth habit, persistence, insect resistance, and crude protein and digestibility (IVOMD) between IRFL 4655 and Siratro. There was a tendency for IRFL 4655 to have larger leaves and a darker green leaf color.

Five-gram quantities of 1991 seed are available from the corresponding author upon request.

A. E. KRETSCHER, JR.,* R. M. SONODA, R. C. BULLOCK, AND T. C. WILSON (9)

References and Notes

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