REGISTRATION OF CROP CULTIVARS

REGISTRATION OF 'COLLIN' WHEAT

'COLLIN' hard red winter wheat (Triticum aestivum L.) (Reg. no. 735) PI 511849 was developed by the Texas Agricultural Experiment Station, Texas A&M University in cooperation with USDA-ARS and released in 1986. Collin, whose experimental designation was TX71D4876-V5, has the parentage of 'Agent'/'Tascosa'/'Sturdy'. It is named for Collin County, where its superior adaptability to the Texas Blacklands was demonstrated.

An individual F_1 plant was selected at Denton, TX in 1971 and the resulting line was entered into statewide yield trials as TX71D4876. In 1975 an F_2 selection, TX71D4876-V5, was made at Vernon, TX. It subsequently exhibited excellent yields and leaf rust (incited by Puccinia recondita Rob ex Desm. f. sp. tritici) resistance in yield trials at Dallas, Temple, McGregor, Beeville, and Uvalde, TX. Single plant progeny rows in the F_3 with a resistant reaction to leaf rust and uniform in plant type, were composited for breeder seed.

Collin was tested for performance in advanced nursery trials in Texas from 1982 to 1985. Collin was consistently among the top yielding cultivars, with 'Mit', 'Probrand 812', 'Payne', and Sturdy. It has been tested for hard red winter wheat milling and baking qualities since 1982. Quality evaluations have indicated that Collin has satisfactory quality properties of a hard red winter wheat, similar to those of 'TAM W-101'.

Collin has the same heading date as Probrand 812 and is 1 d later in heading than Mit at Dallas, McGregor, and Temple. It is 6 d earlier than Sturdy and 2 wk earlier than 'TAM 105' at those locations. In south Texas at Beeville and Uvalde, Collin is 2 d earlier in heading than Probrand 812, 2 wk earlier than Sturdy and 1 d later than Mit.

Collin is an awned, semidwarf, brown-chaff wheat. The height of Collin is the same as Payne, Sturdy, and TAM 105. The plant color of Collin at boot stage is green. The heads are fusiform and the central florets frequently set seed. The outer glumes are mid-long and mid-wide with square shoulders, a sharp keel, and medium beak length. Kernels are medium sized, taper very little, and have a blocky appearance. Collin exhibits semi-erect growth habit in the juvenile stage of growth.

Collin has resistance to leaf rust derived from Agent (Lr 24) as well as adult-plant resistance factors derived from Sturdy. It has been resistant to races UN2, UN3, UN5, UN6, UN13, UN14, and UN17 of the leaf rust fungus in field trials in the Blacklands and south Texas. Collin is moderately resistant to Mycosphaerella graminicola (Fuckel) Schroeter, which causes septoria tritici blotch and moderately resistant to the naturally occurring races of Erysiphe graminis DC. f. sp. tritici E. Marchal, which causes powdery mildew.

Breeder seed is maintained by the Foundation Seed Service of the Texas Agricultural Experiment Station, College Station, TX 77843.


References and Notes


Published in Crop Sci. 28:868 (1988).

REGISTRATION OF GERMPLASMS

REGISTRATION OF TWELVE NONPHOTOPERIODIC LINES WITH ROOT-KNOT NEMATODE RESISTANT PRIMITIVE COTTON GERMPLASM

Twickel nonphotoperiodic cotton, Gossypium hirsutum L., germplasm lines (Reg. no’s. GP-333 through GP-344)(PI 517927 through PI 517938) having resistance to root-knot nematodes, Meloidogyne incognita (Kofoid and White) Chitwood, were released by USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1987. Root-knot resistant, photoperiodic, and primitive race stocks were used as recurrent parents in developing these nonphotoperiodic lines.

The germplasm designation, registration number, PI number, accession number, race classification, and origin of the recurrent parent of each line are given in Table 1. Agronomic and fiber data for many of the races used as recurrent parents in the development of these lines were previously reported (1). These lines were developed by crossing each of the races to ‘Deltapine 16’ (DPL-16) as the female parent in a winter cotton nursery in Mexico, where the short photoperiod induced them to flower. In each backcrossing cycle, all crossings and BC seed production were done in Mexico, and F_1 plants were grown and selected for flowering at Mississippi State, MS.

The recurrent parents used in developing some of these germplasms had the highest resistance to root-knot nematodes among 471 races evaluated (2,3). Numbers of root-knot nematode eggs found on roots of these races 40 d after inoculating them with 8 000 eggs per plant ranged from 1 460 to 4 910 eggs per plant compared with 88 000 per plant on the check, M-8 (3). Since the resistant races are photoperiodic, converting them to nonphotoperiodic lines will increase their value significantly as new sources of root-knot nematode resistance.

All germplasm lines had lower lint percentage and shorter 2.5% fiber span length than did DPL-16. However, 50% fiber