Published September, 1988

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_3 plant was selected at Denton, TX in 1971 and the resulting line was entered into statewide yield trials as TX71D4876. In 1975 an F_7 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_{13} 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.

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References and Notes

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

REGISTRATION OF GERMPLASMS

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

TWELVE 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 (T-) 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_2 plants were grown and selected for flowering at Mississippi State, MS.

The recurrent parents used in developing 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

Table 1. Twelve root-knot resistant, nonphotoperiodic lines of cotton with primitive race germplasm and their recurrent parents.

Line			Recurrent parent		
Release no.	Res. no.	PI no.	Accession no. (T-)	Race	Origin
M 27-RNR	GP-333	517927	27	*punctatum*	Chiapas, Mexico
M 28-RNR	GP-334	517928	28	*punctatum*	Chiapas, Mexico
M 75-RNR	GP-335	517929	75	*latifolium*	Guatemala
M 78-RNR	GP-336	517930	78	*latifolium*	Guatemala
M 19-RNR	GP-337	517931	19	*richmondii*	Chiapas, Mexico
M 22-RNR	GP-338	517932	22	*latifolium*	Chiapas, Mexico
M 25-RNR	GP-339	517933	25	*punctatum*	Chiapas, Mexico
M 26-RNR	GP-340	517934	26	*punctatum*	Chiapas, Mexico
M 70-RNR	GP-341	517935	70	*latifolium*	Guatemala
M 188-RNR	GP-342	517936	188	*latifolium*	Guatemala
M 487-RNR	GP-343	517937	487	*punctatum*	Yucatan, Mexico
M 495-RNR	GP-344	517938	495	*punctatum*	unknown

span length, fiber strength (T_1), elongation (E_1), micronaire, and seed index (weight of 100 seed) of a majority of the germplasm lines were comparable with those of DPL-16.

Small amounts of seed of these twelve lines are available for distribution to cotton geneticists and other research workers. Written requests should be addressed to R.L. Shepherd, USDA-ARS, Crop Science Research Laboratory, P.O. box 5367, Mississippi State, MS 39762–5367.

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Published in Crop Sci. 28:868–869 (1988).

REGISTRATION OF THREE NONCOMMERCIAL GERMPLASM LINES OF UPLAND COTTON TOLERANT TO TOBACCO BUDWORM

THREE cotton, *Gossypium hirsutum* L., germplasm lines MHR-10 (Reg. no. GP-345)(PI 517939) MHR-11 (Reg. no. GP-346) (PI 517940), and MHR-12 (Reg. no. GP-347) (PI 517941) tolerant to the tobacco budworm (TBW), *Heliothis virescens* F., were released by the USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1987. Tolerance to TBW was measured by comparing yield of cotton from plots infested with TBW with similar ones where all insects were controlled.

These three germplasm lines were developed from a backcross of (MOHG × 'DES 24') × MOHG. The MOHG line (tolerant of TBW) was obtained from W.P. Sappenfield and has Socorro Island wild in its parentage, which is also tolerant to TBW. MOHG has small bolls, low lint percentage, low yield potential, and lodges excessively. DES 24, a cultivar (1) has opposite traits.

Each of these germplasm lines is more tolerant to TBW than the susceptible cultivar 'Stoneville 213' (ST 213). Evaluations for tolerance to TBW were made under infestation levels which reduced lint yields of ST 213 by 508 and 1085 kg ha^{-1} in 1985 and 1986, respectively. The lint lost in the tolerant germplasm lines ranged from 248 to 402 kg ha^{-1} in 1985 and from 798 to 954 kg ha^{-1} in 1986.

Lint percentage of each germplasm line is 2 to 4% less than ST 213; however, boll size, micronaire, 50% span length and elongation are similar to those of ST 213. Fiber length (2.5% span length) of MHR-10 is 1 mm longer, MHR-11 is 1 mm shorter and MHR-12 is equal to that of ST 213. MHR-10 is significantly stronger (249 vs. 203 kNm kg^{-1} T1 fiber strength) than ST 213, whereas the other two are similar in strength to ST 213. When artificially infested with TBW larvae, each of these lines yielded more than ST 213 and when protected from all insects each yielded similar to ST 213. These germplasm lines should be useful for developing cultivars with increased tolerance to TBW.

Small amounts of seed of each of these lines are available for distribution to cotton breeders and other research workers upon written request to Johnie N. Jenkins, Crop Science Research Laboratory, P.O. Box 5367, Mississippi State, MS 39762-5367.

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Published in Crop Sci. 28:869 (1988).

REGISTRATION OF THREE NONCOMMERCIAL GERMPLASM LINES OF UPLAND COTTON TOLERANT TO TOBACCO BUDWORM AND TARNISHED PLANT BUG

THREE cotton, *Gossypium hirsutum* L., germplasm lines MHR-14 (Reg. no. GP-348) (PI 517942) MHR-15 (Reg. no. GP-349) (PI 517943), and MHR-16 (Reg. no. GP-350) (PI 517944) tolerant to the tobacco budworm (TBW), *Heliothis virescens* F., and the tarnished plant bug (TPB), *Lygus lineolaris* Palisot de Beauvois, were released by USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1987.

These germplasm lines were developed from a cross of TIMOK 811 × 'Stoneville 213' (ST 213). TIMOK 811 is an accession (SA 1082) from the obsolete variety collection that is tolerant to the TPB (1), but has relatively poor fiber quality. ST 213 is also tolerant to TPB.

Tolerance was measured by comparing yield of cotton from plots artificially infested with TBW with those where all insects were controlled. Tolerance to TPB was measured by boll set when progeny rows were exposed to high populations of TPB developed on a nurse crop of garden mustard, *Brassica juncea* (L.) (2).

Each of the germplasms lost significantly less lint to TBW than ST 213. Lint losses were 650, 417, and 974 kg ha^{-1} for ST 213 in 1984, 1985 and 1986. Losses in these tolerant germplasm lines ranged from 83 to 246 kg ha^{-1} in 1984, from 21 to 138 kg ha^{-1} in 1985 and from 653 to 700 kg ha^{-1} in 1986.