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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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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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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.