REGISTRATION OF GERMPLASMS

References and Notes

1. Bird, L.S. Dep. of Plant Sciences, Texas A&M Univ., College Station, TX 77843.
2. Hess, Delbert. Seed Division, Cargill, P.O. Box 1630, Plainview, TX 79072.

REGISTRATION OF FOUR DOUBLED HAPLOID COTTON GERMPLASMS

M-DH-118 (Reg. no. GP242), M-DH-121 (Reg. no. GP243), M-DH-126 (Reg. no. GP244), and M-DH-128 (Reg. no. GP245) were released as germplasm lines resistant to tobacco budworm, Heliothis virescens (F.), by the USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1983. They were produced as Gossypium hirsutum L. paternal haploids via semigamy in G. barbadense cytoplasm. Haploids were doubled with colchicine. The paternal parent was a heterozygous line MOHG obtained from W.P. Sappenfield (2) which has resistance to the tobacco budworm.

Lint yield of each of the four doubled haploids is 30 to 36% less than ‘Stoneville 213’ (ST 213) when protected from insects with insecticides. Resistance is measured as the ability to yield when artificially infested with 12 first instar tobacco budworm larvae per plant, on a weekly basis, for 6 weeks. Under these infestations, M-DH-118, M-DH-121, M-DH-126, and M-DH-128 yielded 57, 60, 66, and 39% of their respective yield when under insecticidal protection from insects. The MOHG parent yielded 43% and the two checks, ST 213 and ST 7A glandless, yielded 28 and 18% of their respective protected yield.

Each line lodges excessively as does MOHG. When compared with MOHG, the M-DH-118 has higher lint percent, greater fiber elongation, larger bolls, and stronger fiber; M-DH-121 has higher lint percent, larger bolls, and greater fiber elongation; M-DH-126 has smaller bolls with a shorter, coarser, stronger fiber; M-DH-128 has larger bolls with higher lint percent, stronger fiber with greater elongation. Seed gossypol in each line, except M-DH-118, is equal or greater resistance to tobacco budworm, and gen-

REGISTRATION OF MHR-1, TOBACCO BUDWORM RESISTANT COTTON GERMPLASM

MHR-1 is a germplasm line of cotton, Gossypium hirsutum L. (Reg. no. GP246), which has resistance to the tobacco budworm, Heliothis virescens (F.). It was released by USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in 1983. MHR-1 as released is a composite of nine lines in the F7 generation of the nine lines which became MHR-1 plus the parents and two checks were grown instead of the F4 generation of (DES-24 × MOHG) × MOHG. ‘DES-24’ was developed as a high yielding germplasm line of Gossypium barbadense by the Mississippi Agricultural Experiment Station in 1976.

In 1982, MHR-1 was tested as a F3, composite at nine locations in seven states. At three locations, ‘Stoneville 213’ (ST 213) was grown under an artificial infestation with average yields of 950 kg/ha for MHR-1 and 970 kg/ha for ST 213 and MHR-1, respectively. When they were controlled, lint yields averaged over Mississippi of 1275 and 1513 kg/ha for MHR-1 and ST 213, respectively. Thus MHR-1 yielded 15% more than ST 213. Both MHR-1 and ST 213 were significantly better than the two checks, ST 213 and ST 7A glandless, which averaged only 15% less than ST 213.

Resistance in MHR-1 was measured as the lack of yield loss when artificially infested with 12 first instar tobacco budworm larvae per plant for each of 6 weeks. MHR-1 was inoculated for 6 weeks with tobacco budworm larvae and when protected with insecticides attained 68% of its protected yield. Small amounts of seed of these lines are available for distribution to cotton breeders and other research workers until present supply is exhausted. Written requests should be addressed to J.N. Jenkins, Crop Science Res. Lab., P.O. Box 5367, Mississippi State, MS 39762.

JOEL F. MAHILL, JOHNIE N. JENKINS, W.L. PARROTT, AND J.C. MCCARTY, JR.

References and Notes

2. Sappenfield, W.P. Missouri Agric. Exp. Stn., Delta Ctr., P.O. Box 160, Portageville, MO 63773.