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 30782.

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References and Notes


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. Each line is slightly earlier than MOHG, Mahill (1).

These doubled haploid lines, compared with MOHG, have equal or greater resistance to tobacco budworm, and generally have improved yield components and fiber properties. They are also genetically stable, true breeding sources of resistance to tobacco budworm.

Terminal leaf gossypol in each line is equivalent to MOHG and ST 213. Square gossypol of all lines except M-DH-126 is equivalent to ST 213 but lower than MOHG. Gossypol in blooms is higher in each than in ST 213 and equal to MOHG. Seed gossypol in each line, except M-DH-118, is lower than in ST 213 or MOHG. Thus, the resistance to the tobacco budworm in these lines may be due in part to increased gossypol levels from the MOHG parent.


definitions