olina Agricultural Experiment Station in 1988. These germplasm lines should be useful in cotton improvement programs, particularly if effective insecticides are lost to production or if insects develop resistance to the chemicals.

PD 7388 (Reg. no. GP-411, PI 533646) was developed from the second backcross PD 8619 2 (PD 8619 × La. Frego 2). PD 8619 was released as an outstanding germplasm line with resistance to bollworm and tobacco budworm, with high yield potential, and with extra fiber strength (1). Louisiana Frego 2 was developed from the fifth backcross of Stoneville 7A (Stoneville Frego × Stoneville 7A) by J.E. Jones at the Louisiana Agricultural Experiment Station and has resistance to boll weevil.

PD 7439 (Reg. no. GP-412, PI 533647) was developed from the second backcross PD 8650 2 (PD 8650 × La. Frego 2). PD 8650 is resistant to bollworm, tobacco budworm, and boll weevil (3).

PD 7458 (Reg. no. GP-413, PI 533648) was developed from the second backcross Coker 310 2 (PD 8499 × La. Frego 2). Coker 310 is a commercial cultivar developed by Coker's Pedigreed Seed Co. Germplasm lines of PD 8499 × La. Frego 2 possess resistance to bollworm, tobacco budworm, and boll weevil (3).

PD 7496 (Reg. no. GP-414, PI 533649) and PD 7501 (Reg. no. GP-415, PI 533650) were developed from the second backcross of PD 9241 2 (PD 8550 × La. Frego 2). PD 9241 was the progenitor of SC-1 2 (2), the first cultivar from Beasley's trio-species hybrid with extra fiber strength and yield potential equal to southeastern cultivars (5). Germplasm lines from the cross PD 8550 × La. Frego 2 are resistant to bollworm, tobacco budworm, and boll weevil (3).

PD 7586 (Reg. no. GP-416, PI 533651) was developed from the second backcross of PD 9257 2 (PD 8582 × La. Frego 2). PD 9257 was developed from the cross 'TH149' × PD 2165 and has high yield potential and extra fiber strength. Germplasm lines from the cross PD 8582 × La. Frego 2 are resistant to bollworm, tobacco budworm, and boll weevil (3).

PD 7723 (Reg. no. GP-417, PI 533652) was developed from the second backcross of PD 6520 2 (PD 8562 × La. Frego 2). PD 6520 was the progenitor of PD-2 4 (4), an early maturing cultivar with resistance to insects (6). Germplasm lines from the cross PD 8562 × La. Frego 2 are resistant to bollworm, tobacco budworm, and boll weevil (3).

When insects were controlled in four replicated tests from 1981 through 1984, the seven germplasm lines produced lint yields equal or superior to those of the check cultivars, SC-1, Coker 201, and Coker 310. Lint yields of these germplasm lines were consistently superior to those of the resistant checks, PD 695, PD 8619, and PD-2, which commonly cut out during dry, hot weather.

All seven germplasm lines produced significantly more lint than Coker 201 and Coker 310 when boll weevils were controlled with azinphosmethyl and Heliothis spp. were controlled with fenvalerate after damaged squares reached 10% or when two live larvae were found per 100 terminals on PD 695. Also, these germplasm lines generally produced superior yields to those of the resistant checks, PD 695, PD 875, PD 8619, PD-2, and SC-1. The data suggest that these germplasm lines combine early maturity along with the unidentified PD source of resistance to Heliothis spp. with greater environmental stability. These progenies were selected for resistance to Heliothis spp. under natural infestations of these insects that developed under this spray regime. Some natural outcrossing occurred, which will account for some of this.

When Heliothis spp. were controlled with fenvalerate and boll weevils were allowed to cause 10% damaged squares on Coker 310 before being controlled with azinphosmethyl, the germplasm lines, composed primarily of frego bract plants, produced more lint than the late-maturing, normal bract cultivars, SC-1, Coker 201, and Coker 310. They also produced equal or superior yields when compared with the frego bract germplasm lines, PD 695, or the earlier maturing, normal bract cottons, PD 875 and PD-2.

These germplasm lines, developed by backcrossing and selection with diverse ancestry, high yield potential, resistance to insects, and environmental stability to a range of weather conditions, should be useful in cotton improvement programs.

PD 7439, PD 7496, PD 7501, and PD 7723 have fiber strengths comparable to that of PD-2.

Seed (25 g) of these germplasm lines may be obtained from C.C. Green, USDA-ARS, P.O.Box 2131, Florence, SC 29503.

T. W. Culp,* C. C. Green, and B. U. Kittrell (7)

References and Notes


7. Culp, T.W., and C.C. Green, USDA-ARS, P.O.Box 2131, Florence, SC 29503; and B.U. Kittrell, Pee Dee Res. and Education Ctr., Route 1, Florence, SC 29501-9603. Registration by CSSA. Accepted 30 June 1989. *Corresponding author.


REGISTRATION OF 'MONTANA-101' RUBY VALLEY POINTVETCH GERMPLASM

'MONTANA-101' (MT-101) (Reg. no. P-81) (PI 525497) Ruby Valley pointvetch (Oxytropis riparia Litv.) germplasm was released in December 1988 by the Montana Agricultural Experiment Station for breeding and experimental purposes. Montana-101 germplasm was collected from a wild stand in the Ruby Valley of southwestern Montana. Montana-101 is a perennial, indeterminate legume with a deep taproot and prostrate growth habit (4). Plants have acute, subsessile, opposite leaves with small, purplish, papilionaceous flowers (2). The chromosome number of O. riparia has been generally reported as 2n = 2X = 16. However, Astanova and Abu-salamova (1) found both 2n = 2X = 16 and 2n = 2X = 32. The MT-101 chromosome number is 2n = 2X = 16.

Oxytropis riparia is native to Russian Turkestan (2) and is capable of growing on highly alkaline soil (3). Green and Morris (5) named the plant Ruby Valley milkvetch (Astragalus ruby Green and Morris), but the taxonomy was changed to Oxytropis riparia Litv. by Barney (2).

Hardseed content in pointvetch has been reported as high as 96% (4). Poor stand establishment due to hardseededness can be eliminated with seed scarification. L.S. Hicks (1988, personal communication) found mechanical scarification with a Forsberg scarifier (Forsberg's Inc., Thief River Falls, MN) for 20 to 30 s to be effective in removing the hard seed.