

## References and Notes

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## REGISTRATION OF FIVE AMERICAN PIMA COTTON GERMPLASM LINES

FIVE germplasm lines of American Pima cotton (*Gossypium barbadense* L.) (Reg. no. GP-255 to GP-259) were released by USDA-ARS and the Arizona Agricultural Experiment Station in 1985. These germplasm lines incorporate the genetic traits okra leaf, fertility restoration, frego bract, glandless, and nectariless into American Pima backgrounds. Each of these genetic traits has potential economic value. The germplasm lines could be especially useful in developing parental stocks for use in producing inter- or intra-specific cotton hybrids.

Pima okra leaf (Reg. no. GP-255) was selected in BC1OF<sub>2</sub> from a cross of 'Pima S-2' and Sea Island strain St. Vincent superfine okra leaf and backcrossed to 'Pima S-4'. Cotton with okra leaves mature earlier, have a more open canopy, are less susceptible to boll rot, and have shown resistance to boll weevil, *Anthonomus grandis* (Boheman), pink bollworm, *Pectinophora gossypiella* (Saunders), and banded-wing whitefly, *Trialeurodes abutilonea* (Haldeman) (3,6). Pima okra leaf, compared with 'Pima S-5' (1), has a lower lint percentage and lint index, shorter and weaker fiber, and similar boll size, seed size, and fiber fineness.

Pima restorer 4113 (Reg. no. GP-256) was selected in BC4F<sub>5</sub> from a cross of 71-176 and Pima S-4 followed by backcrossing to Pima S-4 for three generations and crossed to Pima S-5 for one generation. The 71-176 line was the source of *G. harknessii* Brandg. cytoplasm and restorer genes, and was developed by Vesta Meyer of the Mississippi Agricultural and Forestry Experiment Station, Stoneville (5). Pima restorer 4113 is true-breeding for fertility restoration of male-sterile plants with *G. harknessii* cytoplasm. Pima restorer 4113, compared with Pima S-5, has weaker and finer fiber, and similar boll size, seed size, lint percentage, lint index, and fiber length.

Pima frego bract (Reg. no. GP-257) was selected in BC7F<sub>2</sub> from a cross of a *G. hirsutum* × *G. barbadense* genetic stock that carried frego bracts and Pima S-2 followed by one backcross to Pima S-2, three backcrosses to Pima S-4, and three backcrosses to Pima S-5. Frego bract is a genetic trait that conditions resistance to the boll weevil (2). Pima frego bract, compared with Pima S-5, has a lower lint percentage and lint index, slightly weaker fiber, and similar boll size, seed size, fiber length, and fiber fineness.

Pima glandless (Reg. no. GP-258) was derived from a composite of three glandless BC7F<sub>3</sub> plants selected from a cross of the *G. hirsutum* strain Shafter 23-B (4) and Pima S-2 followed by six backcrosses to Pima S-2 and one cross to Pima S-4. Glandless cotton does not contain pigment glands and the seed is nearly free of gossypol, resulting in improved cottonseed oil and cottonseed meal (4). Pima glandless, compared with Pima S-5, has a lower lint percentage and lint index, slightly weaker and longer fiber, and similar boll size, seed size, and fiber fineness.

Pima nectariless (Reg. no. GP-259) was selected in BC3F<sub>3</sub> from a cross of Pima S-4 and Deltapine-16 nectariless followed by three backcrosses to Pima S-5. Nectariless cottons are resistant to several insect pests of cotton including *Lygus hesperus* L. and pink bollworm (6). Pima nectariless, com-

pared with Pima S-5, has smaller boll and seed, lower lint index, shorter fiber, slightly lower lint percentage, slightly weaker fiber, and similar fiber fineness.

Seed (25 g) of these germplasm lines may be obtained from USDA-ARS, University of Arizona Cotton Research Center, 4207 E. Broadway, Phoenix, AZ 85040.

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## REGISTRATION OF SEVEN COTTON GERMPLASM LINES

SEVEN germplasm lines of cotton (*Gossypium hirsutum* L.) (Reg. no. GP-260 to GP-266) were released by USDA-ARS and the Arizona Agricultural Experiment Station in 1984. These germplasm lines carry all combinations of the mutant characters nectariless (N), 2(*ne*<sub>1</sub>,*ne*<sub>2</sub>), smoothleaf (S), *Sm*<sub>2</sub>,*Sm*<sub>2</sub> and Okra leaf (L), *L*<sub>2</sub><sup>+</sup>, *L*<sub>2</sub><sup>+</sup>, in a genetic background designated AET-5. These lines were developed as sources of resistance to pink bollworm [*Pectinophora gossypiella* (Saunders)].

The AET-5 breeding line was developed by G.A. Niles, Texas Agricultural Experiment Station. The components of the pedigree of this stock, designated by Niles as (AET-5 × (45-108 × Br-2-10)-7-69), were reported by Wilson et al. (3). This line has consistently shown less damage, caused by pink bollworm, than commercial checks, and has been used as a resistant standard (2).

The AET-5N (Reg. no. GP-260), AET-5S (Reg. no. GP-261), and AET-5NS (Reg. no. GP-262) lines were derived from a cross of AET-5 × La 15213 in 1977, followed by four backcrosses to AET-5 and selection for the appropriate phenotypes in the F<sub>2</sub> through BC<sub>4</sub>F<sub>2</sub> generation. La 15213 is a nectariless, smoothleaf cotton developed by J. E. Jones, Louisiana Agricultural Experiment Station, from a cross of North Carolina Smooth-2 × 'Stoneville 7A' nectariless. La 15213 is predominantly in a Stoneville 7A background.

The AET-5L (Reg. no. GP-263), AET-5NL (Reg. no. GP-264), AET-5SL (Reg. no. GP-265), and AET-5NSL (Reg. no. GP-266) lines were derived from a cross of AET-5 × La 21198 in 1977, followed by four backcrosses to AET-5 and selection for the appropriate phenotypes in the F<sub>2</sub> through BC<sub>4</sub>F<sub>2</sub> generations. La 21198 has a complex pedigree but is predominantly in a Stoneville 7A background, according to its developer, J. E. Jones (personal