REGISTRATION OF SIX AMERICAN PIMA COTTON GERMPLASM LINES

SIX GERMPLASM LINES of American Pima cotton (Gossypium barbadense L.) designated P45 (Reg. no. GP-479, PI 542770), P51 (Reg. no. GP-480, PI 542771), P53 (Reg. no. GP-481, PI 542772), P62 (Reg. no. GP-482, PI 542773), P66 (Reg. no. GP-483, PI 542774), and E15 (Reg. no. GP-484, PI 542775) were released by the USDA-ARS and the Arizona Agricultural Experiment Station in 1989. These germplasm lines represent a range of yield potential, plant height, earliness, tolerance to heat stress, boll and fiber properties, and spinning performance.

P45 is an F2 selection from a cross between Pima experimental strains 6503-33-3-1 and 6614-91-11. P45 averaged 6% higher yield than 'Pima S-6', the current American Pima cotton cultivar (2), in 25 replicated tests grown over the Pima belt from 1980 through 1982. P45, compared with Pima S-6, has similar plant height and maturity, lower lint percentage, and longer, stronger, and whiter fiber with similar fineness. P45 has greater yarn strength and fewer yarn imperfections (neps) than Pima S-6.

P51 is an F2 selection from a cross between Pima experimental strains 6503-33-3-1 and 6612-62-5. The lint yield from P51 averaged 14% less than Pima S-6 in 15 replicated tests below 750 m elevation, and 9% less in 17 replicated tests above 750 m elevation, grown from 1981 through 1985. P51, compared with Pima S-6, has shorter plant stature, earlier maturity, greater heat tolerance (1,3), and lower lint percentage. P51 has longer and finer fiber than Pima S-6 and similar fiber strength. It has greater yarn strengths but more neps than Pima S-6. The earliness and short stature of P51 may allow it to be grown effectively in 76 cm rows, especially under shorter growing seasons above 750 m elevation.

P53 is an F2 selection from a cross between Pima experimental strains 6503-33-3-1 SB and 6604-68-2-9. P53, compared with Pima S-6, averaged 5% higher yield in 27 replicated tests grown from 1981 through 1984. It has taller plants, slightly later maturity, and lower lint percentage. P53 has longer, stronger, finer, and slightly whiter fiber than Pima S-6, and it has stronger yarns with more neps. P53 performs relatively better at elevations below 750 m.

P62 is an F2 selection from a cross between Pima experimental strains 6503-33-3-1 and 6614-91-11. P62, compared with Pima S-6, has earlier maturity, greater heat tolerance, shorter plant stature, and lower lint percentage. The lint yield from P62 averaged 13% less than Pima S-6 in six replicated tests below 750 m elevation, and 10% less in 11 replicated tests above 750 m elevation, grown from 1983 through 1985. P62 has longer, finer, and whiter fiber with similar strength, compared with Pima S-6. It has stronger yarns but appreciably more neps. P62 was developed primarily for planting in situations where early maturity would be beneficial, such as planting in 76-cm rows, late planting, and in environments with relatively short growing seasons.

P66 is an F2 selection from a cross between Pima experimental strain 1-71, 'Tanguis', 'Ashmouni', 'Giza 12', and Pima S-6, which have predominantly quintafoliolate leaves. Compared with Pima S-6, E15 has taller plants, slightly later maturity, greater heat tolerance, lower lint percentage, and stronger yarns with more neps. P66 has similar plant height and maturity, greater heat tolerance, lower lint percentage, and longer, stronger, and whiter fiber of similar length and strength, compared with Pima S-6. It is adapted primarily above 750 m.

Seed (25 g) of these germplasm lines may be obtained from E.L. Turcotte, USDA-ARS, 37860 W. Smith-Enke Road, Eloy, AZ 85239.

E. L. Turcotte,* Carl V. Feaster,** and E. F. Young, Jr.

References and Notes


REGISTRATION OF SOYBEAN GERMPLASM LINES R85-395 AND R88-1259, WITH QUINTAFOLIOLATE LEAVES

Soybean [Glycine max (L.) Merr.] germplasm lines R85-395 (Reg. no. GP-122, PI 542969) and R88-1259 (Reg. no. GP-123, PI 542970), which have predominantly quintafoliolate leaves, were developed by the Arkansas Agricultural Experiment Station. R85-395 has ovate leaflets and lanceolate leaflets and primarily four-seeded pods. These lines were released to provide germplasm for agronomic traits and for use in breeding programs to improve soybean architecture.

Takahashi and Fukuyama (13) described two types with a high frequency of leaves with quintafoliolate leaves. Fehr (7) apparently studied the same reports that a single dominant gene, *L*/*l*1, controls this trait. Studies by Caviness and Threlkeld (4) also showed that a multifoliolate trait is dominant to the trifoliolate character, with a single major gene controlling this leaf architecture.