Registration of Extra-Long Staple Cotton Germplasm, 89590 and 8810

Two germplasm lines of cotton (Gossypium hirsutum L.) designated as 89590 (Reg. no. GP-670, PI 599427) and 8810 (Reg. no. GP-671, PI 599428), were developed by the cooperation with the University of Arizona at the Cotton Genetics Research and Cultivation Center and were released jointly in 1996. Line 89590 possesses long fiber, and line 8810 has high fiber strength. The two lines were released to provide public and private breeders with heat-adapted, agronomically acceptable germplasm sources for increasing fiber length and strength in extra-long staple cotton.

Line 89590 was derived from a cross, made in 1989, between the obsolete, low-yielding, heat-sensitive Sea Island cultivar St. Vincent V-135 and the early-maturing experimental line P62 (2). Individual plant selection was practiced in the F₁ generations, followed by progeny row selection in the F₂ generation. Limited quantities of seed were made in the field on the basis of good heat tolerance, high lint yield, short plant height, and early maturity. Individuals selected in the field were then screened for fiber traits. Line 89590 was developed from a cross, made in 1988, between P72 and P73, two lines were released to provide public and private breeders with heat-adapted, agronomically acceptable germplasm sources for increasing fiber length and strength in extra-long staple cotton.

Fiber and agronomic traits of the two lines were superior to 'Pima S-7' (3) at Maricopa, AZ, in 1993, 1994, 1995, and 1996. The fiber of 89590 was 3 mm longer and 17 kN m kg⁻¹ stronger than that of Pima S-7. Its fiber length uniformity and micronaire reading were lower than those of Pima S-7 (1.0% and 0.6 units, respectively). The fiber of 8810 was 46 kN m kg⁻¹ stronger than that of Pima S-7. Line 8810’s fiber length and strength were equal to or slightly better than that of Pima S-7. Micronaire readings of 89590 and 8810 exceeded Pima S-7 in plant height by 4% and 3%, respectively. Visual yield ratings for 89590 and 8810 exceed the potential between Pima S-7, with 89590 exhibiting the higher potential. Both lines are heat tolerant.

Limited quantities of seed (25-50 g) are available for distribution to cotton geneticists, breeders, and other research personnel upon written request to the corresponding author. Appropriate recognition of source is requested when these germplasm lines contribute to the development of a new breeding line, hybrid, or cultivar. Genetic material of this release will be maintained by the corresponding author and will be deposited in the National Plant Germplasm System, where it will be available for research purposes including the development and commercialization of new cultivars.

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References and Notes

4. R. G. PERCY AND E. L. TURCOTTE (4) (6)
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