

Registration of Three Germplasm Lines of Upland Cotton: PD 93007, PD 93043, and PD 93046

Three cotton (*Gossypium hirsutum* L.) germplasm lines PD 93007 (Reg. no. GP-647, PI 591418), PD 93043 (Reg. no. GP-648, PI 591424), and PD 93046 (Reg. no. GP-649, PI 591425) that combine high yield potential and excellent fiber properties were developed at the Clemson University Pee Dee Research and Education Center, Florence, SC. These lines were released in 1995 by the USDA-ARS and South Carolina Agricultural Experiment Station.

PD 93007, PD 93043, and PD 93046 resulted from different, randomly selected, F₂ plants from a inheritance study of fiber properties in Pee Dee cotton populations (7). Selection for lint yield, fiber, and spinning properties was conducted from the F₄ to F₇ generations. Parentage of PD 93007 is PD 5285/PD 5485. PD 5285 is a full-sib to PD 5286 (3), and PD 5485 is from the cross 'McNair 235'/FJA 347. The parentage of PD 93043 is PD 5265/PD 5576. PD 5265 is from the cross 'McNair 220'/'Sealand 542' and PD 5576 (3) is from the cross 'Deltapine 41'/PD 3246. The parentage of PD 93046 is PD 5358/PD 5485. PD 5358 (4) is from the cross 'Delcot 311'/PD 6079. Grandparent pedigrees of the three germplasm lines have been published (1).

These lines were released for their combination of high yield potential and excellent fiber properties when tested in late-planted production systems (6). Average planting date was 10 June, and the season length was 152 d from planting to first temperature below 0°C preceding harvest. PD 93007 averaged 20% higher yield than 'PD-3' (2), while PD 93043 and PD 93046 averaged 27 and 21%, respectively, higher yield than PD-3. The higher yields of PD 93007, PD 93043, and PD 93046 compared with PD-3 in the late-planted production system may result from earlier maturity (5). PD-3 is a southeastern U.S. cultivar with an unusual combination of high yield potential and desirable fiber and spinning properties (2). Compared with PD-3, the lines PD 93007, PD 93043, and PD 93046 exhibit only minor differences in 2.5% fiber span length, fiber strength (by stelometer measurement), and micronaire reading. PD 93007 has slightly lower yarn strength (<2%) than PD-3, while

that of PD 93043 is similar to PD-3 and that of PD 93046 is about 2% higher than PD-3.

The germplasm lines should be useful to breeders as sources of high yield potential and excellent fiber quality.

Seed (25 g) of the germplasm lines may be obtained from the corresponding author. Recipients of seed are asked to appropriately acknowledge the source of the germplasm if it is used in the development of new germplasm, cultivars, or hybrids.

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References and Notes

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