

REGISTRATION OF DELCOT 390 COTTON

'DELCOT 390' COTTON (*Gossypium hirsutum* L.) (Reg. no 84) was developed by the Missouri Agricultural Experiment Station. The experimental designation was MO 79-390.

Delcot 390 was selected as a BC₁F₂ plant from the cross (MO63-277BR2A × HYC74-283)F₁ × MO63-277BR2A. Current breeder seed of Delcot 390 is in the F₆ generation. MO63-277BR2A was derived from crosses among 'Delcot 277J', 'MoDel' and a bacterial blight resistant (B₂B₆) strain of 'Auburn 56'. HYC 74-283 was selected from a germplasm pool derived from multiple crosses among 'Half & Half', 'Quapaw', Arkansas selection Original 59-31, 'Paymaster 18', MO 59-1021, MO 56-311 and multiple disease resistant germplasm designated 71-CX18.

Delcot 390 is resistant to bacterial blight caused by *Xanthomonas campestris* pv *malvacearum* (Smith) Dye, Races 1, 2, 7, 10, 11, 12, and 18; to Fusarium wilt caused by *Fusarium oxysporum* Schlecht f. sp. *vasinfectum* Syd. & Hans and to Verticillium wilt caused by *Verticillium dahliae* Kleb. Delcot 390 is susceptible to root-knot nematodes caused by *Meloidogyne incognita* (Kofoid and White) Chitwood.

Delcot 390 matures 4 to 10 days earlier than commercial cultivars grown in Missouri. Delcot 390 produces competitively with other cultivars in early plantings but lint yields often are superior when plantings are delayed. It is best adapted to medium textured soils in the northern area of the Missouri "Botheel". Fiber quality of Delcot 390 is equal or superior to that of most cultivars grown in the area.

Delcot 390, compared with 'Delcot 311', is a shorter, more determinate, more compact plant. It is faster fruiting, earlier maturing and is more susceptible to root-knot nematodes.

Compared with Delcot 311, Delcot 390 has slightly lower lint percentage, similar size bolls and seeds, similar 2.5% span length, coarser and slightly weaker fiber. In processing, yarns produced are slightly weaker than those of Delcot 311 but stronger than those for 'Stoneville 825' and 'Stoneville 506', major cultivars grown in Missouri.

Breeder seed will be maintained by the Missouri Agric. Exp. Stn., Delta Ctr., Portageville, MO 63873.

W.P. SAPPENFIELD (1)

References and Notes

1. Professor of agronomy, Univ. of Missouri-Columbia, Missouri Agric. Exp. Stn., Delta Ctr., Portageville, MO 63873. Registration by the Crop Sci. Soc. of Am. Journal Paper no. 9644 of the Missouri Agric. Exp. Stn. Accepted 30 July 1984.

REGISTRATION OF PD-1 COTTON

'PD-1' COTTON (*Gossypium hirsutum* L.) (Reg. no. 85) was developed by USDA-ARS and the South Carolina Agricultural Experiment Station. It was tested experimentally as PD 4548.

PD-1 is from the bulked seed increase of an F₃ plant selected from the cross of PD 4381 × PD 8623 (1). It was released in 1984 as a replacement of 'SC-1', the first cultivar with extra-fiber-strength genes from triple hybrid origin that produced yields equal to commercial cultivars in South Carolina (2). The major advantages of PD-1 over SC-1 are higher lint yield, stronger fiber, and better resistance to the fusarium wilt-rootknot nematode complex, caused by *Fusarium oxysporum* Schlecht. f. *vasinfectum* (Atk.) Syd. & Hans. and *Meloidogyne incognita* (Kofoid & White) Chitwood.

PD-1, compared with SC-1, has a more open plant type, less leafy, lighter green, and is equal or taller in plant height. It is slightly later maturing and produces its highest yields during long growing seasons. Lint yield increases of PD-1 over SC-1 are attributed to higher lint percentages because the number of bolls per meter² are similar for the two cultivars.

Compared with SC-1, PD-1 has a higher lint percentage, smaller bolls, smaller seed, stronger fiber, coarser fiber, and less fiber elongation. In spinning, PD-1 generally produces stronger yarns than SC-1.

Breeder seed will be maintained by the South Carolina Agric. Exp. Stn., Pee Dee Res. and Educ. Ctr., P. O. Box 271, Florence, SC 29503.

T.W. CULP, R.F. MOORE, AND J.B. PITNER (3)

References and Notes

1. Culp, T.W. 1981. Registration of Pee Dee 4548 germplasm line of cotton. Crop Sci. 21: 992.
2. ———, and D.C. Harrell. 1979. Registration of SC-1 cotton. Crop Sci. 19: 410.
3. Research agronomist and supervisory research entomologist, USDA-ARS, and resident director, Clemson Univ. Pee Dee Res. and Educ. Ctr., Florence, SC 29503. Registration by the Crop Sci. Soc. of Am. Cooperative investigations of the USDA-ARS and the South Carolina Agric. Exp. Stn. Journal paper no. 2290 of the South Carolina Agric. Exp. Stn. Accepted 30 July 1984.

REGISTRATION OF PD-2 COTTON

'PD-2' COTTON (*Gossypium hirsutum* L.) (Reg. no. 86) was developed by USDA-ARS and the South Carolina Agricultural Experiment Station. It was tested experimentally as PD 6520.

PD-2 is from the bulked seed increase of an F₃ plant selected from the composite cross of two F₁ hybrids (FTA 266 × 'Altas') × (AC 235 × 'Dixie King') (2). It was released in 1984 as an early maturing high-fiber-strength cultivar for specialty uses. Over a 3-year period, PD-2 planted late on 1 and 15 June produced a average of 7.6 and 20.2%, respectively, more lint than 'Coker 304', the most popular early maturing cultivar grown in South Carolina. PD-2 should be adapted to double cropping with small grains, a promising new production practice in the Southeast.

PD-2 produced yields equal to those of 'Coker 310', the most popular cultivar grown in South Carolina, except when the growing season is long and favors a full-season cultivar. PD-2 has a yield advantage during short growing seasons and has produced significantly higher yields than Coker 310 in tests where boll weevil (*Anthonomus grandis grandis* Boheman) and bollworm (*Heliothis zea* Boddie) damage is a factor in determining yield. Its performance must be due to rapid fruiting and a shorter exposure period of fruiting parts to insect attacks.

PD-2 is intermediate in fiber strength and yarn tenacity between Coker 310 and 'SC-1', the first cultivar with extra-fiber-strength genes from triple hybrid origin that produced yields equal to Coker 310 in South Carolina (1).

PD-2, compared with SC-1, has a more open plant type, is less leafy, and shorter in plant height. It has a lower lint percentage, larger bolls, larger seed, similar fiber length, and micronaire. PD-2 is more resistant than SC-1 to the fusarium wilt-rootknot nematode complex caused by *Fusarium oxysporum* Schlecht. f. *vasinfectum* (Atk.) Syd. and Hans. and *Meloidogyne incognita* (Kofoid and White) Chitwood (3).