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REGISTRATION OF 'ARKOT 518' UPLAND COTTON

'ARKOT 518' cotton (*Gossypium hirsutum* L.) (Reg. no. 91) (PI 510667) was developed at the Cotton Branch of the Arkansas Agricultural Experiment Station in Marianna, AR, and released 1 Apr. 1987. Arkot 518 originated as a single plant selection in the F_2 and F_3 generations of a cross between 'Rex 713' and 'Coker 304'. The resulting F_4 progeny row and subsequent generations were handled as a pure line and increased at Marianna.

Arkot 518 (tested as UArk 2402 or UArk 75182402) expresses excellent lint yield potential under Arkansas conditions and in certain other areas of the U.S. Rain Belt. Arkot 518 matures earlier than other cultivars currently available in Arkansas; reaching 60% open bolls from 2 to 9 d earlier than all other cultivars evaluated in the 1984 and 1985 Arkansas Cotton Cultivar Tests. Fiber of Arkot 518 usually is longer than other mid-South cultivars and is equal to that of 'Coker 315'. Fiber strength of Arkot 518 is similar to that of 'Stoneville 213'. Micronaire is usually within the premium range and is similar to that of other cultivars in production (1,2).

Arkot 518 has a more open-canopy growth habit than most 'Deltapine' and 'Stoneville' cultivars commonly produced in Arkansas because of longer main stem internodes. The large bolls and bracts of Arkot 518 most closely resemble 'Delcot 390' in the mature green boll stage. Pubescence of stems and leaves is similar to Stoneville 213 and Rex 713.

Based on 1986 results, Arkot 518 carries resistance to Fusarium wilt [caused by *Fusarium oxysporum* Schlect f. *vasinfectum* (Atr.) Snyd. & Hans.] similar to that of Coker 315 and 'Deltapine 50'. Its reaction to Verticillium wilt (caused by *Verticillium dahliae* Kleb.) has not been quantified, but it has yielded well at Clarkdale, AR under moderate levels of field infestation.

Seed of Arkot 518 may be obtained from the Arkansas Agricultural Experiment Station.

C. WAYNE SMITH (3)

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REGISTRATION OF 'PD-3' COTTON

'PD-3' cotton (*Gossypium hirsutum* L.) (Reg. no. 92) (PI 511353) was developed by USDA-ARS and the South Carolina Agricultural Experiment Station. It was tested experimentally at PD 6208.

PD-3 is from the bulked seed increase of an F_3 plant selected from the cross of PD 9363 × PD 9240 (1). It was released in 1987 as a replacement for 'PD-1', a cultivar with extra fiber-strength genes from triple hybrid origin that produced yields equal to that of commercial cultivars in South Carolina (2). The major advantages of PD-3 over PD-1 are wider adaptation, higher lint yield potential, stronger fiber, higher yarn tenacity, and fewer neps.

Compared with PD-1, PD-3 shows similar resistance to the fusarium wilt root-knot nematode complex, caused by *Fusarium oxysporum* Schlect. f. *vasinfectum* (Atk.) Snyd. & Hans. and *Meloidogyne incognita* (Kofoid & White) Chitwood. Preliminary observations suggest that it has greater resistance to verticillium wilt, caused by *Verticillium dahliae* Kleb.

PD-3, compared with PD-1, has shorter internodes, darker green leaves, and is equal or taller in plant height. Lint yield increases of PD-3 over PD-1 are attributed to more bolls per square meter because lint percentages, boll size, seed size, fiber length, and micronaire are similar (3).

Breeder seed will be maintained by the South Carolina Agric. Exp. Stn., Pee Dee Res. and Educ. Ctr., Rt. 1, Box 531, Florence, SC 29501-9603.

T. W. CULP,* R. F. MOORE, L. H. HARVEY, AND J. B. PITNER (4)

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REGISTRATION OF 'ACALA 1517-88' COTTON

'ACALA 1517-88' cotton (*Gossypium hirsutum* L.) (Reg. no. 93) (PI 511354) was released by the New Mexico Agricultural Experiment Station in 1987. It originated as a single plant selection from a cross between 'Acala 1517-77BR' (1) and 'Deltapine 70'. Plant-to-row selection for several generations resulted in strain B1788. This strain was released as Acala 1517-88 after 4 yr of testing.

Plants of Acala 1517-88 are about the same height as those of Acala 1517-75, averaging 98 cm. The plant shape is similar to that of Acala 1517-77BR. Maturity of Acala 1517-88 is similar to that of Acala 1517-75, as measured by percentage harvested at first picking. Acala 1517-88 averaged 11% higher lint yield than Acala 1517-75 in the Mesilla Valley and was 15% higher in the Pecos Valley of New Mexico in 4 yr of testing.

Acala 1517-88 is tolerant to *Verticillium dahliae* Kleb., and is resistant to races 1, 2, and 10 of *Xanthomonas campestris* pv. *malvacearum* (Smith) Dye (bacterial blight). The cultivar is also tolerant to Fusarium wilt caused by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyd. and Hans. The tolerance to Verticillium wilt is similar to that of Acala 1517-75.

Bolls of Acala 1517-88 are ovate, averaging 2.35 g of lint per boll compared to that of Acala 1517-75 with 2.32 g. Seed