

REGISTRATION OF PARK BARLEY¹

(Reg. No. 162)

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'PARK' barley (*Hordeum vulgare* L.), C.I. 15768, was developed by the North Dakota Agricultural Experiment Station in cooperation with AR-SEA-USDA and was released 12 Jan. 1978. It was tested as ND 231 and traces to a single F₃ plant selected from the cross, 'Dickson'/3/CI 4738/'Traill'/UM570/4/ND B133, made in 1966. Early generations of this cross were grown in the field and greenhouse at Fargo, N. Dak., and the F₄ generation was grown in a winter increase nursery at Ciudad, Obregon, Sonora, Mexico.

Park is a six-rowed, rough-awned spring barley. The kernels are covered and medium-sized with a colorless aleurone and short hairs on the rachilla. It is medium-early, mid-tall, and has moderately strong straw. Compared with 'Larker', Park is 1 day later in heading, equal in height, and stronger strawed. Park is resistant to *Puccinia graminis* Pers. f. sp. *tritici* Eriks. and Henn. and is much more resistant than Larker to prevalent strains of *Helminthosporium sativum* P.K. and B., *Helminthosporium teres* Sacc., and *Septoria passerinii* Sacc. The yield of Park has exceeded that of Larker by 2% in 60 trials in North Dakota. Park performs best, relative to Larker, under conditions where leaf diseases affect yield.

Park is best adapted to northeastern North Dakota and northwestern Minnesota. The kernel plumpness and test weight of Park are slightly lower than Larker. Quality tests conducted by North Dakota State University, the USDA Barley and Malt Laboratory, Madison, Wis., and industry laboratories indicated that Park is superior to Larker in extract, wort N, and enzyme activity. It has been classified as a cultivar acceptable for malting and brewing by the Malting Barley Improvement Association. Breeder seed will be maintained by the North Dakota Agricultural Experiment Station, Fargo, ND 58105.

¹Registered by the Crop Sci. Soc. Am. Published with the approval of the Director of the North Dakota Agric. Exp. Stn. as Journal Article No. 969. Accepted 15 Feb. 1979.

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REGISTRATION OF SC-1 COTTON¹

(Reg. No. 72)

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'SC-1' cotton (*Gossypium hirsutum* L.), released in March 1977, was developed cooperatively by AR-SEA-USDA and the South Carolina Agricultural Experiment Station. It is the product of 30 years of breeding to overcome the undesirable genetic association between lint yield and fiber strength. SC-1 was developed by pedigree selection from the cross 'Coker 421' × PD 4398. Coker 421 is a selection of 'Coker 413'. Coker 413 is traced to a glabrous plant selected in an advanced progeny row increase from the cross, 'Coker 100 Wilt' × 'Coker Wilds'. PD 4398 was developed from a series of complex crosses involving Triple Hybrid 108 and 171, AHA 6-1-4, 'Earlistaple', 'Sealand 542', C 6-5, and 'Atlas'. SC-1 was tested under the designation Pee Dee 9241.

Fibers of SC-1 are slightly longer (1 mm) and finer (0.4%)

¹Registered by the Crop Sci. Soc. Am. Published as Journal Paper 1630 of the South Carolina Agric. Exp. Stn. Accepted 25 Jan. 1979.

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³Harrell, D. C., T. W. Culp, W. E. Vaught, and J. B. Blanton. 1974. Recent breeding progress in improving lint yield and fiber quality in PD lines of upland cotton (*Gossypium hirsutum* L.). South Carolina Agric. Exp. Stn. Tech. Bull. 1052.

than those of 'Coker 201', but they are shorter (0.5 mm) than fibers of 'Coker 310' and more uniform (3%) than fibers of Coker 201 or Coker 310. Fiber strength approaches that of the high fiber strength check, Pee Dee 2165, and averages 5.3 to 12.1% stronger than Coker 310 and Coker 201, respectively. Thus, yarn strength averages 10.3 to 19.2% higher than that of these two check cultivars.

Fiber elongation (E₁) of SC-1 averages 10.8% more than that of Coker 201 and Coker 310 and 25.4% more than that of Pee Dee 2165, a typical high fiber strength breeding line. The unusually high E₁ may partially account for the excellent yarn strength of this cultivar.

SC-1 yielded 7.0% more lint than Coker 201 in 10 station tests in 1970, 1971, and 1972. In the 1974, 1975, and 1976 Official South Carolina Cotton Variety Test at Blackville, Clemson, and Florence, SC-1 yielded 7.3 and 10.0% more lint than Coker 310 and Coker 201, respectively. SC-1 is the first upland cotton cultivar adapted to production in the Southeast that combines high yield potential with high fiber strength and elongation. This rare combination of yield and quality should meet the requirements of cotton growers and the demands of textile manufacturers.

SC-1 is released and offered for production in South Carolina and other southeastern states. It should not be planted on soils known to be highly infested with nematodes or wilt.

Breeder seed is maintained by the South Carolina Agricultural Experiment Station. Foundation seed is produced by the South Carolina Foundation Seed Association and sold to qualified producers of certified seed.

REGISTRATION OF TAMCOT SP21S COTTON¹

(Reg. No. 73)

L. S. Bird²

'Tamcot SP21S' (*Gossypium hirsutum* L.) was developed in the Texas A&M Multi-Adversity Resistance (TAM-MAR) program of the Texas Agricultural Experiment Station and was released in October 1977 (1, 6). Parents were strains of Tamcot SP21 (Reg. No. 61) and Tamcot SP37 (Reg. No. 63) (3). The cross (SP21F₁ × SP37F₁)F₂ × F₃ (SP21V × SP37V) was made and individual plant selection began in the F₄ of the double cross. Individual plant selection was based on seed coat resistance to mold and a reduced rate of germination when held for 8 days on 1.5% water agar at 13.3 C. This was followed by selection for seedling cotyledon resistance to a mixed inoculum of races 1, 2, 7, and 14 of the bacterial blight pathogen (*Xanthomonas malvacearum* (E. F. Sm.) Dows.). An F₄ progeny was given the strain designation H⁴-14-71 and an F₅ progeny was given the strain designation H⁴-18-72. Tamcot SP21S is a composite of these strains and was evaluated under the name TX-CAMD-S. The described levels of resistance used for representing differences with respect to departure from a susceptible type have been given (4).

SP21S has high resistance to bacterial blight (conditioned by the B₂, B₃, and B₇ genes); resistance to the *Fusarium* wilt root-knot nematode complex [incited by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyder and Hans. and *Meloidogyne incognita* (Kofoid and White) Chitwood] and *Verticillium* wilt caused by *Verticillium albo-atrum* Reinke and Berth., MS. SP21S has intermediate resistance to the seedling disease complex, seed rot, seed deterioration, and early season cold conditions. It has the same delay-kill resistance (plants dying at a reduced rate) to *Phymatotrichum* root rot [incited by *Phymatotrichum omnivorum* (Shear) Dug.] as SP21. SP21S is susceptible to the leaf spot caused by *Alternaria macrospora* Zimm.

Tamcot SP21S is less sensitive to damage from fleahoppers (*Pseudatomoscelis seriatus* (Reuter)) compared with Tamcot SP21 (3, 5, 6, 7). The glabrous surface of all plant parts of Tamcot SP21S provides intermediate resistance to the boll-

¹Approved for publication by the Texas Agric. Exp. Stn. as Technical Article 14479. Registration by Crop Sci. Soc. Am. Accepted 5 Mar. 1979.

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