

Registration of Crop Cultivars

REGISTRATION OF PIMA S-6 COTTON

'PIMA S-6' cotton (*Gossypium barbadense* L.) (Reg. no. 81) was developed by USDA-ARS in cooperation with the State Agricultural Experiment Stations of Arizona, New Mexico, and Texas. The experimental designation was P34.

Pima S-6 is an F₄ selection from a cross of experimental strains 5934-23-2-6 and 5903-98-4-4. It was released in 1983 as a replacement for 'Pima S-5'. The major advantages of Pima S-6 are earlier maturity and higher yield than for Pima S-5. From 1975 through 1981 the average yield advantage for Pima S-6 over Pima S-5 grown at various elevations ranged from 4 to 18%. The greatest yield advantage from Pima S-6 was obtained at high elevations (above 750 m), particularly in New Mexico and Texas.

Pima S-6, compared with Pima S-5, is a more open plant, less leafy, and equal or shorter in plant height at low elevations (up to 450 m) and equal or taller at high elevations. Pima S-6 is early, begins fruiting low on the plant, and continues fruiting throughout the season.

Compared with Pima S-5, Pima S-6 has a higher lint percentage, smaller bolls, slightly shorter 2.5% span fiber length, slightly longer 50% span fiber length, slightly shorter classer's staple, stronger fiber, coarser fiber, and its fiber has less reflectance and greater yellowness. In processing, Pima S-6 gives slightly stronger yarns and better yarn appearance than Pima S-5.

Breeder seed may be obtained by bonafide seed breeders upon written request to USDA-ARS, Univ. of Arizona Cotton Res. Ctr., 4207 E. Broadway, Phoenix, AZ 85040.

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References and Notes

1. Research agronomist and research geneticist, USDA-ARS, Univ. of Arizona Cotton Res. Ctr., Phoenix, AZ 85040. Registration by the Crop Sci. Soc. of Am. Cooperative investigations of the USDA-ARS and the State Agric. Exp. Stns. of Arizona, New Mexico, and Texas. Journal Paper no. 3753 of the Arizona Agric. Exp. Stn. Accepted 23 Sept. 1983.

REGISTRATION OF ACALA 1517-77BR UPLAND COTTON

'ACALA 1517-77BR' cotton (*Gossypium hirsutum* L.) (Reg. No. 82) was released by the New Mexico Agricultural Experiment Station in 1982. It originated as a single plant selection from 'Acala 1517-77'. The original plant selection possessed a high level of resistance to bacterial blight caused by (*Xanthomonas campestris* pv. *malvarearum* (Smith 1901) Dye 1978b. Acala 1517-77BR is resistant to races 1, 2, 10 and Tularosa, a local race in New Mexico (2). Acala 1517-77 is not resistant to the Tularosa race.

Agronomic traits of Acala 1517-77BR are similar to those of Acala 1517-77. The parents and development of Acala 1517-77 were described in 1980 (1). The plant shape of Acala 1517-77BR is narrower than Acala 1517-77, due to shorter sympodial branches. Bolls of Acala 1517-77BR are narrowly ovate and average 2.02 g of lint cotton, compared with 1.99 g for Acala 1517-77. Seeds are fuzzy and medium-large with a fuzzy seed index of 13.0 g. The lint percentage averages 35 to 37 for hand picked samples, which is slightly

higher than that of Acala 1517-77. Earliness and plant height are similar for the two cultivars.

Acala 1517-77BR produces premium quality fiber averaging 30.5 mm in 2.5% span length, generally classing as 1½ in. staple. Fiber uniformity is about 48. Micronaire of Acala 1517-77BR and Acala 1517-77 are similar. Fiber strength as measured on the 3.18 mm gage stelometer averaged 238 kNmkg⁻¹ (mN/tex), nearly identical to Acala 1517-77. Strength of 22's yarn of Acala 1517-77BR averaged 148 kNmkg⁻¹ compared with 143 for Acala 1517-77.

Acala 1517-77BR is moderately tolerant to *Verticillium dahliae* Kleb. The cultivar is mildly tolerant to *Fusarium* wilt caused by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyd. and Hans.

Over the 4 years of testing, Acala 1517-77BR averaged 1% more lint yield than Acala 1517-77. Acala 1517-77BR was released as a replacement for Acala 1517-77 primarily because of the higher levels of bacterial blight resistance.

Breeder seed will be maintained by the New Mexico Agricultural Experiment Station, Las Cruces.

C.L. ROBERTS, N.R. MALM, D.D. DAVIS, AND C.E. BARNES (3)

References and Notes

1. Barnes, C.E., D.D. Davis, N.R. Malm, C.L. Roberts, and R.L. Wood. 1980. Registration of Acala 1517-77 Upland Cotton. Crop Sci. 20:113.
2. Davis, D.D., H.C. Yang, and C.F. Chew. 1974. Development of high-level resistance to bacterial blight in Acala 1517 cottons. N. Mexico Agric. Exp. Stn. Bull. 615.
3. Research specialist, professors, and associate professor, respectively, Dep. of Crop and Soil Sciences, New Mexico State Univ., Las Cruces. Registration by the Crop Sci. Soc. of Am. Journal article 1028, Agric. Exp. Stn., New Mexico State Univ., Las Cruces, NM 88003. Accepted 11 Oct. 1983.

REGISTRATION OF ACALA 1517-SR1 UPLAND COTTON

'ACALA 1517-SR1' cotton (*Gossypium hirsutum* L.) (Reg. No. 83) was released by the New Mexico Agricultural Experiment Station in 1983. It originated as a single plant selection from a cross between 'Acala 1517-E1' and a storm-resistant source. Parents involved in the development of Acala 1517-E1 were Acala 3080 and Pee Dee 2165, and were described in 1978 (1). Plant-to-row selection for several generations resulted in strain E945. After 3 years of testing, this strain was released as Acala 1517-SR1.

Plants of Acala 1517-SR1 are about the same height as those of Acala 1517-E1, averaging 86 cm. Plants of Acala 1517-SR1 are much narrower than Acala 1517-E1 because of shorter sympodial branches. Maturity as measured by early bloom counts and open boll counts is similar for the two cultivars. Acala 1517-SR1 averaged 3% more yield than Acala 1517-E1 in the Mesilla Valley and western New Mexico and 8% more in the Pecos Valley and eastern New Mexico.

Acala 1517-SR1 is moderately tolerant to *Verticillium dahliae* Kleb., and a majority of plants are resistant to races 1, 2, 10, and Tularosa (2) of *Xanthomonas campestris* pv. *malvarearum* (Smith 1901) Dye 1978b of bacterial blight. The

cultivar is mildly tolerant to *Fusarium* wilt caused by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyder and Hans.

Bolls of Acala 1517-SR1 are ovate, averaging 6.05 g seed-cotton compared to Acala 1517-E1 with 5.85 g. Seeds are fuzzy and medium-large with a fuzzy seed index of 13.0 g compared with 12.9 g for Acala 1517-E1. Lint percentage of Acala 1517-SR1 is slightly higher than for Acala 1517-E1, averaging 36.1 over a 3-year period for hand picked bolls. Storm resistance ratings have averaged 4.8 compared with a rating of 2.4 for Acala 1517-E1 on a scale of 1 to 9, where 9 represents most storm resistant. Bolls of Acala 1517-SR1 fluff slightly, but keep their shape unless adverse weather occurs.

Fiber of Acala 1517-SR1 is slightly longer than for Acala 1517-E1, averaging 30.2 mm in 2.5% span length, generally classing as 1½ inch staple. Fiber uniformity averages about 49. Fiber of Acala 1517-E1 averages 29.7 mm 2.5% span length and 50 uniformity index. Micronaire averages 0.2 units less than for Acala 1517-E1. Fiber strength as measured on the 3.18 mm gauge stameter averages 238 kNmkg⁻¹ (mN/tex) compared with 233 for Acala 1517-E1.

Breeder seed will be maintained by the New Mexico Agricultural Experiment Station, Las Cruces.

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(3)

References and Notes

1. Davis, D.D., N.R. Malm, C.L. Roberts, C.E. Barnes and R.L. Wood. 1978. Registration of Acala 1517-E1 Cotton. *Crop Sci.* 18:165.
2. ———, H.C. Yang, and C.F. Chew. 1974. Development of high-level resistance to bacterial blight in Acala 1517 cottons. *N. Mex. Agric. Exp. Stn. Bull.* 615.
3. Professor, associate professor, professor, and research specialist, Dep. of Crop and Soil Sciences, New Mexico State Univ., Las Cruces. Registration by the Crop Sci. Soc. of Am. *Journal Article* 1027, *Agric. Exp. Stn.*, New Mexico State Univ., Las Cruces, NM 88003. Accepted 11 Oct. 1983.

REGISTRATION OF RISE PROSO MILLET

'RISE' proso millet (*Panicum miliaceum* L.) (Reg. no. 89) was developed at the University of Nebraska, Panhandle Station. The cultivar was released on 1 Mar. 1983.

Rise has a white seed coat (lemma and palea) and a compactum (closed) type panicle. It was tested under the experimental number 76004-3-8. Rise was derived from a cross of 'Dawn' X Minn. 402 made at the Nebraska Agricultural Experiment Station in 1976. Dawn is a release of the Nebraska Agricultural Experiment Station and Minn. 402 is an experimental line developed by the Minnesota Agricultural Experiment Station. A single plant selection was made in the F₂ generation for simply inherited traits such as panicle type, height, and seed color. The head row planted from the F₂ selection was again selected in the F₃ generation for lodging resistance and to more precisely determine height, seed color, and panicle type. The seed produced in the F₄ generation was bulked to obtain enough seed to begin testing the F₅ generation in 1980.

Rise was tested for 3 years in six yield trials per year in western Nebraska. Rise is about 12 to 15 cm taller than Dawn and about 5 to 8 cm shorter than 'Panhandle'. It has a heading date midway between 'Cope' and Dawn, similar to 'Minco'. It had grain yields that exceeded Cope, Dawn, and Minco during all three years of testing. It has a compactum panicle type similar to Dawn, although the seed is smaller than Dawn. It has lodging resistance similar to Dawn.

Planting rates and dates for Rise will be similar to other cultivars of medium maturity.

Seed classes of Rise designated by the Nebraska Agricultural Experiment Station will be breeder, foundation, registered, and certified. Breeders seed will be maintained by the Nebraska Agric. Exp. Stn.

LENIS A. NELSON (1)

References and Notes

1. Associate professor of agronomy, Univ. of Nebraska, Panhandle Stn., Scottsbluff, NE 69361. Registration by the Crop Sci. Soc. Am. Published as Paper no. 7130, *Journal Series*, Nebraska Agric. Exp. Stn. Accepted 11 Oct. 1983.

REGISTRATION OF PRESTON OATS

'PRESTON' spring oats (*Avena sativa* L.), (Reg. No. 307) Mn 76161, CI 9422, was developed cooperatively by the Minnesota Agricultural Experiment Station and USDA-ARS, and released in 1982. It originated from a selected F₃ plant in an 'Otee'/'Dal' population. Seed from selected F₂ plants was planted in the greenhouse, and seed from individual F₃ plants produced F₄ rows which were bulk harvested. In evaluating the F₂, F₄, and advanced generations, the traits groat protein percent and protein yield were of particular interest.

Replicated yield evaluations of Preston were begun in 1975, and statewide performance testing was initiated in 1977. Preston was included in the Uniform Midseason Oat Performance Nursery from 1978 through 1980. In Minnesota tests, it has consistently excelled for protein yield, bushel weight, and groat percentage. It has lodging resistance, grain yield, and maturity about equal to 'Noble'.

Preston has intermediate levels of resistance to loose smut [caused by *Ustilago avenae* (Pers.) Rostr] and some field resistance to crown rust (caused by *Puccinia coronata* Cda. F. sp. *avenae* Erichs & E. Henn.). It also has some tolerance to barley yellow dwarf virus.

The seed of Preston is light ivory in color and fluoresces under ultraviolet light. Its lemmas are medium length and without awns. Spikelet separation is by semiabscission and floret separation is by disarticulation. The stems are medium sized, yellow, and have fine hairs at the upper culm nodes. The leaf margins are glabrous and the leaf sheaths are hairless. A ligule is present. The panicle is equilateral, medium sized and has spreading branches.

Preston is best adapted to the central portion of the Midwest oat growing region. It should be valuable as a companion crop in forage establishment because of its earliness, short height and lodging resistance.

Seed of Preston was released to certified growers in Minnesota and South Dakota in 1982.

Breeder seed will be maintained by the Minnesota Crop Improvement Assoc., 1900 Hendon Ave., St. Paul, MN 55108.

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References and Notes

1. Professor, Dep. of Agronomy and Plant Genetics; research plant pathologist, USDA-ARS, and associate professor, Dep. of Plant Pathology; professor, Dep. of Plant Pathology; research geneticist, USDA-ARS, and associate professor, Dep. of Agronomy and Plant Genetics; and professor emeritus, Dep. of Plant Pathology, Univ. of Minnesota, S. Paul, MN