

REGISTRATION OF CROP CULTIVARS

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REGISTRATION OF ACALA 1517-77
UPLAND COTTON¹

(Reg. No. 77)

C. E. Barnes, D. D. Davis, N. R. Malm, C. L. Roberts,
and R. L. Wood²

'ACALA 1517-77' cotton (*Gossypium hirsutum* L.) was released by the New Mexico Agric. Exp. Stn. in 1977. It originated as a single plant selection from 'Acala 1517-70.' Acala 1517-77 was tested for 5 years as strain B3-1. The original plant selection was slightly atypical and appeared to have resulted from an outcross of Acala 1517-70 with a storm resistant type. The parents and development of Acala 1517-70 were described in 1978.³ The plants of Acala 1517-77 are about 5 cm shorter than Acala 1517-70. The plant shape is narrower than that of Acala 1517-70, due to shorter sympodial branches.

Bolls of Acala 1517-77 are narrowly ovate and average 6.4 g of seed cotton, compared with 7.0 g for Acala 1517-70. Seeds are quite fuzzy and medium-large, and the lint percentage averages 35 to 37 for hand-picked samples, compared with 36 to 38 for Acala 1517-70. Seed index averages about 13, the same as for Acala 1517-70.

Acala 1517-77 produces premium quality fiber averaging 30.5 mm in 2.5% span length, generally classing as 1-1/8. in staple. Fiber uniformity index of Acala 1517-77 averages 2.0 to 2.5 units higher than that of Acala 1517-70. Micronaire of Acala 1517-70 and Acala 1517-77 averaged nearly the same over 5 years of testing. Fiber strength as measured on the digital fibrograph and fiber elongation are higher in Acala 1517-77 than in Acala 1517-70, by 6% and 17%, respectively. Yarn strength (miniature spinning 22's) of Acala 1517-77 averaged 147 grams force per tex, compared with 141 for Acala 1517-70.

Acala 1517-77 is moderately tolerant to *Verticillium albo-atrum* Reinke and Berth and resistant to races 1 and 2 of bacterial blight caused by *Xanthomonas malvacearum* (E. F. Smith) Dows. The cultivar is mildly tolerant to *Fusarium* wilt caused by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyder and Hans.

Bolls of Acala 1517-77 have slight storm resistance, and there is less stringing of the seed cotton during adverse weather.

Over the 5 years of testing, Acala 1517-77 showed an average yield advantage of 13% over Acala 1517-70. During the same period, Acala 1517-77 produced 5% more yield than 'Acala 1517-75.' The earliness of Acala 1517-77 compared with Acala 1517-70 gave 10% more of the total crop at first picking.

Breeder seed will be maintained by the New Mexico Agric. Exp. Stn.

¹ Registered by the Crop Sci. Soc. Journal article 728, Agricultural Experiment Station, New Mexico State Univ., Las Cruces, NM 88003. Accepted 15 Oct. 1979.

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³ Davis, D. D., N. R. Malm, C. R. Roberts, C. F. Chew, C. E. Barnes, G. Staten and R. L. Wood. 1978. Registration of Acala 1517-70 cotton. Crop Sci. 18:164.

REGISTRATION OF ACALA 1517E-2
UPLAND COTTON¹

(Reg. No. 78)

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'ACALA 1517E-2' cotton (*Gossypium hirsutum* L.) was released by the New Mexico Agric. Exp. Stn. in 1978. It originated as a single plant selection from 'Acala 1517E-1.' Plant-to-row selection for six generations resulted in strain B344. After 4 years of testing, this strain was released as Acala 1517E-2. The development of Acala 1517E-1 has been described earlier.³

Plants of Acala 1517E-2 are pyramidal and about 2 cm shorter than Acala 1517E-1. Acala 1517E-2 is similar to Acala 1517E-1 in maturity and averaged 9% higher yield. Acala 1517E-2 matures 3 to 4 days earlier than 'Acala 1517-75.'

In short, cool seasons, Acala 1517E-2 has outyielded the standard full season Acala 1517 cultivars, but it often yields lower than these full-season cultivars in long, hot seasons, especially on poor soils. Because of earliness and short stature, Acala 1517E-2 is not as likely to become rank or vegetative when grown on highly fertile soils.

Acala 1517E-2 is moderately tolerant to damage from *Verticillium albo-atrum* Reinke and Berth and resistant to races 1 and 2 of bacterial blight caused by *Xanthomonas malvacearum* (E. F. Smith) Dows. The cultivar is mildly tolerant to *Fusarium* wilt caused by *Fusarium oxysporum* f. sp. *vasinfectum* (Atk.) Snyder and Hans.

Bolls of Acala 1517E-2 are ovate, usually 4-locked, averaging about 6.5 g of seed cotton. Seed index is approximately 13, and lint percentage of hand-picked bolls ranges from 38 to 40, about 1.5% higher than Acala 1517E-1.

Acala 1517E-2 has slightly shorter fiber than the full season Acala 1517 cultivars, with an average 2.5% span length of 30 mm, measured on the digital fibrograph. Fiber strength and elongation are similar to those of other Acala 1517 full season cultivars, but fiber uniformity and particularly micronaire are higher. Micronaire averages about 0.2 unit higher than 'Acala 1517-77' and 0.4 unit higher than Acala 1517-75. The fiber quality of Acala 1517E-2 and Acala 1517E-1 are similar. The genetic potential for uniform, high micronaire fiber is an advantage under cultural conditions that tend to delay fiber maturity, such as excess soil fertility or water, and/or short, cool seasons.

Breeder seed will be maintained by the New Mexico Agric. Exp. Stn.

¹ Registered by the Crop Sci. Soc. Am. Journal Article 729, Agricultural Experiment Station, New Mexico State Univ., Las Cruces, NM 88003. Accepted 15 Oct. 1979.

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³ Davis, D. D., N. R. Malm, C. R. Roberts, C. E. Barnes and R. L. Wood. 1978. Registration of Acala 1517E-1 cotton, Crop Sci. 18:165.

REGISTRATION OF NEW MEXICO
VALENCIA C PEANUT¹

(Reg. No. 24)

D. C. Hsi²

'NEW Mexico Valencia C' is a Valencia-type peanut (*Arachis hypogaea* L.) with bunch growth habit. It was developed by selection in New Mexico from P.I. 355987, introduced in 1971 as one of the 40 lines selected from irradiated seeds of 'Colorado Manfredi' at the Manfredi, Argentina Research Station. It was named and released by the New Mexico State Univ. Agric. Exp. Stn. in 1979.

N.M. Valencia C outproduced 'N.M. Valencia A' in 11 of 16 tests, averaging 6% higher yield from 1972 to 1978. N.M. Valencia C averaged 8% yield increase over 'McRan' during 1975 to 1978. N.M. Valencia C has nearly the same percentage of three and four seeded pods (68%) as N.M. Valencia A (69%) and a higher percentage than McRan (65%). It has larger seed (49 g/100 seed) and a higher shelling percentage (76%) than the other two cultivars (both measuring 47 g/100 seed and 75% respectively). Its seed has red testa.

Both N.M. Valencia C and N.M. Valencia A have longer pods than McRan (31.2, 31.9, and 29.2 mm respectively). In overall pod circumference, N.M. Valencia C and McRan are approximately equal (41.1 and 41.0 mm respectively) and both are larger than N.M. Valencia A (39.6 mm). The larger pods of the new cultivar are preferred by local processors and buyers.

¹ Registered by the Crop Sci. Soc. Am. Journal Article 726 of the Agric. Exp. Stn., New Mexico State Univ., Las Cruces, NM 88003. Accepted 1 Oct. 1979.

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³ Analyses conducted by Dickinson Laboratories, Inc., of El Paso, Tex.