

1517-75 averaged 1054 kg lint/ha, which was 105 and 111% of Acala 1517V and 'Acala 1517-70', respectively.

Boll size (6.6 g seed cotton) is smaller than that of Acala 1517V (7.1 g). Seed index has averaged 13.1 g/100, compared to 13.5 g/100 for Acala 1517V. Lint percentage, 2.5% span, micronaire, tensile strength, and 22's yarn strength have averaged essentially the same as for Acala 1517V.

Acala 1517-75 has compact, ovate, well-shaped open bolls with the seed cotton firmly held in the burr which, combined with the plant type, makes it ideally suited for harvesting with the spindle picker.

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

REGISTRATION OF ACALA 1517E-1 COTTON¹ (Reg. No. 68)

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

'ACALA 1517E-1' was developed from a cross of 'Acala 3080' × 'Pee Dee 2165' made at New Mexico State Univ.³

The Acala 3080 parent originated from a cross of 'Acala 9136' × Acala 49 × Hartsville. Acala 49 and Hartsville were breeding lines with moderate resistance to *Verticillium* wilt. Acala 9136 came from a complex cross involving *G. barbadense* 'Tanguis' introgression into *G. hirsutum*, and carries genes for resistance to races 1 and 2 of *Xanthomonas malvacearum* (E. F. Smith) Dows⁴. Plant-to-row selection procedures resulted in strain B8040 which was bulked as an F₅ in 1971. After 4 years testing this strain was released as Acala 1517E-1 in 1976.

Plants of Acala 1517E-1 are pyramidal in shape, and the shortest statured of all Acala 1517 cultivars, growing about 80% as tall as 'Acala 1517C' under the same conditions.

Acala 1517E-1 is fully 1 week earlier in maturity than all other Acala 1517 types, with the single exception of Acala 1517-75 which matures about 3-4 days later than Acala 1517E-1. In short, cool seasons Acala 1517E-1 has outyielded the old standard types, but often falls below the standard types in long hot seasons, especially on poor soils. Owing to early bloom and short stature, Acala 1517E-1 is not as likely to become rank or vegetative when grown on highly fertile soils.

Acala 1517E-1 is moderately resistant to damage from *Verticillium albo-atrum* Reinke and Berth, and resistant to races 1 and 2 of bacterial blight *Xanthomonas malvacearum* (E. F. Smith) Dows. The cultivar is only mildly tolerant to *Fusarium* wilt.

Bolls of Acala 1517E-1 are ovate, usually 4-locked, averaging about 6.6 g of seed cotton. Seed index ranges near 13 g/100, and lint percentage of hand-picked bolls is from 36 to 39%.

Acala 1517E-1 has slightly shorter fiber than other Acala 1517 types, with an average 2.5% span of 30 mm as measured on the digital fibrograph. Fiber strength and elongation are very similar to other Acala 1517 cultivars but fiber uniformity and particularly micronaire are higher. Micronaire generally runs about 0.4 units higher than other Acala 1517 types grown under similar cultural conditions. The genetic potential for uniform, high micronaire fiber is an advantage under cultural conditions that tend to delay maturity of the fiber, 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 Science Society of America. Accepted 23 Sept. 1977.

² Associate professor, professor, research specialist, associate professor, and associate Professor, respectively, Dep. of Agronomy, New Mexico State Univ., Las Cruces, NM 88003.

³ Culp, T. W., and D. C. Harrell. 1974. Breeding quality cotton at the Pee Dee Experiment Station, Florence, South Carolina. ARS-5-30. 12 p.

⁴ Staten, G. 1971. Breeding Acala 1517 Cottons, 1926 to 1970. New Mexico State Univ. College of Agric. and Home Econ. Mem. Ser. No. 4. 48 p.

REGISTRATION OF THEIS SWEET SORGHUM¹ (Reg. No. 117)

Dempsey M. Broadhead, K. C. Freeman, O. H. Coleman, and
Natale Zummo²

'THEIS' is a sirup-type sweet sorghum, *Sorghum bicolor* (L.) Moench, developed at the U. S. Sugar Crops Field Station, Meridian, Miss., in the cooperative research program of the ARS-USDA and the agricultural experiment stations of Alabama, Florida, Georgia, and Mississippi.

Theis was selected from the progeny of a cross between 'Wiley' × 'C.P. Special' and PI 152965 (MN 1054) × Mer. 51-2 ('White African') × PI 139466 (Mn 660). The cultivar was selected from the F₂ progeny in 1962 at Meridian, Miss., and was evaluated under the breeding number Mer. 67-10. Theis has an erect and semi-compact panicle. Pubescence on the black glumes is semi-deciduous except on the callus, where the hairs are somewhat longer and more persistent. The glumes have a sharp apex and cover about one-third of the caryopses. The glumes do not clasp the seed at maturity and are nonpersistent in the threshed seed. The large, brown, near-orbicular seeds are flatter on the dorsal side than on the ventral side. Theis has a soft, chalky seed coat and mostly corneous endosperm. The seed is free of a brown subcoat, and the lemma is awnless.

Theis matures in 120 to 140 days. It is similar to Wiley in height, but it is far superior to Wiley in lodging resistance. The stalks are practically free of the external waxy bloom common to most sweet sorghum varieties. Theis is highly resistant to leaf anthracnose and stalk red rot, both caused by *Colletotrichum graminicolum* (Ces.) G. W. Wils. It is tolerant to maize dwarf mosaic virus and moderately resistant to downy mildew, *Sclerospora sorghi*, Weston and Uppal. Theis is tolerant to most cotton insecticides; consequently, it is far superior to 'Brandes' in this respect.

Theis was released for sirup production in the southeastern USA in 1974. It produces sirup with a mild sorghum flavor, good color, and excellent quality. Information on sirup production of Theis has been published.³

Breeder seed will be maintained by the Foundation Seed Stocks Program, Mississippi State Univ., Mississippi State, MS 39762 and the U. S. Sugar Crops Field Station, Meridian, MS 39301.

¹ Registered by the Crop Science Society of America. Cooperative investigations of the ARS-USDA and the Agric. Exp. Stns. of Alabama, Florida, Georgia, and Mississippi. Accepted 23 Sept. 1977.

² Research agronomists, collaborator, and plant pathologist, U. S. Sugar Crops Field Station, ARS-USDA, Meridian, MS 39301.

³ Broadhead, D. M., K. C. Freeman, O. H. Coleman and Natale Zummo, 1974. Theis, a new variety of sweet sorghum for sirup production. Mississippi Agric. Forestry Exp. Stn. Res. Highlights 37 (5):4.

REGISTRATION OF CABREE RUSSIAN WILD RYE¹ (Reg. No. 45)

S. Smoliak²

'CABREE' Russian wildrye (*Elymus junceus* Fisch.) was developed at the Agriculture Canada Research Station, Lethbridge, Alberta. The cultivar was tested in the Prairie Provinces under the designation LRS 6757 before being released as Cabree. License number 1638 was granted by the Production and Marketing Branch, Agriculture Canada, in March 1976.

Cabree is a six-clone synthetic with resistance to seed shattering. The original selection of plants with excellent seed retention was made in 1955 at the Agriculture Canada Research Substation, Manyberries, Alberta, in a field seeded in 1952 with commercial seed of unknown origin. Subsequent selection of selfed plants was on the basis of good seed retention, forage yield, seed yield, and seedling vigor in replicated clonal and polycross progeny tests. The synthetic was evaluated in 32 tests at 7 locations for forage production and in 26 tests at 6 locations