

strength (cN/tex) 19.68 vs. 18.72; yarn tenacity (cN/tex) (1978) 10.40 vs. 10.60; and E_1 fiber elongation (%) 6.56 vs. 8.29.

High productivity potential, early maturity, multiple disease resistance and fiber characteristics of HYC76-59 are important considerations for its use in cotton breeding and development of inter/intra-specific hybrid cultivars.

Seed of HYC76-59 will be maintained by the Missouri Agricultural Experiment Station. Small quantities of seed can be obtained from W. P. Sappenfield, University of Missouri, Delta Center, P.O. Box 160, Portageville, MO 63873.

ACKNOWLEDGMENTS

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REGISTRATION OF PEE DEE 4548 GERMPLASM LINE OF COTTON¹ (Reg. No. GP 161)

T. W. Culp²

PEE Dee 4548 (GP 161), an improved breeding line of upland cotton (*Gossypium hirsutum* L.) was released to plant breeders and geneticists by AR-SEA-USDA, and the South Carolina Agric. Exp. Stn. in 1981. This breeding stock possesses high yield potential, high fiber and yarn strength, unusually high lint percentage, and wide adaptation.

Pee Dee 4548 is from the seed increase of a single F_3 plant from the cross Pee Dee 4381³ × Pee Dee 8623. Pee Dee 8623 was developed from a series of crosses involving 'Coker 421,' Triple Hybrid 171, Sealand 7, Earlistaple, C 6-5, and 'Dixie King.'

The simultaneous improvement of lint yield and fiber strength has been a persistent problem in cotton breeding. Pee Dee 4548 produced lint yields equivalent to those of SC-1, the highest yielding check cultivar, and fiber and yarn strengths significantly above those of Pee Dee 2165, the superior fiber quality check, from 3 years of testing in South Carolina and Georgia. Pee Dee 4548 produced the highest average lint yield among the breeding lines with improved fiber strength in the 1978 Regional High Quality Test. Its yields also were comparable with those of the check cultivars, 'Stoneville 213' and 'Coker 310,' and its fiber strength and yarn tenacity approached that of 'Acala SJ-5.' The high lint yield probably resulted from more than 5% increase in lint percentage over that of the check cultivars and the wide adaptation of this breeding line. Since Pee Dee 4548 has the highest lint percentage and the widest range of adaptability of any high quality breeding line that we have developed, it should be valuable germplasm for use in cotton improvement programs.

Seed (25 g) of Pee Dee 4548 may be obtained from AR-SEA-USDA, Pee Dee Experiment Station, P.O. Box 2131, Florence, SC 29503.

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²Research agronomist, AR-SEA-USDA, Pee Dee Experiment Station, Florence, SC 29503.

³Harrell, D. C., and T. W. Culp. 1979. Registration of Pee Dee 4381 germplasm line of cotton. Crop Sci. 19:418.

REGISTRATION OF WH-1 BLUE LUPINE GERMPLASM¹ (Reg. No. GP 1)

Homer D. Wells and John D. Miller²

WH-1 blue lupine (*Lupinus angustifolius* L.), a winterhardy selection from P.I. 168,535, was jointly released by AR-SEA-USDA and the Univ. of Georgia Agric. Exp. Stn. An introduction from Portugal, P.I. 168535 apparently was a heterogeneous mixture or heterozygous for a number of factors because other valuable traits have been found in this introduction (1, 2, 3, 4).

During late December 1958 the temperature dropped to ca - 18 C

at the Georgia Mountain Stn., Blairsville, and all breeding lines and introductions of blue lupines were killed except for P.I. 168,535. Although some plants of this introduction were severely damaged, a few plants showed only minor leaf-tip-burn. In mid-January 1959, a few of the plants showing the least cold damage were transplanted to Tifton and constitute the parent line of WH-1.

WH-1 blue lupine is a freeze tolerant, gray leaf spot (incited by *Stemphylium solani* Weber and *S. botryosum* Walls.) resistant, fine-stemmed, branching phenotype that grows slowly at cool temperatures; has a dark-green, purplish cast plant color that is accentuated during cool weather; is bitter (high alkaloid) and late maturing. Seeds are small, cream-colored with tan specks, shatter immediately after pods mature and have an extremely impervious seed coat after drying.

Because of its freeze tolerance WH-1 can grow without damage at temperatures of 5 to 10 C lower than other cultivars or breeding lines of blue lupines. The additional freeze resistance apparently is conditioned by one major dominant gene and a number of modifiers (3). A portion of the resistance may be directly related to the slower growth during cool temperatures and later maturity, but we have not been able to separate these factors in 'Frost' and 'Tifblue-78' cultivars developed from this source of winterhardiness.

Breeder seed will be maintained by AR-SEA-USDA at the Coastal Plain Station, Tifton, Georgia. Small quantities (up to 50 g) will be provided forage researchers upon written request. Address requests to Drs. Miller or Wells, Coastal Plain Station, Tifton, GA 31793.

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¹Registered by Crop Sci. Soc. of Am. Cooperative investigations, AR-SEA-USDA, and Univ. of Georgia Agric. Exp. Stn. Accepted 19 June 1981.

²AR-SEA-USDA, plant pathologist and agronomist, respectively.

REGISTRATION OF SIX PEANUT GERMPLASM LINES¹ (Reg. Nos. GP 12 to GP 17)

Ray O. Hammons²

SIX lines of peanut (*Arachis hypogaea* L.) were released to scientists by AR-SEA-USDA and the University of Georgia Agric. Exp. Stn., Coastal Plain Station in March 1981. These lines possess resistance to *Cylindrocladium* black rot (CBR), a disease caused by the soil-borne fungus *Cylindrocladium crotalariae* (Loos) Bell and Sobers [perfect state, *Calonectria crotalariae* (Loos) Bell and Sobers].³ There is no known effective control using chemicals or cultural practices.

The new peanut lines were developed by a repeated single-plant selection program. About 25,000 seedlings from 1,072 germplasm accessions were grown in media infested with a homogenized blend of five 14-day-old cultures of *C. crotalariae*. Seedlings showing no lesions after 9 days in growth chambers were transplanted to soil. Following seed increase, two or more additional cycles of individual progeny selection for resistance were practiced.

¹Registered by the Crop Sci. Soc. of Am. Accepted 3 June 1981.

²Supervisory research geneticist AR-SEA-USDA, Crops Research, cooperative with Univ. of Georgia College of Agriculture Coastal Plain Station, Tifton, GA 31793.

³Bell, D. K., and E. K. Sobers. 1966. A peg, pod, and root necrosis of peanuts caused by a species of *Calonectria*. Phytopathology 56:1361-1364.