fumigated, and infested with PA. All subsequent screening tests in the development of N-2 involved the screening of young seedlings for PA resistance, followed by the infestation of PA-resistant selections with YCA after selected plants were cut back and fumigated. Resistant plants selected for propagation were intercrossed at random by honey bees (Apis mellifera) in a greenhouse cage, or were transplanted to isolated field plots for interpollination.

Following the fourth selection cycle for YCA resistance and the second for PA resistance, a “resistant composite” was formed that consisted of open-pollinated seed from each of 322 plants. Each of the 27 plants (representing 13 entries) initially selected for YCA resistance could have contributed germplasm to these 322 plants. However, only six maternal sources were represented in the pedigrees of the 322 plants. These sources and the percentages of the 322 plants each contributed were as follows: Chesapeake, 65%; Beltville Early Flowering Synthetic, 15%; Maryland Selection 67-A2, 10%; Illinois No. 2, 8%; Beltville Medium Flowering Synthetic, 5%; and Illinois No. 1, 1%. The level of resistance to both aphids in the resistant composite was substantially greater than that in the original germplasm sources. The percentage of YCA-resistant plants increased from 0.9% in the initial screening to 95.6% in the resistant composite (fifth selection cycle). Similarly, PA resistance increased from 27.5% resistant plants in the first screening test (germplasm in this test had undergone two cycles of selection for YCA resistance) to 95.7% in the resistant composite following the third screening test for PA resistance. N-2 is based on 198 plants highly resistant to both aphids that were selected from the resistant composite during the third selection cycle for PA resistance and the fifth selection cycle for YCA resistance. All seed harvested from the 198 resistant plants was bulked to form N-2.

N-2 was developed and released cooperatively by the USDA, SEA, AR, and the Nebraska Agricultural Experiment Station. Small quantities of seed are available upon request from the Department of Agronomy, University of Nebraska, Lincoln, NE 68583.


germplasm lines were increased from those progeny of a single plant selected in the pedigrees of Dee 0259 and Pee Dee 2165 have been developed by the USDA, ACNA 259 and AC-FJA 165, respectively.

Pee Dee 0259 produces about 90% as much lint as Coker 201 and its lint percentage, fiber length, and micronaire are equivalent in value. Fibers of Pee Dee 0259 are rougher than those of this commercial check. Pee Dee 2165 is early and has a strong tendency to be determinate in growth habit, particularly under stress conditions. It lacks storm resistance.

Pee Dee 2165 has better lint percentage, fiber length, and fiber strength than Pee Dee 0259 and most southeastern cultivars. Its 15% improvement in fiber strength is characterized by a yield reduction relative to these characteristics. Pee Dee 2165 has proven to be a good commercial cultivar used successfully to improve the fiber quality of commercial cultivars.

Pee Dee 0259 and Pee Dee 2165 represent a significant step in overcoming the adverse relationship between lint yield and fiber strength in upland cotton. Seed of the developing stock may be obtained from AR-SEA-USDA, Pee Dee Experiment Station, Florence, SC 29503.

REGISTRATION OF PEE DEE 4381 (GP 41)
Germlasm Line of Cotton

D. C. Harrell and T. W. Culp

Pee Dee 4381 (GP 41), a breeding line of cotton (Gossypium hirsutum L.) with extra fiber strength, was developed at the South Carolina Agricultural Experiment Station and AR-SEA-USDA, in 1986. This breeding line represents a major improvement in lint yield while it maintains a portion of the extra fiber strength of the parents.

Pee Dee 4381 was selected from the cross AC 239. AC 239 is a PD line developed by Hybrid 313 or Line A with the California Line A was developed from complex crosses of Hybrid 171, ‘Seald 7’, and ‘Earlistaple’. Pee Dee 4381 is the result of the cross of a single plant selection in the F2 generation.

Pee Dee 4381 produces lint yields equal to those of ‘Coker 201’, but it has fibers that are longer, finer, and possess a higher micronaire, equivalent to these characteristics in the commercial check. Pee Dee 4381 represents a significant step in the development of lint and fiber strength in upland cotton.

Pee Dee 4381 has a high level of resistance to fusarium wilt root-knot nematode complex. In the Wilt Test at Tallasee, Ala., it had 0.4% wilt root-knot nematode complex. The combine seed harvested from the 198 resistant plants was bulked to form N-2.

N-2 was developed and released cooperatively by the USDA, SEA, AR, and the Nebraska Agricultural Experiment Station. Small quantities of seed are available upon request from the Department of Agronomy, University of Nebraska, Lincoln, NE 68583.

REGISTRATION OF PEE DEE 0259 AND PEE DEE 2165 GERMLASM LINES OF COTTON
(Reg. No. GP 39 and GP 40)

D. C. Harrell and T. W. Culp

Pee Dee 0259 and Pee Dee 2165 are breeding lines of cotton (Gossypium hirsutum L.) with extra fiber strength, produced at the South Carolina Agricultural Experiment Station and AR-SEA-USDA, in 1968. These breeding lines represent a major improvement in lint yield while it maintains a portion of the extra fiber strength of the parents.

Pee Dee 0259 was produced from the cross AC 239. AC 239 is a PD line developed by Hybrid 313 or Line A with the California Line A was developed from complex crosses of Hybrid 171, ‘Seald 7’, and ‘Earlistaple’. Pee Dee 4381 is the result of the cross of a single plant selection in the F2 generation.

Pee Dee 4381 produces lint yields equal to those of ‘Coker 201’, but it has fibers that are longer, finer, and possess a higher micronaire, equivalent to these characteristics in the commercial check. Pee Dee 4381 represents a significant step in the development of lint and fiber strength in upland cotton.

Pee Dee 4381 has a high level of resistance to fusarium wilt root-knot nematode complex. In the Wilt Test at Tallasee, Ala., it had 0.4% wilt root-knot nematode complex. The combine seed harvested from the 198 resistant plants was bulked to form N-2.

N-2 was developed and released cooperatively by the USDA, SEA, AR, and the Nebraska Agricultural Experiment Station. Small quantities of seed are available upon request from the Department of Agronomy, University of Nebraska, Lincoln, NE 68583.

REGISTRATION OF PEE DEE 4381 (GP 41)
Germlasm Line of Cotton

D. C. Harrell and T. W. Culp

Pee Dee 4381 (GP 41), a breeding line of cotton (Gossypium hirsutum L.) with extra fiber strength, was developed at the South Carolina Agricultural Experiment Station and AR-SEA-USDA, in 1968. This breeding line represents a major improvement in lint yield while it maintains a portion of the extra fiber strength of the parents.

Pee Dee 4381 was selected from the cross AC 239. AC 239 is a PD line developed by Hybrid 313 or Line A with the California Line A was developed from complex crosses of Hybrid 171, ‘Seald 7’, and ‘Earlistaple’. Pee Dee 4381 is the result of the cross of a single plant selection in the F2 generation.

Pee Dee 4381 produces lint yields equal to those of ‘Coker 201’, but it has fibers that are longer, finer, and possess a higher micronaire, equivalent to these characteristics in the commercial check. Pee Dee 4381 represents a significant step in the development of lint and fiber strength in upland cotton.