Registration of ‘Fowler’ Soybean

‘Fowler’ soybean [Glycine max (L.) Merr.] (Reg. no. CV-421, PI 613195) was developed by the USDA-ARS, in cooperation with the University of Tennessee Agricultural Experiment Station and the North Carolina Agricultural Research Service. It was released in 1999 to provide a cultivar of Group V maturity with high yield potential and resistance to soybean cyst nematode (SCN) (Heterodera glycines Ichinohe). Races 2, 3, 5, and 14 (6). Fowler is best adapted to production areas between 34° and 37° N lat.

Fowler is an F2 bulk of a single-plant selection made in the F3 from the cross ‘Hartwig’ × ‘Holladay’ (1, 2). The F2 plants of the cross were challenged with a mixture of SCN Races 2, 3, 5, and 14 in the greenhouse during the spring of 1992. Resistant plants were transplanted to the field for seed production. The transplants were progeny tested in each succeeding generation for resistance to the four SCN races in separate tests. A single plant was chosen from a progeny row in each of the F3, F4, and F5 generations, and the remainder of the row was bulked for yield evaluation during the next year. One hundred and twenty F5 plants were selected from the border rows of yield plots, tested for resistance to each of the four SCN races, and grown in progeny rows in the field for selection for uniformity of flower, pubescence, pod wall color, plant growth, and maturity. Selected rows were bulked in the F10 generation.

Fowler matures ~1 d later than ‘Hutcheson’ (3). It has determinate plant type, white flower, tawny pubescence, and tan pod wall. Seeds are shiny yellow with black hilum. Fowler has been confirmed to be resistant to SCN Races 2, 3, 5, and 14 and by greenhouse tests. It may have resistance to other SCN races because the resistant parent, Hartwig, is resistant to most races of the nematode. Fowler is susceptible to stem canker [caused by Diaporthe phaseolorum (Cook & Ellis) Sacc. var. meridionalis F.A. Fernandez] and root-knot nematodes [Meloidogyne arenaria (Neal) Chitwood and M. incognita (Kofoid & White) Chitwood]. Fowler, tested as J94-7, averaged 3.4 bushels per acre less than Hutcheson in the Tennessee variety trials in 1997 (4), one bushel per acre less in 1998 (5), and two bushels per acre less than Hutcheson in the Uniform Soybean Tests Southern Sates Maturity Group V tests in 1997 and 1998 (7, 8). In four fields infested with either SCN Race 2 or 5, Fowler averaged four bushels per acre more than Hutcheson and had only 17% of the nematodes occurring in Hutcheson plots at harvest. Fowler averaged 8 to 16 bushels per acre more than Hartwig in 1994 to 1995 and in 1997 in tests in western Tennessee.

Breeder seed will be maintained by USDA-ARS, Crop Genetics and Production Research Unit, P.O. Box 345, Stoneville, MS 38776-0345. One hundred seed of Fowler can be obtained for research purposes from the corresponding author for at least five years. U.S. plant variety protection for Fowler will not be applied for.

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References and Notes

9. L.D. Young, USDA-ARS, P.O. Box 345, Stoneville, MS 38776-0345. Registration by CSSA. Accepted 30 Jun. 2000. *Corresponding author (ldyoung@ars.usda.gov).