Registration of 'Charleston' Soybean

'Charleston' soybean [Glycine max (L.) Merr.] (Reg. no. CV-329, PI 567902) was developed jointly by the USDA-ARS and the Ohio Agricultural Research and Development Center. It was released in 1992 as a high-yielding, lodging-resistant determinate semidwarf cultivar with specific adaptation to highly productive environments, where lodging is frequently a problem with taller indeterminate cultivars of similar maturity (1,2).

Charleston was derived from an F₄ plant selected from the cross of two unreleased Maturity Group III determinate semidwarf lines, HC74-634RE × HC78-676. HC74-634RE is from the cross 'Williams' × 'Ransom'. HC78-676 is from the cross L70T-543G × L74D-619. L70T-543G is an indeterminate line from L15 × 'Amsoy 71' (8). L74D-619 is a phytophthora-resistant (Rps-5) backcross isolate of 'Wayne' (4). L74D-619 is a determinate semidwarf line from Williams × Ransom. The cross between HC74-634RE and HC74-676 was made in 1982 at the USDA-ARS Agricultural Research and Development Center, Wooster, OH. Charleston is an F₅-derived F₄ line that was evaluated for yield in Ohio from 1985 to 1987. It was tested in the Uniform Soybean Tests, Northern States, from 1988 to 1991 under the designation HC85-6724.

Charleston is a determinate semidwarf (dt,e) cultivar adapted to the central Midwest, where Maturity Group III cultivars are normally grown. Charleston matures ~1 d later than the semidwarf cultivar Hobbit 87 (3), averaging 5 cm taller in plant height and 5 to 10% higher in seed yield. It has purple flowers, tawny pubescence, tan pods at maturity, and yellow seedcoat with black hila. Plant height averages 60 cm, compared with 80 cm for Resnik, an indeterminate cultivar (7), resulting in greater lodging resistance (1,2). Charleston is recommended specifically for high-yield environments (>3300 kg ha⁻¹), with solid-seeding and 17-cm row spacing at a seeding rate of 675 000 viable seeds ha⁻¹. It is tolerant to phytophthora rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann) (9).

Breeder seed of Charleston was distributed to foundation seed organizations in Iowa, Missouri, and Ohio for planting in 1992. Breeder seed of Charleston will be maintained by the Ohio Agricultural Research and Development Center, Wooster, OH 44691. Plant Variety Protection for Charleston is pending. Small quantities of seed for research purposes can be obtained from the corresponding author for at least 5 yr.


References and Notes


Published in Crop Sci. 35:592 (1995).

Registration of 'TAM 300' Wheat

'TAM 300' hard red winter wheat (Triticum aestivum L.) (Reg. no. CV-797, PI 576151) was developed by the Texas Agricultural Experiment Station (TAES) and released in 1993. TAM 300, whose experimental designation was TX86D1332, has the pedigree 'TAM 106'/Collin'. TAM 106 (1) was released by TAES as an improved hard red winter wheat cultivar in 1979, and has the pedigree 'Sturdy' sib (TX391-56-D8)/'Tascosa'/?Centurk'. Collin (2) was released as an improved hard red winter wheat cultivar by TAES in 1986, and has the pedigree 'Agent'/Tascosa/?Sturdy'. The cross (X306D) that produced TAM 300 was made in the greenhouse at Dallas in 1980. The progeny were grown as a bulk population in the field at Dallas from the 1982 through 1985 growing seasons. An F₅ plant from the cross was selected in the spring of 1985 at Dallas. The selection, TX86D1332, was entered into state performance tests in the fall of 1989, following 4 yr of testing in the northern Blacklands of Texas. From 1989 to 1992, performance tests were conducted at 14 locations in Texas (56 location-years). TX86D1332 was entered into the USDA Southern Regional Performance Nursery in 1990 and 1991. In 1989, 500 F₃ heads were selected, grown as single rows, and evaluated visually for uniformity. In 1990, 289 of the uniform rows were bulked to form the initial breeder seed of TAM 300.

TAM 300 is an awned, semidwarf, brown-chaff wheat. TAM 300 reaches 50% spike emergence (heading date, in days from 1 January, or DOY) at approximately the same time as 'Thunderbird', and 'Siouxland 89' at Dallas, TX. The average calendar heading date for TAM 300 at Dallas was DOY 104, compared with DOY 94 for Collin, DOY 97 for '2180', and DOY 98 for 'Chisholm'. At locations on the plains of Texas, TAM 300 had an average heading date of DOY 107, 1 d earlier than Thunderbird and 1 d later than TAM 200. The height of TAM 300 is about the same as Thunderbird, slightly taller than Chisholm and TAM 200, and somewhat shorter than Siouxland 89. The winterhardiness of TAM 300 is similar to Thunderbird and better than Collin and TAM 200. The plant color of TAM 300 at boot stage is green. The heads are tapering and dense, and the outer glumes are long and midwide, with wanting shoulders and acuminate beaks. Kernels are oval shaped, with rounded cheeks and a short brush.

The majority of TAM 300 plants possess the leaf rust (caused by Puccinia recondita Roberge ex Desmar.) resistance genes Lr1, Lr10, and Lr16. However, some TAM 300 plants possess only Lr2a and Lr24, while other plants possess only Lr24. These latter two plant types each occur at a frequency of about 1 in 1000, and are morphologically indistinguishable from the majority plant type. TAM 300 is resistant to soilborne mosaic virus, moderately resistant to stem rust (caused by P. graminis Pers.:Pers. f. sp. tritici Eriks. & E. Henn.), moderately susceptible to powdery mildew (caused by Erysiphe graminis DC. f. sp. tritici Ém. Marchal), and susceptible to wheat streak mosaic virus and to the populations of greenbug [Schizaphis graminum (Rondani)] and Hessian fly [Myietaula destructor (Say)] prevalent in the southern Great Plains.

In 3 yr of testing in the Texas Blacklands, TAM 300's grain

Published March, 1995