Registration of ‘Titan’ Soybean

‘Titan’ soybean [Glycine max (L.) Merr.] (Reg. no. CV-400, PI 608438) was developed by the Michigan Agricultural Experiment Station. It was released in February 1998 because of its high yield potential compared with other cultivars of a similar maturity and its partial resistance to sclerotinia stem rot [caused by Sclerotinia sclerotiorum (Lib.) de Bary].

Titan, originally tested as E93147, is an F2-derived line selected from the cross E86067 × ‘Kenwood’ (1). E86067 is an experimental line developed by Michigan State University that has the pedigree A80-145015 × A79-135010. A80-145015 has the pedigree (‘Corsoy’ × ‘Wayne’) × Peterson ‘118-11’ (2,3), with Peterson 118-11 having the pedigree Corsoy × (‘Hawkeye’ × ‘Chippewa’) (4,5). A79-135010 was derived from the cross Pride ‘B216’ × ‘Cumberland’ (6). Pride B216 was developed from the cross Corsoy × Wayne. The cross between E86067 and Kenwood was made during the summer of 1989 in East Lansing, MI. The F2 was grown the following summer, and the F3 and F4 plants were grown in Belize during the winter of 1990–1991. The F4 plants were grown during the summer of 1991 in East Lansing and were individually threshed to composite F5-derived lines. Titan was selected based on yield and visual ratings as an F5 line in 1992 at East Lansing. Further yield evaluations of Titan were conducted in Michigan from 1993 to 1997. Titan was evaluated in the Preliminary Test I of the Uniform Soybean Tests—Northern Region Test (7) in 1995 and the Uniform Test I in 1996 and 1997.

Titan is an indeterminate cultivar with a late Group I maturity and is best adapted to 42° to 44° N lat. In the 1996 to 1997 Uniform Soybean Test I, the maturity of Titan was 4 d later than ‘Parker’ (8) and 1 d earlier than ‘Marcus 95’. Marcus 95 was developed by backcrossing the Rpsl-6 and Rps6 genes into ‘Marcus’ (9). The seed yield of Titan was similar to Marcus 95 and 5% greater than Parker. Titan has better lodging scores than either Marcus 95 or Parker. The seed quality score of Titan is similar to Parker and is better than Marcus 95. The plant height of Titan is similar to Marcus 95 and is 10 cm less than Parker. Compared with Marcus 95, the seed of Titan is 5 mg seed"1 larger, the protein content is 8 g kg"1 less, and oil content is 4 g kg"1 less. Compared with Parker, the seed of Titan is 3 mg seed"1 larger, the protein content is 9 g kg"1 less, and oil content is similar.

Titan has purple flowers, tawny pubescence, brown pods at maturity, and yellow seeds with black hila. Titan does not have a major gene conferring resistance to phytophthora rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann) and is susceptible to brown stem rot (caused by Phialophora gregata (Allington & D.W. Chamberlain) W. Gams). Titan has partial resistance to sclerotinia stem rot.

Application for U.S. plant variety protection will be made for Titan, which will permit only Foundation and Certified classes beyond breeder seed. A small sample of seed for research purposes can be obtained from the corresponding author for at least five years.

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References and Notes


Registration of ‘LS92-1800’ Soybean

‘LS92-1800’ soybean [Glycine max (L.) Merr.] (Reg. no. CV-399, PI 607380) was developed by Southern Illinois University Carbondale and was released for its resistance to soybean cyst nematode (SCN) [Heterodera glycines Ichinohe] races 3, 5, and 14 and moderate resistance to SCN race 4 (8). LS92-1800 is a nonexclusive release for nonspecific brand labeling.

LS92-1800 originated as a composite of 6 sublines selected from LS87-131 that segregated for flower color. LS87-131 originated from an individual F2 plant selection from the cross ‘Fayette’ × ‘Pyramid’ (2,6). The F2 and subsequent generations were advanced by single-pod descents (3). A single F5 plant was selected from an SCN-race-3-infested field. Soybean cyst nematode resistance was determined in subsequent generations by greenhouse evaluation utilizing SCN race 3 infested soil collected from a field near Elkhove, IL, and SCN race 4 infested soil collected from a field near Sandridge, IL. Resistance was confirmed at the University of Missouri by greenhouse evaluation against SCN races 3, 5, and 14. The Race 3 culture was maintained on ‘Hutcheson’ soybean (4). The Race 5 culture was maintained on soybean PI 88788. The Race 14 culture was maintained on ‘Forrest’ soybean (5).

LS92-1800 was evaluated in the Regional SCN Tests (7) and the Uniform Soybean Tests—Northern Region (9) in 1994 and 1995. Seed yield of LS92-1800 was 2.0% higher than ‘Delsoy 4210’ (1). LS92-1311 was evaluated in the Regional SCN Tests and the Uniform Soybean Tests—Northern Region in 1991, 1992, and 1993.

LS92-1800 is indeterminate in growth habit. It has white flowers, tawny pubescence, and tan pod walls and matures 0.2 d later than Delsoy 4210 in a full-season planting. Its range of adaptation is from approximately 36° to 39° N lat. Plant height averages 95 cm, compared with 97 cm for Delsoy 4210. Lodging score averages 1.4, compared with 1.8 for Delsoy 4210. Seedcoats are shiny yellow with black hila. Seed quality scores average 1.6 for LS92-1800, compared with 1.9 for Delsoy 4210. Seed size is approximately 141 mg seed"1, compared with 160 mg seed"1 for Delsoy 4210. Seed composition averages 403 g kg"1 protein and 209 g kg"1 oil on a dry weight basis.

LS92-1800 is moderately resistant to soybean sudden death syndrome [caused by Fusarium solani (Mart.) Sacc. f. sp. glycines]. It is susceptible to Races 1 and 4 of phytophthora rot (caused by Phytophthora sojae).