Registration of ‘Traill’ Soybean

‘Traill’ soybean [Glycine max (L.) Merr.] (Reg. no. CV-371, PI 596541) was developed by the North Dakota Agricultural Experiment Station, North Dakota State University. It was released on 7 Feb. 1997. Traill has high yield potential compared with other cultivars of similar maturity.

Traill is an F4-derived line, originally designated ND90-2624, and has the pedigree M82-996 × ‘Sigco KG20’ (1). M82-996 is an experimental line developed by the University of Minnesota with the pedigree M72-3 × ‘Peterson 1677’. The pedigree of M72-3 is (‘Evans’ × ‘Hodgson’) (2). The pedigree of Peterson 1677 is (‘Rampage’ × ‘Corsoy’) (3). The pedigree of Sigco KG20 is (‘McCall’ × 2S11) (5). The pedigree of 2S11 is [059-903 × ‘Hardome’) (6). The experimental line 059-903 is a Fiskeby III selection (PI 438471) (7).

The cross was made in the summer of 1987 at Fargo, ND, and the F1 plants were grown in a 1987–1988 winter nursery in Chile. The F2 population was grown in the summer of 1988 at Fargo and advanced to the F3 generation by the single-pod bulk method. The population was grown in the 1988–1989 winter nursery in Chile and advanced to the F4 generation by the single-pod bulk method. F4 plants from the segregating population grown in 1989 at Fargo were threshed individually in the fall of 1989 at Fargo and F4 plant-rows were grown and selected in 1990 at Fargo. ND90-2624 was first tested in replicated yield trials in 1991.

Traill was evaluated in the Uniform Soybean Test 00, Northern States, in 1994 and 1996. In 2 yr of Uniform Soybean Test 00, Traill averaged 7% higher in seed yield than ‘Agassiz’ and 12% less in seed yield than ‘Lambert’ (8). Traill was evaluated in the Uniform Soybean Test 01, Northern States, in 1995 and 1996 (8). In 2 yr of Uniform Soybean Test 00, Traill averaged 9% higher in seed yield than Agassiz (9) and 18% higher in seed yield than McCall. Traill matures the same date as Agassiz and 7 d earlier than Lambert. Lodging and seed quality scores of Traill are similar to Agassiz and Lambert. Traill averaged the same plant height as Agassiz and 3 cm shorter than Lambert. Seeds of Traill are 27 mg larger than Agassiz and 8 mg seed larger than Lambert. Protein content of Traill was 434 g kg⁻¹ and oil content of Traill was 198 g kg⁻¹, compared with the protein content of Agassiz of 425 g kg⁻¹ and oil content of 206 g kg⁻¹ on a dry weight basis (10).

Traill has purple flowers, tawny pubescence, brown pod color at maturity, intermediate seed coat luster, yellow hilum, and indeterminate growth habit. A Maturity Group 0 cultivar, Traill is generally adapted as a full-season cultivar from 46 to 48° N lat. Traill was evaluated in the Red River Valley of the North from 1991 to 1996 by the North Dakota State University and University of Minnesota soybean breeding projects, for a total of 26 location-years. In these tests, Traill averaged 4% higher in seed yield than Agassiz and had the same maturity. Traill averaged 8% higher in seed yield than ‘Glacier’ (11) and matured 3 d later. In North Dakota test locations, the average iron chlorosis score was 1.3 for Traill, 1.2 for Agassiz, and 2.0 for Glacier. Iron chlorosis was visually rated on a scale of 1 to 5 (where 1 is the best). Traill is adapted to high-pH soils, where iron-deficiency chlorosis may occur. Traill has no major gene resistance to phytophthora root rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann). During the winter of 1995, in the greenhouse at the University of Missouri, single plants of Maverick were evaluated for resistance to Races 3 and 14 of the soybean cyst nematode. F3 plant rows were grown in 1990 at the University of Illinois. LN86-4668 was selected, composited, and evaluated in replicated yield trials in Illinois in 1991 and evaluated in replicated tests at multiple locations in Missouri and Illinois, respectively, and released in August 1996. It was released because of its resistance to the soybean cyst nematode (SCN) (Heterodera glycines Ichniohe), derived from PI 88788, and higher yield compared with SCN-resistant cultivars of similar maturity. Maverick originated as an F4—plant selection from the cross of LN86-4668 × ‘Resnik’ (3) made at the Illinois Agricultural Experiment Station. LN86-4668 is a selection from the cross ‘Fayette’ × ‘Hardin’ (12). The original cross was made in the field in the summer of 1987, and the F1 generation grown in the field in 1988. The F2 and F3 generations were advanced by single-seed descent in Puerto Rico during the winter of 1988 and 1989 and the F4 generation was grown at Urbana in the summer of 1989. In the greenhouse at the University of Illinois during the winter of 1989 and 1990, progeny from single plants selected in the summer of 1989 were evaluated for resistance to Races 3 and 14 of soybean cyst nematode and resistance to Races 1 and 3 of phytophthora rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann). During the winter of 1995, in the greenhouse at the University of Missouri, single plants of Maverick were evaluated for resistance to Races 3 and 14 of the soybean cyst nematode. F3 plant rows were grown in 1990 at the University of Illinois. LN90-4455 was selected, composited, and evaluated in replicated yield trials in Illinois in 1991 and evaluated in replicated tests at multiple locations in Missouri and Illinois, 1992 through 1995. Maverick was evaluated as SL90-4455 in the Preliminary SCN III Test in 1994 and Uniform SCN III Tests in 1995 and 1996 of the Northern Regional Soybean Cyst Nematode Test (4). Maverick was evaluated as SS93-1000 in the Uniform III Soybean Tests—Northern Region Test: 1996 (7).

References and Notes


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Registration of ‘Maverick’ Soybean

‘Maverick’ soybean [Glycine max (L.) Merr.] (Reg. no. CV-372, PI 598124) was developed by the Missouri and Illinois Agricultural Experiment Stations at the Universities of Missouri and Illinois, respectively, and released in August 1996. It was released because of its resistance to the soybean cyst nematode (SCN) (Heterodera glycines Ichniohe), derived from PI 88788, and higher yield compared with SCN-resistant cultivars of similar maturity. Maverick originated as an F4—plant selection from the cross of LN86-4668 × ‘Resnik’ (3) made at the Illinois Agricultural Experiment Station. LN86-4668 is a selection from the cross ‘Fayette’ × ‘Hardin’ (12). The original cross was made in the field in the summer of 1987, and the F1 generation grown in the field in 1988. The F2 and F3 generations were advanced by single-seed descent in Puerto Rico during the winter of 1988 and 1989 and the F4 generation was grown at Urbana in the summer of 1989. In the greenhouse at the University of Illinois during the winter of 1989 and 1990, progeny from single plants selected in the summer of 1989 were evaluated for resistance to Races 3 and 14 of soybean cyst nematode and resistance to Races 1 and 3 of phytophthora rot (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann). During the winter of 1995, in the greenhouse at the University of Missouri, single plants of Maverick were evaluated for resistance to Races 3 and 14 of the soybean cyst nematode. F3 plant rows were grown in 1990 at the University of Illinois. LN90-4455 was selected, composited, and evaluated in replicated yield trials in Illinois in 1991 and evaluated in replicated tests at multiple locations in Missouri and Illinois, 1992 through 1995. Maverick was evaluated as SL90-4455 in the Preliminary SCN III Test in 1994 and Uniform SCN III Tests in 1995 and 1996 of the Northern Regional Soybean Cyst Nematode Test (4). Maverick was evaluated as SS93-1000 in the Uniform III Soybean Tests—Northern Region Test: 1996 (7).

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