Registration of 'Glacier' Soybean

'Glacier' soybean [Glycine max (L.) Merr.] (Reg. no. CV-357, PI 592523) was developed by the Minnesota Agricultural Experiment Station. It was released because of its superiority in yield and phytophthora resistance (caused by Phytophthora sojae M.J. Kauffman & J.W. Gerdemann) conferred by the Rps6 gene compared with other public cultivars of similar maturity.

Glacier was derived from an F3 plant selected from the cross 'McCall' × 'Altona' (1,3). The population was advanced by the single pod bulk method to the F3 generation in Chile and Minnesota. Glacier was tested for yield in Minnesota from 1988 through 1994 under the designation M87-731 and was evaluated in the Uniform Soybean Tests, Northern States Test 00 from 1991 through 1994 (4).

Glacier is classified as Group 00 maturity (relative maturity 00.8), averaging 3 d earlier than 'Agassiz' and 2 d later than McCall (2). It is best adapted as a full-season cultivar to latitudes 46° to 49° N. Glacier has indeterminate growth habit, purple flowers, tawny pubescence, and brown pods at maturity. Seeds are yellow, with yellow hila and dull seed coat luster. In comparison with McCall, Glacier exhibited a yield advantage of 7%. Glacier has a slightly poorer lodging score (1.8 vs. 1.6 on a scale of 1 = erect to 5 = prostrate), is similar in height, and has a seed quality score similar to McCall. Seeds of Glacier are 10 mg larger, 5 g kg⁻¹ higher in protein concentration, and 4 g kg⁻¹ lower in oil concentration than seeds of McCall. The Fe-deficiency chlorosis scores of Glacier and McCall are similar, both being intermediate.

Glacier was released on 15 Feb. 1995 to approved seed growers in Minnesota and North Dakota. Breeder seed is maintained by the Minnesota Agricultural Experiment Station for Glacier for research purposes can be obtained from the Minnesota Agricultural Experiment Station by writing to the corresponding author.

J. H. ORF*, P. J. SCHAUS, AND B. W. KENNEDY (9)

Registration of 'Toyporo' Soybean

Toyporo soybean [Glycine max (L.) Merr.] (Reg. no. CV-360, PI 592560) was developed by the Minnesota Agricultural Experiment Station. It was released as a high protein cultivar for use in making tofu.

Toyporo was derived from an F4 plant selected from the cross M81-610 × M76-349. M61-610 has the pedigree 'Dawson' × M70-447 (4). M70-447 is a selection from the cross 'Provar' × M53-43 (6). M53-43 has the pedigree M10 × PI 180501. M10 is a selection from the cross 'Lincoln'2 × 'Richland' (1). M76-349 has the pedigree L69-202 × M69-45. L69-202 is a selection from the cross L61-2193 × L61-2196. L61-2193 and L61-2196 both have the pedigree 'Sioux' (PI 81021) × 'Harosoy' (7). M69-45 has the pedigree M63-158BF × Provar. M63-158BF is a selection from the cross PI 261475 (Shika No. 1) × Pridesoy II. Pridesoy II is a cultivar from the Twin City Seed Company, Minneapolis, MN. The population was advanced by the single pod bulk method to the F4 generation in Chile and Minnesota. Toyporo was tested for yield in Minnesota from 1987 through 1994 and in Uniform Test 0 of USDA-ARS, West Lafayette, IN.

Toyporo is of late Maturity Group 0 (relative maturity 00.9), averaging about 2 d later than 'Lambert' (3). Toyporo is indeterminate in growth type, with purple flowers, gray pubescence, tan pods at maturity, and dull yellow seeds with yellow hila. In comparison with 'Proto,' Toyporo has 7% higher yield, better lodging resistance and seed quality, and is about 10 cm taller at maturity (2). In comparison with Lambert, Toyporo has 13% less yield. Toyporo has an average seed size of 175 mg seed⁻¹, compared with 204 mg seed⁻¹ for Proto (2,5). Seeds of Toyporo have protein content and oil content similar to Proto (about 455 g kg⁻¹ protein and 172 g kg⁻¹ oil). Toyporo is moderately susceptible to Fe-deficiency chlorosis when grown on calcareous soil.

Breeder seed of Toyporo was released to the foundation organization in Minnesota and will be maintained by the Minnesota Agricultural Experiment Station. Foundation seed was distributed in 1995, with the marketing rights licensed to Northland Organic Foods Corp., 462 Holly Ave., St. Paul, MN. U.S. plant variety protection for Toyporo is pending. Small samples of Toyporo for research purposes can be obtained from the Minnesota Agricultural Experiment Station by writing to the corresponding author.

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References and Notes

5. J.H. Orf, Dep. of Agronomy and Plant Genetics, University of Minnesota, St. Paul. Supported in part by grants from the Minnesota Soybean Promotion Council and Minnesota Seed Production Corporation. Contribution from the Minnesota Agric. Experiment Station. Accepted CSSA. Accepted 30 Nov. 1996. *Corresponding author: jorfon@umn.edu.

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