Registration of 'LN90-4524' Soybean

'LN90-4524' soybean [Glycine max (L.) Merr.] (Reg. no. CV-351, PI 593259) was developed by the Illinois Agricultural Experiment Station at the University of Illinois and released in August 1995. It was released because of its resistance to Race 14 and moderate resistance to Races 3, 4, and 5 of the soybean cyst nematode (SCN) (Heterodera glycines Ichinohe) derived from P1 88788 and higher yield compared with SCN-resistant cultivars of similar maturity.

LN90-4524 originated as an F4 plant selection from the cross LN86-4668 x 'Asgrow A3733' made at the Illinois Agricultural Experiment Station. LN86-4668 is a selection from the cross 'Fayette' x 'Hardin' (4,5). Asgrow A3733 is a selection from the cross 'Elf' x 'Asgrow A3127' (3). Asgrow A3127 is a selection from 'Williams' x 'Essex' (1,9). The original cross was made in the field in the summer of 1987, and the F1 generation was grown in the field at Urbana, IL, in 1988. The F2, F3, and F4 generations were advanced by a modified single-seed-descent procedure in Puerto Rico during the winter of 1988-1989 and at Urbana in the summer of 1989. In the winter of 1989, progeny of selected F4 plants were evaluated in the greenhouse with SCN Races 3 and 4. The F5 generation from SCN-resistant F4 plants was grown as plant rows in 1990. Single plant rows were selected, composited, and evaluated in replicated yield trials in Illinois in 1991 and 1992.

LN90-4524 was evaluated in the 1993 Northern SCN Regional Tests (Group III test) in 1992 and 1993.

LN90-4524 is classified as Group III maturity (relative maturity 3.7), maturing an average of 1 day earlier than 'Linford' and 4 days later than 'Resnik' (2,6). It is best adapted to 39 to 41° N lat. Seed weight and seed protein and oil content of LN90-4524 are similar to Linford. Compared with Linford at noninfested SCN locations, LN90-4524 averaged 6% higher seed yield and 10 cm shorter plant height. At SCN-infested locations, seed yield of LN90-4524 was 15% higher than Linford and 17% higher than Resnik. LN90-4524 has a lower lodging score than Linford.

LN90-4524 has purple flowers, tawny pubescence, brown pods at maturity, and dull yellow seeds with black hila. LN90-4524 is susceptible to Phytophthora rot (Races 1, 4, and 7) (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann), brown stem rot (caused by Phialophora gregata (Allington & D.W. Chamberlain) W. Gams), and sudden death syndrome (caused by Fusarium solani (Mart.) Sacc.). When evaluated against SCN in the greenhouse, LN90-4524 is susceptible to Races 1 and 2, moderately resistant to Races 3, 4, and 5, and resistant to Race 14 (8).

LN90-4524 is a nonexclusive release for use by seedsmen for brand labeling. Parent seed of LN90-4524 will be maintained by Illinois Foundation Seeds, Inc., Route 45 South, Champaign, IL 61820. A research assessment fee of $0.70 per 50-pound unit will be collected. A small sample of seed of LN90-4524 may be obtained for research purposes for at least five years from the authors.


References and Notes

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Registration of 'Iroquois' Soybean

'Iroquois' soybean [Glycine max (L.) Merr.] (Reg. no. CV-351, PI 593259) was developed by the Illinois Agricultural Experiment Station at the University of Illinois and released in August 1995. This is an early Maturity Group III cultivar, released because of its resistance to phytophthora rot (Race 1) (caused by Phytophthora sojae M.J. Kaufmann & J.W. Gerdemann) and high yield compared with cultivars of similar maturity.

'Iroquois is a F4-derived line from the cross LN81-1029 x 'Asgrow A2943' made at the Illinois Agricultural Experiment Station. LN81-1029 is a selection from the cross ('Tracy' x 'Bonus') x 'Pella' (3,4,5). Asgrow A2943 is a selection from the cross 'Asgrow A1564' x 'Asgrow A3127'. Asgrow A1564 is a selection from 'Hark!' ("Harosoy") x 'Lincoln' x 'Ogden') x ('Blackhawk' x 'Harosoy')) (2,8). Asgrow A3127 is a selection from 'Williams' x 'Essex' (1,7). The original cross was made in the field at Urbana, IL, in the summer of 1985, and the F1 generation was grown in the field in 1986. The F2, F3, and F4 generations were advanced by a modified single-seed-descent procedure in Puerto Rico during the winter of 1986-1987 and at Urbana in the summer of 1987. The F5 generation was grown as plant rows in 1988. Single plant rows were selected, composited, and evaluated in replicated yield trials in Illinois in 1989 and 1990. Iroquois was evaluated as LN88-10534 in Preliminary Test IIIA in 1991, and in Uniform III Test in 1992-1994 of the Uniform Soybean Tests—Northern Region Test (9).

Iroquois is an indeterminate cultivar classified as Group III maturity (relative maturit y 3.0), similar to 'Resnik' (6). It is best adapted to 40 to 42° N lat. Compared with Resnik, Iroquois averaged 3% higher seed yield, and 7.5 cm taller plant height. Iroquois is similar to Resnik in lodging, seed weight, seed quality scores, and seed protein and oil concentration.

Iroquois has purple flowers, gray pubescence, and brown pods at maturity. Seeds are yellow with intermediate seed coat luster and imperfect black hila. Iroquois is resistant to Race 1 and susceptible to Races 4 and 7 of phytophthora rot; it is susceptible to brown stem rot (caused by Phialophora gregata (Allington & D.W. Chamberlain) W. Gams), soybean cyst nematode (Races 3 and 4) (Heterodera glycines Ichinohe), and sudden death syndrome (caused by Fusarium solani (Mart.) Sacc.).

Application has been made for U.S. plant variety protection for Iroquois, permitting only production of Foundation and Certified classes beyond Breeder seed. Seed of Iroquois is being increased by foundation seed organizations in releasing states, Illinois and Iowa. It will be available to qualified certified seed producers in those states for 1996 planting. A small sample of seed of Iroquois may be obtained for research purposes for at least five years from the authors.