'DELSOY 4710' SOYBEAN

'DELSOY 4710' soybean [Glycine max (L.) Merr.]. (Reg. no. CV-299, PI 560207) was developed by the Missouri Agricultural Experiment Station and released jointly by the Missouri and Illinois agricultural experiment stations in April 1991. This is a Maturity Group IV cultivar selected to combine high yield with resistance to soybean cyst nematode (SCN), Heterodera glycines Ichinohe, Races 3 and 14 (8).

Delsoy 4710 was selected from the cross L77-443 x L77-906. L77-443 originated from 'Union' (3) x L75-8020, whereas L77-906 was derived from 'Williams' (4) x PI 209332(2). L75-8020 was developed from the cross Williams x L70-2283, whereas L70-2283 originated from the cross 'Custer' (6) x 'Chippewa' (5). L77-443 and L77-906 were received from Dr. R.L. Bernard, USDA-ARS, University of Illinois. The F1 plants were grown in the winter nursery in Puerto Rico and the F2 population was grown in the SCN screening nursery at the Rhodes Farm of the University of Missouri, near Clarkson, MO. One pod from each desirable plant was picked and the F3 generation was advanced in Puerto Rico. The F3 generation was grown in the SCN screening nursery and individual plants were harvested and screened in the greenhouse for reaction to SCN races 3 and 14. Homozygous SCN resistant F3 lines were selected and grown at the Lee Farm, near Portageville, MO, and composited for yield testing and seed increase.

Delsoy 4710 was evaluated under the designation S84-1163 in the Regional SCN tests IV from 1988 through 1990 and compared with 'Delsoy 4500' (1), 'Pharaoh', and 'Pennyrile' (7).

Delsoy 4710 yielded well both in SCN-infested and uninfested fields. In the SCN-infested fields, Delsoy 4710 yielded 54% greater than SCN susceptible PENNYRILE and 10% greater than Delsoy 4500. At the Rhodes Farm, which is highly infested with SCN Race 14, Delsoy 4710 outyielded Pharaoh, the Race 3 resistant cultivar by a margin of 57%. Delsoy 4710 would be suitable for planting in the SCN infested fields in Southern areas in Illinois and Kansas, and southeastern and southwestern fields in Missouri where late Maturity Group IV cultivars are planted.

Delsoy 4710 has purple flowers and tawny pubescence. It is a Maturity Group IV indeterminate cultivar that matures 2 d later than PENNYRILE. Delsoy 4710 has a plant height of 107 cm, which is similar to that of PENNYRILE. It is resistant to SCN Races 3 and 14 and is moderately resistant to Race 4. It has moderate level of resistance to southern Meloidogyne incognita (Kofoid & White) Chitwood and northern root-knot nematode M. arenaria (Neal) Chitwood. Delsoy 4710 also has a moderate level of resistance to sudden death syndrome caused by Fusarium solani (Mart.) Sacc. Delsoy 4710 has 38.9% seed protein and 20.3% oil, vs. 41.8% seed protein and 20.3% oil of PENNYRILE. The seeds of Delsoy 4710 are yellow with black hila and have a 100-seed weight of 15.9 g, vs. 15.4 g of PENNYRILE.

The Missouri Agricultural Experiment Station will be responsible for maintaining breeder seed. The seed will be maintained as one generation each of breeder, foundation, registered, and certified seed. A royalty of $0.20 per unit (of 22.7 kg or 27.2 kg) will be included in the price of registered and certified classes of seed. Foundation seed will be produced and distributed by Missouri Foundation Seeds, Department of Agronomy, 210 Waters Hall, University of Missouri, Columbia, MO 65211. A small sample of seed of Delsoy 4710 may be obtained for research purposes for at least 5 yr from the author.

References and Notes

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