REGISTRATION OF 'HARPER 87' SOYBEAN

'HARPER 87' soybean [Glycine max (L.) Merr.] (Reg. no. 218) (PI 518667) was developed cooperatively by the Iowa Agriculture and Home Economics Experiment Station, the Ohio Agricultural Research and Development Center, and the Puerto Rico Agricultural Experiment Station. It was released in 1987 because of its resistance to specific races of phytophthora rot [caused by Phytophthora megasperma (Drechs.) f.sp. glycinea Kuan & Erwin] to which the cultivar Harper is susceptible (1).

Harper 87 was a composite of progeny from BC$_3$F$_4$ from plants from the backcross Harper$^{6} \times$ 'Williams 82'. Williams 82 was the source of the Rps1-k allele for resistance to races 1 to 10, 13 to 15, 17, 18, 21, and 22 of P. megasperma. The backcrossing program was conducted in Iowa, Ohio, and Puerto Rico. The seeds of 40 selected BC$_3$F$_4$-derived lines were bulked to form Harper 87. The lines were homozygous for the Rps1-k allele, uniform for agronomic characters, and similar in plant type and maturity to Harper. Harper 87 was tested for seed yield in the Uniform Soybean Tests, Northern States, during 1985 and 1986 under the designation Harper BC.

Harper 87 has purple flowers, tawny pubescence, brown pods at maturity, and shiny yellow seeds with black hilum. It is of Maturity Group III and best adapted to approximately 40 to 42° N Lat. Harper 87 is similar to Harper for all agronomic and seed characteristics in the absence of phytophthora rot, including seed yield, maturity, height, lodging resistance, seed weight, seed quality, seed protein and oil content, and shattering resistance. Both cultivars are moderately susceptible to Fe-deficiency chlorosis when grown on calcareous soil.

Harper 87 is moderately susceptible to pink eye caused by Cercospora kikuchii (T. Matsu & Tomoyasu) Gardner (T. Matsu. & Tomyasu) [caused by Peronospora maydis (Syd. ex. Gaum.)], and bacterial tan spot [caused by Meloidogyne incognita (Hedges) Coll.] and bacterial sporopollenin (Hedges) Col]. Both cultivars are susceptible to brown stem rot [caused by Cercospora kikuchii (T. Matsu & Tomoyasu) Gardner].

Breeder seed of Harper 87 was distributed to seed organizations in Illinois, Indiana, Iowa, Missouri, Nebraska, and Ohio for planting in 1987. Breeder seed will be maintained by the Iowa Agriculture and Home Economics Experiment Station, Ames.

References and Notes


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REGISTRATION OF 'TN 4-86' SOYBEAN

'TN 4-86' soybean [Glycine max (L.) Merr.] (Reg. no. 219) (PI 518668) was developed by the Tennessee Agricultural Experiment Station and released in 1986 because of its high seed yields and resistance to races 3 and 4 of the soybean cyst nematode (SCN) (Heterodera glycine Ichinohe). TN 4-86 is the increase from a F$_4$ line from the cross, 'Bedford' X 'Crawford'. A single pod was harvested from each plant in the F$_2$ and F$_3$ generations and composited for growing bulk F$_4$ and F$_5$ populations. Single plant selections were made in the F$_5$ and F$_6$ generations and the line was composited in the F$_7$ generation. Resistance to SCN was determined by evaluating plants of the F$_4$ line in the greenhouse for reaction to races 3 and 4 and on a field site infested with race 4. TN 4-86 was released in Tennessee in 1986 because of its high seed yields and resistance to races 3 and 4 of SCN. Seed of TN 4-86 is also resistant to SCN races 3 and 4. Seed of TN 4-86 averaged 0.8% higher in oil content (21.9%) and 1.0% lower in protein (40.5%) than seed of Douglas.

In addition to resistance to races 3 and 4, TN 4-86 has moderate resistance to the common root-knot nematode [caused by Meloidogyne incognita (Chitwood). Also, it has resistance to bacterial brown spot by Xanthomonas phaseoli (E. F. Smith) Dow (Hedges) Starr & Burkh.] and moderate resistance to bacterial seed stain [incited by Cercospora kikuchii (Tomoyasu) Gardner].

Breeder seed was released in May 1986 to Foundation Seeds, Inc. The Tennessee Agricultural Experiment Station will be responsible for the maintenance of breeder seed.