REGISTRATION OF ‘LINFORD’ SOYBEAN

‘LINFORD’ SOYBEAN [Glycine max (L.) Merr.] (Reg. no. 270, PI 542043) was developed by the USDA-ARS and the Illinois Agricultural Experiment Station in a program to provide cultivars resistant to soybean cyst nematode (SCN) [Heterodera glycines Ichinohe] with improved performance in the Midwest. It is named for the late Maurice B. Linford, a plant pathologist who specialized in nematology at the University of Illinois from 1949 to 1960.

The parents of Linford are ‘Williams 82’ (1) and ‘Fayette’ (2). The cross Williams 82 × Fayette was made in the winter of 1979–1980 in the greenhouse at Urbana; the F1 was grown at Urbana in 1980, and the F2 advanced in bulk in the winter of 1980–1981 in the USDA winter nursery in Puerto Rico. The F2 population was grown in 1981 near Mount Vernon, IL, in a field heavily infested with SCN Race 3. The more vigorous plants were harvested and progeny tested in the greenhouse in soils infested with SCN Races 3 and 4. In 1982 selected F2 lines were grown in a field infested with SCN Race 3 near Catlin, IL. The best-appearing rows were harvested; these included L2SC-1246, the experimental designation of Linford. It was then tested in replicated yield tests in SCN-infested fields in Illinois during 1983 and 1984 and in the cooperative SCN Regional Tests in 1985 to 1989.

Linford is in maturity Group III (relative maturity 3.8), averaging 1 d earlier than Fayette. It is best adapted to 38 to 41° N lat. It is similar to Fayette in SCN resistance and performance, except that it yields ≈5% higher on both infested and noninfested fields.

Linford is very similar to its parent variety Fayette in appearance. It has indeterminate stems, white flowers, tawny pubescence, tan pods, and seeds with a shiny yellow coat and black hilum. Linford is moderately susceptible to Phytophthora rot (caused by Phytophthora megasperma Drechs. f. sp. glycinea T. Kuan & D.C. Erwin) (gene Rp-y-k), to bacterial pustule leaf spot [Xanthomonas campestris pv. glycines (Nakano) Dye] (gene rpx), and to powdery mildew [Microsphaera difusa Cooke & Peck] (presumably gene Rphd).

Kunitz was previously identified as L81-4590 and was released for experimental use in 1985 along with KTI-null isolines of Amsoy 71 and Clark 63 (2). It now appears that it has economic value in certain livestock feed applications, and so it is being released for commercial production. The cultivar is named for Dr. Moses Kunitz of Rockefeller University, who first isolated KTI, the predominant trypsin inhibitor in soybean seed (4).

Kunitz was developed by backcrossing and is the progeny of an F1 plant selected from the BC, Williams 82 × PI 157440. The recurrent parent Williams 82 has the Ti-a genotype for the common type of KTI. The donor parent is the cultivar Kum Du, identified as PI 157440 in the USDA soybean germplasm collection (3). It was introduced in 1947 from the Central Experiment Station, Suweon, South Korea. PI 157440 lacks KTI, and this trait is controlled by the recessive gene ti (5). Kunitz is similar to Williams 82 in all visible traits (indeterminate stem, white flowers, tawny pubescence, tan pods, and shiny yellow seeds each with a black hilum). In performance trials in 11 fields in Illinois seed yield, oil, and protein content were similar to Williams 82. It averaged a day earlier (relative maturity 3.8, vs. 3.9 for Williams 82) and slightly higher protein (1 percentage point).

Kunitz is resistant to many races of Phytophthora rot (Phytophthora megasperma Drechs. f. sp. glycinea T. Kuan & D.C. Erwin) (gene Rps-k), to bacterial pustule leaf spot [Xanthomonas campestris pv. glycines (Nakano) Dye] (gene rpx), and to powdery mildew [Microsphaera difusa Cooke & Peck] (presumably gene Rm).

Kunitz was released in December 1989 for commercial production through Illinois Foundation Seeds, Inc., P.O. Box 722, Champaign, IL 61820. Breeder seed will be maintained by the Illinois Agricultural Experiment Station.

R. L. BERNARD* AND G. R. NOEL (5)

References and Notes


REGISTRATION OF ‘KUNITZ’ SOYBEAN

‘KUNITZ’ SOYBEAN [Glycine max (L.) Merr.] (Reg. no. 271, PI 542044) was developed by the Illinois Agricultural Experiment Station and the USDA-ARS as part of a program to transfer unique seed traits to the widely grown cultivar ‘Williams 82’ (1). It is nearly isogenic to Williams 82, but differs in having the ti ti genotype, thereby lacking the Kunitz trypsin inhibitor (KTI) in its seeds.

Kunitz was developed by backcrossing and is the progeny of an F1 plant selected from the BC, Williams 82 × PI 157440. The recurrent parent Williams 82 has the Ti-a genotype for the common type of KTI. The donor parent is the cultivar Kum Du, identified as PI 157440 in the USDA soybean germplasm collection (3). It was introduced in 1947 from the Central Experiment Station, Suweon, South Korea. PI 157440 lacks KTI, and this trait is controlled by the recessive gene ti (5). Kunitz is similar to Williams 82 in all visible traits (indeterminate stem, white flowers, tawny pubescence, tan pods, and shiny yellow seeds each with a black hilum). In performance trials in 11 fields in Illinois seed yield, oil, and protein content were similar to Williams 82. It averaged a day earlier (relative maturity 3.8, vs. 3.9 for Williams 82) and slightly higher protein (1 percentage point).

Kunitz is resistant to many races of Phytophthora rot (Phytophthora megasperma Drechs. f. sp. glycinea T. Kuan & D.C. Erwin) (gene Rps-k), to bacterial pustule leaf spot [Xanthomonas campestris pv. glycines (Nakano) Dye] (gene rpx), and to powdery mildew [Microsphaera difusa Cooke & Peck] (presumably gene Rm).

Kunitz was previously identified as L81-4590 and was released for experimental use in 1985 along with KTI-null isolines of Amsoy 71 and Clark 63 (2). It now appears that it has economic value in certain livestock feed applications, and so it is being released for commercial production.

The cultivar is named for Dr. Moses Kunitz of Rockefeller University, who first isolated KTI, the predominant trypsin inhibitor in soybean seed (4).

Kunitz was released in December 1989 for commercial production through Illinois Foundation Seeds, Inc., P.O. Box 722, Champaign, IL 61820. Breeder seed will be maintained by the Illinois Agricultural Experiment Station.

R. L. BERNARD, T. HYMOWITZ,* AND C. R. CREMEENS (6)