current selection for increased seed yield. The cycle 0 population was derived by intermating 40 high-yielding lines of Maturity Group 0 to IV. The F₂ progeny of 300 F₂ plants from the cycle 0 population were evaluated for yield in Iowa, and the 30 highest yielding lines were mated in a diallel to form the cycle 1 population. F₃ seed from 1,799 F₂ plants of the cycle 1 population was bulked, and the population was advanced to the F₄ generation by single-seed descent in Iowa and Puerto Rico. The line was evaluated in Iowa during 1978 to 1980 and in the Uniform Soybean Tests, Northern States, from 1978 to 1980 under the designation A77-112023.

Lakota has purple flowers, tawny pubescence, tan pods at maturity, and dull yellow seeds with black hila. It is of Group II maturity and best adapted to approximately 42° N Lat. In comparison with 'Weber,' Lakota has longer hypocotyl elongation at 25°C, 2 days earlier maturity, more lodging susceptibility, 10 cm taller plant height, more shattering resistance, lower seed quality, 2.0 g/100 seeds heavier seed weight, 1.8 percentage units higher protein, and 1.2 percentage units lower oil. The two cultivars have similar resistance to iron-deficiency chlorosis on calcareous soil, and Lakota has about 2.5% higher seed yield on noncalcareous soil.

Lakota is resistant to race 1 of phytophthora rot [caused by Phytophthora megasperma (Drechs.) f. sp. glycinea Kuan and Erwin] and moderately resistant to pod and stem blight [caused by Diaporthe phaseolorum (Cke. and Ell.) var. sojae Wehm.]. It is moderately susceptible to purple stain [caused by Cercospora kikuchii (T. Matsu. and Tomoyasu) Chupp] and brown stem rot [caused by Phialophora grigata (Allington and Chamberlain) W. Gams]. It is susceptible to soybean mosaic virus.

Breeder seed of Lakota was distributed to foundation seed organizations in Illinois, Indiana, Iowa, Kansas, Nebraska, and Ohio for planting in 1983. Breeder seed will be maintained by the Iowa Agriculture and Home Economics Experiment Station, Ames.

J.B. BAHRENFUS AND W.R. FEHR

REGISTRATION OF HARPERSOYBEAN

'Harper' soybean [Glycine max (L.) Merr.] (Reg. no. 172) was developed by the Iowa Agriculture and Home Economics Experiment Station and the Puerto Rico Agricultural Experiment Station. It was released because of its superiority in yield to public cultivars of similar maturity.

Harper was derived from an F₄ plant selected from a diallel mating of high-yielding cultivars and experimental lines of Maturity Group 1 to III. The parents of the single-cross populations in the diallel were not maintained. Three generations were advanced by single-seed descent to the F₄ in Iowa and Puerto Rico. The line was tested for yield in Iowa from 1978 to 1982 and in the Uniform Soybean Tests, Northern States, from 1980 to 1982 under the designation A79-336014.

Harper has purple flowers, tawny pubescence, brown pods at maturity, and shiny yellow seeds with black hila. It is of Group III maturity and best adapted to approximately 40° to 42° N Lat. In comparison with 'Cumberland,' Harper has about 3.5% higher seed yield, better lodging resistance, 1.0 g/100 seeds heavier seed weight, 0.7 percentage units higher protein, and 1.2 percentage units lower oil. The two cultivars have similar hypocotyl elongation at 25°C, maturity, plant height, resistance to iron-deficiency chlorosis, shattering resistance, and seed quality.

Harper is resistant to bacterial pustule [caused by Xanthomonas phaseoli (E. F. Smith) Dowson var. sojensis (Hedges) Starr and Burkholder]. It is moderately resistant to purple stain [caused by Cercospora kikuchii (T. Matsu. & Tomoyasu) Chupp] and phytophthora rot [caused by Phytophthora megasperma (Drechs.) f. sp. glycinea Kuan and Erwin]. It is moderately susceptible to race 2 of frogeye leaf spot [caused by Cercospora sojina Hara] and susceptible to brown stem rot [caused by Phialophora grigata (Allington and Chamberlain) W. Gams] and soybean mosaic virus.

Breeder seed of Harper was distributed to foundation seed organizations in Illinois, Indiana, Iowa, Kansas, Nebraska, and Ohio for planting in 1985. Breeder seed will be maintained by the Iowa Agriculture and Home Economics Experiment Station, Ames.

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REGISTRATION OF ELGINSOYBEAN

'Elgin' soybean [Glycine max (L.) Merr.] (Reg. no. 173) was developed by the Iowa Agriculture and Home Economics Experiment Station and the Puerto Rico Agricultural Experiment Station. It was released because of its superiority in yield to public cultivars of similar maturity.

Elgin was derived from an F₄ plant selected from the population AP6 (1). The cultivar was identified after one cycle of recurrent selection for increased seed yield. The cycle 0 population was derived by intermating 40 high-yielding lines of Maturity Group 0 to IV. A total of 300 lines from the cycle 0 population was evaluated for yield in Iowa, and the 30 highest-yielding ones were mated in a diallel to form the cycle 1 population. The cycle 1 population was advanced by single-seed descent to the F₄ generation in Iowa and Puerto Rico. A total of 300 F₄-derived lines from the population of Harper was evaluated at two locations in Iowa during 1978, and the 90 highest-yielding ones were further evaluated in Iowa during 1979. Elgin was one of 30 lines chosen from the 1979 test to be a parent of the cycle 2 population of AP6. It was evaluated in the Uniform Soybean Tests, Northern States, from 1980 to 1982 under the designation A79-133019.

Elgin has purple flowers, tawny pubescence, brown pods at maturity, and shiny yellow seeds with black hila. It is of Group II maturity and best adapted to approximately 42°