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and reticulation but slight to moderate constriction. The average pod length and breadth are 25 and 12 mm, respectively. Its seeds have tan testa, with a 100-seed mass of 38 g. Seeds average 49.6% oil and 22.0% protein, with an oleic/linoleic fatty acid ratio of 1.54. In a drought-tolerance field screening nursery at ICRISAT Center, ICGV 87121 recorded a significantly ($P < 0.05$) greater growth rate for pod yield (5.96 g m^{-2} d^{-1}) over the trial mean (4.5 g m^{-2} d^{-1}), indicating its above average performance at all levels of water deficits (2). ICGV 87121, although a virginia botanical type, would be traded as a spanish market type because of its low seed mass.

The ICRISAT Center, Patancheru, AP 502 324, India, maintains the breeder seed.

S.N. NIGAM, S.L. DWIVEDI,* Y.L.C. RAO, AND R.W. GIBBONS (3)

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REGISTRATION OF FOUR SUGARBEET GERMPLASMS SELECTED FROM THE NC-7 *BETA* COLLECTION

Four sugar beet (*Beta vulgaris* L.) germplasms, F1011 to F1014 (Reg. no. GP-134 to GP-137; PI 555454, PI 552532, PI 552533, and PI 552534), were developed by the USDA-ARS and the North Dakota Agricultural Experiment Station and released 8 July 1988. These germplasms make readily available a portion of the genetic diversity within the USDA National Plant Germplasm System *Beta* collection.

One hundred sixty-seven accessions from the *B. vulgaris* collection (NC-7) maintained by the USDA-ARS at Ames, IA, were evaluated for sucrose concentration. The sucrose concentration of individual roots was determined from a small sample of the taproot. The original accessions were evaluated in unreplicated field plots with a commercial hybrid ('ACH-14') check every fifth plot. Twenty six accessions with relatively high sucrose were identified. Four to six roots with relatively high sucrose concentration from each accession were induced to flower and were interpollinated within an accession. Progeny were evaluated in replicated field plots. Individual roots with high sucrose concentration from lines with high sucrose were induced to flower and crossed in pairs within a line. Four additional cycles of mass selection within lines formed by paired crosses followed. High-sucrose individuals from desirable lines were selected in all selection cycles except the fifth. Fifth-cycle selection was based solely on line performance and a random sample of individuals from selected lines provided seed for the sixth cycle. Approximately 10 plants per line were increased each cycle. Root weight was added as a selection criterion in the last three cycles. Visual selection eliminated severely sprangled or colored roots.

Both F1011 (GP-134) and F1012 (GP-135) were selected from PI 266100, an accession from Poland. F1013 (GP-136) was selected from PI 169025, an accession that originated from Turkey, and F1014 (GP-137) from PI 355959 from Russia. F1012, F1013, and F1014 segregate for pink and green hypocotyl color; F1011 has pink hypocotyls. All four lines are diploid and produce multigerm seed. In the initial screening, the original four accessions were 15 to 22 g kg^{-1} lower in sucrose concentration than ACH-14. Comparisons of the parental accessions with F1013 and F1014 indicate that selection had increased sucrose concentration by ≈25 g kg^{-1}. Sucrose concentrations of the four germplasms were equal to the commercial hybrids used as checks. Root yield differences were not significant in all cases but, in general, yields were ≈75% of that observed for the commercial hybrids. F1011 and F1012 originated from the same parental accession, but exhibited contrasting performance throughout the selection and testing process. F1011 had consistently high sucrose concentration, while F1012 was consistently one of the higher-yielding lines. Root yields of F1014 were approximately equal to those observed for F1011 and less than F1013.

These lines are intended to increase the genetic diversity available for the development of populations and parental lines with improved agronomic performance. Breeder seed will be maintained by USDA-ARS and provided in quantities sufficient for reproduction upon written request to Sugarbeet Research, USDA-ARS, Northern Crop Science Laboratory, Fargo, ND 58105-5677.

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REGISTRATION OF FIVE CHICKPEA GERMPLASM LINES RESISTANT TO ASCOCHYTA BLIGHT

Two KABULI (large, oval or pea-shaped, light-colored seeds) germplasm lines, ILC 200 (Reg. no. GP-103, PI 559359) and ILC 6482 (Reg. no. GP-104, PI 559360), and three desi (small, angular, dark-colored seeds) germplasm lines, ICC 4475 (Reg. no. GP-105, PI 559361), ICC 6328 (Reg. no. GP-106, PI 559362), and ICC 12004 (Reg. no. GP-107, PI 550363) of chickpea (*Cicer arietinum* L.), resistant to ascochyta blight [incited by *Phoma rabiei* (Pass.) Khune & J.N. Kapoor; = *Mycosphaerella rabiei* Kovachevski (telomorph); syn. *Ascochyta rabiei* (Pass.) Labrousse], were released by the joint kabuli chickpea improvement program of ICARDA, Syria, and ICRISAT, India

These five lines were identified as resistant to ascochyta blight by screening 6594 kabuli germplasm accessions available at ICARDA and 12 749 desi germplasm accessions available at ICRISAT (3,4,6). Screening for ascochyta blight resistance was carried out between 1979 and 1991 in the field and greenhouse at Tel Hadya, the principal ICARDA station in Syria, by inoculating with blight-affected chickpea diseased-debris and spraying a spore suspension of the mixture of six races of *A. rabiei* from Syria (2). In 10 of the 13 seasons in field and in greenhouse evaluation in 1990, the known blight-susceptible cultivar (ILC 263 or ILC 1929) was killed, indicating high disease development. A line was considered resistant when it showed resistance in all the years of testing. The observations of agronomic characters on kabuli lines were recorded at Tel Hayda (36° N, 36° E) in Syria (5) and on desi lines at Patancheru (18° N, 78° E) in India (1). Tel Hadya has a long growing season for chickpea, whereas Patancheru has a short one.

ILC 200 is a kabuli type introduced from the USSR, with pea-shaped and light orange-colored seed. It is a line with late maturity (142 d to flower), medium plant height (60 cm), small seed size (21 g 100 seed^{-1}), and low yield. ILC 6482 is a kabuli type of unknown origin, with ramhead-shaped and beige-colored seeds. It is a late-maturing line (145 d to flower), with medium plant height (50 cm), medium seed size (35 g 100 seed^{-1}), and low yield. ICC 4475 (P 5496) was introduced from Iran and is a black-seeded desi type. It is a line with late maturity (80 d to flower), medium plant height (47 cm), very small seed size (9 g 100 seed^{-1}), and low yield. ICC 6328 (NEC 241) is a desi type introduced from India, with angular shape and black-colored seeds. It is a line with late maturity (73 d to flower), medium plant height (44 cm), small seed size (17 g 100 seed^{-1}), and low yield. ICC 12004 (NEC 2861) is a brown-seeded desi type of unknown origin. It is a line with late maturity (67 d to flower), medium plant height (43 cm), very small seed size (10 g 100 seed^{-1}), and low yield.

None of these five lines have desirable attributes for direct commerical exploitation, but all are valuable as sources of resistance to ascochyta blight in hybridization programs.

Small quantities of seeds of these germplasm lines can be obtained from the Legume Program, ICARDA, P.O. Box 5466, Aleppo, Syria.

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REGISTRATION OF SOYBEAN GERMPLASM SG1E6

The soybean [*Glycine max* (L.) Merr.] population SG1E6 (Reg. no. GP-137, PI 558508) was released on 1 Nov. 1991 by the Agricultural Research Division, University of Nebraska–Lincoln. SG1E6 was derived by repetitively mating elite germplasm to an existing population known as SG1. SG1 was a population random-mated three times after its creation from the matings of 39 female ancestral germplasm strains to four male adapted strains heterozygous for the *ms2* form of genetic male-sterility (3).

The synthesis of SG1E6 commenced in 1985. Seed harvested from male-sterile plants of the 1984 SG1 population were planted in a 1985 intermating block in Lincoln, NE. The SG1 rows were alternated, checkerboard-square fashion, with pure rows of 32 elite strains (Table 1). The SG1 rows segregated for male-fertile (MF) and male-sterile (MS) plants in a 1:1 ratio. The MF plants were rogued as soon as they flowered, when they were distinguishable from MS plants, which have reduced anthers that bear no pollen. Pollen transfer from the MF plants in the elite strain rows to the MS plants in the SG1 rows was mediated by honey bees (a hive was placed near the nursery) and other insects. The nursery was surrounded by a 20-m plant-free border, to minimize insect movement from other soybean fields.

About 400 MS plants bearing seed were gathered from the 1985 intermating nursery. An F_1 seed was collected from the top, middle, and bottom nodes of each MS plant and placed at random into one of three bags. One F_1 seed lot was placed on reserve in a cold room. The other two were planted in a winter nursery in Puerto Rico, where the selfed F_1 plants in each lot were bulk-harvested. One F_2 seed bulk was used to plant the 3MF:1MS rows of the next (1986) intermating nursery. The other F_2 seed bulk was transferred to the breeding program for use in soybean cultivar development.

Repetition of the process facilitated the mating of six sets of elite parents (Table 1) to MS plants in the 1985 (SG1E1), 1986 (SG1E2), 1987 (SG1E3), 1988 (SFG1E4), 1989 (SG1E5), and 1990 (SG1E6) mating nurseries. Three procedural modifications were adopted after 1985. First, the total number of rows in the mating nursery was increased, to adjust for the change to a 3MF:1MS segregation ratio, and to ensure the availability of 500 to 1000 MS plants each year. Second, a balanced seed composite of the male parents was planted in each elite row, instead of using replicated pure rows of the elite parents (as was done in 1985). Third, the choice of each year's elite entries was made more objective by selecting: (i) the two highest-yielding public entries in each of six maturity group tests (00, 0, I, II, III, IV) of the Uniform Soybean Tests–Northern States, using multiple-location 2-yr means; (ii) the single highest-yielding public entry in each of six Preliminary Tests (I, IIa, IIb, IIIa, IIIb, IV) of the Uniform Soybean Tests–Northern states, using multiple-location 1-yr means; and (iii) the two highest-yielding proprietary entries in each of the eight and six location–maturity zones of the respective Nebraska and Iowa variety performance trials, using 3-yr zone means. A few entries not meeting these criteria were added to the parental list, to maintain a minimal frequency of genes for disease resistance or morphological variation [e.g., *dt1* for determinant stem growth; *Rps1-k* for phytophthora root rot resistance (*Phytophthora megasperma* Drechs. f.sp. *glycinea* T. Kuan & D.C. Erwin)]. The use of proprietary strains for intermating was discontinued after 1988, primarily because of increasing restrictions in the seed trade on the use of such strains as parental material.