

Registration of ICGV 86388 Peanut Germplasm

ICGV 86388 (Reg. no GP-77, PI 593239) is a spanish peanut (*Arachis hypogaea* L. subsp. *fastigiata* var. *vulgaris*) germplasm developed at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India. It was released in 1995 by the Plant Material Identification Committee of ICRISAT because of its resistance to peanut bud necrosis virus (PBNV). It is also moderately resistant to thrips (*T. palmi*) and jassid (*Empoasca kerri* Pruthi) (3). In 3 yr of field tests at two locations, ICGV 86388 averaged 18% peanut bud necrosis disease (PBNV) incidence, compared with 61% in the susceptible control cultivar JL 24. ICGV 86388 was mechanically inoculated with 10% and 1% (w/v) dilutions of infected plant extract in a glasshouse for three seasons; it showed resistance to PBNV at the lower dilution (1%) only. The PBNV incidence in glasshouse averaged 30% in ICGV 86388, compared with 87% in JL 24. ICGV 86388 scored a 5 for thrips damage on a scale of 1 to 9 (where 1 = highly resistant, 2-3 = resistant, 4-5 = moderately resistant, 6-7 = susceptible, and 8-9 = highly susceptible), compared with 8 for JL 24. In three seasons of yield trials at 11 locations in India, ICGV 86388 produced an average pod yield of 2.04 t ha⁻¹, compared with 1.68 t for JL 24 (3).

ICGV 86388 was selected from a three-way cross made in 1981 at the ICRISAT Asia Center. The parents involved were Dh 3-20, USA 20, and NC Ac 2232. Dh 3-20 (spanish type) and USA 20 (virginia type) are high-yielding breeding lines. NC Ac 2232 is a low-yielding U.S. virginia-type germplasm with resistance to thrips and jassids (1). The pedigree of ICGV 86388 is (Dh 3-20/USA 20//NC Ac 2232) F₂-B₁-B₁-B₁-B₁. The segregating population in each season was grown late and at low plant density, to enhance PBNV incidence under field conditions. Plants with no disease symptoms were selected in mass based on plant, pod, and seed characteristics. The final selection was in the F₆ generation, when the population stabilized. This population was designated as ICGV 86388 and was screened for resistance to PBNV and to the vector of PBNV (*Thrips palmi* Karny) under field conditions, and later for resistance to PBNV in a glasshouse.

ICGV 86388 has an erect growth habit with sequential branching and medium-sized elliptic dark-green leaves. Pods are small, two-seeded, and characterized by none to slight constriction, moderate reticulation, and absence of beak (2). It has a meat content of 70%. The seeds are tan in color, with an average seed weight of 37 g 100 seed⁻¹. The seeds contain 53% oil. ICGV 86388 can be cultivated in areas where PBNV is endemic. It is a source of resistance to PBNV and to its vector *T. palmi*.

Small quantities of seed of ICGV 86388 can be obtained without restriction on use from the Genetic Resources Division, ICRISAT Asia Center, Patancheru, Andhra Pradesh 502 324, India. Seeds of ICGV 86388 have also been placed in long-term storage at the U.S. National Seed Storage Laboratory, 1111 S. Mason St., Fort Collins, CO 80521-4500.

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References and Notes

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Registration of Soybean Germplasm Line G93-9106 Resistant to Peanut Root-Knot Nematode

The soybean [*Glycine max* (L.) Merr.] germplasm line G93-9106 (Reg. no. GP-180, PI 593238) was developed by the Georgia Agricultural Experiment Stations and released in March of 1995 because of its high level of resistance to the peanut root-knot nematode [*Meloidogyne arenaria* (Neal) Chitwood] (Ma). G93-9106 has a similar level of resistance to Ma as PI 200538, but higher seed yield. PI 200538 has the highest level of resistance to Ma that has been identified in soybean (1,2).

G93-9106 is an F₄-derived line from the cross G83-559 × (G80-1515² × PI 200538). G80-1515 is a selection from 'Pickett 71' × 'Bedford' (3,4). G83-559 is a selection from D77-6103 × F77-6903. The parentage of D77-6103 is 'Centennial' × J74-47 (5). J74-47 is from the same cross as Bedford. F77-6903 was selected from the cross of 'Forrest' × ('Cobb' × D68-216) (6,7). D86-216 has the same parentage as Forrest.

The F₂ plants from the original cross were evaluated for resistance to Ma using greenhouse screening procedures (1). Resistant plants were backcrossed to G80-1515 and the BC₁F₂ plants were evaluated for resistance to Ma. Resistant plants were crossed to G83-559 and F₂ plants were evaluated for resistance to Ma. The F_{2,3} and F_{3,4} seed were produced from resistant plants identified in the previous generation. The F_{3,4} lines were evaluated for agronomic characteristics in a field near Athens, GA, in 1992 and for resistance to Ma and soybean cyst nematode (*Heterodera glycines* Ichinohe) (SCN) Races 3 and 14 in the greenhouse. The F_{4,5} seed were harvested individually from 15 plants within each of the most agronomically desirable, Ma- and SCN-resistant lines. Seed from each F_{4,5} plant was increased in a separate row in Puerto Rico during the winter of 1993.

The F_{4,6} seed were harvested from selected rows and grown in yield trials near Athens and Plains, GA, during 1993. The F_{4,7} seed from the nine most productive lines were planted in yield trials in 1994 near Athens and Plains. In addition to selected Ma- and SCN-resistant lines, each yield trial contained parental and check genotypes. Across environments, G93-9106 yielded 39% more than PI 200538 and 17% less than 'Bryan' (8). In two greenhouse experiments, G93-9106 and PI 200538 averaged 53 and 54 Ma galls per plant, respectively, and Bryan, a cultivar possessing the highest level of Ma resistance that is currently available to soybean growers (9), averaged 100 Ma galls per plant. 'CNS' (7), the Ma-susceptible check, averaged 172 Ma galls per plant.

G93-9106 is a Maturity Group VII germplasm that matures 8 d later than Bryan and 2 d later than PI 200538. It is 2 cm taller and more susceptible to lodging than Bryan. G93-9106 has white flowers, gray pubescence, tan pod walls, and a determinate growth habit. The seed have a yellow coat and a buff hilum. G93-9106 also is resistant to the southern [*M. incognita* (Kofoid & White) Chitwood] and javanese [*M. javanica* (Treub) Chitwood] root-knot nematodes, Races 3 and 14 of SCN, and bacterial pustule [*Xanthomonas campestris* pv. *glycines* (Nakano) Dye].

G93-9106 will be maintained by the Department of Crop and Soil Sciences, University of Georgia, Athens, GA 30602. Small quantities of seed for research and breeding can be obtained from the corresponding author. We ask that appropriate recognition be made of the source of this germplasm when it contributes to the development of a new cultivar or germplasm.

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