REGISTRATION OF GERMPLASM

Registration of ICGV 88438, ICGV 89214, and ICGV 91098 Peanut Germplasm

Three large-seeded peanut (*Arachis hypogaea* L.) germplasm lines, ICGV 88438 (Reg. no. GP-84, PI 596514), ICGV 89214 (Reg. no. GP-85, PI 596515), and ICGV 91098 (Reg. no. GP-86, PI 596516), were released in 1996 by the ICRISAT Plant Material Identification Committee because of their high yield, high 100-seed weight, and greater oleic/linoleic (O/L) fatty acid ratio. Earlier, after 3 to 6 yr (1990–1995) of evaluation in Cyprus, they had also been released in 1995 by the Agricultural Research Institute at Nicosia, Ministry of Agriculture, Natural Resources and Environment, for cultivation in the summer season with irrigation in the coastal region of Paphos; ICGV 88438 was released as 'Nikoklia', ICGV 89214 as 'Kouklia', and ICGV 91098 as 'Gigas'.

An advanced breeding line introduced in 1987 at ICRISAT Center, Patancheru, India, from North Carolina State University (NCSU) at Raleigh was designated, after initial multiplication, as ICGV 88438. Its pedigree is GP NC 343/NC Ac 17367. Both GP NC 343 (PI 565479) and NC Ac 17367 belong to the virginia botanical group and originated from NCSU. GP NC 343 is resistant to southern corn rootworm (*Diabrotica undecimpunctata howardi* Barber) (2), thrips (*Thrips palmi* Karny), leaf hopper (*Empoasca kerri* Pruthi), and termites (*Odontotermes* spp.) (1). ICGV 89214 and ICGV 91098 were developed at ICRISAT. Beginning in the F_2 generation, high-yielding, large-seeded plants were selected and bulked into phenotypically similar groups. The process of bulking and selection of phenotypically similar plants, based on plant type and pod and seed characteristics, continued in later generations until the selected bulks stabilized. Pedigrees of these two genotypes are as follows: ICGV 87123/ICG 6150 F_2-B_2-B_2-B_2-B_2-B_3 for ICGV 89214 and ICGV 86564/ICGV 87152 F_2-B_2-B_2-B_3-B_2-B_1-B_3-B_1 for ICGV 91098. ICGV 87123 ('ICGS 11', PI 478788) has been released in India (6), and in Sri Lanka as 'ANKG 2'. ICG 6150 (PI 269698) is a germplasm line that originated in Argentina (7). ICGV 86564 (PI 573007) has been released as 'Walawe' in Sri Lanka (3). ICGV 87152 is a high-yielding, large-seeded breeding line developed at ICRISAT.

ICGV 88438, ICGV 89214, and ICGV 91098 belong to the virginia botanical group (subsp. *hypogaea* var. *hypogaea*), but they differ in other characteristics. Growth habit, primary and secondary branches, plant height, and canopy width of these genotypes were recorded 1 wk before harvest at Acheleia, Cyprus, during the 1995 crop season.

ICGV 88438 has a Decumbent 3 growth habit (4) and medium-sized green to light green ovate leaves. It has 7 primary and 7 secondary branches. Plant height and canopy width are 30 cm. It has large, two-seeded pods with moderate beak and constriction. Pod reticulation is moderate to prominent. It has 71% meat content and a 103 g 100 seed^{-1} weight (averaged over 10 locations in Cyprus, 6 yr). Seeds of ICGV 88438 are pale tan and contain 27% protein and 50% oil, with an O/L ratio of 2.2.

ICGV 89214 has an erect growth habit (4) and large, dark green, obovate leaves. It has 8 primary and 4 secondary branches. Plant height and canopy width are 35 and 45 cm, respectively. It has mainly large, two-seeded pods characterized by very prominent reticulation, absent to slight beak, and no constriction; one-seeded pods also occur. It has 70% meat content and 102 g 100 seed^{-1} weight (averaged over 10 locations in Cyprus, 6 yr). Seeds of ICGV 89214 are light tan and contain 25% protein and 53% oil, with an O/L ratio of 1.4.

ICGV 91098 has a Decumbent 3 to erect growth habit (4) and medium-sized green to dark green obovate leaves. It has 11 primary and 8 secondary branches. Plant height and canopy width are 32 and 45 cm, respectively. It has mainly large, two-seeded pods characterized by moderate beak and constriction and prominent reticulation. One-seeded pods also occur. It has 65% meat content and 127 g 100 seed^{-1} weight (averaged over 5 locations in Cyprus, 3 yr). The seeds of ICGV 91098 are pale tan and contain 27% protein and 52% oil, with an O/L ratio of 1.2.

When these genotypes were evaluated across 2 to 10 locations in India, they recorded an average pod yield similar to that of the local control cultivar 'Chandra' (2.0 t ha^{-1}), but showed a greater 100-seed weight than the latter (80–88 g, compared with 70 g for Chandra). While ICGV 89214 and ICGV 91098 had similar O/L ratios as Chandra (1.4), ICGV 88438 recorded a greater O/L ratio (2.4). In 6 yr of yield trials conducted over 10 locations in Cyprus, ICGV 88438 and ICGV 89214 produced an average seed yield of 3.66 and 3.86 t ha^{-1}, respectively. The local control in these trials yielded 3.31 t ha^{-1}. ICGV 91098 was evaluated for 3 yr at 5 locations in Cyprus. It gave an average seed yield of 3.57 t ha^{-1}, compared with 3.46 t ha^{-1} for the local control. Whereas these genotypes have meat content similar to the control (68%), they recorded greater 100-seed weight (102–127 g, compared with 80 g in the local control). ICGV 88438 matured in 126 d and ICGV 89214 and ICGV 91098 in 136 d at Acheleia during the 1995 crop season in Cyprus. Both genotypes are tolerant of lime-induced iron chlorosis (5).

Limited quantities of seed of these germplasm lines can be obtained from the Agricultural Research Institute, Ministry of Agriculture, Natural Resources and Environment, P.O. Box 2016, Nicosia, Cyprus (fax +357 2 316770). Seed has also been deposited with the National Seed Storage Laboratory, 1111 Mason St., Fort Collins, CO 80521-4500.

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References and Notes

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