

Registration of Early-Maturing Peanut Germplasm ICGV 93382

ICGV 93382 (Reg. no. GP-117, PI 630948) is an improved Spanish peanut (*Arachis hypogaea* L. subsp. *fastigiata* var. *vulgaris*) germplasm line bred at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India. This germplasm line was released in 1999 by the Central Agricultural Research Institute and Myanmar Agricultural Service of Myanmar as 'Sinpadetha 7' for general cultivation in the country. It was released by the Plant Materials Identification Committee of ICRISAT as an early-maturing high-yielding germplasm line in 2001.

ICGV 93382 originated from a cross between ICGV 86068 and Chico (Bailey and Hammons, 1975) made in the 1989 rainy season at ICRISAT. ICGV 86068 is an early maturing high-yielding Spanish germplasm line developed at ICRISAT from a cross between 'MH 2' and NC Ac 2731. Chico is an early-maturing germplasm line selected from PI 268661 in the USA. ICGV 93382 arose as a single plant selection made in the F₃ generation of progeny from a single plant selected in the F₃ bulk of cross ICGV 86068/Chico. Phenotypically similar early maturing high-yielding F₅ plants from the progeny of the F₄ plant were mass-selected and bulked at harvest. The process of bulking phenotypically similar plants was repeated in following generations until the mass-selection became homogeneous. Its pedigree is ICGV 86068/Chico F₂-B₁-P₂₈-P₂-B₁-B₁-B₁, where B refers to bulk and P refers to plant selection.

ICGV 93382 matures at ICRISAT in 90 d after planting (DAP), being 10 to 15 d earlier than the early-maturing popular cultivar in India, JL 24. ICGV 93382 was evaluated in two rainy and two postrainy seasons, in replicated field trials at ICRISAT which were harvested when the crop accumulated 1240°Cd (degree days) (equivalent to 75 DAP in the rainy season at ICRISAT) and 1470°Cd (equivalent to 90 DAP in the rainy season at ICRISAT). ICGV 93382 produced an average pod yield of 1.48 Mg ha⁻¹ at 1240°Cd harvest and 2.11 Mg ha⁻¹ at 1470°Cd harvest, which represented 16.5 and 20.6% more pod yield than JL 24, respectively. Under low input conditions (alfisol, 20 kg P₂O₅ ha⁻¹, rainfed, no protection from diseases and insect pests), it yielded 1.34 Mg ha⁻¹, 59.5% more than JL 24. ICGV 93382 was evaluated at locations with different fertility levels in Myanmar. It produced on average 0.82 Mg ha⁻¹, 41.4% more than the local cultivar 'Sinpadetha 1' at locations with low fertility in the 1997-1998 rainy season; 1.96 Mg ha⁻¹, 35.2% more than the Sinpadetha

1 at locations with moderate fertility in the 1996-1997 late rainy and 1997-1998 rainy seasons; and 3.01 Mg ha⁻¹, 15.8% more than the local cultivar 'Magwe 11' at locations with high fertility in the 1997-1998 rainy season. In the multilocational trials in 1997-1998 rainy and postrainy seasons in Myanmar, it produced on average 2.55 Mg ha⁻¹, 16.4% more than Sinpadetha 1 (T. Show, 1998, unpublished data). In Bangladesh in the 1996-1997 and 1997-1998 postrainy seasons, it produced 2.49 Mg ha⁻¹, 15.3% more than the local cultivar 'Dacca 1' (F. Mia, 1998, unpublished data). In trials in Karnataka, India, in the 1995 rainy, 1994-1995 postrainy, and 1995-1996 postrainy seasons, ICGV 93382 averaged 2.30 Mg ha⁻¹ pod yield, 17.3% more than JL 24 (P.S. Dharamraj, 1997, unpublished data). In China during the 1998 spring season, it averaged 3.40 Mg ha⁻¹, 23.6% more than the local cultivar 'SY 27' (X. Liang, 1998, unpublished data). It matured 10 to 15 d earlier than the local cultivars at all of these locations.

In ICGV 93382, the number of primary branches ranges between four and five, and number of secondary branches is one. It has an erect growth habit and elliptical medium-sized green leaves (IBPGR and ICRISAT, 1992). ICGV 93382 has a main stem of ≈18 cm, with a canopy width of 29 cm, when measured at 90 DAP in the postrainy season at ICRISAT. Its pods are mainly two seeded, small in size (28-mm length and 12-mm width) with slight beak, moderate constriction, and slight reticulation. The average meat content is 70% compared with 64% for JL 24. Its seeds have tan colored testa, weigh 37 g 100 seed⁻¹, and contain on average, 46.3% oil and 23.8% protein.

ICGV 93382 is an early-maturing high-yielding germplasm line that can be used as an improved source of earliness in a germplasm enhancement program. This line can be cultivated in the areas or situations where the growing season is short, planting is delayed, end-of-season droughts are frequent, or in multiple cropping systems.

Breeder seed of ICGV 93382 will be maintained by the Genetic Resources Unit, Genetic Resources and Enhancement Program, ICRISAT Center, Patancheru P.O., Andhra Pradesh 502 324, India. Limited quantities of seed of ICGV 93382 are available upon request by signing a Material Transfer Agreement. Seeds of this line are also deposited with the U.S. National Seed Storage Laboratory, 1111 S. Mason St., Fort Collins, CO 80521-4500.

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