Registration of ICGV 86699 Peanut Germplasm Line with Multiple Disease and Insect Resistance

ICGV 86699 (Reg. no. GP-76, PI 591815) is a high-yielding elite peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) germplasm line with multiple pest resistance. It was released in 1994 by the Plant Material Identification Committee of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) because of its resistance to rust (caused by Puccinia arachidis Speg.) and stem and pod rots (caused by Sclerotium rolfsii Sacc.), and tolerance of late leaf spot (caused by Phaeoisariopsis personata (Berk. & M.A. Curtis) Arx; syn. Ceratocystis personata (Berk. & M.A. Curtis) Deighton), early leaf spot [caused by Cercospora arachidicola S. Hori], peanut bud necrosis (caused by the peanut bud necrosis virus), and peanut mottle (caused by the peanut mottle virus). It also suffers less damage due to tobacco caterpillar [Spodoptera litura (caused by the peanut mottle virus)]. It also suffers less damage due to tobacco caterpillar [Spodoptera litura (F.)] and jassids or leafhoppers (Empoasca kerri Pruthi) than control cultivars under field conditions.

ICGV 86699 originates from a single-plant selection made from CS 29. CS 29 was developed through repeated selections from a cytologically unstable, segregating interspecific population of [Arachis batizocoi Krapov. & W.C. Gregory/A. duranensis Krapov. & W.C. Gregory//A. hypogaea (cv. NC 2)] received from the North Carolina State University at Raleigh. The single-plant selection made in CS 29 was progeny rowed, and selected plants at the time of harvest were grouped into three bulks based on their similarity in agronomic characters (including growth habit, yield, and disease reaction). These bulks were designated as B1, B2, and B3 and were grown again. In subsequent generations, the same process of selection and bulking just described was repeated until the selected bulks stabilized. The pedigree of ICGV 86699 is [Arachis batizocoi/A. duranensis/A. hypogaea cv. NC 2] - CS 29-P1-B2-B1-B1-B1.

In 20 replicated yield trials conducted during 1987 to 1990 by the All India Coordinated Research Project on Oilseeds (AICRPO) in different locations in India, ICGV 86699 produced 47% greater pod yield than the cultivar Kadiri 3. The average pod yield of ICGV 86699 in these trials was 1.25 t ha⁻¹. Similarly, in Myanmar, it produced 100% greater pod yield than the local cultivar ‘Spinadetha 2’, with 1.42 t pods ha⁻¹.

In 12 trials conducted at ICRISAT Asia Center (IAC) over 3 yr under fungicide-free conditions, ICGV 86699 was rated 3.1 for rust and 5.9 for late leaf spot, on a field scale of 1 to 9 (where 1 = no disease and 9 = 81–100% disease incidence), compared with ratings of 7.9 and 7.7, respectively, for Kadiri 3. It has maintained its superior reaction to rust and late leaf spot over the local cultivars at other Indian locations and in Myanmar, South Africa, the Republic of Guinea, Niger, and Sri Lanka. Similarly, it was less susceptible to early leaf spot in South Africa, Niger, and Sri Lanka. ICGV 86699 showed field tolerance to peanut bud necrosis disease (PBND) in tests conducted for two seasons at IAC (with an average PBND incidence of 17.9%, compared with 37.9% incidence in ‘JL 24’) and for one season in a hot-spot location in northern India (with 7.9% PBND incidence, compared with 47.1% incidence). ICGV 86699 showed field tolerance to peanut bud necrosis disease (PBND) in tests conducted for two seasons at IAC (with an average PBND incidence of 17.9%, compared with 37.9% incidence in ‘JL 24’) and for one season in a hot-spot location in northern India (with 7.9% PBND incidence, compared with 47.1% incidence in ‘JL 24’).

ICGV 86699 has a Demount 3 growth habit, branching, and medium-sized elliptic green leaves. It has 5 to 15 and 12 to 20 secondary branches. It matures in ≈115 days, with a moderate beak. The pods are mostly two-seeded with a moderate beak. The pods are mostly two-seeded with a moderate beak.

The Genetic Resources Division, ICRISAT Asia Center, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, AP 502 324, India, will maintain the breeder seed of ICGV 86699. Limited quantities of seed without limitations on uses will be made available upon request. Seed of ICGV 86699 is deposited with the U.S. National Seed Storage Laboratory, 1111 S. Mason St., Fort Collins, CO 80521-4500.


References and Notes


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Registration of Mississippi Sclerotinia-Resistant (MSR) Alfalfa Germplasm

Mississippi Sclerotinia-Resistant (MSR) alfalfa (Medicago sativa L.) germplasm (Reg. no. GP-300, PI 590999) was released by the USDA-ARS and the Mississippi Agricultural and Forestry Experiment Station in May 1995. MSR is the first alfalfa developed for increased resistance to Sclerotinia rolfsii Eriks., the causal agent of sclerotinia crown and stem rot and other forage legumes. This is one of the most important diseases of fall-planted alfalfa in the southeastern and south-central USA (3).

MSR was produced as a by-product of efforts to develop and release Sclerotinia-Resistant (MSR) alfalfa germplasm (Reg. no. GP-300, PI 590999)