

### Registration of ICG 12991 Peanut Germplasm Line

ICG 12991 is a short duration (90–110 d to maturation), drought-tolerant, spanish-type peanut (*Arachis hypogaea* L. subsp. *fastigiata* Waldron var. *vulgaris* Harz.) germplasm line (Reg. no. GP-122, PI 639691) with a high level of field resistance to groundnut rosette disease (Naidu et al., 1999a; Subrahmanyam et al., 2000). Groundnut rosette disease results from a synergism of three agents: *Groundnut rosette assistor virus* (GRAV, a luteovirus), *Groundnut rosette virus* (GRV, an umbravirus), and a satellite RNA (sat RNA) of GRV. ICG 12991 was originally collected from a farmer's field in south India in 1988. In 1994, ICRISAT introduced ICG 12991 into Malawi for evaluation during a germplasm screening program for resistance to groundnut rosette disease and early leaf spot disease (caused by *Cercospora arachidicola* S. Hori). Subsequently, ICG 12991 was released in Malawi as 'Baka' in 2001 and in Uganda as 'Serenut 4T' in 2002, following extensive testing and distribution by the national programs of each country. Resistance to groundnut rosette disease in ICG 12991 is due to aphid resistance, not due to resistance to the virus complex (Naidu et al., 1999b).

From 1994 through 1998, ICG 12991 was evaluated at the Chitedze Agriculture Research Station in Lilongwe, Malawi, by the SADC (Southern Africa Development Community)/ICRISAT (International Crop Research Institute for the Semi-Arid Tropics) Groundnut Project. Germplasm was evaluated under various groundnut rosette disease pressures by aphid transmission for resistance and yield. During this evaluation period the mean disease incidence under high groundnut rosette disease pressure for ICG 12991 was 4.5%, while the susceptible controls, 'JL24' and 'Malimba', were 95%. JL24 is an early-maturing, high-yielding commercial cultivar that began replacing Malimba in 2000. Subsequently, ICG 12991 was selected for on-station and on-farm trials based on its yield potential and resistance to groundnut rosette disease.

In trials conducted in Malawi at four research stations (Baka, Chitedze, Chitala, and Makoka) in the 1998–1999 season and three research stations (Chitedze, Chitala, and Makoka) in the 1999–2000 season, ICG 12991 gave higher levels than JL24 (12 and 13%, respectively). Groundnut rosette disease was negligible in both seasons at the on-station sites. On-farm trials were conducted in different agro-ecological regions of Malawi. In trials at 12 sites during the 1998–1999 growing season, ICG 12991 gave yields equal to JL24. There was no groundnut rosette disease pressure during the 1998–1999 growing season. However at ten sites during the 1999–2000 growing season, the groundnut rosette disease incidence was 19% in JL24, but only 3% in ICG 12991, resulting in a 59% higher yield for ICG 12991 than for JL24.

ICG 12991 was introduced into Uganda in 1997 for yield and groundnut rosette disease resistance evaluation. In Uganda, the performance of ICG 12991 was compared to Red Beauty, a cultivar susceptible to groundnut rosette disease, and Serenut 2, a medium duration cultivar (130–140 d to mature) that is resistant to groundnut rosette disease. At six test sites over

three seasons (1999–2001), ICG 12991 gave a mean yield 6% higher than Serenut 2 and 55% higher than Red Beauty. During the 3-yr evaluation period the incidence of groundnut rosette disease averaged approximately 1% in ICG 12991, 48% in Red Beauty, and 0% in Serenut 2.

ICG 12991 has a sequential branching pattern averaging 4.5 primary branches and 2.5 secondary branches. ICG 12991 produces small two-seeded pods with thin shells, a slight to medium constriction, and a slight to medium reticulation. Seeds are tan, average 33.9 g 100 seed<sup>-1</sup> in Malawi and 38.0 g 100 seed<sup>-1</sup> in Uganda with no fresh seed dormancy. Typically, ICG 12991 seed has an oil content of 43% and averages 27% protein. The average shelling percentage is 73 to 77% depending on location.

Seeds of this germplasm line are deposited with the National Center for Genetic Resources Preservation, 1111 S. Mason St., Fort Collins, CO 80521–4500.

C.M. DEOM,\* T. KAPEWA, C.M. BUSOLO-BULAFU, R.A. NAIDU, A.J. CHIYEMBEKEZA, F.M. KIMMINS, P. SUBRAHMANYAM, AND P.J.A. VAN DER MERWE

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C.M. Deom, Dep. Plant Path., Univ. of Georgia, Athens, GA 30602; A.J. Chiyembekeza and T. Kapewa, Chitedze Agric. Res. Stn., Lilongwe, Malawi; C.M. Busolo-Bulafu, Serere Agric. and Animal Res. Inst., Soroti, Uganda; R.A. Naidu, Washington State Univ., Prosser, WA; Frances M. Kimmins, Nat. Res. Inst., Kent, United Kingdom; Subrahmanyam and P.J.A. van der Merwe, ICRISAT, Lilongwe, Malawi. Registration by CSSA. Accepted 31 July 2005. \*Corresponding author (deom@uga.edu).

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