Registration of ‘GP-1’ Peanut

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GP-1 peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) (Reg. No. CV-96, PI 633866) cultivar was developed by the University of Florida Agricultural Experiment Station (UFAES) and was approved for release in 2002. GP-1 is an early maturing (126–128 d), runner market-type peanut cultivar with high oleic (~80% C18:1) fatty acid seed oil chemistry. It has some resistance to spotted wilt caused by Tomato spotted wilt virus (TSWV), a Tospovirus. Tested experimentally as UF98604 (89xOL14-1-3-2-2-b2-B), GP-1 originates from a cross of ‘Marc I’ (Gorbet et al., 1992) with F435-H01 (Norden et al., 1987) which was then backcrossed to Marc I (Gorbet, 2004). Marc I is an early maturing runner market-type cultivar released by UFAES in 1990. F435-H01 is an unreleased UFAES breeding line used as a source of the high oleic trait in several peanut cultivars (Gorbet and Knauf, 2000). Marc I originates from a cross of a sisterline of ‘Florunner’ (Norden et al., 1969) and ‘Early Bunch’ (Norden et al., 1978). A pedigree selection program was followed under recommended management practices conditions (fungicide sprays, irrigation, and good fertility) through the F4 generation. Seed from two individual F4 plants were bulked to produce F5, plots in yield tests at NFREC Marianna (irrigated, full management) in 1995. TSWV pressure was moderate to strong in the breeding nurseries during selection and emphasis was placed on good runner market-type with resistance to TSWV (Gorbet, 2004).

Plants of GP-1 have intermediate spreading bunch to semi-prostrate (runner) growth habit with alternate branching patterns, normal leaf size and plant color being similar to Marc I. Leaves of GP-1 tend to be somewhat larger than for Marc I. Seeds of GP-1 were plump and rounded to somewhat elongated with a pink testa, and a 100-seed weight of 62 g vs. 58 g for ‘Georgia Green’ (< 0.05) (Branch, 1996). In 24 Florida field tests (1997–2001), GP-1’s pod yield was not significantly different than that of Georgia Green (4386 vs. 4493 kg ha−1), but its sound mature kernel (TSMK) percentage was lower (75 vs. 78%, < 0.05). GP-1 was somewhat more susceptible to TSWV with a disease rating of 5.3 vs. 4.0 (< 0.01) than ‘Andru 93’ (Gorbet and Knauf, 1995), with similar disease levels.

Seeds of GP-1 range in oil content between 43% from West Texas samples to 48% from Florida, compared to 45% oil for Andru 93 in Florida tests. GP-1 seeds have high-oleic and low-linoleic fatty acid content (80% and 2–3%, respectively), similar to ‘SunOleic 97R’ (Gorbet and Knauf, 2000). This chemistry should give improved shelf-life and flavor stability for products from its seed. Seeds of GP-1 have about 26% protein and 4% sugar, with acceptable to good flavor. GP-1 has shell characteristics similar to Andru 93, with strong seed vigor and germination.

Florida data on GP-1 have not shown good resistance to any particular disease, including TSWV. Production of this cultivar should be in a low disease pressure situation and with good management for disease control. This cultivar is most similar to Andru 93 and Marc I but tolerates higher pressure from TSWV and has high-oleic oil chemistry.

GP-1 is protected under U.S. Plant Variety Protection Certificate (PVP No. 200300321) and may be sold only as a class of certified seed. Current commercial seed production is contracted with Golden Peanut Company, Atlanta, GA. Inquiries concerning foundation seed and production of GP-1 should be directed to Florida Foundation Seed Producers, Inc., P. O. Box 309, Greenwood, FL 32443. Breeders seed will be maintained by UFAES. Seeds have been submitted to the National Plant Germplasm System (NPGS) for distribution after expiration of the PVP. Further inquiries on small quantities of seeds for research purposes should be directed to the author.

References


