Registration of ‘Tamrun OL07’ Peanut

‘Tamrun OL07’ (Reg. no. CV-92, PI-642851) is a runner market-type peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) cultivar with a high O/L ratio and good yield potential. The new variety was tested as Tx033630 and was released by the Texas Agricultural Experiment Station in May 2006.

Tamrun OL07 was derived from a three-way cross among ‘Tamrun 96’ (Smith et al., 1998), breeding line Tx901639-3, and ‘SunOleic 95R’ (Gorbet et al., 1997), the donor of the high O/L genes (O = oleic fatty acid; L = linoleic fatty acid). The first cross was made in 1995 between Tx901639-3 and SunOleic 95R. The resulting F₁ progeny were grown in a nursery in Bryan, TX, the following summer. The F₂ progeny were grown in the 1996–1997 winter greenhouse and pollen from those F₂ progeny were used to pollinate Tamrun 96 in the spring of 1997. Resulting F₁ progeny were increased during the summer and individual plant selections (IPS) were made for TSWV resistance during the 1999 growing season. In 2000, the resulting selections were space planted as F₂ generation plants in a Sclerotinia blight nursery and reselected as IPS for disease resistance and uniformity of agronomic characteristics. F₃ generation individual plant selections were planted in the greenhouse during the winter of 2000–2001 as a quarantine measure because Sclerotinia blight (caused by Sclerotinia minor Jaggar) can be seed transmitted and subsequent testing on Sclerotinia-free fields was to follow. The F₄ generation plant rows were grown in the 2001 TSWV nursery where final selections were made on the basis of TSWV disease ratings.

The final selection was yield tested as breeding line Tx033630. Initial yield testing for Tamrun OL07 began as an F₄ generation bulk in 2002 and was conducted until 2005 resulting in a F₄:10 generation line for release.

Tamrun OL07 has a larger vine than that of ‘Tamrun OL 01’ (Simpson et al., 2003). The mainstem height is, on average, 13.9 cm taller than Tamrun OL 01 (p ≤ 0.01), and the N + 1 lateral branches are 15.3 cm longer (p ≤ 0.01). The mainstem is apparent at most locations and seeding rates tested. Branching is profuse like Tamrun OL 01 and the branching pattern is alternate, although not perfectly 2 + 2. Leaf color is medium green, as with Tamrun OL 01 (RHS 137A).

Pods of Tamrun OL07 are mostly two seeded and shorter than those of Tamrun OL 01 resulting in significantly smaller seed size, averaging 68.1 vs. 72.3 g 100 seed⁻¹ (p ≤ 0.05), across all locations. Pod constriction between the seeds is moderate and no differences were detected between the two cultivars in analysis of pod measurements.

Disease ratings indicate that Tamrun OL07 has more resistance to TSWV than Tamrun OL 01, ‘Tamrun OL 02’ (Simpson et al., 2006), and Flavor Runner 458. Yield test in a South Texas TSWV nursery showed Tamrun OL07 had fewer diseased plants with a visual rating of 28.3% as compared with Tamrun OL 01, Tamrun OL 02, and Flavor Runner 458 with ratings of 58.8, 55.0, and 74.1%, respectively (p ≤ 0.01). The increased disease resistance for Tamrun OL07 was reflected in higher yields under heavy TSWV pressure. Data analyzed from 2004 and 2005 detected a difference between Tamrun OL07 and the check cultivars. Tamrun OL07 yielded 58.8, 55.0, and 74.1%, respectively.

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References


