Registration of ‘Tamrun OL 02’ Peanut

‘Tamrun OL 02’ (Reg. no. CV-88, PI 633041) is a runner market-type peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) cultivar with a high O/L ratio (O = oleic acid; L = linoleic acid) and having good yield potential. The new variety was tested as Tx977053 and was released by the Texas Agricultural Experiment Station on 6 Nov. 2002.

Tamrun OL 02 has vine size larger than ‘Tamrun 96’ (Smith et al., 1998). The main stem is apparent at most locations and seeding rates. The lateral branching is profuse, like Tamrun 96, and the branching pattern is alternate, although not perfectly 2+2. Leaf color is medium green, like Tamrun 96 (RHS 146A). Pods of Tamrun OL 02 are larger in size than ‘Florunner’ (Norden et al., 1969) and Tamrun 96, mostly two seeded (up to 1% three seeded). The constriction between the kernels is moderate but deeper than Tamrun 96. Seed size is also larger than Tamrun 96 and averages 64.7 g 100 seed⁻1. Maturity of Tamrun OL 02 is equal to or slightly later than Tamrun 96.

Tamrun OL 02 was derived by selection from a first backcross with Tamrun 96 as the recurrent parent and ‘SunOleic 95R’ (Gorbet and Knauf, 1997) the donor of the high O/L genes. The first cross was made in 1995 and the backcross in 1996. The BC₁F₁ was field planted in 1996 and the BC₁F₂ was spaced planted in the Puerto Rico winter nursery in the 1996–1997 season. Individual plants were harvested and planted as BC₁F₂₃ plant rows in a Tomato spotted wilt virus (TSWV) screening nursery in 1997. Among these plant rows selections were made on the basis of disease ratings and agronomic traits. The selected lines were grown the following year in two preliminary yield trials. These BC₁F₂₃ lines were selected on the basis of disease ratings, yield, and grade characters. This increase was used to conduct the first O/L analysis in 1998. From a subsequent yield test in 1999, BC₁F₂₅ seed were tested for high O/L, bulked, and planted as BC₁F₂₆. From this increase a second group of BC₁F₂₇ seed were chosen, retested for O/L ratio, and increased for breeder seed increase. The released material was BC₁F₂₈.

In 21 tests during 1998 to 2001, Tamrun OL 02 averaged 10% higher yield than Florunner in Central Texas, West Texas, and southwestern Oklahoma. Total sound mature kernels (grades) were slightly lower for Tamrun OL 02 than for Florunner in these tests and seed weight 100 seed⁻¹ was significantly higher (64.7 vs. 59.8 g.)

In shelling tests, Tamrun OL 02 was similar to Florunner in jumbo, medium, and No. 1 seed size distribution. Splits, other kernels, damage kernels, and oil stock were also equal.

Quality analyses indicated significant differences between Tamrun OL 02 vs. Florunner and Tamrun 96, including such traits as O/L ratio = 29.0, iodine number = 81.3, oil content = 49.55%, protein = 25.99%, with flavor and blanchability similar. Subsequent testing indicates the O/L ratio was 24.1, and sugar content was significantly lower than Tamrun OL 01.

Disease ratings indicate that Tamrun OL 02 has a moderate level of some of the same disease tolerance as Tamrun 96 and ‘Tamrun OL 01’ (Simpson et al., 2003). No significant increase in TSWV, stem rot or southern blight (caused by Sclerotium rolfsii Sacc.) and sclerotinia blight (cause by Sclerotinia nor Jagger).

Foundation seed of Tamrun OL 02 will be produced and released under a license agreement between the Tamrun 96 and ‘Tamrun OL 01’ peanut. Crop Sci. 37:1392.

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References


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