Registration of ‘Tamnut OL06’ Peanut

‘Tamnut OL06’ (Reg. no. CV-91, PI 642850) is a large seeded, spanish-type peanut (Arachis hypogaea L. subsp. fastigiata Waldron var. vulgaris Harz.) cultivar that has the high O/L genes (O = oleic fatty acid; L = linoleic fatty acid) and is high yielding. It exhibits some disease tolerance and is earlier in maturity than virtually all runner cultivars presently available to growers. The objective of releasing this cultivar was to provide the peanut growers of West Texas with a peanut that has almost the same size seed as the popular runner-type ‘Florunner’ (Norden et al., 1969) cultivar but with some disease tolerance and earlier maturity. Tamnut OL06 was tested as Tx034342 and released in May 2006 by the Texas Agricultural Experiment Station, Texas A&M University System.

Tamnut OL06 was derived as a single plant selection from a fourth backcross (BC) between ‘Tamspan 90’ (Smith et al., 1991) and a BC3 progeny developed from crosses between Tamspan 90 and UF 435–2–1, the original source of the high O/L genes. The original cross and backcross produced progenies from which the cultivar OLin (Simpson et al., 2003) was selected and developed; Tamnut OL06 followed from further BC studies with this same material that produced the OLin cultivar. In the subsequent BC, after the selection of OLin, individual seed were tested for O/L ratio, planted, evaluated, and selection pressure applied for various desirable agronomic characters including seed size, plant growth habit, maturity, and yield. One of the major constraints that had to be overcome was the strong association between the high O/L trait and small seed size in the initial crossing program with the spanish-type cultivars. Various tests and generation advances were conducted at each BC cycle, including O/L ratio and yield, when sufficient seed were available. Generation advances were accomplished in the Puerto Rico Winter Nursery in BC2 and BC3.

The BC4 was made in the spring of 1997, and individual plants (IPS) were selected from the BC4F2 populations in 1998. The BC4F2 selections were analyzed for O/L ratios using five seed samples. The resulting high O/L selections were planted as BC4F2:3 plant rows in 1999. Selected BC4F2:4 populations were yield tested in 2000, and IPS based on seed and pod characteristics were made within these populations. The BC4F2:5 selections were analyzed for O/L ratio with Tamnut OL06 having a ratio of 20:8:1. These selections were increased as BC4F2:5 plant rows in 2001 and increased again as BC4F2:6 plant rows in the 2001–2002 Puerto Rico winter nursery. Initial yield testing for Tamnut OL06 began as BC4F2:7 generation materials in 2002 and were conducted until 2005, resulting in BC4F2:10 generation lines. The material that was proposed for release was a combination of BC4F2:10 and BC4F2:11, the latter resulting from a portion of the BC4F2:10 being sent to the Puerto Rico Winter Increase Nursery in November 2005.

The plants are essentially the same size as Tamspan 90, at three locations during 2004 and 2005 to compare OL06 with Florunner, Tamspan 90, and OLin. Tamnut OL06 kernel (ELK) 8.53- × 25.4-mm slotted screen fraction was equal to Florunner and significantly lower than either Tamspan 90 or OLin with 26.2, 27.9, 3.3, and 60.5%, respectively (p ≤ 0.01). Medium (6.35- × 25.4-mm slotted screen) fraction for Tamnut OL06 was equal to Florunner and lower than both Tamspan 90 and OLin with 5.5, 6.9, 17.8, and 9.1%, respectively. Individual seed size distribution for Tamnut OL06 is within the three major fractions to Florunner (unpublished data). Tests on the blanching properties of Tamnut OL06 indicated that the cultivar blanches as well as spanish-type cultivars tested and will be acceptable to the blanching and split-blanching markets.

Yield data from 2002 through 2005 indicate that Tamnut OL06 performed equal to Tamspan 90 and OLin with average yields of 6049, 6018, and 5675 kg ha−1, respectively (p ≤ 0.05). Total sound mature kernels (TSMK) were equal to Florunner and lower than both Tamspan 90 and OLin: [Tamnut OL06 = 5.7 rating (10 = all plants dead), Tamspan 90 = 5.3, and OLin (p ≤ 0.05)].

Analysis of maturity data indicates that Tamnut OL06 is equal to Tamspan 90 and OLin and earlier than the Florunner cultivar with ratings of 89.1, 85.3, 86.1, and 45.5, respectively (p ≤ 0.05). The hulled-sieve method determined maturity with the percentage of mature pods harvested by those pods which were black, brown, or black and brown, approximately 145 to 150 DAP.

Foundation seed of Tamnut OL06 will be produced and distributed by the Foundation Seed Service of the Texas Agricultural Experiment Station, Vernon, Texas, US. Contact the Texas Foundation Seed Service for more information. No seed will be distributed without written permission from the National Plant Germplasm System (NPGS). Protection for the cultivar is being applied for, and the cultivar may only be sold and grown as a class of certified seed by growers. The objective of releasing this cultivar was to provide a strong association between the high O/L trait and yield, and earlier maturity.