Registration of ‘AT 3081R’ Peanut

‘AT 3081R’ peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) (Reg. no, CV-81, PI 639234) was released in April 2005 by Golden Peanut Company, LLC. It was developed by AgraTech Seed Inc. and was tested as experimental number 00–3081B.

AT 3081R is a midmaturity (135 d in south Georgia) runner-type peanut and was selected for superior yield and tolerance to Tomato spotted wilt virus (TSWV). Parents ‘GK-7’ (PVP 8200141, PI 601061) and H 95 were crossed in 1995. Parent H 95 was derived from interspecific crossing and introgression with wild species A. batizocoi Krapov. & W.C. Gregory (Acc. 9484) at North Carolina State University (Smartt and Gregory, 1967; Stalker et al., 1979). H 95 was selected as a parent for good agronomic traits and for high levels of resistance to the peanut root knot nematode [Meloidogyne arenaria (Neal) Chitwood] (Anderson et al., 2004). Single plant pedigree selection began in the F2 generation and continued through the F5 generation. Individual F7 plants were selected after bulk harvesting for two seasons. In 2000, the progeny row 3081B was selected based on TSWV resistance and runner market type pod and seed characteristics.

Yields averaged 4066 kg ha–1 for AT 3081R compared to 3758 kg ha–1 for ‘C-99R’ (Gorbet and Shokes, 2002) and were significantly higher than ‘Georgia Green’ (Branch, 1996) which yielded 3448 kg ha–1 in seven replicated yield trials over six locations in the Southeast during 2001 and 2002. In five tests AT 3081R had 25% TSWV disease incidence in plots compared to 37% for C-99R. Overall disease ratings, which included TSWV and soilborne diseases, were taken in early September. AT 3081R averaged 35% disease incidence versus 41% for C-99R. AT 3081R had significantly higher yields of 4468 kg ha–1 versus 3798 kg ha–1 for Georgia Green in seven tests in 2003 and 2004.

AT 3081R has a runner growth habit and a mainstem which averages 44.7 cm in height with no flowers. Plants are similar in size to C-99R (rows lap in single row plantings) and dark green, and the mainstem is prominent at maturity. Pods contain two seeds that have smooth pink testa, spherical shape, and weigh 64 g 100–1 seed. The seeds have 46.75% oil (1.58 oleic–linoleic acid ratio) and 29.13% protein. Besides TSWV tolerance, AT 3081R has moderate resistance to both early and late leaf spot diseases (greater resistance than ‘AT 201’ but less than Cercospora arachidicola Hori and Cercospora personatum (Berk. & M.A. Curt.) Deighton, respectively). In greenhouse study, AT 3081R had moderate resistance (6084 egg g–1 root) to peanut root knot nematodes, which is lower than Georgia Green (14 998 egg g–1 root). In two field trials with high nematode pressure AT 3081R averaged 3700 kg ha–1; C-99R and Georgia Green, 3363 kg ha–1. Flavor and acceptance to acceptable released cultivars. The meat color was the same as C-99R (73%). The seed distribution is large (jumbo runner size percentage is 45%) compared to 50% for C-99R and 42% for AT 201.

U.S. Plant Variety Protection is pending for AT 3081R. Breeder and Registered seed of AT 3081R will be maintained by Golden Peanut Company, 100 North Point Center East, Suite 400, Alpharetta, GA, 30022.

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References


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