REGISTRATIONS OF CULTIVARS

Registration of ‘COAN’ Peanut

‘COAN’ (Reg. no. CV-68, PI 610452) is a runner market-type peanut (Arachis hypogaea L. subsp. hypogaea var. hypogaea) (2n = 4x = 40) cultivar with a high level of resistance to root-knot nematodes [Meloidogyne arenaria (Neal) Chitwood and M. javanica (Treub) Chitwood]. The new cultivar was tested as TP262-3-5 and was released by the Texas Agricultural Experiment Station on 25 March 1999. COAN is the first peanut cultivar to have root-knot nematode resistance and is the first to have an identifiable gene transferred from a wild species of Arachis.

COAN was derived from a backcross introgression pathway (Simpson, 1991) involving a complex interspecific amphiplloid hybrid (2n = 4x = 40), utilizing Florunner (A. hypogaea subsp. hypogaea var. hypogaea) as the recurrent parent. The amphiplloid was formed by first crossing A. cardenasis Krapov. and W.C. Gregory/A. diogoi Hoehne, and then crossing the 50% pollen fertile F1 hybrid with A. batizocoi Krapov. and W.C. Gregory. The resulting tri-species hybrid (2n = 20) was <1% pollen stained and produced no fruit. The chromosome number was doubled with colchicine to form TxA 6 (Simpson et al., 1993). TxA 6 is about 89% pollen stained and is highly fertile, both selfed or when crossed with A. hypogaea. The fertile amphiplloid was crossed with Florunner, and five backcrosses produced the designated breeding line, TP262-3-5. In each backcross cycle, selection was made for agronomic characters similar to Florunner and resistance to root-knot nematodes (Nelson et al., 1990; Starr et al., 1990).

COAN has a smaller vine size than Florunner (17% by measurement of main stem and cotyledonary laterals). The smaller canopy has a rounded appearance in mature plants, and the main stem is not apparent in most locations and seeding rates. The lateral branching is profuse, like Florunner, with an alternate pattern, but not uniformly 2 × 2. Leaf color is light green like Florunner. Pods of COAN are similar in size and shape to Florunner, mostly two-seeded (= one in 400, three-seeded). The constriction between the kernels is slightly greater than Florunner (4%). Seed size and color is almost identical to Florunner.

COAN averaged numerically less in yield than Florunner and Tamrun 96 in 19 tests from 1996 to 1998 in Texas but was not statistically different (P = 0.10) than the two check cultivars. In six tests with damaging levels of root-knot nematode present, COAN was 225% higher in pod yield hectare−1 than Florunner with no nematicide application.

Resistance of COAN to root-knot nematodes is expressed as a reduction in nematode reproduction. COAN typically has <10% of the final nematode population density at crop maturity in relation to nematode development on susceptible Florunner (Starr et al., 1995). Nematodes invade the roots of COAN but either fail to develop or develop at a much reduced rate. Resistance to the nematode species was confirmed in the third and fourth self-pollinated generations of TP262-3-5

From the BC1 F2:3, 137 of 300 individual plants were selected for uniform phenotype. Ten seeds per selection were both nematode resistant and 127 progeny rows resulted in 468 kg of Breeder seed, which were produced in Dilley, TX, for Foundation seed increase in the summer of 1997–1998. COAN has a smaller vine size than Florunner (17% by measurement of main stem and cotyledonary laterals). The most promising plants were found in New Jersey, Pennsylvania, North Carolina, Georgia, Alabama, Mississippi, Tennessee, Ohio, Kansas, and Idaho.

‘Plantation’ tall fescue (Festuca arundinacea Schreb.) (Reg. no. CV-85, PI 608578) was developed jointly by the Jersey Agricultural Experiment Station of Rutgers, New Jersey, and Advanta Seeds Pacific, Inc., Albany, OR, and Pennington Seed, Inc. of Madison, GA. It was released in September 1999 by Pennington Seeds, a division of Central Garden and Pet Supply, Lafayette, CA. ‘Pennington 1901’ was the initial designation of Plantation. The first Certified seed was produced in 1999.

References


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