Registration of ‘Stoddard’ Soybean


’S’toddard’ soybean [Glycine max (L.) Merr.] (Reg. No. CV-487, PI 643911) was developed by the Missouri Agricultural Experiment Station at the University of Missouri-Delta Center, Portageville, MO, and released 3 Feb. 2006. It was released because of its high yield potential, broad resistance to soybean cyst nematode (SCN, Heterodera glycines Ichinohe) populations, resistance to southern root knot nematode [Meloidogyne incognita (Kofoid and White) Chitwood] and resistance to sudden death syndrome (SDS) [caused by Fusarium solani (Mart.) Sacc. f. sp. glycines Roy].

Stoddard, tested as S00-9925-10, is early Group V maturity (RM 5.1). It is an F₃ single plant selection composed in the F₆ generation from the cross K1393 × ‘Anand’ (Anand et al., 2001) made in 1997. K1393 is from ‘KS 5292’ (Schapaugh and Todd, 1998) × ‘Hutcheson’ (Buss et al., 1988). The F₁ generation was grown in Puerto Rico. The F₂ to F₄ generations were advanced alternately in the SCN nursery at the University of Missouri Rhodes Farm near Clarkton, MO, and in Puerto Rico, respectively by the bulk pod method. The bulk pod method we used involved harvesting a single three-seeded pod from each of up to 500 plants in each generation, and then bulked seed from harvested pods was planted to advance the next generation.

The F₅ generation was grown in Costa Rica during the winter and spring of 2000, and 100 single plants were harvested, threshed individually, and planted in F₆ progeny rows in the SCN nursery at Clarkton during the summer of 2000. The F₆ row S00-9925-10 was uniform for agronomic traits, bulked and tested in southeast Missouri for yield, agronomic, and disease traits from 2001 to 2005. Stoddard was also tested in the Southern Regional Uniform Preliminary Group IVS test in 2002 and Uniform Group IVS test in 2003 to 2005. Yields of Stoddard have averaged 200 kg ha⁻¹ more than ‘Manokin’ (Kenworthy et al., 1996) to 400 kg ha⁻¹ more than ‘Manokin’ (Kenworthy et al., 1996) on sand, loam, and clay soil types in 25 southern Missouri tests. Yields for Stoddard have been similar to the high yielding variety ‘5002T’ (Pantalone et al., 2004). In comparison to 5002T in the Uniform Tests-Southern States across 3 yr and 43 locations (Paris and Bell, 2000; Shelton, 2006), Stoddard averaged 1% less in seed yield (5002T yielded 3480 kg ha⁻¹); the same maturity (5002T was 71 cm); and 1.5 g 100 seeds⁻¹ larger seed (5002T was 14.6 g 100 seeds⁻¹).

Plants of Stoddard have a determinate growth habit with white flowers, tawny pubescence, and tan pods at maturity. Seed protein and oil content on a dry weight basis have averaged 39.6 g kg⁻¹ and 19.8 g kg⁻¹, respectively compared to 40.6 g kg⁻¹ and 20.5 g kg⁻¹ for 5002T. Stoddard has shown a similar reaction to SCN HG types (Stoddard has shown moderate resistance to SCN HG type 1.2—Race 2), HG type 0 (Race 3), HG type 1- (Race 5), and HG type 1.3- (Race 14) in greenhouse tests in MO, MO, and Columbia, MO, in 2003 and 2005. Indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002). In the same tests female indexes on Stoddard for each HG type above were 23, 1, 15, 1, and 1, respectively based on a SCN female index of 100 for the susceptible check (Niblack et al., 2002).