Registration of 97-363, 97-2170, and 97-2162 Pea Germplasms

Three F3 sugar snap pea (Pisum sativum L.) breeding lines, 97-363 (Reg. no. GP-91, PI 606699), 97-2170 (Reg. no. GP-92, PI 606700), and 97-2162 (Reg. no. GP-93, PI 606701), were developed cooperatively and released jointly by the USDA-ARS and the Washington, Idaho, and Oregon Agricultural Experiment Stations in August of 1998. These breeding lines are unique in combining genes for resistance to root rot [caused by Fusarium solani (Mart.) Sacc. f. sp. pi (van Hall) Snyd. & Hans.] (5) and with the recessive n and p genes for thick, edible pod walls. All three lines contain a string in the suture of the pod walls but are of excellent quality. These lines have consistently outyielded susceptible commercial snap pea cultivars including Sugar Snap, Sugar Mel, and Sugar Daddy when grown in fields severely infested with A. euteiches, F. solani, and fusarium wilt. 97-363 blooms in the 15th node, is single and double podded, and is tolerant of fusarium root rot and Races 1 and 6 of fusarium wilt. 97-2170 is tolerant of fusarium root rot but is susceptible to fusarium root rot and tolerant to aphanomyces root rot. 97-2162 blooms in the 14th node and is single pedded. Pods are 6.4 to 10.2 cm in length and are sickle-shaped with excellent eating quality. Seeds are a mixture of smooth and dimpled types. This line is tolerant of aphanomyces root rot but is susceptible to fusarium root rot and is resistant to Races 1, 2, 5, and 6 of fusarium wilt. The expected uses of 97-363, 97-2170, and 97-2162 are as parents to develop sugar snap pea cultivars with increased multiple disease resistance, with special emphasis on combining genes for resistance to root rot and wilt. All three of these lines could be grown as home-garden types without further selection or refinement. Small amounts of seed of these lines are available from the corresponding author. We request that the germplasm source be acknowledged if they undergo further selection, or are used in crosses for development of improved cultivars.

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References and Notes


Registration of SR93 Sugarbeet Germplasm with Smooth Root

Sugarbeet (Beta vulgaris L.) germplasm SR93 (Reg. no. GP-204, PI 598075) was developed by the USDA-ARS and the Michigan Agricultural Experiment Station, in cooperation with the Beet Sugar Development Foundation, and released in May 1997. SR93 has excellent root smoothness, equivalent to SR87 (4) but with broader genetic background. The smooth-root characteristic reduces soil quantities taken from the field on harvested beets, as well as subsequent soil disposal costs at the sugar factory (4). Smooth-root sugarbeets also are prospective components of redesigned sugarbeet harvesting and piling systems that reduce bruising and subsequent storage-pile sugar losses due to rot and respiration. SR93 is an increase of seed produced by open pollination of 12 smooth-root selections resulting from two cycles of mass selection for root smoothness in a population derived from a series of pair-crosses among plants not selected for root smoothness. The series started with a sulfonylurea herbicide resistant regenerant plant (2), from callus of clone REL-1 (1), crossed to a single plant of EL48. A single sulfonylurea herbicide resistant progeny plant was crossed to a plant of smooth-root line SP85700 (PI 590776). Two herbicide resistant progeny plants from that mating were pair-crossed to two plants from a high sucrose line, L19 (PI 590690) (3). Four herbicide resistant plants from the resultant progenies were pair-crossed to SR87 (developed from one cycle of mass selection for root smoothness from SP85700) plants, producing the four families that entered the two smooth-root mass selection