Registration of ‘Canstar’ Field Pea

‘Canstar’ (Reg. no. CV-25, PI 642785), a semileafless field pea (Pisum sativum L.) cultivar with yellow cotyledons, medium seed size, and resistance to powdery mildew, caused by Erysiphe pisi DC. var. pisi, was developed at Agriculture and Agri-Food Canada (AAFC), Morden Research Station (MRS), Morden, MB, Canada. Registration no. 5894 was issued for Canstar on 8 Sep. 2005 by the Variety Section, Plant Health and Plant Products Division, Canadian Food Inspection Agency.

Canstar was derived from the cross 4-0359.016‘Aladin’ made at AAFC, MRS in 1995. Breeding line 4-0359.016 was a semileafless, powdery mildew resistant yellow pea line developed by Danisco Seeds, Denmark, and registered later as cultivar ‘DS Stalwarth’ (Andersen et al., 2001). Aladin, a yellow field pea cultivar developed by Nickerson Seed, UK, was susceptible to powdery mildew. Powdery mildew resistant plants were selected in the field from the F2 population of the cross at MRS in 1996. The F2–F4 generations were advanced in the greenhouse using single seed descent in the winter of 1996–1997. The F5 was grown at Morden, MB, Canada, in the summer of 1997. One of the selected plants based on plant type, maturity, and resistance to powdery mildew from the F5 population was advanced to the F6 generation in a progeny row at Brawley, CA, during the winter of 1997–1998. This progeny row was bulk-harvested and named line 9561098. It was evaluated in a preliminary yield trial at Morden in the summer of 1998 at the generation of F4. In 1999, line 9561098 was evaluated in replicated yield trials at the generation of F5 at six locations in Canada with three locations in Manitoba (MRS, Morden Berdick, and Portage la Prairie), one location in Saskatchewan (Melfort), and two locations in Alberta (Lacombe and Edmonton). In 2000 (F6), it was tested at five locations in Manitoba (MRS, Morden Berdick, Portage la Prairie, Thornhill, and Roblin), four locations in Saskatchewan (Indian Head, Melfort, Scott, and Swift Current), three locations in Alberta (Lacombe, Beaverlodge, and Grande Prairie), and one location in Quebec (St. Bruno). It was tested in the 2002–2003 Field Pea Cooperative Test-B as MP1814. The breeder seed of Canstar was formed from one bulk-harvested plot at the F8 generation.

Canstar is adapted to all field pea-growing regions in western Canada. Compared with the check cultivars Carrera, Eclipse, and CDC Mozart over 18 site-years in the 2002–2003 Field Pea Cooperative Test-B, Canstar yielded 3695 kg ha⁻¹, being 15, 3, and 9% higher than Carrera, Eclipse, and CDC Mozart, respectively. Canstar matured at 96 d, identical to Carrera, 1 d earlier than CDC Mozart, and 2 d earlier than Eclipse. Plant height of Canstar was 66 cm, taller than Carrera, Eclipse, and CDC Mozart by 17, 5, and 10 cm, respectively. The preharvest lodging score over 18 site-years was 3.5 for Canstar, 4.9 for Carrera, 3.5 for Eclipse, and 4.8 for CDC Mozart based on a 1-to-9 scale (1 = upright, 9 = prostrate).

Canstar has white flowers, yellow cotyledons, an opaque seed coat color, and round seed shape. The 1000-seed weight was 2.9 for Canstar, 2.5 for Carrera, 3.3 for Eclipse, and 2.5 for CDC Mozart. Puree viscosity was measured (cm) that 50 mL of puree advanced down a Consistometer in 10 s, where 1 indicated the highest viscosity (well-cooked) and 24 indicated the lowest (poorly cooked). Canstar had a viscosity score of 18 for Carrera, 22 Eclipse, and 21 for CDC Mozart.

Canstar is resistant to powdery mildew, eclipse, and CDC Mozart, while Carrera is susceptible to powdery mildew. Canstar is susceptible to Mycosphaerella piiformis caused by Mycosphaerella piiformis (Berk. & Cooke) Vestergr., with a disease severity score of 7.0 (based on a scale 1–9, where 1 = no disease, 9 = whole plant blighted), similar to the check cultivars Carrera (6.3), and CDC Mozart (6.7).

Breeder seed of Canstar is being main at the Agri-Food Canada, Morden Research Farm, Indian Head, SK, Canada. It has been released on an exclusive basis through an arrangement to Canseed Canada Ltd. (P.O. Box 700, Stettler, AB, Canada, T0C 2L0). Pedigree and quality can be purchased from Canseed Ltd. Plant breeder rights for Canstar have been applied for from the Canadian Food Inspection Agency (application no. 04–4208). Plant breeder’s rights for Canstar have been applied for from the Canadian Food Inspection Agency (application no. 04–4208). Pedigree and quality can be purchased from Canseed Ltd. Plant breeder’s rights for Canstar have been applied for from the Canadian Food Inspection Agency (application no. 04–4208).

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References


