Registration of ‘Reward’ Field Pea

‘Reward’ (Reg. no. CV-24, PI 642784), a semileafless, powdery mildew (caused by *Erysiphe pisi* DC. var. *pisi*) resistant field pea (*Pisum sativum* L.) cultivar with white flowers and yellow cotyledons, was developed at Agriculture and Agri-Food Canada (AAFC), Morden Research Station (MRS), Morden, MB, Canada. It has high seed yield, medium seed size, round seed shape, and excellent lodging resistance. Reward was registered at the Variety Section, Plant Health and Plant Products Division, Canadian Food Inspection Agency (registration no. 5966) on 27 June 2005.

Reward was derived from the cross 4-0359.016/MP1491 made at AAFC MRS in 1996. 4-0359.016 is a breeding line of yellow field pea developed by Danisco Seeds, Denmark. It is semileafless, resistant to powdery mildew, and was later registered as cultivar DS Stalwarth (Andersen et al., 2001). MP1491, a field pea breeding line susceptible to powdery mildew, was developed at AAFC MRS from the cross ‘Topper’/‘Montana’. The breeding method for Reward was pedigree selection in combination with single seed descent in the F3–F4 generations. The F1 was grown in the greenhouse at AAFC MRS in the spring of 1997. The F2 generation was grown in the field in Morden, MB, Canada in the summer of 1997. Powdery mildew resistant plants were selected from the F2 population and advanced to the F3 by single seed descent in the greenhouse during the winter of 1997. In the summer of 1998, the F5 generation was grown at Morden, MB, Canada. Single plants, selected from the F5 population on the basis of plant type, resistance to powdery mildew and lodging resistance, were grown in progeny rows (F3) at Brawley, CA, USA (October 1998–March 1999). One of the selected progeny rows from the F5 was named line 9674057. This line was tested in a preliminary yield trial (F7) at AAFC MRS in the summer of 1999 and in replicated yield trials (F8) at two locations (Morden and Portage la Prairie, MB, Canada) in the summer of 2000. It was renamed P9674057 (F9) in 2001 and tested at 13 locations in Canada with four locations in Alberta, Saskatchewan, and Manitoba and one location in Quebec. It was entered into the 2002–2003 Western Canada Field Pea Cooperative Registration Test-A as MP1820 and evaluated at 17 location-years. The breeder seed for Reward was derived from a bulk harvested F9 single line.

Reward is adapted to all field pea growing regions in western Canada. In the 2002–2003 Western Canada Field Pea Cooperative Registration Test-A over 17 station-years, Reward yielded 3983 kg ha⁻¹, which was 30, 10, and 18% greater than the check cultivars Carrera (3058 kg ha⁻¹), Eclipse (3619 kg ha⁻¹), and CDC Mozart (3379 kg ha⁻¹), respectively. On the basis of a 1-to-9 scale (1 = upright, 9 = prostrate), Reward had a lodging score of 2.4 vs. 4.0 for Carrera, 2.7 for Eclipse, and 4.1 for CDC Mozart over 16 station-years. Reward matured in 92 d, 2 d later than Carrera, but 1 d earlier than Eclipse and 2 d earlier than CDC Mozart. Reward (68 cm) was significantly taller than Carrera (47 cm), Eclipse (57 cm), and CDC Mozart (55 cm) in the single seed descent 15 progeny rows.

Eclipse, and 2.7 for CDC Mozart. Granulation of pulp (scored on a 1-to-5 scale, 1 = very good, 5 = very poor) was 3.3 for Reward compared with 2.6 for Carrera, 3.3 for Eclipse, and 2.7 for CDC Mozart. Puree viscosity was measured in centipoise (cp) that 50 mL of puree advanced down a Consistometer (Cenco Instrument Corp., Chicago, IL) where 1 indicated the highest viscosity (well cooked) and 5 indicated the lowest viscosity (poorly cooked). Puree viscosity score of 19 vs. 21 for Carrera and 22 for Eclipse, and 24 for CDC Mozart.

Similar to Eclipse and CDC Mozart, Reward is adapted to powdery mildew, while Carrera is susceptible. A disease severity score of 5.9 based on a 1–9 scale (9 = whole plant was severely blighted, 1 = no disease, 9 = whole plant was severely blighted, a disease caused by *Mycocepus从小孢属*, Berk. & Blox.) Vestergr., similar to Carrera and Eclipse, while CDC Mozart had a score of 6.5.

Breeder seed of Reward is being maintained at the Agri-Food Canada, Lacombe Research Centre, Indian Head, SK, Canada S0G 2K0. It has been released on an exclusive basis to Stalwarth field pea. Can. J. Plant Sci. 81:281–282.

Development of Reward was funded by Agriculture and Agri-Food Canada, the Manitoba Pulse Growers, the Saskatchewan Pulse Growers, the Alberta Pulse Commission, and the Western Canadian Pea Growers Association. The cultivar is registered with the Plant Breeder’s Rights Act of Canada and Plant Products Division, Canadian Food Inspection Agency (application no. 05-4966). Contact Agri-Food Canada for permission for 18 yr from the date of registration for production and sale of pedigreed seed. Plant Breeder’s Rights for Reward have been applied for from the Canadian Food Inspection Agency (application no. 05-4966).

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**References**


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