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Complete List of Authors:	Warkentin, Tom; University of Saskatchewan, Crop Development Centre/Plant Sciences Tar'an, Bunyamin; University of Saskatchewan, Plant Sciences Banniza, Sabine; University of Saskatchewan, Crop Development Centre Vandenberg, Albert; University of Saskatchewan, Plant Sciences Bett, Kirstin; University of Saskatchewan, Plant Sciences Arganosa, Gene; University of Saskatchewan, Plant Sciences Barlow, Brent; University of Saskatchewan, Crop Development Centre Ife, Scott; University of Saskatchewan, Crop Development Centre Horner, Jaret; University of Saskatchewan, Crop Development Centre DeSilva, Devini; University of Saskatchewan, Crop Development Centre Wagenhoffer, Stacey; University of Saskatchewan, Crop Development Centre Liu, Yong; University of Saskatchewan College of Agriculture and Bioresources Prado, Thiago; University of Saskatchewan, Crop Development Centre Mikituk, Kevin; University of Saskatchewan Department of Plant Sciences
Keywords:	field pea, <i>Pisum sativum</i> , cultivar description

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CULTIVAR DESCRIPTION

CDC Canary yellow field pea

Tom Warkentin¹, Bunyamin Tar'an, Sabine Banniza, Albert Vandenberg, Kirstin Bett,

Gene Arganosa, Brent Barlow, Scott Ife, Jaret Horner, Devini de Silva, Stacey

Wagenhoffer, Yong Liu, Thiago Prado, and Kevin Mikituk

Crop Development Centre, University of Saskatchewan,

51 Campus Drive, Saskatoon, SK, S7N 5A8

¹corresponding author, email: tom.warkentin@usask.ca.

CDC Canary, a yellow cotyledon field pea (*Pisum sativum* L.) cultivar, was released in 2017 by the Crop Development Centre, University of Saskatchewan for distribution to Select seed growers through the Variety Release Committee of the Saskatchewan Pulse Growers. CDC Canary has good lodging resistance, medium-sized, round seeds, early maturity, and good yielding ability. CDC Canary is adapted to the field pea growing regions of western Canada.

Key words: field pea, *Pisum sativum* L., cultivar description

CDC Canary is a field pea (*Pisum sativum* L.) cultivar developed by the Crop

Development Centre (CDC), University of Saskatchewan. It was issued registration number 8221 on March 31, 2017 by the Canadian Food Inspection Agency, Variety Registration Office.

Breeding Methods and Pedigree

CDC Canary was developed from the pedigree Ceb 4159/Carneval//CDC Meadow, whereby the F_1 from the simple cross was used to develop the second cross made in 2006. CDC Meadow was developed by the Crop Development Centre (CDC), University of Saskatchewan (Warkentin et al., 2007). Carneval was developed by Svalof Weibull (Sweden) and Ceb 4159 was developed by Cebeco Zaden (Netherlands). The objective of this cross was the development of a high yielding cultivar with powdery mildew (*Erysiphe pisi* DC.) resistance, improved lodging resistance and medium seed size. Selection for seed size and shape was conducted in the F_1 and F_2 generations. Selection for powdery mildew resistance was conducted in the F_2 generation under natural infection conditions, with CDC Meadow and Ceb 4159 being resistant parents. The $F_{2:3}$ family was evaluated in field trials in Saskatoon in 2009. Preliminary replicated yield trials were conducted in the F_4 in Saskatoon in 2010. An F_4 line, 3360-7, was selected based on good yield, good lodging resistance, and medium seed size. This line was evaluated in replicated yield trials in Saskatoon, Rosthern, Meath Park, Pasqua and Wilkie, Saskatchewan and St. Albert, Alberta in 2011, then in 2012 at the same locations (except Pasqua) plus Mildred and Yorkton in Saskatchewan, and Barrhead, Lacombe, and Vegreville, Alberta. It was then entered as CDC 3360-7, an $F_{2:7}$ line, in the Field Pea Co-

operative Registration Test-B in 2013 and 2014.

These trials were conducted by the following organizations at the following locations:

- Alberta Agriculture and Forestry research sites at Brooks, Barrhead, St. Albert, and Vegreville, AB
- University of Saskatchewan in Saskatoon, Limerick, and Yorkton, SK
- Agriculture and Agri-Food Canada Research Centres located in Indian Head, Scott, Melfort, and Swift Current, SK, Lacombe, AB and Brandon, MB

Breeder seed of CDC 3360-7, later named CDC Canary, was derived by bulking 78 F_{6,9} lines in 2014, after discarding phenotypic outliers.

Performance

In two years of testing in the Field Pea Co-operative Test-B (22 site-years), CDC Canary had significantly greater yield than the check cultivars Agassiz and CDC Golden (Table 1). CDC Canary had the same time to maturity as CDC Golden, one day earlier on average than Agassiz, with longer vines compared to the checks. In the lodging score, CDC Canary was superior to CDC Golden, not significantly different from Agassiz. CDC Canary had greater seed weight than the checks, with somewhat blockier seed shape. Protein concentration of CDC Canary was the same as Agassiz, somewhat less than CDC Golden. CDC Canary had similar percent seed coat breakage (Reichert et al., 1986) as CDC Golden, less than Agassiz. CDC Canary is adapted to the field pea growing region of western Canada.

Other Characteristics

CDC Canary has a semileafless leaf type, white flowers, yellow cotyledons, opaque seed coat and round, smooth seed. CDC Canary was evaluated in mist-irrigated field disease nurseries at Morden and Saskatoon as part of the Field Pea Co-operative Registration Test in 2013 and 2014. CDC Canary was resistant to powdery mildew, as were CDC Golden and Agassiz (Table 1). CDC Canary was moderately susceptible to mycosphaerella blight [*Mycosphaerella pinodes* (Berk. & Bloxam) Vestergren] and moderately resistant to Fusarium wilt [*Fusarium oxysporum* Schlecht. emend. Snyder & Hans. f. sp. *pisi* (van Hall) Snyder & Hans], similar to the checks (Table 1).

Availability of Propagating Material

Breeder seed of CDC Canary is maintained by the Crop Development Centre, University of Saskatchewan, 51 Campus Drive, Saskatoon, Saskatchewan, Canada, S7N 5A8. Distribution rights for CDC Canary are held by the Saskatchewan Pulse Growers (207-116 Research Drive, Saskatoon, Saskatchewan, Canada, S7N 3R3). Breeder seed of CDC Canary was first distributed in 2017 to seed growers qualified as Select seed growers by the Canadian Seed Growers' Association.

Appreciation is expressed to the pulse crop breeding staff at the Crop Development Centre, University of Saskatchewan, for their technical assistance in the development of CDC Canary, and to Dave Benallack and Craig Ells (also at the Crop Development Centre) for breeder seed production. Financial support of the Saskatchewan Pulse

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Table 1. Summary of agronomic, quality, and disease data for CDC Canary and yellow cotyledon check cultivars Agassiz and CDC Golden for all station-years based on data from Field Pea Co-operative Test-B in western Canada, 2013-2014

Cultivar	Yield (t ha ⁻¹)	Maturity (d)	Vine	Lodging	Seed wt (g 1000 sd ⁻¹)	Seed	Seed coat	Protein (%) ^d	Mycosphaerella blight		Powdery	Fusarium
			length (cm)	score (1-9) ^a		shape (1-5) ^b	breakage (%) ^c		MB	SK	mildew (0-9) ^f	wilt (%) ^g
CDC Canary	5.10	97	95	3.9	232	3.0	2	22.7	4.9	4.4	0.0	27
CDC Golden	4.47	97	87	4.7	210	2.5	2	23.7	4.8	4.2	0.0	25
Agassiz	4.80	98	90	4.2	223	2.6	5	22.7	5.0	4.4	0.0	21
LSD (P=0.05)	0.29	0.8	3.8	0.5	7.7	0.2	2.6	0.7	1.2	1.1	-	18
Site-yr (<i>n</i>)	22	20	16	23	19	20	4	9	2	2	2	2

^a1 = no lodging, 9 = completely lodged, assessed at physiological maturity.

^b1 = round, 5 = cubed.

^cBased on Reichert et al. (1986) with the following modifications: seed equilibration to 14% moisture content, use of equal seed volumes per well, instead of equal numbers of seeds per well, and without arcsin data transformation.

^dProtein content (N X 6.25) expressed as dry weight basis, predicted by near infrared spectroscopy (NIR).

^e0 = no disease; 9 = whole plant severely blighted.

^f0 = no disease; 9 = whole plant severely mildewed.

^gpercent of plants with symptoms of Fusarium wilt.