

MEMORANDUM

TO: Prairie Recommending Committee for Pulse and Special Crops
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DATE: February 10, 2022
SUBJECT: **Request for support for registration of yellow cotyledon field pea variety CDC 5779-1**

Strengths

- Improved yield (106%) compared to the mean of the yellow checks (AAC Lacombe and CDC Amarillo)
- Good lodging resistance, better than the checks
- Medium-long vine length, longer than the checks
- Greater seed protein concentration than the checks
- Low seed coat breakage percentage, less than the checks

Neutral traits

- Medium maturity, similar to the checks
- Medium seed weight, similar to CDC Amarillo, less than AAC Lacombe
- Round seed shape, similar to the checks
- Powdery mildew resistance, same as the checks
- Fair mycosphaerella blight resistance, slightly more resistant than CDC Amarillo, similar to AAC Lacombe
- Moderate Fusarium root rot resistance, similar to the checks

Description

Yellow cotyledon, semileafless field pea variety CDC 5779-1 was tested in the Field Pea Co-operative Registration Test-A in 2020 and 2021. Performance data for CDC 5779-1 are summarized in accompanying Table 1. Seed photos for CDC 5779-1 and check varieties are in Fig 1.

Table 1. Performance of yellow pea variety CDC 5779-1 compared to the checks (Pea Co-op Test-A, 2020-2021)

	[21]		[19]	[19]	[17]	[13]	[12]	[13]	[4]	[11]	[2]	[1]
	Yield						Seed					
Variety	kg/ha	% of yellow	DTM	VLTH	PHL (1-9)	Weight (g/1000)	Shape (1-5)	Protein (%)	Myco (0-9)	SCB (%)	FRR (1-7)	PM
CDC Amarillo	3780	100	91	71	2.9	226	2.5	22.7	4.2	16.8	3.5	R
AAC Lacombe	3798	100	91	71	2.9	254	2.7	23.3	3.9	10.6	3.8	R
CDC 5779-1	4012	106	91	74	2.6	226	2.6	23.8	3.9	3.3	3.2	R
CV	7.1		1.4	6.7	19.4	3.4	10.9	3.2	6.6	53.1	17.1	na
LSD	135.7		0.7	2.6	0.3	5.2	0.2	0.5	0.3	2.4	1.4	na

Yield: % of yellow = percent yield of the average yield of yellow checks;

DTM = Days to maturity; VLTH = Vine length (cm); PHL = Pre-harvest lodging score (1=upright, 9=flat);

Shape: 1=round, 5=blocky;

SCB=seed coat breakage

Myco: mycosphaerella blight, where 0=no disease, 9=completely blighted

FRR: Fusarium root rot, where 1=healthy, 7=completely decayed, PM: powdery mildew where R=resistant, S=susceptible

[X] number of locations

Fig. 1. Scans of seed samples from the 2021 Pea Co-op Test-A at Brandon, MB of CDC 5779-1 and check varieties AAC Lacombe and CDC Amarillo.



Field Pea: Main Characteristics of Varieties

Variety	Years tested ¹	- Yield as % CDC Amarillo			Maturity	Lodging (1-9) ²	Vine length (cm)	Resistance to: -----							Seed weight g/1000	Protein vs. CDC Amarillo
		1.2 & South 3	North 3 & 4	Irrigation				Myco. blight ³	Powdery mildew	Fus. root rot	Seed coat breakage	Bleach	Seed coat dimpling ⁴	Greenness ⁵		
Yellow																
CDC Amarillo	14	100	100	100	M	3.5	85	4.5	R	MR	F	n/a	F	G	230	23.0
CDC 5779-1	3	111	105	na	M	3.5	85	4.0	R	MR	G	n/a	G	G	230	23.5

¹ Co-op and regional trials in Saskatchewan

² Lodging score (1-9) where 1=completely upright, 9=completely lodged

³ Mycosphaerella blight score (1-9) where 1=no disease, 9=completely blighted

⁴ Seed coat dimpling: VG = 0-5%; G = 6-20%; F = 21-50%

⁵ Greenness: Good = 0-15%; Fair = 16-40%

Key features of CDC 5779-1

Strong yield in south and north Saskatchewan; was highest yielder in 2022 Saskatchewan pea regional trial

Good agronomic package in terms of maturity, lodging resistance, vine length

Good disease resistance package in terms of powdery mildew, mycosphaerella blight, and root rot

Good seed quality package in terms of protein, seed coat breakage, dimpling and greenness

Medium size, round, smooth yellow cotyledon seeds