

MEMORANDUM

TO: *Prairie Recommending Committee for Pulse and Special Crops*
FROM: A.Vandenerg, A. Vargas, S. Banniza, S. Boechler, J. Horner, S. Wagenhoffer, B. Barlow, Y. Liu, D. Raymond, K. Mikituk and D. DeSilva
Crop Development Centre, 51 Campus Drive, University of Saskatchewan
Saskatoon, Saskatchewan S7N 5A8
DATE: February 05, 2025

SUBJECT: Request for Support for Registration of Large Green Lentil Line CDC23.05

Lentil line CDC23.05 was tested for two years in the Lentil Registration Recommendation Trial (LRRT) in 2023-24. Two year agronomic and disease performance data summaries in those trials are included in the accompanying Tables 1, 2 and 3. CDC23.05 is tolerant to imidazolinone herbicide. Table 1 (8 site years) indicates the yield of CDC23.05 was 109% of the large green market class check CDC Lima. Cotyledon colour, flowering time, maturity, plant height are similar to CDC Lima. The seed coat of CDC23.05 is green, and has a slightly more intense green color making it more visually appealing than CDC Lima does.

Strengths: High yield compared to CDC Lima.
Better Seed Coat colour score than CDC Lima making it more visually appealing when marketing.
Tolerant to imidazolinone herbicide.

Neutral: Similar agronomic and maturity characteristics compared to CDC Lima.

Weakness: No noticeable improvement in disease resistance.

Figure 1. Visual comparison of CDC23.05, large green check CDC Lima

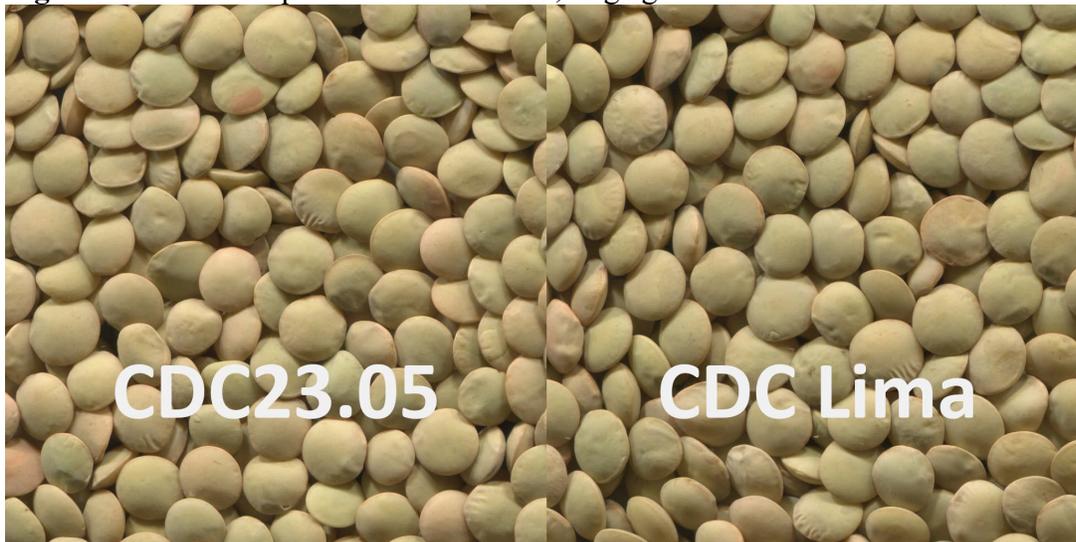


Table 1. Two year summary of agronomic performance data for large green lentil CDC23.05 in the 2023-2024 Lentil RRT in western Canada

Market class	Line	Yield kg/ha	Yield		Seed weight (g/1000)	Days to flower	Days to mature	Lodging* (1-5)	Plant height (cm)	Seed coat colour score (1-5)	% Seed over							
			% of MC-C	% of Nimble							Round Hole (64th inch)							slotted
			6.0mm >15/64	5.6mm >14/64							5.2mm >13/64	4.8mm >12/64	4.4mm >11/64	4.0mm >10/64	3.6mm >9/64	2.6mm >6.5/64		
SR	CDC Nimble	1652	100	100	36	52	84	1.4	40		0	1	9	33	35	17	5	22
LG	CDC Lima	1574	100	95	67	53	86	2.5	38	3.0	29	22	7	3	1	1	1	74
LG	CDC23.05	1711	109	104	59	55	87	2.7	41	3.4	29	26	10	4	2	1	1	49
Mean		1646	103	100	54	53	86	2.2	40	3.2								

[] indicates number of sites
 Market Classes: SR-small red; LG - large green
 Seed Coat Colour Score: CDC Lima = 3, 1 = more green than CDC Lima and 5 = less green than CDC Lima
 *Lodging: no lodging notes taken in 2023 data shown from 2024 season only

Table 2. Ascochyta blight disease data for large green lentil CDC23.05 in the 2023-2024 Lentil RRT in western Canada

Market Class	Line	2023 LCYT		2024 LCYT	
		Mean (%)	Signif*	Mean (%)	Signif*
LG	CDC Lima	46.3	BCD	17.5	CDEFGHIJKLMN
LG	CDC23.05	53.1	AB	31.3	BCDE
SG	Eston	63.8	A	53.8	A
SG	CDC Viceroy	53.1	AB	16.9	DEFG
LG	CDC Greenstar	38.8	BCD	9.4	HIJKLM
ESR	CDC Robin	29.4	DE	12.9	FGHIJKL
FG	CDC Marble			38.8	B
SB	CDC SB-2			21.7	CDEFG
Mean		29.2		60.0	

Significance (Signif*) Entries with a letter in common are not significantly different from each other.
 Ascochyta blight disease testing carried out indoors
 Market Classes: SG-small green; LG-large green; ESR-extra small red; FG-french green; SB-spanish brown
 Disease checks are shaded ascochyta susceptible check-Eston; resistant checks-Redberry, Greenstar, Robin, Viceroy; moderate resistant checks Marble and SB-2

Table 3. Small Green(SG) Anthracnose disease data for large green lentil CDC23.05 in the 2023 - 2024 Lentil RRT in western Canada

Market Class	Line	Anthracnose (%)					
		2023 (SG, LG)				2024 (SG, LG)	
		Race 1		Race 0		Race 1	
Mean (%)	Signif*	Mean (%)	Signif*	Mean (%)	Signif*		
LG	CDC Lima	94.4	A	92.5	A	93.8	AB
LG	CDC23.05	89.4	ABC	91.9	AB	95.0	A
SG	Eston	95.0	A	95.0	A	95.0	A
ESR	CDC Robin	25.0	G	93.8	A	40.6	JK
LG	CDC Greenstar	86.9	ABCD	92.5	A	95.0	A
SG	CDC Viceroy	34.4	F	68.1	E	49.4	IJK
	LR-59-81			47.5	F		

Significance (Signif*) Entries with a letter in common are not significantly different from each other.
 Anthracnose disease testing carried out indoors
 Market Classes: SG-small green; LG-large green; ESR-extra small red
 Disease checks are shaded: Eston-susceptible to Anthracnose Robin, LR-59-81 and Viceroy resistant to Anthracnose
 Greenstar moderately susceptible to Anthracnose