



CDC Monarch (CL[®]) Variety Description

July, 2024

Market Class: Large Red Lentil

Year Released to Seed Growers: 2023

Sub-licensed Outside of SK: No

International Distribution Rights: Not assigned

Breeder: Dr. Albert Vandenberg, Crop Development Centre, University of Saskatchewan, Saskatoon, SK

Plant Breeders Rights: Applied

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Description

CDC Monarch (IBC-1306) is a very high-yielding, large red Clearfield® lentil variety. In 7 years of testing in the co-op and regional trials, it yielded 120% of the check variety CDC Maxim in the brown and dark brown soil zones and 119% in the black and dark grey zone (Table 1). It is the highest yielding red lentil available. Statistical analysis of 9 years of long-term Regional Variety Trial data ranked CDC Monarch first for yield over all zones among 9 historical and new small and large red lentil varieties (Figure 1). Seed coat colour, cotyledon colour, flowering time, maturity, and disease resistance characteristics are similar to CDC Maxim. CDC Monarch is taller than CDC Maxim, which is similar to other large red lentils. Seed thickness is greater compared to CDC KR-2 making it well suited for lentil dehulling (Table 2). Application for PBR'91 protection for CDC Monarch has been submitted.

Strengths

- Very high yield compared to CDC Maxim or CDC KR-2
- Highest yielding red lentil variety
- Imidazolinone tolerance
- Seed thickness is greater than CDC KR-2
- Taller compared to CDC Maxim

Neutral

- Similar agronomic, disease resistance and maturity characteristics compared to CDC Maxim

Table 1: Performance Data of red lentil varieties from the Co-op and Regional Trials in Saskatchewan

Variety	Class	Year registered	Herbicide Tolerance ¹	Years Tested	Yield (% Maxim)		Height (cm)	Maturity Rating	Resistance to ³ :		Seed Weight (g/1000)
					Area 1 & 2 ²	Area 3 & 4 ²			Aschocyta Blight	Anthracnose Race 1	
CDC Maxim	Small Red	2007	CL	18	100	100	34	E/M	MR	MR	40
CDC Dazil	Small Red	2010	CL	13	97	92	33	E/M	MR	I	35
CDC Impulse	Small Red	2014	CL	14	109	103	37	E/M	MR	MR	44
CDC Proclaim	Small Red	2014	CL	13	106	104	34	E/M	MR	MR	40
CDC Redmoon	Small Red	2015	None	13	113	107	33	E/M	MR	MR	41
CDC Nimble	Small Red	2019	CL	10	108	109	35	E/M	MR	MR	38

CDC Simmie	Small Red	2019	CL	9	107	104	34	E/M	MR	MR	39
CDC KR-2	Large Red	2013	CL	11	104	90	37	M	MR	MR	55
CDC Sublime	Large Red	2019	CL	8	118	107	38	E/M	MR	MR	53
CDC Monarch	Large Red	2023	CL	7	120	119	37	E/M	MR	MR	51

Source: Varieties of Grain Crops ([SaskSeed Guide](#))

*CL@ indicates Clearfield® variety

²Area 1: Brown soil zone; Area 2: Dark brown; Area 3: Black; Area 4: Dark gray

³Resistance Ratings: R = Resistant; MR = Moderately Resistant, I = Intermediate; S = Susceptible

Table 2: Seed size and thickness distribution of CDC Monarch in the 2018-2019 Lentil RRT in Western Canada

VARIETY	SEED THICKNESS DISTRIBUTION (% SEED OVER):								
	ROUND HOLE SCREEN (mm)								SLOTTED SCREEN (mm) 2.6 > 6.5/64
	6.4 >16/64	6.0 >15/64	5.6 >14/64	5.2 >13/64	4.8 >12/64	4.4 >11/64	4.0 >10/64	3.6 >9/64	
CDC Maxim	0	1	4	27	49	15	3	1	48
CDC KR-2	2	20	42	25	8	2	1	1	56
CDC Monarch	1	13	56	23	4	1	1	1	66

Source: CDC Pulse Breeding Group, U of S

Figure 1. Direct comparison showing relative size vs. CDC Impulse (centre) and CDC Sublime (right).





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