

MEMORANDUM

TO: *Prairie Recommending Committee for Pulse and Special Crops*
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SUBJECT: Request for Support for Registration of Black Lentil Line 8587-1-H2-13-bk

Lentil line 8587-1-H2-13-bk was tested for one year in the Lentil Registration Recommendation Trial (LRRT) in 2021 and privately tested in the LSST01 in 2022. Agronomic and disease performance data summaries in those trials are included in the accompanying Tables 1, 2, 3 and 4. Lentil line 8587-1-H2-13-bk is tolerant to imidazolinone herbicide. Table 1 (8 site years) indicates the yield of 8587-1-H2-13-bk was 109% of the long term check CDC Maxim. Table 2 (4 site years) of the LSST 01(2022) 8587-1-H2-13-bk shows comparisons to the extra small-seed black lentil check Indianhead. Cotyledon colour, flowering time, maturity, plant height are similar to CDC Maxim. Seed thickness is similar to that of CDC Maxim and greater than that of Indianhead, providing efficiencies in de-hulling and reducing mechanical damage during handling.

Strengths: High yield compared to CDC Maxim and Indianhead.
Noticeably thicker seed compared to black check Indianhead
Better disease resistance than CDC Maxim
Tolerant to imidazolinone herbicide.

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

Weakness: None noticed during testing

Figure 1. Visual comparison of seeds of 8587-1-H2-13-bk, CDC Maxim and Indianhead

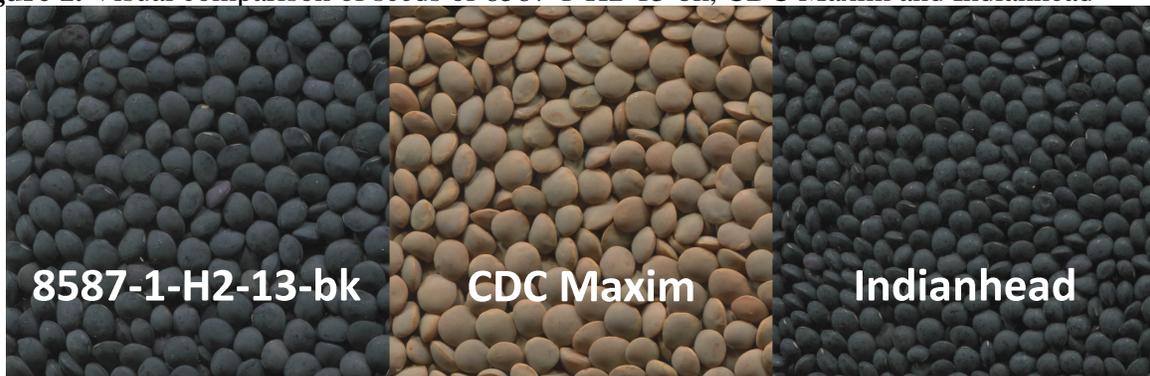


Table 1. Two year summary of agronomic performance for black lentil 8587-1-H2-13-bk in the 2021 LCYTA - 2022 Lentil LSST 01

Market class	Line	Yield		Seed weight (g/1000)	Days to flower	Days to mature	*Lodging (1-5)	Plant height (cm)	% Seed over							slotted 2.6mm >6.5/64
		kg/ha	% of Maxim						Round Hole (64th inch)							
									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	
SR	CDC Maxim (A)	1298	100	43	57	95	1.3	34	0	6	27	38	20	7	2	31
BK	8587-1-H2-13-bk	1409	109	36	61	96	1.4	38	0	0	4	32	43	18	4	27

[] indicates number of sites

Market class: SR - small red; BK - black

Lodging - no lodging done in 2021 data shown only 2022

Table 2. Agronomic performance summary for entries in the 2022 Lentil LSST 01

Market class	Line	Seed coat	Cotyledon colour	S'toon	EL	Ros	MJ	Yield			Days to flower	Days to mature	Seed weight g/1000	Plant Height (cm)	% seed over	
								kg/ha	% of						* >12/64	slotted >6.5/64
									Maxim	IH						
SR	CDC Maxim	gray	red	1913	848	1275	1490	1382	100	151	57	91	41	35	58	32
BK	Indianhead (IH)	black	yellow	1183	852	707	--	914	66	100	.	94	20	35	0	0
BK	8587-1-H2-13-bk	black	red	2280	1052	1330	1711	1593	115	174	60	91	36	40	25	34
CV				11.9	8.3	10.8	5.1									
LSD				432	141	239	143									

[] indicates number of sites

Market Class: SR - small red; BK - black

*% Seed Over Round : SR, BK % >12/64

The 2022 LSST 01 trial was grown in Saskatchewan at four locations Saskatoon (S'toon), Elrose (EL), Rosthern(Ros) and Moose Jaw(MJ). The LSST 01 was designed as a RCBD set up as a two rep test which consisted of 18 entries 4 of those being market class checks.

Table 3. Ascochyta blight disease data for 8587-1-H2-13-bk in the 2021 LCYT - 2022 Lentil LSST 01

		Ascochyta blight(%)					
		Lentil Coop A data			Lentil LSST 01 data		
Entry	Market Class	2021			2022		
		Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*
CDC Maxim	SR	20.0	6.5	DEFGHI	41.0	6.1	ABC
Indianhead	BK				40.3	6.1	ABC
8587-1-H2-13-bk	BK	16.3	6.4	FGHIJKL	35.9	6.1	ABCD
Eston	SG	48.1	6.7	A			
CDC Robin	SR	16.9	5.7	FGHIJK			
CV		44.0			43.0		

* Entries with a letter in common are not significantly different from each other.
 STDERR = Standard Error
 Market Class: SR - small red; BK - black; SG - small green
 Ascochyta blight disease testing carried out indoors

Table 4. Anthracnose disease data for 8587-1-H2-13-bk in the 2021 LCYT - 2022 Lentil LSST 01

		Anthracnose (%)											
		2021						2022					
Entry	Market Class	Race 1			Race 0			Race 1			Race 0		
		Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*
CDC Maxim	SR	68.0	9.7	BCDEFGHIJK	95.0	3.1	A	88	5.4	A	95	0.9	A
Indianhead	BK							10	5.4	F	95	0.9	A
8587-1-H2-13-bk	BK	44.0	11.1	JKLMN	93.0	3.1	ABC	59	5.4	C	94	0.9	A
Eston		87	3.8	AB	95.0	3.1	A	95	5.4	A	95	0.9	A
Robin		11	4.6	P	95.0	3.1	A	19	5.4	EF	95.0	0.9	A
LR59-81					50.0	3.1	F				55.0	0.9	C
CV		41.0			11.0			22.0			3.0		

Sig* Entries with a letter in common are not significantly different from each other.
 STDERR = Standard Error
 Anthracnose disease testing carried out indoors