

MEMORANDUM

TO: *Prairie Recommending Committee for Pulse and Special Crops*
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SUBJECT: Request for Support for Registration of Black Lentil Line 8627-1-H2-4

Lentil line 8627-1-H2-4 is a black lentil with green cotyledons and was tested for one year in the Lentil Registration Recommendation Trial B (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. 8627-1-H2-4 is tolerant to imidazolinone herbicide. Table 1. (7 site years) indicates the yield of 8627-1-H2-4 was 108% of the long-term check CDC Maxim. Table 2. (4 site years) summary of the LSST 01(2022) shows 8627-1-H2-4 compared to black lentil check Indianhead and CDC Maxim. Flowering time, maturity, and plant height are similar to CDC Maxim and Indianhead.

Strengths: High yield compared to CDC Maxim and Indian Head.
Tolerant to imidazolinone herbicide.

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

Weakness: None noticed during testing.

Figure 1. Visual comparisons of Indianhead lentil with line 8627-1-H2-4 with and without seed coat. Indianhead has yellow cotyledons.

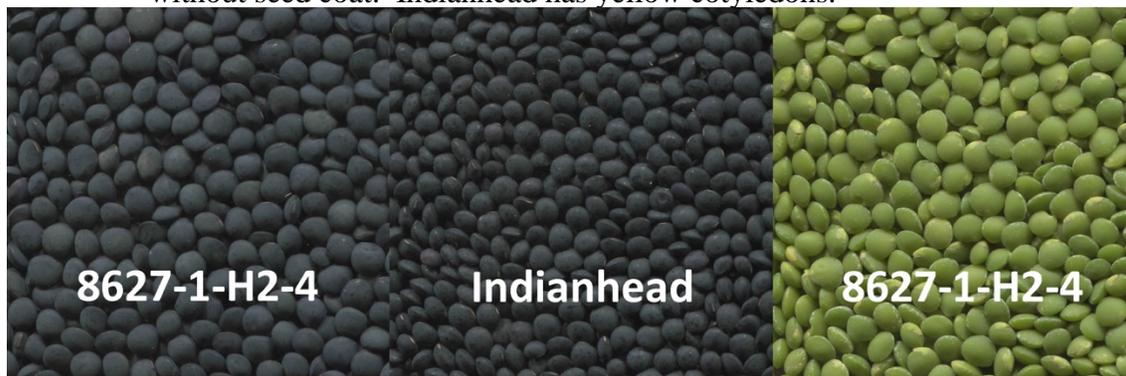


Table 1. Two year summary of agronomic performance for black lentil 8627-1-H2-4 in the 2021 LCYTB - 2022 Lentil LSST 01

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	1408	100	43	58	95	1.3	34	0	5	26	38	20	8	2	33
BK	8627-1-H2-4	1516	108	31	62	99	1.1	36	0	0	0	10	36	40	14	3

[] 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 8627-1-H2-4 in the 2022 Lentil LSST 01

Market class	Line	Seed coat	Cotyledon colour	S'toon	EL	Ros	Moose Jaw	Yield		Days to flower	Days to mature	Seed weight g/1000	Plant Height (cm)	% seed over		
								kg/ha	% of Maxim					round >12/64	slotted >6.5/64	
								IH								
SR	CDC Maxim	gray	red	1913	848	1275	1490	1382	100	151	57	91	41	35	58	32
BK	Indianhead	black	yellow	1183	852	707	--	914	66	100	.	94	20	35	0	0
BK	8627-1-H2-4	black	green	2210	1025	1563	1442	1560	113	171	61	94	29	38	3	3
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 8627-1-H2-4 in the 2021 LCYTB - 2022 Lentil LSST 01

		Ascochyta blight(%)						
Entry	Market Class	Lentil Coop B data			Lentil LSST 01 data			
		2021			2022			
		Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*	
CDC Maxim	SR	8.1	4.4	KL	88.0	5.4	A	
Indianhead	BK				10.0	5.4	F	
8627-1-H2-4	BK	6.3	4.4	KL	87.0	5.4	A	
Eston	SG	55.6	4.4	A	95.0	5.4	A	
CDC Robin	SR	11.9	4.4	IJKL	19.0	5.4	EF	
CV		38.0			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 8627-1-H2-4 in the 2021 LCYTB - 2022 Lentil LSST 01

		Anthracnose (%)											
Entry	Market Class	2021						2022					
		Race 1			Race 0			Race 1			Race 0		
		Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*	Mean (%)	STDERR	Sig*
CDC Maxim	SR	41.0	8.2	BCDE	91.0	3.2	ABCD	88	5.4	A	95	0.9	A
Indianhead	BK							10	5.4	F	95	0.9	A
8627-1-H2-4	BK	43.0	10.6	BCDEFG	89.0	3.2	ABCD	87	5.4	A	95	0.9	A
Eston		94	5.4	A	95.0	3.2	A	95	5.4	A	95	0.9	A
Robin		15	5.1	IJ	93.0	3.2	ABC	19	5.4	EF	95.0	0.9	A
LR59-81					19.0	3.2	H				55.0	0.9	C
CV		67			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