

Request for Support for Registration of HB24360

Crop: Barley (*Hordeum vulgare* L.)
Type: Two-row, spring, hulless (Food)

Proposers: A.D. Beattie
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Test #'s: HB24360 or SH210106
Pedigree: CDC Ascent x HB16337

Area of Adaptation: Western Canada

Description:

HB24360 is a two-row, hulless, black aleurone food barley with good adaptability across Western Canada. It combines short height (similar to shortest check) and good lodging resistance (similar to checks) along with good threshability, excellent kernel weight, high plumpness and low thins. **HB24360** also demonstrates grain beta-glucan concentration which exceeds CDC Rattan. Grain yield was slightly higher than the high beta-glucan food barley check (CDC Rattan). **HB24360** shows moderate resistance to FHB, and intermediate resistance to spot-form net blotch, spot blotch and surface smuts. **HB24360** represents the first high beta-glucan, black aleurone food barley line brought forward for support of registration.

Strengths:

- Grain yield (> CDC Rattan).
- Short height (similar to shortest check).
- High kernel weight (> all hulless food checks).
- High grain β -glucan concentration (> CDC Rattan).
- Moderately resistant to FHB; intermediate resistance to spot-form net blotch, spot blotch and surface smuts.

Neutral characteristics:

- Good lodging resistance (within the range of checks).
- Heading date and maturity (within the range of checks).
- Good threshability (within the range of checks).
- Grain plumpness and thins (within range of checks).

Weaknesses:

- Moderately susceptible to net-form net blotch, scald and stem rust.

Table 1. Grain yield for HB24360 and checks from the 2024 Western Cooperative Hulless Barley Test.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire
AAC Synergy	7088	130	3973	103	4561	125	7350	116	5792	124
CDC McGwire	5455	100	3842	100	3644	100	6347	100	4659	100
CDC Rattan	5395	99	3512	91	3807	104	5894	93	4622	99
CDC Fibar	4000	73	2685	70	3111	85	4813	76	3594	77
CDC Clear	5268	97	3341	87	3471	95	6420	101	4472	96
HB24360	5639	103	3303	86	3786	104	6246	98	4725	101
Station Years	4		1		4		1		10	

Table 2. Grain yield for HB24360 and checks from the 2025 Western Cooperative Hulless Barley Test.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire
AAC Synergy	6216	127	6765	129	5757	120	9671	111	6488	124
CDC McGwire	4907	100	5247	100	4783	100	8714	100	5253	100
CDC Rattan	4767	97	4894	93	4668	98	7330	84	4965	95
CDC Fibar	4063	83	4241	81	3644	76	6425	74	4188	80
CDC Clear	4193	85	5386	103	4864	102	7842	90	5076	97
CDC Hilose	4773	97	5304	101	4771	100	8686	100	5220	99
HB24360	4817	98	5442	104	4467	93	7835	90	5114	97
Station Years	4		3		4		1		12	

Table 3. Grain yield for HB24360 and checks from the 2024 and 2025 Western Cooperative Hulless Barley Test.

Entry	Black Soil Zone		Black & Grey Zone		Brown Soil Zone		Irrigated		Combined	
	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire	kg/ha	% McGwire
AAC Synergy	6652	128	6067	124	5159	122	8510	113	6172	124
CDC McGwire	5181	100	4896	100	4214	100	7530	100	4991	100
CDC Rattan	5081	98	4548	93	4238	101	6612	88	4817	97
CDC Fibar	4031	78	3852	79	3378	80	5619	75	3905	78
CDC Clear	4730	91	4856	99	4167	99	7131	95	4757	95
HB24360	5228	101	4907	100	4126	98	7041	94	4934	99
Station Years	8		4		8		2		22	

Table 4. Agronomic characteristics for HB24360 and checks from the 2024 Western Cooperative Hulless Barley Test.

Entry	Days to Head	Days to Mature	Plant Height (cm)	Lodging Score (1-9)	D. Test Weight (kg/hl)	C. Test Weight (kg/hl)	Kernel Weight (g/1000k)	Plump >5.5/64 (%)	Thin <5.0/64 (%)
AAC Synergy	57.6	84.3	78.5	1.1	-	65.9	42.8	92.2	2.7
CDC McGwire	59.6	87.0	80.4	2.1	73.1	79.5	36.1	68.7	14.9
CDC Rattan	59.1	83.2	72.9	1.7	66.8	77.6	31.9	66.8	15.5
CDC Fibar	58.5	86.4	82.2	2.2	62.8	75.0	37.7	86.3	6.6
CDC Clear	59.9	86.8	80.1	1.0	72.7	79.5	42.1	82.3	10.5
HB24360	59.8	85.7	76.9	1.9	70.1	78.9	38.3	79.1	10.3
Station Years	10	11	9	4	7	10	10	8	6

Table 5. Agronomic characteristics for HB24360 and checks from the 2025 Western Cooperative Hulless Barley Test.

Entry	Days to Head	Days to Mature	Plant Height (cm)	Lodging Score (1-9)	D. Test Weight (kg/hl)	C. Test Weight (kg/hl)	Kernel Weight (g/1000k)	Plump >5.5/64 (%)	Thin <5.0/64 (%)
AAC Synergy	58.6	91.5	72.9	3.4	-	67.4	49.5	98.5	0.5
CDC McGwire	60.2	93.7	75.7	3.2	75.4	80.4	41.8	93.7	2.1
CDC Rattan	62.1	91.5	68.4	2.7	74.5	81.0	38.6	94.0	1.5
CDC Fibar	57.8	90.9	75.8	4.2	66.9	76.8	40.3	96.8	0.9
CDC Clear	60.8	95.7	81.2	2.4	73.4	81.0	51.6	96.6	1.6
CDC Hilose	60.5	92.5	73.9	4.2	73.7	79.4	40.8	91.2	2.4
HB24360	61.1	92.4	68.8	3.6	72.4	79.2	43.8	94.4	1.9
Station Years	13	12	13	6	10	13	13	10	8

Table 6. Agronomic characteristics for HB24360 and checks from the 2024 and 2025 Western Cooperative Hulless Barley Tests.

Entry	Days to Head	Days to Mature	Plant Height (cm)	Lodging Score (1-9)	D. Test Weight (kg/hl)	C. Test Weight (kg/hl)	Kernel Weight (g/1000k)	Plump >5.5/64 (%)	Thin <5.0/64 (%)
AAC Synergy	58.2	88.1	75.4	2.5	-	66.7	46.6	95.7	1.4
CDC McGwire	60.0	90.5	77.9	2.9	74.4	80.0	39.3	82.6	7.6
CDC Rattan	60.8	87.6	70.5	2.4	71.3	79.5	35.7	81.9	7.5
CDC Fibar	58.2	88.8	78.7	3.5	65.2	76.0	39.2	92.1	3.4
CDC Clear	60.5	91.4	80.9	1.8	73.1	80.3	47.5	90.2	5.4
HB24360	60.6	89.2	72.2	3.0	71.4	79.1	41.4	87.6	5.5
Station Years	23	23	22	10	17	23	23	18	14

Table 7. Grain quality characteristics for HB24360 and checks from the 2024 and 2025 Western Cooperative Hulless Barley Tests.

Entry	2024		2025		Average	
	BG (%)	Protein (%)	BG (%)	Protein (%)	BG (%)	Protein (%)
CDC McGwire	4.8	14.8	5.0	13.5	4.9	14.2
CDC Rattan	7.6	15.4	7.7	14.8	7.7	15.1
CDC Fibar	10.4	17.3	10.2	16.2	10.3	16.8
HB24360	8.9	15.0	9.0	14.8	9.0	14.9
Station Years	6	6	6	6	12	12

Table 8. Disease reaction summary for HB24360 and checks from the 2024 and 2025 Western Cooperative Hulless Barley Tests.

Entry		<u>Net Blotch</u>						<u>Scald</u>				<u>Spot Blotch</u>				
		Net-form		Spot-form		Merit	Seedling	Field		Merit	Seedling	Field			Merit	
		Seedling	Field	Seedling	Field			Lac	Edm			1903	Brd	Lac		Mel
102	858	Lac	MBV25	Lac	Net/Spot	2275	Lac	Edm		1903	Brd	Lac	Mel	Ros		
AAC Synergy	2025	1	1	2.0	3	4.0		S	8.0	7.5		3	2.5	5.5	5.0	
	2024	3	2	0.0	7	2.0		MS	5.0	7.0		2	3.0	2.5	5.0	7.0
				MR/I			+/0	S			-		I			0
CDC McGwire	2025	1	2	2.5	3	4.0		S	6.0	7.0		7	3.0	5.5	5.5	
	2024	5	9	0.0	5	2.0		MS	3.5	5.5		2	4.0	2.5	5.0	5.0
				I/I			0/0	MS			-		I			0
CDC Rattan	2025	6	7	5.0	5	5.0		MS	6.5	7.0		5	5.0	5.0	5.0	
	2024	7	8	4.0	5	3.0		MS	1.5	4.0		4	5.5	3.0	6	6.5
				MS/I			-/0	MS			-		I			0
CDC Fibar	2025	6	3	5.0	3	5.5		MR	6.0	5.5		5	6.5	5.5	6.5	
	2024	7	5	4.0	3	4.0		MR	1.5	0.0		2	6.0	7.0	8.5	
				MS/I			-/0	I-MR			0		I			0
CDC Clear	2025	2	NR	1.5	3	4.0		MS	7.0			3	3.0	5.0	6.0	
	2024	2	7	0.0	2	3.0		MS	6.0	5.5		7	3.5	3.0	5.0	5.5
				I/I			0/0	MS			-		MR			+
HB24360	2025	3	3	5.5	4	5.0		MS	6.0	7.5		3	4.0	5.5	5.0	
	2024	7	10	4.5	7	2		MS	4.0	6.0		3	3.5	6.0	7.0	
				MS/I			-/0	MS			-		I			0

Table 8 (cont). Disease reaction summary for HB24360 and checks from the 2024 and 2025 Western Cooperative Hulless Barley Tests.

Entry		<u>Surface Smuts</u>			<u>Loose Smut</u>			<u>Stem Rust</u>					<u>Fusarium Head Blight</u>					Merit			
		Field	AAFC-MRDC		Merit	USask	Merit	Field	USask	Seedling			Rating		Charlottetown				DON		
		USask	U. hordei	U. nigra		U. nuda		Cov	React	Rpg1	QCC	MCC		Bran	Mor	Inc.	Sev.		Index	Bran	Mor
AAC Synergy	2025	7	7	13		87		1	R	5R	2-2	1-1		1.5	2.0	8.0	7.0	56	7.4	13.4	
	2024	21	23	16		6		1	R	6R	NR	;1		1.7	2.0	8.0	7.7	62	14.5	38.7	
		MR			+	S	-	R					+	MR					+		
CDC McGwire	2025	2	24	0		10		10	I	5R	3-	;1		1.8	1.7	8.0	7.5	60	5.1	4.7	
	2024	8	10	12		50		10	MR	6R	NR	12-		2.2	2.2	8.5	7.8	65	5.1	18.3	
		MR			+	I	0	MR					+	MR					+		
CDC Rattan	2025	33	18	23		0		2	MR	5R	2-2	1-		1.8	2.5	8.0	7.0	56	4.3	9.8	
	2024	26	11	14		0		1	R	6R	NR	1-		1.5	2.5	8.0	8.0	64	8.2	18.7	
		I			0	R	+	R					+	MR					+		
CDC Fibar	2025	29	22	24		100		40	MS	5S	11+	33+		2.0	3.0	8.2	8.0	66	6.3	9.5	
	2024	3		4		80		30	S	6S	NR	3-		2.5	1.8	8.2	7.7	64	10.9	27.9	
		I			0	S	-	S					-	MR					+		
CDC Clear	2025	0				0		5	MR	5R	33+	11+		1.5	1.2	8.0	7.5	60	4.6	10.5	
	2024	17	10	20		0		1	R	6R	NR	;1-		2.0	0.8	8.0	7.3	58	7.2	12.1	
		MR			+	R	+	MR					0	MR					+		
HB24360	2025	20	60	32		100		60	MS	2R,3S	2-	22+		1.0	1.7	8.0	7.2	58	4.8	5.4	
	2024	45		20		60		30	MS	6R		23-		1.8	1.5	8.2	8.0	66	7.8	21.8	
		I			0	S	-	MS						MR					+		