

REQUEST FOR SUPPORT OF REGISTRATION OF **BW1085**

CROP KIND: Wheat

TYPE: Canada Western Red Spring

PROPOSERS: P. Hucl and C. Briggs

CDC, Univ. of Saskatchewan, Saskatoon, SK, S7N 5A8

TEST NUMBERS: BW1085, W15141

PEDIGREE: Carberry/CDC Utmost

BW1085 was selected from the cross Carberry/CDC Utmost made at the University of Saskatchewan during the summer of 2009.

The resulting F₁ from the cross Carberry/CDC Utmost was grown in New Zealand during the winter of 2009/2010. The F₂ generation was grown in bulk plots in Saskatoon in 2010, the F₃ generation was grown in a winter nursery (2010/2011) while the F₄ generation was grown in a space-planted nursery at Saskatoon in 2011. F₅ and F₆ hills were grown at Saskatoon in 2012 and 2013. Seed from a bulked F₆ row was used as a source for entry into an unreplicated yield trial nursery at Saskatoon in 2014. W05141 was grown in a replicated trial at Saskatoon in 2015 and in a replicated trial at six locations in 2016. The entry was also evaluated for reaction to leaf and stem rust in an irrigated nursery from 2012 to 2016.

BW1085 was evaluated as W05141 in the Central Bread Wheat 'B' test in 2017 (as code#32). BW1085 was subsequently evaluated in the Central Bread Wheat Cooperative Test from 2018 to 2020.

AREA OF ADAPTATION: Spring wheat growing regions of Central Canada.

STRENGTHS: BW1085 is higher yielding than two of the three check cultivars with intermediate height and low lodging scores. BW1085 is earlier maturing than the three check cultivars.

WEAKNESSES: Slightly lower Test Weight than the checks.

DESCRIPTION: BW1085 is a semi dwarf line with intermediate lodging scores. BW1085 is awned and hollow-stemmed. In three years of testing in the Central Bread Wheat Cooperative Test, BW1085 was 2%, 9% and 9% higher yielding than Unity, Glenn and Carberry, respectively (Table 1). BW1085 yielded 2% less than AAC Viewfield (Table 1).

BW1085 was intermediate for maturity, plant height, lodging score and kernel weight relative to the check cultivars (Table 1). BW1085 had a lower test weight than the checks (Table 1).

BW1085 was resistant to prevalent races of leaf, stem and stripe rust as well as common bunt (Table 2). The FHB reactions for BW1085 were mostly "MR" or "I" (Table 3). BW1085 is resistant to the wheat midge (Table 2).

After two years of quality evaluation BW1085 was awarded a "DNO" vote by the QET.

Table 1. Agronomic data for BW1085 and check cultivars in the Central Bread Wheat Cooperative Test, 2018 to 2020

Entry	Yield (kg ha⁻¹)	% of Unit	Maturity (days)	Height (cm)	Lodging (1-9)	Test Weight (kg hL⁻¹)	Kernel wt (g)	Grain Protein (%)
Unity	4956	100	89	92	2.3	79.5	35.5	14.2
Glenn	4632	93	91	85	1.5	82.3	35.6	14.5
Carberry	4623	93	92	80	1.3	80.1	36.8	14.7
AAC Viewfield	5185	105	92	75	1.4	80.8	35.0	14.1
BW1085	5061	102	91	80	1.5	79.1	35.7	14.4
Grand Mean	4892		91	82	1.58	80.4	35.7	14.4
CV	5.4		1.6	3.4	22.6	0.9	3.4	3.8
LSD	210		1.16	2.16	0.3	0.3	0.55	0.25
Location-Years	32		33	34	13	35	35	35

Table 2. Disease reaction of BW1085 and check cultivars (2018 to 2020).

Entry	Leaf Rust						Stem Rust						Stripe Rust (Lethbridge)					
	2018		2019		2020		2018		2019		2020		2018		2019		2020	
	Sev	IT	Sev	IT	Sev	IT	Sev	IT	Sev	IT	Sev	IT	Sev	IT	Sev	IT	Sev	IT
Unity	15	MR	57	MS	40	MS	1	R	10	R	1	R	29	I	67	S	60	S
Glenn	13	MR	35		43	MS	1	R	10	R	1	R	23	I	38	I	23	MR
Carberry	2	R	13	MR	3	R	1	R	5	R	1	R	9	R	22	MR	18	MR
AAC Viewfield	2	R	27	MR	22	MR	1	R	10	MR	1	R	10	MR	50	S	18	MR
AAC Brandon	-	-	-	-	13	MR	-	-	-	-	1	R	-	-	-	-	10	R-MR
BW1085	0	R	13	MR	8	R	5	I	40	I	1	R	4	R	9	R	13	MR-R

Entry	Common Bunt			Midge					
	2018	2019	2020	BRA 2018	IH 2018	BRA 2019	MEL 2019	BRA 2020	MEL 2020
	%Infec.	%Infec.	%Infec.	(R:S:U)	(R:S:U)	(R:S:U)	(R:S:U)	(R:S:U)	(R:S:U)
Unity	0R	2R	-	4:1:4	7:2:1	7:1:3	3:0:2	8:2:0	7:2:1
Glenn	23I	10MR	-	0:5:0	0:10:0	0:9:1	0:5:0	0:10:0	0:10:0
Carberry	0R	0R	-	0:5:0	0:10:0	0:10:0	0:5:0	0:10:0	0:10:0
AAC Viewfield	10MR	5R	-	0:5:0	0:10:0	0:10:0	0:5:0	0:10:0	0:10:0
AAC Brandon	-	-	-	-	-	-	-	0:10:0	0:3:7
BW1085	4R	2R	-	5:0:5	8:0:2	6:0:4	3:0:6	6:0:4	7:0:3

Table 3 FHB reaction of BW1085 and check cultivars (2018 to 2020).

FHB Morden 2018													FHB Morden 2019			FHB Morden 2020		
Entry	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	ISD^d	ISD Rate^b	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	Rating						
Unity	41.3	S	3.8	4.9	MR	44.5	MS	10.7	32.7	MS	13.51	MR						
Glenn	25.7	I	3.5	4.2	MR	23.4	MR	7.3	24.9	I	13.72	MR						
Carberry	16.5	MR	4.4	4.5	MR	28.8	I	8.5	17.3	I	16.52	I						
AAC Viewfield	20.2	I	6.3	5.7	I	40.5	MS	18.4	12.6	MR	23.61	MS						
AAC Brandon	-	-	-	-	-	-	-	-	21.9	I	19.53	I						
BW1085	27.3	I	6.9	6.3	I	31.5	I	10.9	13.9	MR	22.19	MS						

FHB Carman 2018													FHB Carman 2019			FHB Carman 2020		
Entry	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	ISD^d	ISD Rate^b	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	Avg VRI^a %	VRI Rate^b	Avg DON^c (ppm)	Rating						
Unity	16.3	I	2.23	3.0	MR	42.0	MS	4.8	39.6	I	4.7	MR						
Glenn	15.8	I	3.07	3.7	MR	18.0	MR	7.0	27.7	I	7.0	MR						
Carberry	10.7	MR	3	3.4	MR	12.3	MR	5.2	22.8	MR	7.8	MR						
AAC Viewfield	8.9	MR	4.33	4.1	I	28.4	I	6.9	30.8	I	8.9	I						
AAC Brandon	-	-	-	-	-	-	-	-	18.8	MR	5.9	MR						
BW1085	3.3	R	2.7	2.6	MR	19.3	MR	5.6	17.7	MR	4.2	R						

Available breeder seed for distribution: 300 kg.