

### **Request for Support for Registration of HB340**

**Crop:** Barley (*Hordeum vulgare* L.)  
**Type:** 2-Row Hulless

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**Test #'s:** HB340 or SB94794

**Pedigree:** SB85750/Arizona Hulless Waxy

**Area of Adaptation:** Western Canada

#### **Strengths:**

- (1) Waxy hulless with 100% amylopectin starch  
(Bhatti & Rossnagel, Cereal Chemistry, 74(2):190-191, 1997.
- (2) Good threshability (High dirty test wt./low hand % hull).
- (3) Moderate scald resistance
- (4) Good straw strength
- (5) Very large plump grain

#### **Neutral traits:**

- (1) Heading & maturity
- (2) Yield only = Condor

#### **Weaknesses:**

- (1) Susceptible to all smuts.
- (2) Susceptible to stem rust.
- (3) Susceptible to net and spot blotch.

#### **Description:**

HB340 is a 2-rowed hulless waxy barley in which 100% of the starch is in the form of amylopectin. It is designed for specialty uses in the food and non-food/feed industries.

Table 1. Grain yield (kg/ha) for HB340 and checks, Western Hulless Barley Coop 1997 - 1998.

<b>Genotype</b>	<b>1997</b>	<b>% Condor</b>	<b>1998</b>	<b>% Condor</b>	<b>97-98</b>	<b>% Condor</b>
CDC Dolly	5785	127	6141	126	5963	126
Condor	4563	100	4882	100	4723	100
Falcon	4625	101	4760	98	4693	99
CDC Dawn	5023	110	5138	105	5081	108
AC Bacon	5418	119	5760	118	5589	118
<b>HB340</b>	<b>4600</b>	<b>100</b>	<b>4999</b>	<b>102</b>	<b>4800</b>	<b>102</b>
# SY	15		15		30	

Table 2. Agronomic characteristics HB340 and checks, Western Hulless Barley Coop, 1997 - 1998.

<b>Genotype</b>	<b>Days to Head</b>	<b>Days to Mature</b>	<b>Plant Height (cm)</b>	<b>Lodging Score (1 - 9)</b>	<b>Test Wt. (kg/hl)</b>	<b>1000 K. Wt. (g)</b>	<b>% Plump</b>	<b>Dirty Test Wt. (kg/hl)</b>	<b>Hand % Hull</b>
CDC Dolly	56.8	93.4	82	5.2	67.4	46.6	89	-	-
Condor	60.1	92.5	84	4.3	77.9	36.2	61	71.7	11.0
Falcon	60.5	92.6	74	2.6	74.4	32.7	36	67.4	8.8
CDC Dawn	60.2	94.0	86	5.2	74.1	36.7	54	65.4	21.4
AC Bacon	57.3	92.5	92	3.4	73.9	35.4	59	62.4	34.2
<b>HB340</b>	<b>58.5</b>	<b>93.6</b>	<b>84</b>	<b>3.0</b>	<b>74.3</b>	<b>42.4</b>	<b>82</b>	<b>69.1</b>	<b>10.6</b>
# SY	27	24	27	15	25	29	18	27	5

Table 3. Grain quality for HB340 and checks, Western Hulless Barley Coop, 1997 - 1998.

<b>Genotype</b>	<b>% Protein</b>	<b>Beta-glucan (% dry wt.)</b>	<b>Viscosity (centipoises)</b>	<b>ADF (% dry matter)</b>	<b>NDF (% dry matter)</b>
CDC Dolly	13.4	5.12	4.37	4.23	13.66
Condor	14.7	5.37	5.17	1.67	9.79
Falcon	15.1	4.34	4.58	2.14	10.30
CDC Dawn	13.8	4.51	4.99	2.03	9.33
AC Bacon	13.4	4.46	3.86	2.76	10.60
<b>HB340</b>	<b>17.9</b>	<b>6.70</b>	<b>14.51</b>	<b>1.35</b>	<b>8.65</b>
# SY	13	3	3	3	3

Table 4. Disease reaction summaries for HB340 and checks, Western Hulless Barley Coop, 1997 - 1998.

Genotype	Inoc Net Blotch Wpg (1-10)			Net Blotch S'toon		Net Blotch Brandon		Net Blotch Outlook	Net Blotch Rate from Yield Trials	Net Blotch Glenlea	
	102	858	857	Date 1	Date 2	Date 1	Date 2			UL	LL
CDC Dolly	8.0	10.0	8.0	4.3	5.0	2.5	2.8	4.0	4.1	1.0	1.5
Condor	8.5	9.5	8.5	5.3	6.8	2.0	3.0	4.5	4.4	1.8	2.5
Falcon	7.0	5.0	7.0	3.8	4.5	2.3	3.3	3.0	3.0	1.3	1.5
CDC Dawn	7.5	10.0	3.0	4.3	3.8	2.3	3.0	3.5	4.0	3.0	3.5
AC Bacon	9.0	8.5	6.0	3.5	4.8	2.8	3.0	2.5	4.0	2.3	2.5
<b>HB340</b>	<b>9.0</b>	<b>8.0</b>	<b>8.0</b>	<b>4.0</b>	<b>5.5</b>	<b>2.3</b>	<b>3.3</b>	<b>2.5</b>	<b>5.2</b>	<b>3.0</b>	<b>3.5</b>
# SY	2	2	2	2	2	2	2	1	7	2	1

Genotype	Spot Blotch Brandon		Common Root Rot Lacombe	Inoc Scald Winnipeg Race 1493	Lacombe Scald			Edm Scald	Scald in Yield Trials
	Date 1	Date 2			Date 1	Date 2	Date 3		
CDC Dolly	1.8	3.0	27	MS	0.8	1.3	2.5	2.8	3.4
Condor	2.8	3.8	38	S	2.5	4.8	7.0	2.8	4.7
Falcon	2.8	3.3	47	MR	0.5	2.3	5.8	2.0	1.9
CDC Dawn	2.8	3.3	18	MR	1.8	2.8	5.3	2.0	3.4
AC Bacon	2.5	3.0	24	R	1.3	2.8	6.8	2.5	3.2
<b>HB340</b>	<b>3.0</b>	<b>3.0</b>	<b>22</b>	<b>MR/MS</b>	<b>0.8</b>	<b>1.0</b>	<b>1.8</b>	<b>3.0</b>	<b>3.1</b>
# SY	2	2	2	2	2	2	2	2	6

Genotype	Smuts			Stem Rust	
	U. nuda	U. hordei	U. nigra	MCC (Glenlea)	QCC (Brandon)
CDC Dolly	72	8	9	28.5	55.5
Condor	36	7	13	5.4	60.6
Falcon	54	2	3	4.3	63.6
CDC Dawn	50	7	4	10.3	68.6
AC Bacon	29	9	12	13.4	60.7
<b>HB340</b>	<b>37</b>	<b>14</b>	<b>19</b>	<b>45.6</b>	<b>65.6</b>
# SY	2	2	2	2	2