

2010
NORTH AMERICAN BARLEY SCAB EVALUATION
NURSERY (NABSEN) REPORT
December 2010

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INTRODUCTION

The 2010 North American Barley Scab Evaluation Nursery (NABSEN) was grown at Fargo, Langdon, Osnabrock and Casselton, ND; St. Paul and Crookston MN, and Brandon, Manitoba. Nurseries were either misted or unmisted (dryland). Dryland nurseries provide conditions similar to those found in commercial fields. Disease in misted fields is more severe than growers would observe in most years and entries with only moderate FHB resistance may have higher disease levels. Dryland nurseries allow discrimination of entries with moderate to low levels of FHB resistance. Each nursery included a set of common checks. The checks were Chevron, Quest and ND 20493(resistant six-row checks), Robust and Stander (susceptible six-row checks), and Conlon (moderately resistant two-row check). At all locations percent severity of FHB was determined at the soft to middle dough stage by determining the ratio of infected kernels to total kernels on 10-20 spikes per entry, and then multiplying by 100.

Disease levels in 2010 were very low at Crookston dryland nursery , relatively low in Osnabrock and Casselton locations thus no FHB incidence or severity data was taken from these nurseries. Disease levels were highest at Langdon and Brandon Manitoba locations. DON levels were high at Langdon and Brandon (table 4).
Site details are as follows;

FARGO, ND – Robert Brueggeman and Patrick Gross

- Misted
- Inoculated by grain spawn method
- 3 Replicates
- Disease severity - percentage of infected kernels
- Disease incidence - percentage of infected heads
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates
- Day to heading counted from date planted to 50% of heads emerged 50%

LANGDON, ND – Robert Brueggeman and Patrick Gross

- Misted
- Inoculated by grain spawn method
- 3 Replicates
- Disease severity - percentage of infected kernels
- Disease incidence - percentage of infected heads
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates
- Day to heading counted from date planted to 50% of heads emerged 50%

Osnabrock, ND – Richard Horsley

- Dryland
- 3 Replicates
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates

Casselton, ND – Jolanta Menert

- Dryland
- 3 replicates
- Inoculated by grain spawn method
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates

ST. PAUL, MN– Kevin Smith and Ruth Dill-Macky

- Misted
- Inoculated by grain spawn method
- Disease severity - percentage of infected kernels
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates
- Day to heading counted from date planted to 50% of heads emerged 50%
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates

CROOKSTON, MN – Kevin Smith and Ruth Dill-Macky

- Separate Misted and Dryland trails
- Inoculated by spore spray method
- Disease severity - percentage of infected kernels
- DON content (ppm) measured by GC/ECD by P. Schwarz, NDSU on a composite sample of 3 replicates

BRANDON, MANITOBA - Bill Legge and James Tucker

- Misted
- 4 replicates RCB design
- Disease severity - percentage of infected kernels
- Disease incidence - percentage of infected heads
- Day to heading counted from date planted to 50% of heads emerged 50%
- DON content (ppm) measured by ELISA technique at ECORC, Ottawa on a composite sample of 4 replicates

Table 1. Mean FHB severity of entries grown in the 2010 NABSEN Nursery at four locations.....	6-7
Table 2. Mean disease incidence of entries grown in the 2010 NABSEN Nursery at three locations.....	8-9
Table 3. Mean days to heading after planting of entries grown in 2010 NABSEN Nursery at four locations.....	10-11
Table 4. Mean for DON (ppm) entries grown in 2010 NABSEN Nursery at eight locations.....	12-13
Table 5. Average means of heading date, FHB incidence, FHB severity and DON content.....	14-15
Table 6. Temperature (°F) compared to the 30-year average.....	16
Table 7. Rainfall (in.) compared to the 30-year average.....	16
Table 8. Correlation among locations for FHB DON (ppm) in 2010.....	17
Table 9. Pedigree and source of breeding lines tested for FHB resistance in 2010.....	18-19

Table 1. Mean FHB severity of entries grown in the 2010 NABSEN Nursery at five locations.

Label	Fargo	Langdon	Brandon	ST. Paul	Crookston	Mean
SH070393	7.1	14.0	10.1	16.5	11.7	11.9
SB080353	9.5	23.2	15.9	7.8	12.7	13.8
SM080935	11.7	30.9	23.5	5.3	5.0	15.3
SM081569	15.6	46.8	10.5	19.2	22.0	22.8
TR08203	10.8	36.5	15.9	12.8	3.3	15.9
TR10214	10.1	28.3	15.2	15.5	7.0	15.2
TR10215	12.3	36.8	17.4	8.3	14.3	17.8
TR10216	9.0	20.0	22.0	13.5	8.5	14.6
TR10691	9.5	29.1	16.0	10.3	18.8	16.7
TR10692	5.6	30.9	16.6	6.0	12.7	14.3
TR10693	8.1	30.4	13.3	5.5	17.0	14.9
TR10694	9.1	33.9	17.9	12.7	8.3	16.4
ND25160	14.7	53.8	17.4	12.2	27.2	25.1
ND25161	14.2	45.1	23.1	22.5	37.5	28.5
ND26036	7.1	26.2	7.8	9.2	17.3	13.5
ND26920	14.7	26.6	15.9	11.5	39.5	21.6
ND27142	14.4	38.2	18.8	9.7	58.5	27.9
ND27177	15.5	29.9	22.8	14.1	11.5	18.8
ND27210	9.5	34.8	21.5	5.8	13.7	17.0
ND27269	13.2	29.4	15.6	4.4	9.5	14.4
2ND27374	10.8	34.8	8.7	10.1	9.2	14.7
2ND27405	9.8	42.6	18.3	11.5	6.8	17.8
2ND27498	12.6	29.4	27.8	15.7	13.7	19.8
2ND27518	10.5	37.7	23.8	13.0	9.9	19.0
2ND27560	14.8	21.6	21.2	8.5	17.2	16.7
2ND27577	13.6	30.9	20.3	16.0	18.0	19.8

Table 1. cont: Mean FHB severity of entries grown in the 2010 NABSEN Nursery at five locations.

Label	Fargo	Langdon	Brandon	ST. Paul	Crookston	MEAN
2ND27580	13.2	39.0	16.4	8.2	14.2	18.2
2ND27614	15.0	28.6	20.6	9.5	13.5	17.5
M142	10.9	22.9	30.7	4.7	18.0	17.5
M143	7.1	29.8	26.1	7.8	11.0	16.3
M144	8.5	31.2	25.2	3.9	17.5	17.3
M145	8.2	27.5	30.1	5.8	17.8	17.9
FEG181-66	8.2	28.7	19.3	5.4	21.2	16.6
FEG183-53	12.9	26.6	22.5	3.2	6.1	14.3
FEG202-06	8.7	27.2	28.1	4.5	17.3	17.2
FEG215-05	8.1	19.3	28.4	4.2	16.8	15.3
6B04-0007	15.7	34.6	7.3	9.5	no data	16.8
6B04-0075	14.8	32.0	15.1	10.7	12.2	17.0
6B05-0717	14.2	30.4	6.4	8.5	14.8	14.9
6B05-0572	18.8	40.6	20.4	11.8	19.8	22.3
6B07-1684	13.9	26.7	24.1	16.2	18.0	19.8
6B07-1753	9.7	28.3	19.7	11.6	18.8	17.6
6B07-1819	15.5	33.1	24.6	13.4	19.3	21.2
6B07-1825	14.1	27.9	31.2	15.8	24.0	22.6
Quest(M122)	6.4	24.4	24.0	6.5	22.3	16.7
Conlon	9.4	34.6	11.4	14.8	6.8	15.4
ND 20493	9.5	28.3	5.3	9.1	17.0	13.8
Robust	9.1	26.4	43.7	9.4	36.2	25.0
Chevron	0.6	7.9	7.1	2.9	6.3	5.0
Stander	14.5	37.3	54.8	8.7	25.3	28.1

Table 2. Mean disease incidence of entries grown in the 2010 NABSEN Nursery at three locations.

Label	Fargo	Langdon	Brandon	MEAN
SH070393	80.0	80.0	77.5	79.2
SB080353	86.7	96.7	92.5	91.9
SM080935	90.0	93.3	90.0	91.1
SM081569	100.0	100.0	90.0	96.7
TR08203	86.7	96.7	97.5	93.6
TR10214	76.7	100.0	90.0	88.9
TR10215	86.7	100.0	95.0	93.9
TR10216	70.0	93.3	97.5	86.9
TR10691	80.0	90.0	95.0	88.3
TR10692	60.0	100.0	97.5	85.8
TR10693	83.3	96.7	85.0	88.3
TR10694	83.3	96.7	97.5	92.5
ND25160	93.3	100.0	95.0	96.1
ND25161	100.0	100.0	90.0	96.7
ND26036	80.0	100.0	90.0	90.0
ND26920	86.7	100.0	90.0	92.2
ND27142	96.7	100.0	90.0	95.6
ND27177	100.0	100.0	92.5	97.5
ND27210	90.0	100.0	87.5	92.5
ND27269	93.3	100.0	97.5	96.9
2ND27374	83.3	100.0	82.5	88.6
2ND27405	76.7	96.7	95.0	89.4
2ND27498	93.3	96.7	100.0	96.7
2ND27518	90.0	100.0	95.0	95.0
2ND27560	90.0	93.3	97.5	93.6
2ND27577	86.7	100.0	92.5	93.1

Table 2. cont: Mean disease incidence of entries grown in the 2010 NABSEN Nursery at three locations.

Label	Fargo	Langdon	Brandon	MEAN
2ND27580	86.7	100.0	97.5	94.7
2ND27614	86.7	100.0	92.5	93.1
M142	86.7	100.0	97.5	94.7
M143	90.0	100.0	100.0	96.7
M144	80.0	100.0	100.0	93.3
M145	83.3	100.0	100.0	94.4
FEG181-66	90.0	100.0	97.5	95.8
FEG183-53	96.7	100.0	100.0	98.9
FEG202-06	86.7	100.0	100.0	95.6
FEG215-05	80.0	100.0	100.0	93.3
6B04-0007	96.7	100.0	82.5	93.1
6B04-0075	96.7	100.0	97.5	98.1
6B05-0717	93.3	100.0	87.5	93.6
6B05-0572	100.0	100.0	95.0	98.3
6B07-1684	83.3	96.7	100.0	93.3
6B07-1753	93.3	100.0	90.0	94.4
6B07-1819	100.0	100.0	97.5	99.2
6B07-1825	96.7	100.0	100.0	98.9
Quest(M122)	83.3	100.0	100.0	94.4
Conlon	83.3	100.0	90.0	91.1
ND 20493	83.3	100.0	70.0	84.4
Robust	83.3	100.0	100.0	94.4
Chevron	26.7	90.0	87.5	68.1
Stander	100.0	100.0	100.0	100.0

Table 3. Mean days to heading after planting of entries grown in 2010 NABSEN Nursery at four locations.

Label	Fargo	Langdon	Brandon	St. Paul	MEAN
SH070393	64.7	53.3	59.0	60	59.2
SB080353	62.0	53.0	57.5	54	56.7
SM080935	63.0	52.3	56.8	56	57.0
SM081569	61.0	50.7	49.5	52	53.4
TR08203	64.3	53.7	59.5	57	58.7
TR10214	64.3	55.7	60.0	59	59.8
TR10215	63.7	54.0	57.0	56	57.6
TR10216	65.3	55.3	57.5	59	59.3
TR10691	61.7	52.0	57.0	56	56.6
TR10692	64.7	53.7	60.0	60	59.5
TR10693	63.0	52.7	54.0	56	56.3
TR10694	62.7	51.7	58.0	58	57.5
ND25160	60.3	50.3	50.5	52	53.4
ND25161	61.0	49.0	51.0	53	53.4
ND26036	59.7	50.0	49.0	52	52.6
ND26920	59.3	49.7	51.0	51	52.8
ND27142	61.0	49.3	50.5	52	53.3
ND27177	61.3	51.0	52.5	52	54.2
ND27210	60.3	50.7	51.5	53	53.9
ND27269	62.0	50.3	51.0	54	54.4
2ND27374	58.0	46.0	48.5	50	50.5
2ND27405	58.7	50.7	54.5	51	53.7
2ND27498	59.3	48.3	54.5	51	53.3
2ND27518	60.0	47.7	54.5	53	53.7
2ND27560	61.0	52.0	57.0	53	55.8
2ND27577	59.3	49.3	54.0	53	53.9

Table 3. cont: Mean days to heading after planting of entries grown in 2010 NABSEN Nursery at four locations.

Label	Fargo	Langdon	Brandon	St. Paul	MEAN
2ND27580	58.7	47.7	49.0	51	51.7
2ND27614	60.0	46.7	54.5	51	53.1
M142	60.7	50.3	54.5	53	54.6
M143	61.3	52.3	57.5	55	56.5
M144	62.7	51.7	56.0	53	55.8
M145	60.0	51.7	56.0	52	54.8
FEG181-66	62.0	51.7	56.0	57	56.7
FEG183-53	60.3	49.7	53.0	52	53.7
FEG202-06	62.3	52.7	54.5	54	55.8
FEG215-05	61.7	51.0	58.0	53	55.8
6B04-0007	61.7	51.3	49.0	54	53.9
6B04-0075	59.7	50.0	50.5	52	53.0
6B05-0717	60.7	50.0	48.5	53	53.1
6B05-0572	60.0	50.3	51.5	52	53.4
6B07-1684	61.3	50.0	52.5	54	54.5
6B07-1753	59.3	49.7	50.5	52	53.0
6B07-1819	60.3	50.7	51.0	53	53.8
6B07-1825	62.0	50.3	54.5	53	55.0
Quest(M122)	60.7	51.3	54.5	52	54.7
Conlon	58.0	45.7	49.0	50	50.7
ND 20493	59.3	50.0	48.5	52	52.4
Robust	62.3	51.7	57.5	53	56.0
Chevron	66.3	55.3	57.5	61	60.0
Stander	63.7	51.7	56.0	53	56.0

Table 4. Mean for DON (ppm) entries grown in 2010 NABSEN Nursery at eight locations.

Label	Misted					Dryland			Misted	Dryland
	Fargo	Langdon	Brandon	St. Paul	Crookston	Osnabrock	Crookston	Casselton*		
SH070393	1.5	12.0	21.4	9.3	2.9	0.5	0.01	0.2	9.4	0.2
SB080353	2.6	19.1	29.4	11.1	4.9	0.6	0.20	0.2	13.4	0.3
SM080935	2.3	30.9	36.5	15.9	14.8	1.0	0.35	0.3	20.1	0.5
SM081569	3.8	27.8	27.5	31.9	6.8	0.8	0.25	0.4	19.5	0.5
TR08203	4.8	26.1	47.3	21.1	9.3	0.8	0.10	0.3	21.7	0.4
TR10214	4.3	24.4	28.4	14.5	6.7	0.6	0.11	0.1	15.7	0.3
TR10215	3.4	18.3	26.4	12.2	5.3	0.7	0.09	0.4	13.1	0.4
TR10216	4.4	20.3	28.6	15.5	3.6	0.5	0.02	0.3	14.5	0.2
TR10691	4.8	31.5	27.2	9.7	3.4	0.2	0.11	0.1	15.3	0.1
TR10692	2.6	17.5	23.4	10.3	5.5	0.8	0.12	0.1	11.9	0.3
TR10693	5.1	48.9	47.1	25.9	11.7	0.6	0.04	0.2	27.7	0.3
TR10694	3.1	34.6	44.0	14.6	8.2	0.4	0.08	0.3	20.9	0.3
ND25160	6.9	27.1	38.3	19.0	5.8	1.6	0.52	0.4	19.4	0.9
ND25161	9.6	29.2	35.2	20.3	7.5	0.6	0.56	0.8	20.3	0.7
ND26036	5.9	29.6	36.0	17.2	7.8	0.6	0.13	0.2	19.3	0.3
ND26920	10.5	29.7	35.1	14.6	10.9	1.4	0.50	1.2	20.2	1.0
ND27142	4.6	38.3	29.3	21.8	6.6	0.5	0.57	0.4	20.1	0.5
ND27177	7.1	32.6	39.3	20.7	14.1	1.0	1.38	0.5	22.7	1.0
ND27210	6.2	26.6	38.3	21.2	5.3	0.4	0.26	0.6	19.5	0.4
ND27269	7.4	20.9	44.9	20.1	10.4	0.5	0.28	0.4	20.7	0.4
2ND27374	5.6	26.3	23.5	10.0	4.4	0.7	0.26	0.4	14.0	0.4
2ND27405	2.2	16.6	23.7	14.6	3.4	0.3	0.48	0.2	12.1	0.3
2ND27498	6.2	22.4	32.6	21.8	2.0	0.5	0.06	0.3	17.0	0.3
2ND27518	3.4	20.3	30.0	20.7	5.7	0.2	0.15	0.3	16.0	0.2
2ND27560	6.0	36.8	34.2	21.2	5.3	1.4	0.34	0.3	20.7	0.7
2ND27577	3.4	28.4	25.9	20.1	6.7	0.3	0.05	0.5	16.9	0.3

*Standard checks not used at Casseleton

Table 4. cont: Mean for DON (ppm) entries grown in 2010 NABSEN Nursery at eight locations.

Label	Misted					Dryland			Misted	Dryland
	Fargo	Langdon	Brandon	St. Paul	Crookston	Osnabrock	Crookston	Casselton*		
2ND27580	2.9	23.8	33.0	10.0	4.7	0.6	0.21	0.7	14.9	0.5
2ND27614	5.1	32.3	26.9	16.0	5.9	0.8	0.20	0.2	17.2	0.4
M142 (FEG161-23)	5.6	40.6	36.4	16.8	13.1	1.0	0.53	0.3	22.5	0.6
M143 (FEG181-09)	6.8	32.4	43.1	14.7	8.1	0.4	0.17	0.6	21.0	0.4
M144 (FEG184-25)	7.8	43.0	40.4	21.9	3.7	1.0	0.13	0.4	23.3	0.5
M145 (FEG189-05)	4.6	39.3	36.8	14.9	7.3	1.1	0.14	0.5	20.6	0.6
FEG181-66	7.1	28.3	34.0	11.1	7.1	0.4	0.12	0.4	17.5	0.3
FEG183-53	5.2	24.6	24.2	16.1	4.4	0.6	0.29	0.2	14.9	0.3
FEG202-06	13.5	40.2	39.1	14.6	10.4	1.3	0.19	0.5	23.6	0.7
FEG215-05	5.3	25.6	42.5	17.6	8.7	0.4	0.17	0.4	19.9	0.3
6B04-0007	7.7	40.8	44.1	16.4	9.0	0.7	0.33	1.0	23.6	0.7
6B04-0075	6.3	40.0	36.3	20.2	9.1	1.0	0.19	0.5	22.4	0.6
6B05-0717	6.3	24.1	26.3	11.7	8.3	0.8	0.55	0.3	15.4	0.6
6B05-0572	7.8	29.0	33.2	19.4	10.5	0.7	0.57	0.3	20.0	0.5
6B07-1684	10.9	28.6	30.5	14.7	17.0	1.3	0.41	0.3	20.3	0.7
6B07-1753	9.8	30.0	46.7	19.6	14.8	0.8	1.00	1.1	24.2	1.0
6B07-1819	7.0	32.7	32.8	15.9	9.2	0.3	0.38	1.1	19.5	0.6
6B07-1825	7.5	54.5	58.4	19.4	8.8	0.6	0.44	1.0	29.7	0.7
Quest(M122)	4.5	20.5	28.1	11.5	9.4	0.7	0.26	not used	14.8	0.5
Conlon	3.5	23.8	17.5	14.5	5.4	0.1	0.10	not used	12.9	0.1
ND 20493	3.3	14.1	12.3	9.4	3.3	0.2	0.07	not used	8.5	0.1
Robust	7.7	18.1	49.4	17.0	14.4	0.4	0.53	not used	21.3	0.5
Chevron	4.0	26.9	28.1	11.6	6.3	0.3	0.07	not used	15.4	0.2
Stander	15.0	33.4	65.9	33.6	16.7	4.2	0.52	not used	32.9	2.3

*Standard checks not used at Casselton

Table 5. Average means of Heading date, FHB Incidence, FHB severity and DON content.

Label	<u>Days to</u> ¹	<u>FHB</u> ²	<u>FHB</u> ³	<u>DON ppm</u> ⁴	
	head	incidence	severity	misted	dryland
SH070393	59.2	79.2	11.9	9.4	0.2
SB080353	56.7	91.9	13.8	13.4	0.3
SM080935	57.0	91.1	15.3	20.1	0.5
SM081569	53.4	96.7	22.8	19.5	0.5
TR08203	58.7	93.6	15.9	21.7	0.4
TR10214	59.8	88.9	15.2	15.7	0.3
TR10215	57.6	93.9	17.8	13.1	0.4
TR10216	59.3	86.9	14.6	14.5	0.2
TR10691	56.6	88.3	16.7	15.3	0.1
TR10692	59.5	85.8	14.3	11.9	0.3
TR10693	56.3	88.3	14.9	27.7	0.3
TR10694	57.5	92.5	16.4	20.9	0.3
ND25160	53.4	96.1	25.1	19.4	0.9
ND25161	53.4	96.7	28.5	20.3	0.7
ND26036	52.6	90.0	13.5	19.3	0.3
ND26920	52.8	92.2	21.6	20.2	1.0
ND27142	53.3	95.6	27.9	20.1	0.5
ND27177	54.2	97.5	18.8	22.7	1.0
ND27210	53.9	92.5	17.0	19.5	0.4
ND27269	54.4	96.9	14.4	20.7	0.4
2ND27374	50.5	88.6	14.7	14.0	0.4
2ND27405	53.7	89.4	17.8	12.1	0.3
2ND27498	53.3	96.7	19.8	17.0	0.3
2ND27518	53.7	95.0	19.0	16.0	0.2
2ND27560	55.8	93.6	16.7	20.7	0.7
2ND27577	53.9	93.1	19.8	16.9	0.3

¹ Date from planting to 50% of heads 50% emerged at four locations.

² FHB incidence means at three locations.

³ FHB severity means at five locations.

⁴ DON content means at eight locations.

Table 5. cont: Average means of Heading date, FHB Incidence, FHB severity and DON content.

Label	<u>Days to</u> ¹	<u>FHB</u> ²	<u>FHB</u> ³	<u>DON ppm</u> ⁴	
	head	incidence	severity	misted	dryland
2ND27580	51.7	94.7	18.2	14.9	0.5
2ND27614	53.1	93.1	17.5	17.2	0.4
M142	54.6	94.7	17.5	22.5	0.6
M143	56.5	96.7	16.3	21.0	0.4
M144	55.8	93.3	17.3	23.3	0.5
M145	54.8	94.4	17.9	20.6	0.6
FEG181-66	56.7	95.8	16.6	17.5	0.3
FEG183-53	53.7	98.9	14.3	14.9	0.3
FEG202-06	55.8	95.6	17.2	23.6	0.7
FEG215-05	55.8	93.3	15.3	19.9	0.3
6B04-0007	53.9	93.1	16.8	23.6	0.7
6B04-0075	53.0	98.1	17.0	22.4	0.6
6B05-0717	53.1	93.6	14.9	15.4	0.6
6B05-0572	53.4	98.3	22.3	20.0	0.5
6B07-1684	54.5	93.3	19.8	20.3	0.7
6B07-1753	53.0	94.4	17.6	24.2	1.0
6B07-1819	53.8	99.2	21.2	19.5	0.6
6B07-1825	55.0	98.9	22.6	29.7	0.7
Quest(M122)	54.7	94.4	16.7	14.8	0.5
Conlon	50.7	91.1	15.4	12.9	0.1
ND 20493	52.4	84.4	13.8	8.5	0.1
Robust	56.0	94.4	25.0	21.3	0.5
Chevron	60.0	68.1	5.0	15.4	0.2
Stander	56.0	100.0	28.1	32.9	2.3

¹ Date from planting to 50% of heads 50% emerged at four locations.

² FHB incidence means at three locations.

³ FHB severity means at five locations.

⁴ DON content means at eight locations.

Table 6. Temperature (°F) compared to the 30-year average.

Location	May	June	July	August
Fargo	1	0	1	2
Langdon	0	0	5	3
Prosper,ND*	1	1	0	1
St. Paul	0.6	-1.2	1	3.8
Crookston,MN	0.8	-0.7	1.1	2
Brandon, Manitoba	n/a	-1.1	-0.3	3.8

Table 7. Rainfall (in.) compared to the 30-year average.

Location	May	June	July	August
Fargo	0.07	-0.12	1.26	0.48
Langdon	2.62	0.27	-0.61	-0.18
Prosper, ND*	0.08	-0.42	0.83	0.28
St. Paul	-1.39	0.93	1.06	2.63
Crookston,MN	3.02	-0.39	-0.24	-0.45
Brandon, Manitoba	n/a	0.8	-1.16	-1.3

*Prosper is closest recording NDawn weather station to Casselton, ND

Table 8. Correlation among locations for FHB DON (ppm) in 2010

	Fargo	Langdon	St. Paul	Crookston misted	<u>Crookston</u> dryland	Osnabrock	Casselton
Fargo	1.00	0.40**	0.58**	0.38**	0.58**	0.43**	0.62**
Langdon	0.40**	1.00	0.55**	0.40**	0.33*	0.17	0.26
St. Paul	0.58**	0.55**	1.00	0.55**	0.60**	0.30*	0.49**
Crookston-misted	0.38**	0.40**	0.55**	1.00	0.34*	0.26	0.46**
Crookston-dryland	0.58**	0.33*	0.60**	0.34*	1.00	0.56**	0.47**
Osnabrock	0.43**	0.17	0.30*	0.26	0.56**	1.00	0.29*
Casselton	0.62**	0.26	0.49**	0.46**	0.47**	0.29*	1.00

*,** r-values significantly different from 0.0 at P<0.05 and P<0.01, respectively

Table 9. Pedigree and source of breeding lines tested for FHB resistance in 2010.

Entry	Name	Pedigree	Contributor	Row type
1	SH070393	KM2062/CDC McGwire	CDC, University of Saskatchewan	2-row
2	SB080353	Ursa/TR04379	CDC, University of Saskatchewan	2-row
3	SM080935	TR04280/SM04261	CDC, University of Saskatchewan	2-row
4	SM081569	SM03191/6B98-9940	CDC, University of Saskatchewan	6-row
5	TR08203	TR04282/Newdale	AAFC-Brandon	2-row
6	TR10214	TR04282/Newdale	AAFC-Brandon	2-row
7	TR10215	TR169/Newdale	AAFC-Brandon	2-row
8	TR10216	SM99703/Newdale	AAFC-Brandon	2-row
9	TR10691	H97062F1/H97055F1	FCDC, Alberta Agriculture and Food	2-row
10	TR10692	I95039/H92066105X	FCDC, Alberta Agriculture and Food	2-row
11	TR10693	CDC Bold/H93167228Z	FCDC, Alberta Agriculture and Food	2-row
12	TR10694	H92013289Z/TR656	FCDC, Alberta Agriculture and Food	2-row
13	ND25160	ND19557/ND19491	North Dakota State University	6-row
14	ND25161	ND19557/ND19491	North Dakota State University	6-row
15	ND26036	ND20448/ND20603	North Dakota State University	6-row
16	ND26920	ND21376/ND21306	North Dakota State University	6-row
17	ND27142	ND21376/ND20605	North Dakota State University	6-row
18	ND27177	STELLAR-ND/ND23530	North Dakota State University	6-row
19	ND27210	ND21609/ND23468	North Dakota State University	6-row
20	ND27269	QUEST/ND23665	North Dakota State University	6-row
21	2ND27374	ND24519/ND24383	North Dakota State University	2-row
22	2ND27405	ND24365/ND24519	North Dakota State University	2-row
23	2ND27498	RAWSON/ND24383	North Dakota State University	2-row
24	2ND27518	ND19922//ND19974/ND19119/3/ND23146	North Dakota State University	2-row
25	2ND27560	SHN105/ND22947//ND23164	North Dakota State University	2-row
26	2ND27577	ND23146/ND24519 ND21089-	North Dakota State University	2-row
27	2ND27580	2/3/ND19922//ND19929/RAWSON	North Dakota State University	2-row
28	2ND27614	RAWSON/ND24383	North Dakota State University	2-row

Table 9 cont: Pedigree and source of breeding lines tested for FHB resistance in 2010.

Entry	Name	Pedigree	Contributor	Row type
29	M142 (FEG161-23)	FEG97-23 / M00-33	University of Minnesota	6-row
30	M143 (FEG181-09)	M129 / FEG100-41	University of Minnesota	6-row
31	M144 (FEG184-25)	FEG109-44 / FEG100-41	University of Minnesota	6-row
32	M145 (FEG189-05)	FEG144-17 / Quest (M122)	University of Minnesota	6-row
33	FEG181-66	M129 / FEG100-41	University of Minnesota	6-row
34	FEG183-53	M132 (FEG100-44) / M123	University of Minnesota	6-row
35	FEG202-06	M128 / M132	University of Minnesota	6-row
36	FEG215-05	M01-65 / Quest (M122)	University of Minnesota	6-row
37	6B04-0007	TRADITION // 6B96-3373 / DRUMMOND	BAR - LLC	6-row
38	6B04-0075	6B95-2089 // 6B97-2232 / 6B98-9022	BAR - LLC	6-row
39	6B05-0717	6B98-9814 / TRADITION	BAR - LLC	6-row
40	6B05-0572	6B95-2482-1 / 6B98-9852	BAR - LLC	6-row
41	6B07-1684	6B00-0949 / ND18803	BAR - LLC	6-row
42	6B07-1753	6B00-1328 / ND18659	BAR - LLC	6-row
43	6B07-1819	CELEBRATION / ND18579	BAR - LLC	6-row
44	6B07-1825	CELEBRATION / TRADITION	BAR - LLC	6-row
45	QUEST(M122)	FEG18-20 / M110	Check	6-row
46	Conlon	BOWMAN*2/DWS1008/ND10232	Check	2-row
47	ND 20493	ND16918*2/CIho 6611	Check	6-row
48	Robust	MOREX/MANKER	Check	6-row
49	Chevron	UNKNOWN	Check	6-row
50	Stander	ROBUST*2/3/CREE/BONANZA/ /MANKER/4/ROBUST/BUMBER	Check	6-row