



# Langdon Research Extension Center

NORTH DAKOTA STATE UNIVERSITY



## 2010 Annual Research Report

# NDSU

Langdon Research Extension Center

**Annual Research Report No. 85**

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The 2010 annual research report is intended to provide producers information to aid in selecting varieties and/or hybrids. Variety information and research reports on crop disease and production can also be found at our website [www.ag.ndsu.edu/langdon/](http://www.ag.ndsu.edu/langdon/). Variety trial results from all NDSU Research Extension Centers and the Main Station at Fargo, along with crop extension bulletins, can be accessed on the Web at [www.ag.ndsu.edu/varietytrials/](http://www.ag.ndsu.edu/varietytrials/).

Choosing a variety is one of the most important decisions a producer makes in successful crop production. Characteristics to consider in selecting a variety may include yield potential, disease resistance, protein content when grown with proper fertility, straw strength, plant height, test weight, yield stability across years and locations, quality and economic profitability. A variety's performance may differ from year to year and from location to location within a year due to varying environmental conditions. When selecting a variety to grow it is best to consider a variety's performance over several years and locations.

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The trials are designed so that "real" yield and agronomic differences can be statistically separated from differences that occur by chance. The least significant difference (LSD) values given in the report are used for this purpose. For example, if the LSD 5% is 5 bushels, then if the difference between any two varieties is greater than 5 bushels they are said to be significantly different from one another 95 times out of 100 under those growing conditions. If the difference between two varieties is less than 5 bushels, they are not significantly different from one another. If there is a "NS" for LSD 5% value it means there was no real difference between any varieties or the trial was too variable to detect a real difference. The CV stands for coefficient of variation and is expressed as a percentage. The CV is a measure of variability in the trial. Large CVs mean a large amount of variation that could not be attributed to differences in the varieties or agronomic characteristic.

The NDSU Langdon Research Extension Center, in addition to its on-station research program, conducted variety research trails at five off-station locations in 2010. Trial locations were at Cavalier, Park River, Lakota, Devils Lake and Cando. These locations are in cooperation with the farmer, the Extension Service and the County Agricultural Improvement Association.

### **2010 Weather Summary**

Fall recharge at Langdon for September through October 2009 was 4.35 inches, 1.16 inches above normal. Precipitation from November 2009 through March 2010 was 3.05, 0.85 inches below normal. Spring planting began the last couple weeks of April but was interrupted by a two week rainy period. Rainfall was generally above normal across the region April-September except for July. Temperatures were also above normal for all months except September. This was especially favorable for the warm season crops. Yields were generally good to excellent across the region. Some areas received too much rainfall early in the growing season resulting in saturated soil conditions and poor plant growth. Harvest conditions were excellent until September when an extended period of wet weather result in little harvest until later September when weather turned warm and dry.

<b>2010 Crop Management - Langdon</b>						
<b>Field Trial</b>	<b>Previous Crop</b>	<b>Seeding Rate Unit/Acre</b>	<b>Yield Goal</b>	<b>Planting Date</b>	<b>Harvest Date</b>	<b>Row Spacing</b>
Barley	soybean	1.25 million pls	120 bu	4/22	8/3	6
Buckwheat	soybean	700,000 pls	1700 lb	5/27	9/27	6
Camelina	soybean	5 lbs	1500 lb	5/17	8/25	6
Canola - LL, CL	soybean	610,000 pls	2500 lb	5/17	8/27	6
Canola - RR	soybean	610,000 pls	2500 lb	5/17	8/28	6
Corn	sunflower	28,000 thinned	110 bu	5/21	10/15	30
Durum	soybean	1.50 million pls	60 bu	4/22	8/23	6
Drybean	soybean	70-90,000 pls	2500 lb	5/21	9/28	30
Field Pea	soybean	300,000 pls	60 bu	4/23	8/18	6
Flax	soybean	2.8 million pls	40 bu	5/14	9/8	6
HRSW	soybean	1.50 million pls	60 bu	4/22	8/16	6
HRWW	canola	1.0 million pls	60 bu	9/29/09	8/5	6
Mustard	soybean	610,000 pls	2000 lb	5/17	8/25	6
Oats	soybean	1.0 million pls	120 bu	4/22	8/18	6
Soybean - Conventional	wheat	200,000 pls	60 bu	5/21	10/11	6
Soybean - RR	wheat	200,000 pls	60 bu	5/21	10/11	6
Sunflower - Confection	potato	17,000 thinned	2500 lb	5/18	10/12	30
Sunflower-Oil	potato	20,000 thinned	2500 lb	5/18	10/14	30
<b>Soil Type</b> - Svea-Barnes loam						

**Special thanks to our local cooperators and Extension Agents for their efforts in our off-station variety testing.**

Chad Hofstad-Cando  
 Crystal Martodam -Towner County Agent  
 Mark Blanchfield, Al Stiven -Devils Lake  
 Bill Hodus - Ramsey County Agent  
 Dave Hankey - Park River  
 Brad Brummond - Walsh County Agent  
 Kent Schluchter - Cavalier  
 Lesley Lubenow - Pembina County Agent  
 Jay Estvold - Lakota  
 Scott Nelson - Lakota  
 Grant Tweed - Tolna  
 Duane Andersen - Leeds  
 Lucas Walter - Nelson County Agent  
 Lionel Olson - Area Extension Agent

<b>2010 Off-Station Crop Management</b>						
<b>Location(County/ Field Trial</b>	<b>Previous Crop</b>	<b>Seeding Rate Unit/Acre</b>	<b>Yield Goal</b>	<b>Planting Date</b>	<b>Harvest Date</b>	<b>Row Spacing</b>
<b>Cavalier (Pembina)</b>						
HRSW	wheat	1.50 million pls	60 bu	4/26	--	6
Soybeans	wheat	200,000 pls	60 bu	5/20	10/8	6
Drybean	wheat	70,000-90,000 pls	2000 lb	5/20	--	30
Wheat and drybean were not harvested due to poor stands and growth caused by saturated soil conditions in trial area.						
<b>Park River (Walsh)</b>						
HRSW	fallow	1.50 million pls	60 bu	4/20	9/15	6
Barley	fallow	1.25 million pls	100 bu	4/20	8/4	6
Soybean	wheat	200,000 pls	60 bu	5/19	--	6
Soybeans were not harvested due to poor stands and growth caused by saturated soil conditions in trial area.						
<b>Lakota (Nelson)</b>						
HRSW	canola	1.50 million pls	60 bu	4/20	8/17	6
Durum	canola	1.50 million pls	60 bu	4/20	8/17	6
<b>Devils Lake(Ramsey)</b>						
Soybean	wheat	200,000 pls	60 bu	5/28	10/7	6
<b>Cando (Towner)</b>						
HRSW	fallow	1.50 million pls	60 bu	4/27	8/19	6
Durum	fallow	1.50 million pls	60 bu	4/27	8/19	6
Barley	fallow	1.25 million pls	100 bu	4/27	8/5	6
<b>Location</b>	<b>Soil Type</b>					
Cavalier	Neché silty clay					
Park River	Glyndon silt loam,					
Lakota	Hamerly loam					
Cando	Bearden-Lindaas silt loam					
Devils Lake	Barnes-Svea					

pls=pure live seeds

**Record of Climatological Observation  
Langdon, ND**

	Precipitation		Dep. from		Temperature		Dep. from
	Normal	2010	Normal		Normal	2010	Normal
April	1.24	1.50	+0.26	April	38.2	46.4	+8.20
May	2.27	5.19	+2.92	May	51.5	51.7	+0.2
June	3.23	3.96	+0.73	June	60.8	60.9	+0.1
July	2.86	2.19	-0.67	July	66.1	67.0	+0.9
August	2.63	3.79	+1.16	August	64.4	66.7	+2.3
September	2.00	5.26	+3.26	Sept.	54.3	52.1	-2.2
Total	14.23	21.89	+7.66	Ave.	55.9	57.5	+1.6

**Monthly Growing Degree Days and Normals-Langdon**

	Wheat Growing Degree Days			Corn Growing Degree Days			Sunflower Growing Degree Days		
	2010	Normal	Deviation	2010	Normal	Deviation	2010	Normal	Deviation
April	449	263	+186	--	--	--	--	--	--
May	608	638	-30	100	97	+3	216	165	+51
June	856	872	-16	343	366	-23	508	525	-17
July	1038	998	+40	535	479	+56	720	665	+55
August	993	937	+56	520	441	+79	697	617	+80
September	616	640	-24	189	241	-52	294	334	-40
Total	4560	4348	+212	1687	1624	+63	2435	2306	+129

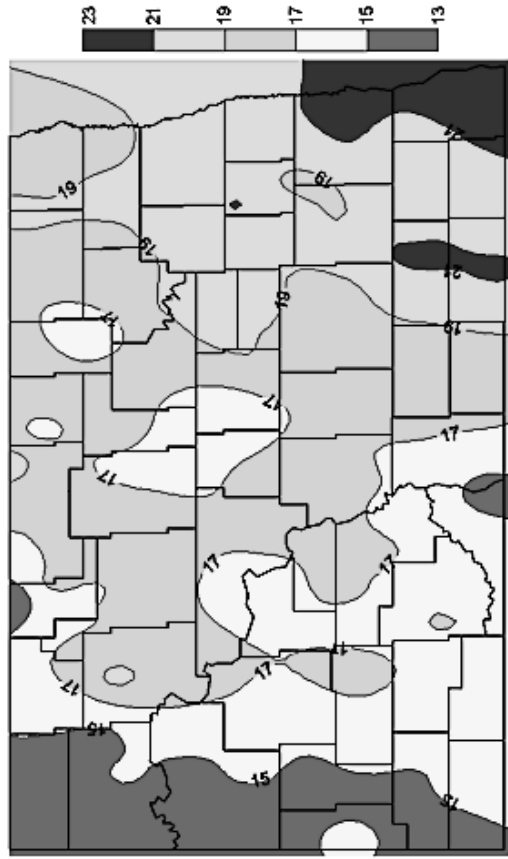
**Frost Dates, Langdon and Selected Cities**

	Last		First		Frost Free Days	
	Spring Frost		Fall Frost			
	32°F	28°F	32°F	28°F	32°F	28°F
<b>Langdon</b>						
Normal	21-May	8-May	17-Sep	28-Sep	118	142
2010	9-May	8-May	18-Sep	2-Oct	131	146
<b>Cavalier</b>						
Normal	16-May	5-May	23-Sep	3-Oct	129	151
2010	9-May	4-May	2-Oct	2-Oct	145	150
<b>Grafton</b>						
Normal	9-May	30-Apr	24-Sep	4-Oct	138	157
2010	9-May	17-Apr	2-Oct	15-Oct	145	180
<b>Devils Lake</b>						
Normal	10-May	10-Apr	26-Sep	6-Oct	138	158
2010	8-May	28-Mar	17-Oct	27-Oct	161	211

Normals are from the NWS, 2010 frost dates from nearest reporting NDAWN station.

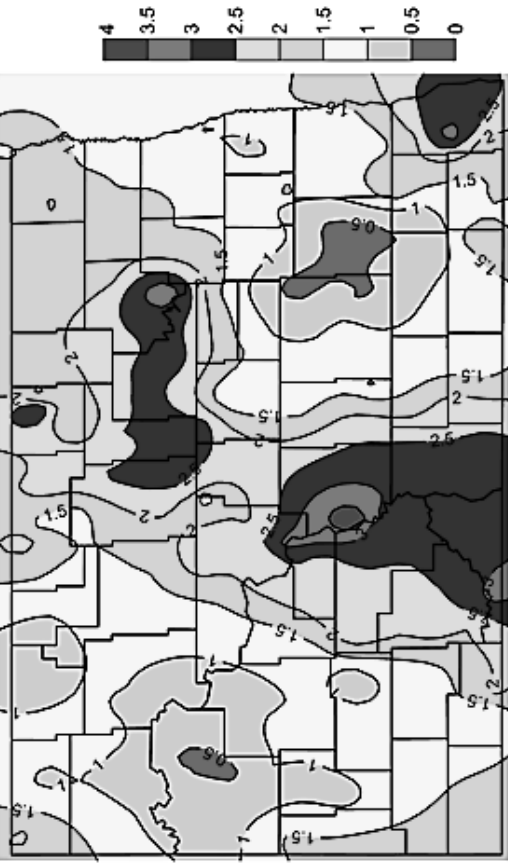


**North Dakota Annual 1971-2000 Normal Precipitation (inches)**  
 (Data from NWS Cooperative Network)



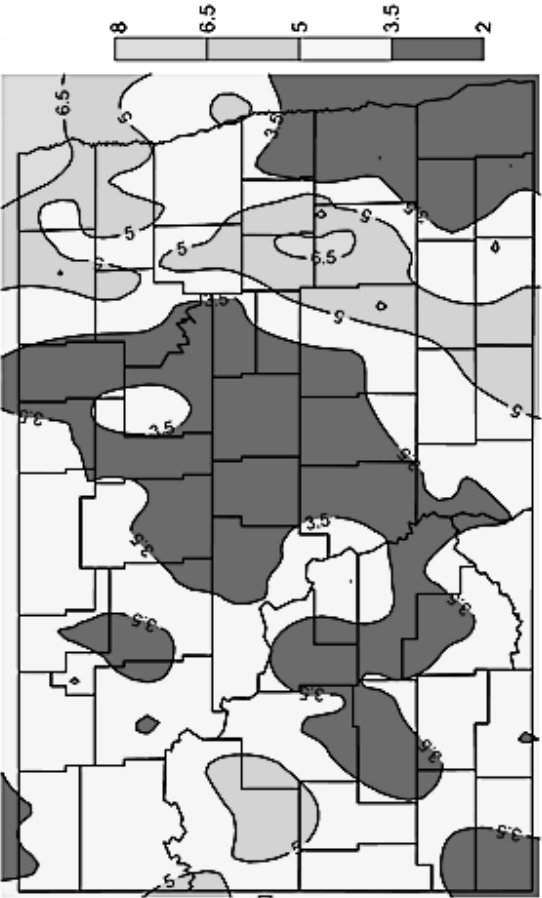
ND State Climate Office

**North Dakota April 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



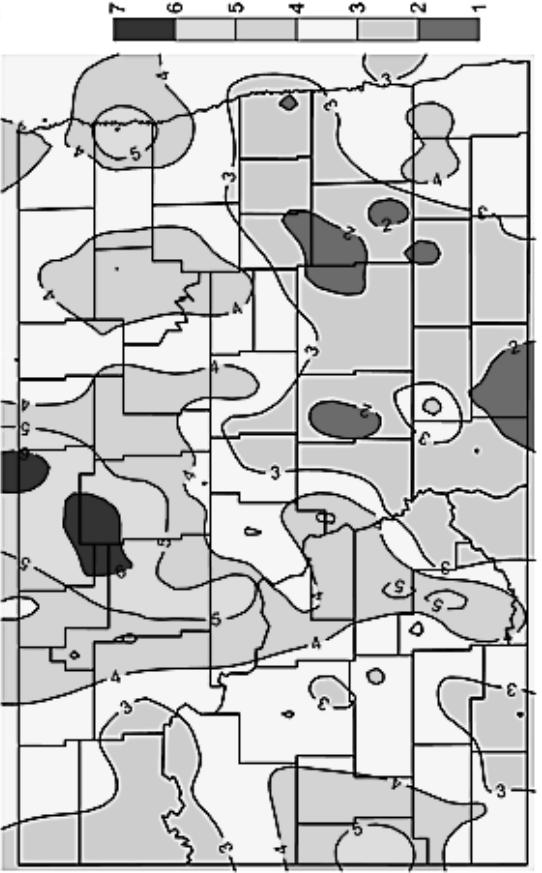
ND State Climate Office

**North Dakota May 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



ND State Climate Office

**North Dakota June 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



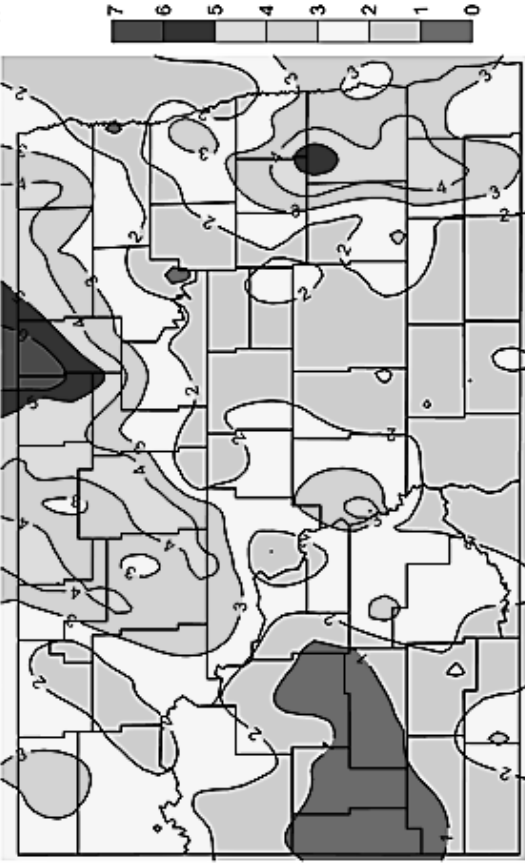
ND State Climate Office

**North Dakota July 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



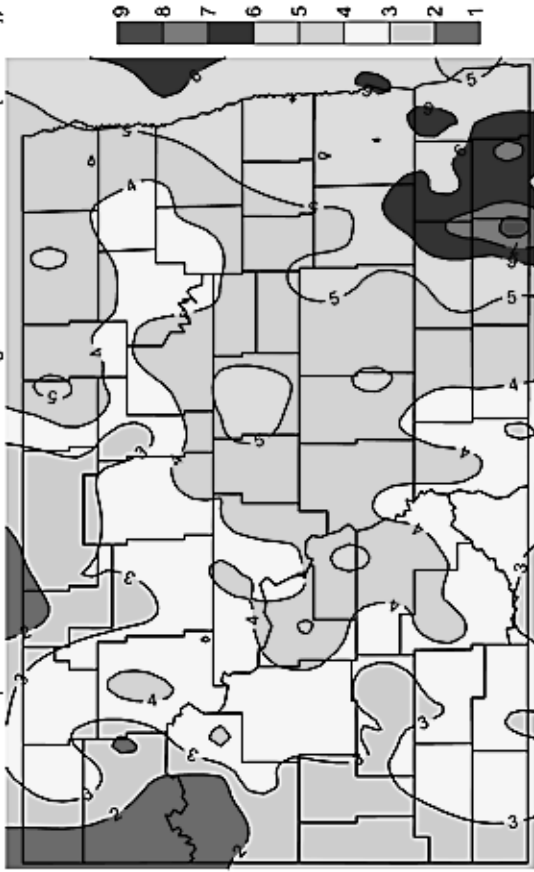
ND State Climate Office

**North Dakota August 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



ND State Climate Office

**North Dakota September 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



ND State Climate Office

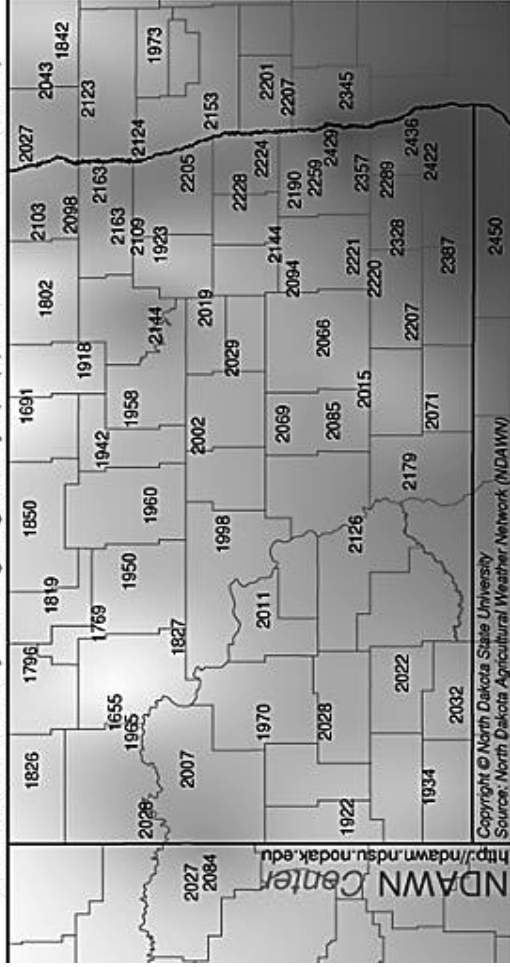
**North Dakota April - September 2010 Precipitation (inches)**  
 (Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



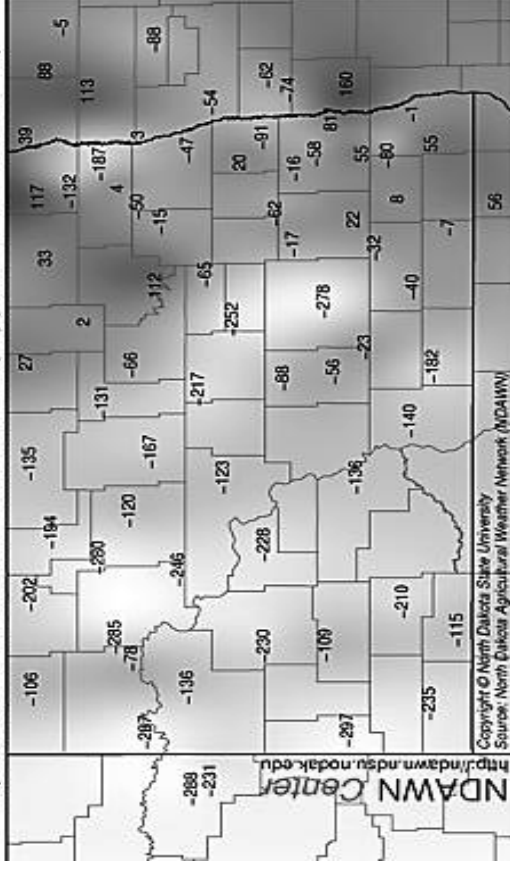
ND State Climate Office



Corn Accumulated Daily Growing Degree Days (°F) (2010-05-01 - 2010-09-30)



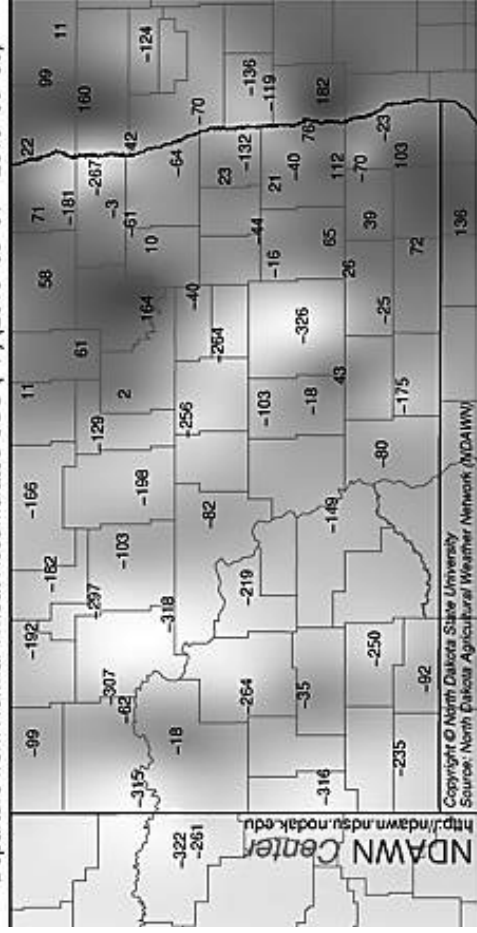
Departure from Normal Corn Accumulated GDD (°F) (2010-05-01 - 2010-09-30)



Accumulated Wheat Growing Degree Days (°F) (2010-05-01 - 2010-08-31)



Departure from Normal Wheat Accumulated GDD (°F) (2010-05-01 - 2010-09-30)



### Average Data by Crop and Year Across Sites

Durum	Yield (bu/a)										Test Weight (lbs/bu)										Height (in)										Days to Head									
	2	3	3	3	3	9	2	3	3	3	3	9	2	2	3	3	3	9	2	2	3	3	3	9	2	2	3	3	3	9	2	2	3	3	3	9				
No. Sites	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr				
Alkabo	63	66	62	76	79	72	61.1	60.2	59.2	60.5	58.4	59.4	36	41	34	40	42	39	36	41	34	40	42	39	55	64	66	60	69	65	55	64	66	60	69	65				
Grenora	60	57	67	84	86	79	60.1	58.3	58.0	59.8	57.9	58.6	34	39	34	39	41	38	34	39	34	39	41	38	54	64	65	60	69	65	54	64	65	60	69	65				
Lebsock	55	59	65	80	76	73	61.4	59.8	60.0	61.3	59.5	60.3	34	40	35	40	41	38	34	40	35	40	41	38	53	63	65	59	71	65	53	63	65	59	71	65				
DG Star	--	--	--	61	71	72	68	--	--	57.8	58.8	57.0	57.9	--	--	35	40	41	39	--	--	35	40	41	39	--	--	62	58	68	63	--	--	62	58	68	63			
Wales	--	--	63	75	76	71	--	--	57.9	59.5	57.8	58.4	--	--	35	39	41	38	--	--	35	39	41	38	--	--	64	58	69	64	--	--	64	58	69	64				
DG Max	--	--	--	75	74	--	--	--	--	60.1	58.2	--	--	--	--	41	43	--	--	--	--	41	43	--	--	--	--	58	69	--	--	--	--	58	69	--				
Tioga	--	--	--	87	80	--	--	--	--	60.1	57.6	--	--	--	--	43	45	--	--	--	--	43	45	--	--	--	--	60	70	--	--	--	--	60	70	--				
Westhope	--	--	--	71	76	--	--	--	--	59.1	58.6	--	--	--	--	40	41	--	--	--	--	40	41	--	--	--	--	58	70	--	--	--	--	58	70	--				
Divide	58	59	63	--	80	--	60.8	58.9	58.7	--	57.2	--	36	42	35	--	43	--	36	42	35	--	43	--	56	64	67	--	70	--	56	64	67	--	70	--				
Grande D'oro	64	59	65	--	77	--	61.3	59.7	60.0	--	59.7	--	36	41	34	--	42	--	36	41	34	--	42	--	55	65	65	--	71	--	55	65	65	--	71	--				
Mountrail	61	59	--	--	--	--	60.5	59.0	--	--	--	--	35	42	--	--	--	--	35	42	--	--	--	--	55	65	--	--	--	--	55	65	--	--	--	--				
Primo Doro	54	53	--	--	--	--	61.4	58.7	--	--	--	--	40	44	--	--	--	--	40	44	--	--	--	--	53	63	--	--	--	--	53	63	--	--	--	--				

Barley	Yield (bu/a)										Test Weight (lbs/bu)										Protein (%)										Plump (%)										Days to Head									
	4	4	3	3	3	9	4	4	3	3	3	9	4	4	3	3	3	9	4	4	3	3	3	9	4	4	3	3	3	9	4	4	3	3	3	9	4	4	3	3	3	9								
No. Sites	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr								
Lacey	91	86	120	124	116	120	47.9	48.8	48.8	49.2	50.2	49.4	12.8	12.4	13.4	11.8	12.0	12.4	74	84	88	96	96	93	74	84	88	96	96	93	59	65	56	64	64	62	59	65	56	64	64	62								
Stellar-ND	95	78	116	126	116	119	47.3	47.8	47.5	48.0	48.6	48.0	12.2	12.2	13.1	11.8	11.9	12.3	76	89	92	97	97	95	76	89	92	97	97	95	58	65	55	65	65	62	58	65	55	65	65	62								
Tradition	93	73	113	124	118	119	47.7	48.0	49.0	48.9	49.7	49.2	12.6	12.4	13.2	11.9	12.0	12.4	72	84	94	96	96	95	72	84	94	96	96	95	60	66	57	64	64	62	60	66	57	64	64	62								
Pinnacle*	--	80	120	133	119	124	--	49.7	49.9	49.8	49.9	49.9	--	11.2	12.0	11.0	10.8	11.3	--	92	96	96	97	96	--	92	96	96	97	96	60	65	57	67	63	63	60	65	57	67	63	63								
Rasmusson	--	--	123	131	126	127	--	--	48.6	48.9	49.4	49.0	--	--	13.0	11.6	11.6	12.1	--	--	88	95	94	92	--	--	88	95	94	92	--	--	64	55	65	61	--	--	64	55	65	61								
Celebration	--	--	--	131	111	--	--	--	--	48.9	49.1	--	--	--	--	12.3	12.5	--	--	--	--	97	94	--	--	--	--	97	94	--	--	--	--	56	65	--	--	--	--	56	65	--								
Quest	--	--	--	--	118	--	--	--	--	--	48.3	--	--	--	--	--	12.0	--	--	--	--	--	89	--	--	--	--	--	89	--	--	--	--	--	65	--	--	--	--	--	65	--								
Drummond	84	78	--	--	--	--	46.6	47.9	--	--	--	--	13.0	12.5	--	--	--	--	70	84	--	--	--	--	70	84	--	--	--	--	58	--	--	--	--	--	58	--	--	--	--	--								
Legacy	89	74	--	--	--	--	45.1	47.2	--	--	--	--	12.3	12.2	--	--	--	--	67	84	--	--	--	--	67	84	--	--	--	--	61	--	--	--	--	--	61	--	--	--	--	--								

\*2-row barley

### Average Data by Crop and Year Across Sites

HRSW	Yield (bu/a)												Test Weight (lbs/bu)												Protein (%)												Height (in)												Days to Head											
	6	6	6	8	8	8	10	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	5	5	5	7	7	7	9	9	9	9	13				
No. Sites	6	6	6	8	8	8	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	6	6	6	8	8	8	10	10	10	10	15	5	5	5	7	7	7	9	9	9	9	13					
Variety	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr															
Faller	73	75	89	90	86	88	60.8	60.3	60.5	58.9	59.6	59.7	14.1	14.4	14.1	13.2	13.4	13.6	37	35	38	38	37	60	65	57	66	63																																
Glenn	63	66	74	78	70	74	63.6	62.9	62.7	63.2	61.9	62.6	15.2	15.2	15.3	13.9	14.5	14.6	39	38	39	40	39	57	61	53	64	59																																
Howard	68	64	80	84	78	81	62.0	61.5	61.1	60.2	59.9	60.4	14.5	14.7	14.4	13.4	14.1	14.0	37	37	38	38	37	60	63	55	66	61																																
Kelby	61	63	73	76	72	74	61.5	60.0	60.5	60.7	59.3	60.2	15.1	14.9	14.9	14.0	14.4	14.4	32	30	32	34	32	58	63	53	65	60																																
Kuntz	--	65	80	78	73	77	--	59.9	60.0	58.8	58.4	59.1	--	14.1	13.8	13.4	13.8	13.7	33	32	33	33	33	60	65	56	66	62																																
RB07	--	66	79	80	76	78	--	59.6	60.3	59.7	59.2	59.7	--	14.6	14.6	13.7	13.8	14.0	35	32	34	35	34	57	61	53	65	60																																
Steele-ND	--	62	76	77	76	76	--	61.2	61.0	60.4	59.8	60.4	--	15.1	14.7	13.7	14.3	14.2	37	37	38	39	38	59	64	55	65	61																																
Albany	--	--	82	85	85	84	--	--	59.9	59.6	59.1	59.5	--	--	13.4	12.4	12.6	12.8	--	33	35	35	34	--	68	59	69	65																																
Breaker	--	--	80	82	83	82	--	--	61.8	60.2	61.3	61.1	--	--	14.4	13.5	13.7	13.9	--	35	37	37	36	--	65	57	67	63																																
Hat Trick	--	--	80	76	71	75	--	--	61.2	60.5	59.2	60.3	--	--	14.5	13.3	13.1	13.6	--	34	37	37	36	--	63	58	67	62																																
Tom	--	--	80	81	77	79	--	--	60.7	60.1	59.6	60.1	--	--	14.4	13.5	13.8	13.9	--	35	37	38	36	--	63	55	65	61																																
Barlow	--	--	--	81	78	--	--	--	--	60.6	60.4	--	--	--	--	13.7	14.2	--	--	--	38	38	--	--	--	54	65	--																																
Brennan	--	--	--	77	71	--	--	--	--	60.4	59.2	--	--	--	--	13.8	14.1	--	--	--	32	33	--	--	--	54	65	--																																
Brick	--	--	--	82	74	--	--	--	--	60.8	60.3	--	--	--	--	13.3	14.2	--	--	--	39	39	--	--	--	52	63	--																																
Cromwell	--	--	--	80	76	--	--	--	--	61.0	60.7	--	--	--	--	13.5	14.0	--	--	--	36	37	--	--	--	57	68	--																																
Jenna	--	--	--	77	79	--	--	--	--	58.8	58.7	--	--	--	--	13.7	14.1	--	--	--	34	35	--	--	--	57	69	--																																
Sabin	--	--	--	77	75	--	--	--	--	59.4	59.1	--	--	--	--	13.9	14.2	--	--	--	38	37	--	--	--	55	66	--																																
Select	--	--	--	--	66	--	--	--	--	--	59.7	--	--	--	--	--	14.0	--	--	--	--	38	--	--	--	--	63	--																																
Vantage	--	--	--	--	74	--	--	--	--	--	62.3	--	--	--	--	--	15.0	--	--	--	--	35	--	--	--	--	71	--																																
Ada	63	62	77	80	--	--	61.9	61.0	61.4	60.9	--	--	14.6	14.4	14.3	13.5	--	--	34	33	35	--	--	60	64	57	--	--																																
Traverse	71	68	83	86	--	--	59.4	58.1	58.7	57.8	--	--	13.7	14.0	13.9	12.8	--	--	39	37	40	--	--	57	62	54	--	--																																
Samson	--	--	82	82	--	--	--	--	59.5	58.6	--	--	--	--	14.1	13.3	--	--	--	32	33	--	--	--	65	56	--	--																																
Alsen	62	53	73	--	--	--	61.7	60.4	60.9	--	--	15.0	15.0	14.9	--	--	--	36	35	--	--	--	59	63	--	--	--																																	
Briggs	64	65	77	--	--	--	61.5	60.4	60.5	--	--	14.8	15.1	14.7	--	--	--	36	35	--	--	--	57	61	--	--	--																																	
Knudson	65	67	78	--	--	--	61.2	60.1	60.1	--	--	14.1	14.2	14.1	--	--	--	35	34	--	--	--	60	64	--	--	--																																	
Bakker Gold	64	56	--	--	--	--	60.4	59.6	--	--	--	14.0	13.7	--	--	--	--	36	--	--	--	--	65	--	--	--	--																																	
Bigg Red	66	49	--	--	--	--	62.9	61.2	--	--	--	13.8	13.5	--	--	--	--	38	--	--	--	--	60	--	--	--	--																																	
Fireball	58	55	--	--	--	--	59.6	58.2	--	--	--	15.7	15.6	--	--	--	--	34	--	--	--	--	63	--	--	--	--																																	
Oklee	60	58	--	--	--	--	61.5	60.9	--	--	--	15.3	15.0	--	--	--	--	36	--	--	--	--	58	--	--	--	--																																	
Rush	58	60	--	--	--	--	62.3	61.0	--	--	--	15.2	15.0	--	--	--	--	35	--	--	--	--	57	--	--	--	--																																	
Trooper	66	68	--	--	--	--	62.0	60.6	--	--	--	14.1	13.5	--	--	--	--	32	--	--	--	--	58	--	--	--	--																																	
Hotshot	--	52	--	--	--	--	--	59.6	--	--	--	--	13.2	--	--	--	--	33	--	--	--	--	64	--	--	--	--																																	

<b>HRSW Summary, Langdon 2006-2010</b>																		
<b>Variety</b>	<b>Yield(bu/a)</b>						<b>Test Weight(lbs/bu)</b>						<b>Protein(%)</b>					
	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>
Alsen	63	59	80	79	78	79	60.3	61.8	61.0	58.6	60.7	60.1	14.8	15.3	14.8	14.8	14.2	14.6
Barlow	62	72	81	86	85	84	61.1	62.0	61.5	59.4	60.6	60.5	14.9	14.8	14.6	14.4	14.0	14.3
Briggs	63	65	87	83	83	84	60.1	60.4	61.0	58.2	60.7	60.0	15.1	14.8	14.5	14.9	14.1	14.5
Dapps	57	67	77	93	79	83	58.4	60.1	59.9	59.3	60.1	59.8	15.8	16.5	15.8	15.0	14.2	15.0
Faller	69	76	94	103	92	97	59.1	61.1	60.5	58.5	60.3	59.7	14.1	15.0	13.5	14.0	13.0	13.5
Freyr	63	72	79	73	83	78	60.4	60.9	60.4	57.4	60.0	59.2	14.5	13.9	14.2	14.5	13.8	14.1
Glenn	56	76	80	85	77	81	62.2	63.8	62.8	62.5	62.5	62.6	15.5	15.0	15.3	14.8	14.2	14.8
Howard	63	63	85	90	88	88	60.0	62.2	61.5	59.4	60.9	60.6	14.5	15.2	14.4	14.3	13.8	14.2
Kelby	61	70	74	77	79	77	60.6	60.7	60.4	59.2	60.2	59.9	15.1	15.2	14.3	14.8	14.1	14.4
Knudson	65	72	85	89	83	86	59.8	60.9	59.8	58.4	59.2	59.2	13.8	14.2	13.7	13.3	13.2	13.4
RB07	67	73	83	75	79	79	60.1	60.4	60.0	56.4	59.8	58.7	14.9	14.7	14.5	14.8	13.5	14.3
Reeder	61	62	85	86	84	85	59.6	60.7	60.2	58.2	60.1	59.5	14.0	14.5	15.4	14.9	14.0	14.8
Steele-ND	67	63	79	85	87	84	60.5	61.9	61.6	59.2	61.0	60.6	14.9	15.5	14.4	14.2	14.2	14.2
Traverse	66	76	89	94	95	93	57.5	58.8	59.0	56.3	58.0	57.8	14.1	13.9	13.2	13.2	13.3	13.2
Brick	--	68	83	90	84	85	--	61.5	62.1	59.8	61.3	61.0	--	14.7	13.7	13.9	14.0	13.9
Cromwell	--	73	84	90	80	84	--	62.1	61.8	60.1	61.2	61.0	--	14.7	14.1	14.3	14.1	14.2
Kuntz	--	71	86	78	75	80	--	60.5	59.9	58.1	58.7	58.9	--	14.1	13.6	13.9	13.7	13.7
Mott	--	62	85	88	76	83	--	61.7	61.1	59.7	60.3	60.4	--	13.9	14.2	13.8	13.0	13.7
Tom	--	71	86	89	84	86	--	60.9	60.7	59.0	60.4	60.1	--	14.3	13.7	14.4	13.7	13.9
Albany	--	--	88	89	91	89	--	--	60.1	58.7	59.9	59.6	--	--	12.6	13.1	12.2	12.6
Blade	--	--	83	83	86	84	--	--	61.7	60.2	61.1	61.0	--	--	14.3	14.4	13.8	14.2
Breaker	--	--	83	86	88	86	--	--	61.4	59.5	60.3	60.4	--	--	13.9	14.5	13.7	14.0
Brennan	--	--	82	78	75	78	--	--	61.0	58.6	60.0	59.9	--	--	14.4	14.6	13.9	14.3
Hat Trick	--	--	89	79	68	79	--	--	61.5	58.3	58.8	59.5	--	--	14.8	14.8	12.4	14.0
Jenna	--	--	85	83	82	83	--	--	59.4	57.7	59.9	59.0	--	--	14.0	14.4	13.9	14.1
Sabin	--	--	85	83	81	83	--	--	60.4	58.3	59.9	59.5	--	--	14.5	14.6	14.0	14.4
Samson	--	--	86	79	82	82	--	--	59.4	56.8	58.3	58.1	--	--	13.7	14.3	13.0	13.7
Select	--	--	85	70	78	78	--	--	61.7	57.4	60.9	60.0	--	--	13.9	14.5	13.7	14.0
Vantage	--	--	81	77	78	78	--	--	62.8	61.5	62.3	62.2	--	--	15.5	15.9	14.7	15.4
Brogan	--	--	--	71	73	--	--	--	--	57.3	59.5	--	--	--	--	15.4	13.6	--
Alpine	--	--	--	--	79	--	--	--	--	--	59.6	--	--	--	--	--	13.0	--
WB Digger	--	--	--	--	81	--	--	--	--	--	59.9	--	--	--	--	--	13.3	--
Ada	59	71	83	87	--	--	61.0	62.4	61.8	60.1	--	--	13.9	14.2	13.1	14.4	--	--
Bigg Red	62	59	72	91	--	--	62.0	62.5	62.9	61.8	--	--	13.6	13.6	13.6	13.9	--	--
Granger	67	69	78	79	--	--	60.6	61.2	60.6	58.0	--	--	14.7	14.9	13.8	14.6	--	--
Granite	60	63	78	83	--	--	61.4	62.8	62.9	61.6	--	--	15.5	16.3	15.0	15.4	--	--
Oklee	62	65	77	86	--	--	60.8	61.3	61.1	60.0	--	--	14.8	15.2	14.1	14.6	--	--
Parshall	60	67	80	92	--	--	60.4	62.4	61.5	61.0	--	--	14.7	14.9	14.5	14.4	--	--
Trooper	61	74	85	77	--	--	61.2	61.3	62.2	57.7	--	--	13.8	13.5	13.0	13.8	--	--
AP605 CL	--	--	--	88	--	--	--	--	--	59.1	--	--	--	--	--	14.9	--	--
Hanna	61	63	78	--	--	--	60.2	60.5	60.8	--	--	--	14.6	15.5	14.4	--	--	--
Norpro	67	71	81	--	--	--	60.2	60.3	59.6	--	--	--	14.3	14.6	13.6	--	--	--
Russ	62	60	73	--	--	--	58.8	58.9	61.6	--	--	--	14.7	14.6	15.2	--	--	--
AP 604CL	--	59	80	--	--	--	--	60.6	61.0	--	--	--	--	14.4	14.2	--	--	--
Banton	64	--	76	--	--	--	62.3	--	60.4	--	--	--	14.7	--	14.2	--	--	--
Choteau	--	--	76	--	--	--	--	--	59.5	--	--	--	--	--	13.4	--	--	--
Diamond	--	--	44	--	--	--	--	--	58.4	--	--	--	--	--	14.2	--	--	--
Lolo	--	--	84	--	--	--	--	--	60.3	--	--	--	--	--	12.9	--	--	--
Mercury	72	76	--	--	--	--	59.5	60.5	--	--	--	--	14.3	13.6	--	--	--	--
Rush	55	68	--	--	--	--	60.9	61.9	--	--	--	--	15.3	15.0	--	--	--	--
LSD 5%	8.1	7.7	5.8	7.1	5.0		1.4	1.0	0.8	1.0	0.6		0.7	1.0	0.7	0.5	0.4	

<b>HRSW Summary, Langdon 2006-2010</b>																		
<b>Variety</b>	<b>Days to Head</b>						<b>Height(in)</b>						<b>Lodging(0-9)</b>					<b>Shatter*</b>
	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>2008</b>
Alsen	52	61	67	59	68	65	37	39	39	39	37	38	0.3	2.0	0.0	0.4	0.8	40
Barlow	50	60	66	56	67	63	38	39	39	41	40	40	1.3	3.0	0.0	1.5	1.5	8
Briggs	51	60	64	55	66	62	37	37	39	40	39	40	3.5	2.5	0.0	2.3	1.6	0
Dapps	53	62	67	58	66	64	41	42	44	45	43	44	3.8	1.9	0.0	1.1	1.0	14
Faller	54	63	69	60	69	66	36	38	38	40	39	39	3.8	1.9	0.0	0.8	0.9	0
Freyr	52	62	67	58	69	65	37	37	38	40	38	39	0.0	0.6	0.0	1.8	0.8	58
Glenn	49	60	64	56	65	62	38	41	41	43	40	42	0.3	1.2	0.0	0.0	0.4	2
Howard	52	62	67	59	68	65	36	39	40	41	40	41	3.0	3.4	0.0	2.2	1.9	0
Kelby	51	61	67	55	67	63	31	36	34	35	35	35	1.5	0.1	0.0	2.9	1.0	6
Knudson	54	65	68	59	69	65	34	39	36	38	37	37	0.3	0.6	0.0	3.6	1.4	14
RB07	51	59	64	55	67	62	35	36	35	36	35	35	1.8	0.3	0.0	2.1	0.8	2
Reeder	53	62	66	57	67	63	36	40	40	41	39	40	1.3	1.2	0.0	0.8	0.7	2
Steele-ND	53	62	67	58	68	64	38	38	41	41	40	41	2.3	1.7	0.0	2.8	1.5	8
Traverse	50	61	65	57	66	63	40	40	40	44	40	41	0.5	1.5	0.0	0.1	0.5	102
Brick	--	58	63	52	63	59	--	39	40	42	40	41	1.5	0.8	0.0	1.8	0.9	8
Cromwell	--	65	70	61	70	67	--	38	37	40	38	38	0.3	1.6	0.0	3.1	1.6	2
Kuntz	--	63	69	59	69	65	--	36	34	35	34	34	1.0	0.1	0.0	1.1	0.4	10
Mott	--	67	69	61	70	67	--	41	42	43	41	42	0.0	0.7	0.0	0.3	0.3	16
Tom	--	62	66	58	67	64	--	38	38	40	38	39	2.5	2.7	0.0	2.9	1.9	0
Albany	--	--	70	62	70	67	--	--	36	38	36	37	--	0.8	0.0	1.8	0.9	76
Blade	--	--	69	59	68	66	--	--	37	40	38	38	--	0.5	0.0	0.8	0.4	0
Breaker	--	--	70	60	69	66	--	--	38	39	39	39	--	0.1	0.0	1.0	0.4	6
Brennan	--	--	67	57	67	63	--	--	34	35	33	34	--	0.0	0.0	3.7	1.2	0
Hat Trick	--	--	66	59	68	64	--	--	38	39	37	38	--	0.1	0.0	1.6	0.6	20
Jenna	--	--	71	62	71	68	--	--	38	37	36	37	--	0.6	0.0	2.2	0.9	8
Sabin	--	--	68	60	68	65	--	--	37	40	37	38	--	2.2	0.0	1.8	1.3	6
Samson	--	--	69	58	68	65	--	--	34	34	35	34	--	0.2	0.0	0.2	0.1	0
Select	--	--	63	54	64	60	--	--	39	42	38	39	--	1.8	0.0	1.8	1.2	0
Vantage	--	--	73	63	74	70	--	--	37	39	35	37	--	0.0	0.0	0.0	0.0	10
Brogan	--	--	--	60	69	--	--	--	--	38	35	--	--	--	0.0	0.6	--	--
Alpine	--	--	--	--	68	--	--	--	--	--	37	--	--	--	--	2.8	--	--
WB Digger	--	--	--	--	67	--	--	--	--	--	38	--	--	--	--	1.6	--	--
Ada	53	63	67	61	--	--	34	36	35	38	--	--	0.3	0.3	0.0	--	--	0
Bigg Red	55	63	68	61	--	--	41	41	41	47	--	--	0.8	0.7	0.0	--	--	202
Granger	53	61	66	59	--	--	41	41	42	45	--	--	1.8	2.1	0.0	--	--	96
Granite	55	69	71	63	--	--	34	37	35	38	--	--	0.0	0.2	0.0	--	--	26
Oklee	53	60	66	58	--	--	37	37	39	42	--	--	3.0	0.8	0.0	--	--	14
Parshall	52	62	67	59	--	--	42	44	44	47	--	--	0.3	0.6	0.0	--	--	2
Trooper	50	61	66	56	--	--	31	35	33	34	--	--	0.5	0.2	0.0	--	--	0
AP605 CL	--	--	--	57	--	--	--	--	--	41	--	--	--	--	0.0	--	--	--
Hanna	52	62	66	--	--	--	41	41	44	--	--	--	3.0	1.7	--	--	--	0
Norpro	52	63	67	--	--	--	33	35	35	--	--	--	2.0	0.8	--	--	--	0
Russ	51	63	65	--	--	--	39	39	37	--	--	--	2.3	0.7	--	--	--	52
AP 604CL	--	59	64	--	--	--	--	35	38	--	--	--	3.5	1.8	--	--	--	2
Banton	51	--	65	--	--	--	37	--	38	--	--	--	--	0.2	--	--	--	0
Choteau	--	--	67	--	--	--	--	--	36	--	--	--	--	0.0	--	--	--	2
Diamond	--	--	69	--	--	--	--	--	43	--	--	--	--	1.9	--	--	--	480
Lolo	--	--	70	--	--	--	--	--	39	--	--	--	--	2.3	--	--	--	4
Mercury	53	62	--	--	--	--	32	34	--	--	--	--	1.3	--	--	--	--	--
Rush	51	59	--	--	--	--	35	37	--	--	--	--	0.3	--	--	--	--	--
LSD 5%	1.0	1.0	1.2	1.0	1.0		2.1	2.0	2.0	1.6	1.0		2.0	2.1	--	1.3		55

\*2008-Seeds/ft<sup>2</sup>

### Pembina County HRSW Summary 2005-2009

Variety	Yield (bu/a)						Test Weight (lbs/bu)						Protein (%)						Lodging (0-9)					
	05	06	07	08	09	3yr	05	06	07	08	09	3yr	05	06	07	08	09	3yr	05	06	07	08	09	3yr
Freyr	60	75	62	81	63	69	59.0	61.6	60.7	59.9	59.1	59.9	15.4	12.9	13.9	14.9	13.3	14.0	0	0.3	0	0	0	0
Glenn	60	66	66	80	68	71	62.2	65.2	63.9	63.1	63.2	63.4	15.4	13.3	14.2	16.1	13.3	14.5	0	0	0	0	0	0
Howard	60	76	64	85	69	72	61.4	62.5	61.7	61.7	60.5	61.3	15.1	13.0	13.6	14.6	12.8	13.7	0	0.3	0	0	0	0
Ada	--	75	65	82	67	71	--	63.5	62.2	61.9	61.3	61.8	--	13.1	13.5	14.7	13.0	13.7	--	0.3	0	0	0	0
Faller	--	90	78	98	75	84	--	62.1	60.7	62.1	59.8	60.9	--	12.2	13.2	14.4	12.6	13.4	--	0	0	0	0	0
Kelby	--	73	59	77	68	68	--	63.1	59.8	61.0	60.1	60.3	--	13.1	14.1	15.2	14.0	14.4	--	0	0	0	0	0
Traverse	--	86	70	87	70	76	--	61.3	58.7	59.1	57.2	58.3	--	11.5	12.9	14.5	12.3	13.2	--	0	0	0	0	0
Steele-ND	58	--	66	82	66	71	60.9	--	61.8	61.2	60.7	61.2	15.4	--	14.0	15.0	13.1	14.0	0	--	0	0	0	0
Kuntz	--	--	69	84	63	72	--	--	60.4	60.5	59.2	60.0	--	--	13.4	14.0	13.5	13.6	--	--	0	0	0	0
RB07	--	--	69	82	72	74	--	--	60.4	61.0	60.0	60.5	--	--	13.6	15.3	13.5	14.1	--	--	0	0	0	0
Albany	--	--	--	85	77	--	--	--	--	60.5	59.7	--	--	--	--	13.7	11.7	--	--	--	--	0	0	--
Breaker	--	--	--	88	75	--	--	--	--	61.9	61.0	--	--	--	--	14.8	13.4	--	--	--	--	0	0	--
Hat Trick	--	--	--	87	74	--	--	--	--	61.9	61.2	--	--	--	--	14.7	12.8	--	--	--	--	0	0	--
Samson	--	--	--	86	79	--	--	--	--	59.0	58.7	--	--	--	--	14.5	12.8	--	--	--	--	0	0	--
Tom	--	--	--	83	69	--	--	--	--	60.8	60.7	--	--	--	--	14.7	12.9	--	--	--	--	0	0	--
Barlow	--	--	--	--	67	--	--	--	--	--	61.0	--	--	--	--	--	13.3	--	--	--	--	--	0	--
Brennan	--	--	--	--	69	--	--	--	--	--	60.0	--	--	--	--	--	13.6	--	--	--	--	--	0	--
Brick	--	--	--	--	69	--	--	--	--	--	60.4	--	--	--	--	--	12.6	--	--	--	--	--	0	--
Cromwell	--	--	--	--	71	--	--	--	--	--	61.5	--	--	--	--	--	13.3	--	--	--	--	--	0	--
Jenna	--	--	--	--	70	--	--	--	--	--	58.5	--	--	--	--	--	13.7	--	--	--	--	--	0	--
Sabin	--	--	--	--	71	--	--	--	--	--	59.2	--	--	--	--	--	13.4	--	--	--	--	--	0	--
Alsen	59	71	59	77	--	--	60.7	62.4	61.6	61.3	--	--	15.5	13.9	14.0	14.9	--	--	0	0	0	0	--	--
Briggs	57	71	68	79	--	--	59.6	62.8	61.2	61.0	--	--	15.3	12.6	14.4	15.5	--	--	0	0.3	0	0	--	--
Knudson	63	72	71	81	--	--	59.9	61.7	60.8	59.9	--	--	14.5	12.8	13.6	14.1	--	--	0	0	0	0	--	--
Trooper	63	70	74	--	--	--	61.2	62.8	62.0	--	--	--	14.6	12.2	13.0	--	--	--	0	0	0	--	--	--
Bakker Gold	--	75	72	--	--	--	--	61.3	61.8	--	--	--	--	11.5	13.2	--	--	--	--	0	0	--	--	--
Bigg Red	--	76	60	--	--	--	--	63.5	62.5	--	--	--	--	11.9	13.3	--	--	--	--	0	0	--	--	--
Fireball	--	60	61	--	--	--	--	61.2	59.3	--	--	--	--	13.8	14.7	--	--	--	--	0	0	--	--	--
Rush	--	68	62	--	--	--	--	63.9	61.5	--	--	--	--	13.5	14.3	--	--	--	--	0	0	--	--	--
Hotshot	--	--	63	--	--	--	--	--	62.3	--	--	--	--	--	11.9	--	--	--	--	--	0	--	--	--
LSD 5%	3.2	7.6	4.7	3.6	6.5		0.6	0.8	0.4	0.7	0.6		0.4	1.1	0.4	0.3	0.6		--	0.5	--	--	--	--

### Walsh County HRSW Summary 2006-2010

Variety	Yield(bu/a)						Test Weight(lbs/bu)						Protein(%)						Lodging (0-9)					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Faller	90	74	103	93	81	92	61.7	58.5	60.5	58.5	58.4	59.1	15.0	14.7	14.7	14.0	14.1	14.3	0	3.0	1.5	6.0	3.9	3.8
Glenn	72	57	82	82	65	76	63.9	60.9	62.9	62.8	61.2	62.3	16.6	16.0	15.0	14.3	14.7	14.7	0	2.0	1.5	2.3	4.1	2.6
Howard	76	60	91	86	69	82	62.9	59.4	61.1	59.9	58.8	59.9	15.6	15.2	14.6	13.8	14.7	14.4	0	3.3	2.0	4.8	4.6	3.8
Kelby	72	58	86	83	71	80	61.5	57.8	60.7	60.0	58.9	59.9	15.8	15.2	14.8	14.3	15.1	14.7	0	3.5	0.0	1.0	1.8	0.9
Kuntz	--	58	90	85	71	82	--	57.2	59.9	58.2	57.8	58.6	--	14.4	14.4	14.1	14.3	14.3	--	4.0	0.0	0.5	0.6	0.4
RB07	--	54	95	90	79	88	--	55.9	59.8	58.7	58.4	59.0	--	15.1	14.4	14.2	13.9	14.2	--	5.8	0.0	3.8	0.7	1.5
Steele-ND	--	56	87	78	61	75	--	59.3	61.3	59.7	58.6	59.9	--	15.8	14.7	14.5	14.7	14.6	--	3.3	0.5	3.5	3.1	2.4
Albany	--	--	99	83	76	86	--	--	60.6	58.2	58.6	59.1	--	--	13.5	13.4	12.9	13.3	--	--	0.8	6.5	1.5	2.9
Breaker	--	--	87	83	82	84	--	--	62.3	60.4	61.1	61.3	--	--	14.5	13.8	13.9	14.1	--	--	0.0	4.3	0.3	1.5
Hat Trick	--	--	98	74	68	80	--	--	61.9	58.7	58.9	59.8	--	--	14.0	13.5	13.7	13.7	--	--	0.0	5.0	0.7	1.9
Samson	--	--	98	88	77	88	--	--	60.0	57.5	57.7	58.4	--	--	14.1	13.6	13.7	13.8	--	--	0.0	0.0	0.2	0.1
Tom	--	--	93	81	72	82	--	--	60.1	58.8	58.9	59.3	--	--	14.8	14.2	13.6	14.2	--	--	3.8	5.8	2.7	4.1
Barlow	--	--	--	80	74	--	--	--	--	60.0	59.6	--	--	--	--	14.2	14.6	--	--	--	--	2.5	1.8	--
Brennan	--	--	--	82	66	--	--	--	--	59.6	58.5	--	--	--	--	13.9	14.6	--	--	--	--	0.5	1.3	--
Brick	--	--	--	89	64	--	--	--	--	61.1	59.0	--	--	--	--	14.2	15.1	--	--	--	--	3.8	6.9	--
Cromwell	--	--	--	86	72	--	--	--	--	60.6	59.5	--	--	--	--	13.7	14.4	--	--	--	--	5.8	2.4	--
Jenna	--	--	--	79	73	--	--	--	--	57.4	57.9	--	--	--	--	14.4	14.4	--	--	--	--	2.0	0.2	--
Sabin	--	--	--	76	66	--	--	--	--	58.4	58.2	--	--	--	--	14.7	14.6	--	--	--	--	4.0	6.9	--
Blade	--	--	--	--	75	--	--	--	--	--	61.4	--	--	--	--	--	14.2	--	--	--	--	--	0.5	--
Brogan	--	--	--	--	73	--	--	--	--	--	59.5	--	--	--	--	--	13.7	--	--	--	--	--	1.7	--
Select	--	--	--	--	54	--	--	--	--	--	58.1	--	--	--	--	--	15.0	--	--	--	--	--	4.6	--
Vantage	--	--	--	--	75	--	--	--	--	--	61.6	--	--	--	--	--	15.3	--	--	--	--	--	0.2	--
WB-Digger	--	--	--	--	79	--	--	--	--	--	58.9	--	--	--	--	--	13.5	--	--	--	--	--	0.5	--
Ada	86	55	88	82	--	--	62.9	58.7	61.6	60.2	--	--	14.7	14.7	14.2	13.8	--	--	0	6.5	0.8	5.0	--	--
Freyr	79	52	89	84	--	--	61.6	55.9	60.3	58.5	--	--	15.6	15.0	14.7	14.0	--	--	0	4.8	0.0	4.3	--	--
Traverse	90	64	99	95	--	--	60.3	55.0	59.0	57.3	--	--	15.2	14.8	14.7	13.7	--	--	0	4.3	4.5	3.0	--	--
Alsen	71	47	83	--	--	--	62.6	57.6	61.0	--	--	--	16.3	15.5	15.1	--	--	--	0	6.8	0.0	--	--	--
Briggs	72	59	87	--	--	--	61.7	58.6	60.5	--	--	--	15.9	16.0	14.8	--	--	--	0	4.0	4.0	--	--	--
Knudson	79	59	88	--	--	--	61.8	57.8	60.2	--	--	--	14.6	14.3	14.0	--	--	--	0	3.8	0.5	--	--	--
Bakker Gold	89	54	--	--	--	--	62.1	57.1	--	--	--	--	14.7	13.2	--	--	--	--	0	0.3	--	--	--	--
Bigg Red	79	39	--	--	--	--	63.8	58.5	--	--	--	--	14.7	14.1	--	--	--	--	0	6.5	--	--	--	--
Fireball	72	51	--	--	--	--	60.3	55.5	--	--	--	--	16.4	15.7	--	--	--	--	0	0.5	--	--	--	--
Hotshot	86	42	--	--	--	--	63.1	56.8	--	--	--	--	13.4	12.7	--	--	--	--	0	3.3	--	--	--	--
Oklee	73	52	--	--	--	--	62.4	59.3	--	--	--	--	16.3	15.4	--	--	--	--	0	3.3	--	--	--	--
Rush	70	58	--	--	--	--	63.1	59.3	--	--	--	--	15.2	15.3	--	--	--	--	0	0.0	--	--	--	--
Trooper	85	59	--	--	--	--	63.0	59.2	--	--	--	--	14.8	13.9	--	--	--	--	0	5.0	--	--	--	--
LSD 5%	5.9	6.4	5.9	6.1	6.1	6.1	0.5	0.9	0.5	0.9	0.6	0.6	0.3	0.3	0.4	0.5	0.6	0.6	--	2.4	1.8	2.6	1.7	1.7



### Nelson County HRSW Summary 2006-2010

Variety	Yield(bu/a)						Test Weight(lbs/bu)						Protein(%)						Lodging(0-9)					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Faller	68	73	91	92	83	89	61.3	60.7	60.7	59.3	59.5	59.8	14.4	14.8	13.2	12.9	13.1	13.1	0	0	0	0	0	0.0
Glenn	66	65	72	78	66	72	64.5	62.8	62.4	63.5	61.2	62.4	15.1	15.8	14.4	14.0	14.5	14.3	0	0	0	0	0	0.3
Howard	67	66	74	87	78	80	62.7	61.9	60.4	60.5	60.2	60.4	14.4	15.3	13.7	13.5	14.4	13.9	0	0	0	0	0	1.5
Kelby	62	62	74	75	66	72	63.0	60.5	61.1	62.4	58.4	60.6	15.0	15.4	14.2	13.8	14.2	14.1	0	0	0	0	0	0.0
Kuntz	--	56	84	85	69	79	--	60.5	60.3	58.6	57.9	58.9	--	14.7	13.4	13.5	14.1	13.7	--	0	0	0	0	0.0
RB07	--	65	82	78	70	77	--	60.6	60.2	61.7	58.6	60.2	--	15.3	13.4	13.3	14.0	13.6	--	0	0	0	0	0.0
Steele-ND	--	59	75	74	76	75	--	61.6	60.6	61.5	59.8	60.6	--	15.8	14.1	13.6	14.4	14.0	--	0	0	0	1.3	0.4
Albany	--	--	85	97	89	90	--	--	60.0	60.9	59.3	60.1	--	--	12.8	12.5	12.6	12.6	--	--	0	0	0	0.0
Breaker	--	--	81	81	82	81	--	--	61.4	60.0	62.0	61.1	--	--	13.7	13.3	13.8	13.6	--	--	0	0	0	0.0
Hat Trick	--	--	86	74	72	77	--	--	61.6	62.7	59.9	61.4	--	--	13.3	12.8	12.9	13.0	--	--	0	0	0	0.0
Tom	--	--	81	84	72	79	--	--	61.1	60.7	59.0	60.3	--	--	14.0	13.6	14.1	13.9	--	--	0	0	0	0.8
Barlow	--	--	--	88	77	--	--	--	--	61.1	60.6	--	--	--	--	13.9	14.4	--	--	--	--	0	0	0.5
Brennan	--	--	--	79	69	--	--	--	--	62.4	58.5	--	--	--	--	13.6	13.9	--	--	--	--	0	0	0.0
Brick	--	--	--	81	75	--	--	--	--	62.7	60.0	--	--	--	--	13.4	14.0	--	--	--	--	0	0	0.5
Cromwell	--	--	--	84	76	--	--	--	--	60.9	60.7	--	--	--	--	13.5	13.6	--	--	--	--	0	0	0.0
Jenna	--	--	--	86	83	--	--	--	--	59.8	58.0	--	--	--	--	13.4	14.2	--	--	--	--	0	0	0.0
Sabin	--	--	--	77	78	--	--	--	--	60.9	59.0	--	--	--	--	13.8	14.3	--	--	--	--	0	1.3	--
Select	--	--	--	--	63	--	--	--	--	--	59.2	--	--	--	--	--	13.9	--	--	--	--	--	1.0	--
Vantage	--	--	--	--	74	--	--	--	--	--	62.5	--	--	--	--	--	14.9	--	--	--	--	--	0.0	--
Ada	67	57	77	81	--	--	63.3	60.6	61.2	62.0	--	--	14.7	15.1	13.8	13.3	--	--	0	0	0	0	0	--
Freyr	56	55	74	80	--	--	62.1	60.2	58.8	58.3	--	--	14.4	15.2	13.9	13.4	--	--	0	0	0	0	0	--
Traverse	64	57	85	91	--	--	60.5	58.1	58.8	59.7	--	--	13.6	15.0	13.0	12.6	--	--	0	0	0	0	0	--
Samson	--	--	82	87	--	--	--	--	59.2	59.9	--	--	--	--	13.7	13.3	--	--	--	--	0	0	0	--
Alsen	62	52	72	--	--	--	63.3	60.5	61.0	--	--	--	14.5	15.6	13.9	--	--	--	0	0	0	0	0	--
Briggs	62	62	80	--	--	--	62.5	60.4	60.5	--	--	--	15.0	15.9	13.8	--	--	--	0	0	0	0	0	--
Knudson	64	65	82	--	--	--	62.9	60.8	59.6	--	--	--	14.2	14.7	13.2	--	--	--	0	0	0	0	0	--
Bakker Gold	68	46	--	--	--	--	61.7	58.3	--	--	--	--	13.8	14.6	--	--	--	--	0	0	--	--	--	--
Bigg Red	66	48	--	--	--	--	63.9	61.8	--	--	--	--	14.4	13.7	--	--	--	--	0	0	--	--	--	--
Fireball	63	53	--	--	--	--	61.7	58.4	--	--	--	--	15.7	16.1	--	--	--	--	0	0	--	--	--	--
Hotshot	64	52	--	--	--	--	61.7	59.4	--	--	--	--	13.7	14.1	--	--	--	--	0	0	--	--	--	--
Oklee	57	53	--	--	--	--	62.1	61.2	--	--	--	--	15.5	15.9	--	--	--	--	0	0	--	--	--	--
Rush	57	59	--	--	--	--	63.5	61.0	--	--	--	--	15.3	15.6	--	--	--	--	0	0	--	--	--	--
Trooper	64	63	--	--	--	--	62.5	60.5	--	--	--	--	14.3	14.2	--	--	--	--	0	0	--	--	--	--
LSD 5%	5.9	5.2	5.5	7.5	8.2	--	0.7	0.5	0.7	1.1	0.5	--	0.5	0.3	0.5	0.5	0.4	--	1.6	--	--	--	--	NS

### Towner County HRSW Summary 2006-2010

Variety	Yield(bu/a)			Test Weight(lbs/bu)			Protein(%)											
	06	07	08	09	10	3yr	06	07	08	09	10	3yr						
Faller	60	68	57	86	86	76	60.0	59.8	59.7	59.0	60.1	59.6	14.6	14.3	14.7	12.5	13.5	13.6
Glenn	56	60	58	78	73	70	63.2	62.4	63.3	63.8	62.5	63.2	15.5	14.9	15.2	13.0	14.4	14.2
Howard	60	60	60	90	79	76	61.4	61.1	61.6	60.8	59.6	60.7	14.7	14.6	14.8	12.4	13.6	13.6
Kelby	49	56	53	75	72	67	59.9	60.3	60.3	61.9	59.5	60.6	15.7	14.9	15.4	13.0	14.2	14.2
Kuntz	--	56	55	78	76	70	--	59.5	60.4	59.8	59.0	59.7	--	13.7	13.9	12.2	13.0	13.0
RB07	--	62	55	84	76	72	--	59.8	61.2	61.6	59.8	60.9	--	14.3	14.9	12.5	13.8	13.7
Steele-ND	--	58	56	83	79	72	--	60.7	61.2	60.8	59.7	60.6	--	15.0	14.9	13.0	13.7	13.9
Albany	--	--	51	80	82	71	--	--	59.4	60.7	58.6	59.6	--	--	14.7	11.5	12.8	13.0
Breaker	--	--	59	84	80	74	--	--	62.0	60.3	61.8	61.4	--	--	15.0	12.5	13.4	13.6
Cromwell	--	--	51	71	75	66	--	--	61.7	61.9	61.4	61.7	--	--	15.5	12.8	13.9	14.1
Hat Trick	--	--	46	79	76	67	--	--	60.4	61.7	59.3	60.5	--	--	15.9	12.8	13.5	14.1
Tom	--	--	54	82	78	72	--	--	60.9	61.1	60.0	60.7	--	--	14.6	12.6	13.8	13.7
Barlow	--	--	--	85	76	--	--	--	61.4	60.7	--	--	--	--	--	12.9	13.9	--
Brennan	--	--	--	76	73	--	--	--	61.6	59.6	--	--	--	--	--	13.0	13.8	--
Brick	--	--	--	81	74	--	--	--	62.0	60.8	--	--	--	--	--	12.6	13.8	--
Jenna	--	--	--	77	77	--	--	--	60.4	58.9	--	--	--	--	--	12.7	13.8	--
Sabin	--	--	--	78	73	--	--	--	60.3	59.2	--	--	--	--	--	13.2	13.9	--
Select	--	--	--	--	69	--	--	--	--	60.4	--	--	--	--	--	--	13.3	--
Vantage	--	--	--	--	71	--	--	--	--	62.6	--	--	--	--	--	--	15.2	--
Ada	38	54	54	81	--	--	59.0	61.0	61.6	61.0	--	--	16.3	14.4	15.3	12.9	--	--
Freyr	54	55	53	85	--	--	59.2	59.9	61.0	58.4	--	--	14.9	14.1	14.6	13.0	--	--
Traverse	55	64	59	78	--	--	57.1	59.0	59.0	58.5	--	--	14.3	13.8	13.9	12.3	--	--
Samson	--	--	60	77	--	--	--	60.6	60.0	--	--	--	--	--	14.5	12.7	--	--
Alsen	47	45	52	--	--	--	60.3	60.1	60.8	--	--	--	15.3	14.7	15.8	--	--	--
Briggs	57	62	50	--	--	--	60.8	60.8	60.4	--	--	--	15.1	15.0	15.2	--	--	--
Knudson	49	60	54	--	--	--	59.6	59.9	61.4	--	--	--	15.2	14.3	15.0	--	--	--
Bakker Gold	38	45	--	--	--	--	57.8	58.9	--	--	--	--	16.4	13.7	--	--	--	--
Bigg Red	48	40	--	--	--	--	61.4	60.5	--	--	--	--	14.6	12.8	--	--	--	--
Fireball	39	46	--	--	--	--	57.2	57.8	--	--	--	--	17.8	15.5	--	--	--	--
Oklee	46	52	--	--	--	--	59.9	60.9	--	--	--	--	16.4	14.8	--	--	--	--
Rush	46	50	--	--	--	--	60.7	60.5	--	--	--	--	16.2	14.9	--	--	--	--
Trooper	50	55	--	--	--	--	59.8	59.2	--	--	--	--	14.7	13.2	--	--	--	--
Hotshot	--	45	--	--	--	--	--	59.0	--	--	--	--	--	13.3	--	--	--	--
LSD 5%	10.7	4.4	NS	5.9	4.9		2.0	0.6	0.9	1.0	0.7		1.1	0.3	0.8	0.6	0.3	

No lodging in trials.

HRSW Disease by Location, Year and Variety		Foliar Necrosis - % of Flag at Soft Dough																DON <sup>1</sup> - ppm						FDK <sup>2</sup> (Tombstones)-%													
		5site		L		N		W		T		10		09		08		07		06		4site		L		L		P		N		2 site		L		L	
		Ave.	10	10	10	10	10	10	10	10	10	10	10	10	09	08	07	07	07	07	06	Ave.	10	08	08	08	08	08	08	08	10	10	08	07	07		
Variety:																																					
Albany	20	9	28	32	13	21	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.7	0.8	0.8	0.8	0.5	0.7	0	1	--	--	--	--				
Barlow	6	7	9	7	5	4	13	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	--	--	--	2.7	1	4	--	--	--	--				
Breaker	8	6	9	10	8	7	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	1.0	0.9	0.5	0.6	0.5	0	1	--	--	--	--				
Brennan	33	27	43	55	23	20	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	--	--	--	1.9	1	3	--	--	--	--				
Brick	25	17	35	28	36	11	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	--	--	--	0.5	0	1	--	--	--	--				
Cromwell	8	4	11	12	8	5	7	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.7	--	--	0.2	0	0	0	0	0	0				
Faller	11	15	21	11	5	5	5	13	7	10	20	1	5	1	1	1	1	1	1	1	1	0.5	0.5	0.8	0.3	0.3	0.1	0	0	0	0	0	0				
Glenn	16	16	38	17	4	7	7	20	8	23	20	5	15	2	8	8	8	8	8	8	8	0.5	0.3	0.7	0.6	0.3	0.2	0	0	0	0	0	0	0			
Hat Trick	51	43	58	82	24	47	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	0.8	1.8	1.0	0.6	0.9	1	1	--	--	--	--				
Howard	10	8	8	23	7	4	7	27	8	13	18	5	7	1	1	1	1	1	1	1	1.2	1.0	1.1	1.8	0.7	1.9	1	3	1	1	1	1	1				
Jenna	11	4	11	16	10	12	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0	--	--	--	1.3	1	2	--	--	--	--				
Kelby	24	13	40	20	26	19	10	40	23	67	20	3	42	4	1	1	1	1	1	1	0.8	0.7	0.9	1.0	0.7	0.7	1	1	0	0	0	0	0				
Kuntz	34	23	69	38	20	21	12	23	27	43	25	5	25	--	--	--	--	--	--	--	0.8	0.3	1.6	0.9	0.5	1.0	1	1	0	0	0	0	0	0			
RB07	28	15	48	19	17	41	7	23	25	30	13	3	22	--	--	--	--	--	--	--	0.6	0.5	0.9	0.5	0.3	0.2	0	0	0	0	0	0	0	0			
Sabin	18	13	19	33	9	17	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	--	--	--	--	0.0	0	0	--	--	--	--				
Select	59	33	86	77	59	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	--	--	--	--	1	--	--	--	--	--	--			
Steele-ND	14	8	10	37	7	10	8	30	10	10	23	5	5	1	--	--	--	--	--	--	1.1	0.9	1.2	1.2	1.2	2.2	1	3	0	0	0	0	0	0			
Tom	14	11	15	28	9	7	7	43	--	--	--	--	--	--	--	--	--	--	--	--	0.6	0.7	0.7	0.7	0.3	0.4	0	1	0	0	0	0	0	0			
Vantage	11	8	24	4	7	11	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	1.1	--	--	1.7	0	3	--	--	--	--	--			
Blade	--	7	--	7	--	19	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.9	--	--	0.9	1	1	--	--	--	--	--			
Brogan	--	10	--	16	--	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0	--	--	--	--	1	--	--	--	--	--	--			
WB Digger	--	17	--	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	--	--	--	--	2	--	--	--	--	--	--			
Alpine	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--	1	--	--	--	--	--	--			
Alsen	--	12	--	--	--	12	13	30	33	57	33	5	65	2	5	5	5	5	5	5	0.5	0.3	0.6	0.6	0.3	0.5	1	1	0	0	0	0	0	0	0		
Briggs	--	10	--	--	--	11	7	20	13	30	13	3	7	2	3	3	3	3	3	3	0.8	1.0	1.2	0.6	0.3	1.3	0	2	1	1	1	1	1	1	1		
Dapps	--	17	--	--	--	7	7	20	--	--	--	--	--	1	1	1	1	1	1	1	--	--	0.6	1.9	--	--	1.8	0	3	0	0	0	0	0	0		
Freyr	--	5	--	--	--	10	7	30	23	57	20	2	33	1	1	1	1	1	1	1	0.4	0.3	0.3	0.6	0.5	0.5	1	0	0	0	0	0	0	0	0		
Knudson	--	9	--	--	--	7	10	10	10	23	13	3	4	2	1	1	1	1	1	1	0.7	1.4	0.3	0.3	0.8	0.6	0	1	0	0	0	0	0	0	0		
Mott	--	10	--	--	--	6	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.8	--	--	--	1.4	1	2	--	--	--	--	--			
Reeder	--	11	--	--	--	13	7	80	--	--	--	--	--	5	--	--	--	--	--	--	--	--	1.2	4.0	--	--	3.3	2	5	1	1	1	1	1	1		
Samson	--	22	--	20	--	21	12	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	1.9	3.2	3.9	2.1	5.9	4	8	--	--	--	--	--	--			
Traverse	--	20	--	--	--	7	8	33	23	37	23	5	30	4	3	3	3	3	3	3	0.4	0.3	0.5	0.3	0.3	0.6	1	0	0	0	0	0	0	0	0	0	

L=L-Longdon, P=Pembina, W=Walsh, T=Towner, R=Ramsey, N=Nelson

<sup>1</sup>DON test results reported as <0.5 ppm are listed as 0.3 ppm

<sup>2</sup>Fusarium Damaged Kernels

Durum Summary, Langdon 2006-2010																														
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Lodging (0-9)						Height (in)						Days to Head					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr			
AC Navigator	65	50	78	58	63	66	60.4	55.8	57.2	56.5	54.0	55.9	3.5	3.3	2.2	4.7	3.4	37	37	34	37	36	66	70	65	70	68			
Alkabo	69	80	77	88	89	85	61.5	60.6	59.5	60.2	58.1	59.3	0.3	0.8	0.0	3.7	1.5	42	41	45	43	43	66	70	65	71	68			
Ben	65	64	80	84	90	85	61.4	59.5	59.5	59.5	59.4	59.5	0.0	1.5	1.8	3.5	2.3	43	43	47	44	45	66	68	64	69	67			
DG Star	67	51	78	67	80	75	61.1	55.5	57.4	57.0	56.5	57.0	1.3	0.0	0.5	2.9	1.1	41	41	44	43	43	64	66	63	68	66			
Dilse	65	66	83	80	84	83	60.7	58.6	58.6	59.4	57.0	58.3	2.5	3.3	1.9	5.5	3.6	42	42	44	43	43	67	71	64	72	69			
Grande D'oro	71	62	86	87	87	87	61.5	59.0	59.9	60.5	59.2	59.9	3.8	2.0	0.8	3.9	2.2	42	42	42	44	43	67	69	65	73	69			
Grenora	69	67	87	96	95	92	60.2	58.2	58.2	58.7	57.6	58.2	2.3	1.5	2.8	5.1	3.1	40	41	44	43	42	66	69	64	71	68			
Lebsock	64	69	88	96	87	90	61.9	59.9	60.2	60.5	58.7	59.8	0.8	2.0	0.0	3.3	1.8	41	42	45	43	43	65	70	62	72	68			
Maier	61	66	82	79	81	81	60.8	57.8	57.8	58.2	56.1	57.3	2.3	3.8	1.3	5.7	3.6	40	40	43	43	42	65	69	64	71	68			
Mountrail	71	68	85	89	87	87	60.7	58.6	59.4	59.3	57.7	58.8	4.3	3.8	3.8	5.3	4.3	43	42	46	45	44	68	71	64	73	70			
Pierce	57	61	80	85	87	84	60.7	59.5	59.6	59.7	58.4	59.2	1.8	3.3	1.5	5.1	3.3	43	43	47	45	45	66	69	64	71	68			
Strongfield	64	56	83	75	81	80	60.3	56.9	57.3	58.0	55.3	56.9	4.0	2.3	0.0	6.3	2.9	41	40	42	43	42	68	69	63	73	68			
Tioga	74	60	88	98	90	92	61.1	58.2	58.1	58.9	57.1	58.0	4.0	3.5	1.5	4.4	3.1	44	45	47	47	46	66	70	64	72	69			
AC Commander	--	60	76	61	72	70	--	56.1	54.3	53.8	54.1	54.1	2.3	6.0	0.0	5.0	3.7	35	35	34	36	35	66	70	64	71	68			
Alzada	--	52	60	--	58	59	--	54.3	56.7	50.4	53.5	53.5	0.0	0.0	0.0	7.2	2.4	33	33	33	33	33	60	66	59	66	64			
DG Max	--	--	81	78	78	79	--	--	59.5	58.6	57.2	58.4	--	2.3	0.7	5.1	2.7	--	43	46	45	45	--	67	62	69	66			
Wales	--	--	76	78	84	79	--	--	56.1	56.6	57.1	56.6	--	1.0	0.0	3.2	1.4	--	40	43	42	42	--	69	62	70	67			
Divide	64	65	84	--	90	--	61.4	58.4	58.4	--	56.7	--	3.5	1.8	--	5.8	--	42	42	--	45	--	67	71	--	71	--			
Westhope	--	--	--	71	85	--	--	--	--	56.5	58.2	--	--	--	0.6	3.4	--	--	--	44	42	--	--	--	63	70	--			
CDC Verona	--	--	--	--	81	--	--	--	--	--	55.8	--	--	--	--	4.4	--	--	--	--	44	--	--	--	--	73	--			
AC Napoleon	--	61	86	85	--	--	--	56.4	57.9	56.1	--	--	3.0	2.5	1.4	--	--	44	44	46	--	--	67	69	64	--	--			
Primo Doro	58	55	--	--	--	--	61.4	57.2	--	--	--	--	7.8	--	--	--	--	43	--	--	--	--	65	--	--	--	--			
Belzer	68	--	--	--	--	--	60.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Munich	71	--	--	--	--	--	61.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Plaza	66	--	--	--	--	--	60.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Rugby	57	--	--	--	--	--	61.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
LSD 5%	6.8	10.0	4.9	8.5	5.5		0.9	1.4	1.3	1.7	1.0		3.3	NS	2.0	1.3		1.6	1.7	1.7	2.0		1.1	1.4	1.1	1.0				

<b>Durum Summary, Nelson County 2006-2010</b>																								
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Height (in)						Days to Head					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Alkabo	58	67	66	68	75	70	60.7	61.0	59.0	61.1	57.5	59.2	29	40	35	37	41	38	52	62	61	56	69	62
Grenora	52	60	69	72	84	75	59.9	59.4	57.7	61.0	57.3	58.7	26	38	33	36	40	36	51	62	61	56	69	62
Lebsock	46	61	66	72	74	70	60.8	60.8	60.0	62.5	59.3	60.6	26	39	33	37	40	37	51	62	60	55	72	62
DG Star	--	--	64	74	63	67	--	--	57.5	60.3	56.0	57.9	--	--	34	38	40	37	--	--	58	55	68	60
Wales	--	--	68	75	70	71	--	--	58.4	61.6	57.9	59.3	--	--	35	37	40	37	--	--	59	55	69	61
Divide	53	61	64	--	75	--	60.1	60.5	58.7	--	56.0	--	29	41	35	--	42	--	53	62	62	--	70	--
Grande D'oro	57	65	69	--	69	--	61.0	61.2	60.2	--	58.6	--	29	41	34	--	41	--	52	63	60	--	72	--
DG Max	--	--	--	77	74	--	--	--	--	61.5	57.9	--	--	--	--	37	42	--	--	--	--	55	68	--
Tioga	--	--	--	80	75	--	--	--	--	61.1	56.5	--	--	--	--	40	45	--	--	--	--	57	70	--
Westhope	--	--	--	73	73	--	--	--	--	60.9	58.4	--	--	--	--	39	41	--	--	--	--	55	70	--
Mountrail	51	61	--	--	--	--	60.2	60.1	--	--	--	--	28	40	--	--	--	--	51	62	--	--	--	--
Primo Doro	50	54	--	--	--	--	61.3	60.1	--	--	--	--	32	45	--	--	--	50	61	--	--	--	--	--
LSD 5%	NS	5.2	NS	NS	7.5		0.4	0.5	0.9	0.8	1.1		3.1	1.8	NS	NS	1.0	0.9	0.7	2.1	1.3	1.0		

2007 and 2008 yield data are from Devils Lake

<b>Durum Summary, Towner County 2007-2010</b>																								
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Height (in)						Days to Head					
	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10	3yr	07	08	09	10
Alkabo	51	42	73	74	63	59.1	59.1	60.2	59.5	59.6	27	38	41	35	63	56	68	62	62	62	62	62	62	62
Grenora	45	44	84	78	69	57.4	58.2	59.8	58.7	58.9	27	36	40	34	63	56	68	62	62	62	62	62	62	62
Lebsock	48	40	73	65	59	58.6	59.7	60.8	60.5	60.3	29	37	40	35	63	56	68	62	62	62	62	62	62	62
DG Star	--	41	72	72	62	--	58.4	59.2	58.6	58.7	29	38	40	36	--	57	68	--	--	--	--	--	--	--
Wales	--	45	73	73	63	--	59.3	60.2	58.4	59.3	29	38	42	36	--	56	69	--	--	--	--	--	--	--
Divide	51	40	--	74	--	57.9	59.1	--	58.9	--	29	--	42	--	64	--	69	--	--	--	--	--	--	--
Grande D'oro	49	41	--	75	--	58.9	59.8	--	61.3	--	27	--	42	--	65	--	68	--	--	--	--	--	--	--
DG Max	--	--	71	71	--	--	--	60.2	59.4	--	--	39	42	--	--	56	68	--	--	--	--	--	--	--
Tioga	--	--	84	76	--	--	--	60.4	59.2	--	--	42	44	--	--	58	68	--	--	--	--	--	--	--
Westhope	--	--	68	71	--	--	--	59.8	59.1	--	--	36	40	--	--	57	69	--	--	--	--	--	--	--
Mountrail	49	--	--	--	--	58.3	--	--	--	--	--	--	--	--	65	--	--	--	--	--	--	--	--	--
Primo Doro	49	--	--	--	--	58.8	--	--	--	--	--	--	--	--	62	--	--	--	--	--	--	--	--	--
LSD 5%	NS	3.2	6.9	7.2		0.7	0.5	NS	1.0		NS	1.8	2.0	0.9	1.0	NS		0.9	0.7	2.1	1.3	1.0		



<b>HRWW Summary, Langdon 2008-2010</b>															
<b>Variety</b>	<b>Yield (bu/a)</b>					<b>Test Weight (lbs/bu)</b>					<b>Protein(%)</b>				
	<b>NoF*</b>		<b>wF*</b>			<b>NoF*</b>		<b>wF*</b>			<b>NoF*</b>		<b>wF*</b>		
	<b>08</b>	<b>09</b>	<b>10</b>	<b>10</b>	<b>3yr</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>10</b>	<b>3yr</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>10</b>	<b>3yr</b>
CDC Falcon	90	106	72	93	90	59.9	61.0	56.7	58.9	59.1	11.0	10.6	12.3	12.1	11.5
Jagalene	80	87	56	102	82	59.0	61.0	55.6	58.8	58.6	12.0	11.4	11.6	11.4	11.6
Jerry	85	101	79	94	90	59.0	60.7	56.9	58.1	58.7	11.8	11.7	13.0	12.8	12.3
Millennium	91	85	84	97	89	60.7	60.5	58.1	59.7	59.7	11.4	11.3	12.5	12.5	11.9
Wesley	80	104	61	81	81	57.8	59.4	54.7	57.4	57.3	12.1	11.3	13.2	13.4	12.5
Yellowstone	85	104	53	90	83	57.6	59.5	52.8	55.6	56.4	11.3	10.9	12.3	12.3	11.7
Darrell	92	107	73	93	91	60.2	60.8	57.7	58.8	59.4	11.1	11.2	12.1	12.3	11.7
Hawken	88	88	55	88	80	60.4	60.5	55.5	58.6	58.8	11.8	11.9	12.7	13.0	12.3
Accipiter	92	99	79	99	92	60.1	61.4	57.1	58.5	59.3	11.2	10.7	11.4	11.7	11.2
Peregrine	91	108	77	89	91	60.3	61.4	58.5	58.7	59.7	10.8	10.4	11.7	11.6	11.1
Lyman	90	102	88	98	95	60.7	61.3	59.2	59.6	60.2	12.1	12.2	13.0	13.1	12.6
Overland	95	103	89	97	96	60.4	60.9	58.5	60.1	60.0	12.0	10.8	12.3	12.4	11.9
Art	--	115	85	101	--	--	61.5	58.9	60.4	--	--	11.5	12.8	12.7	--
Boomer	--	108	79	95	--	--	60.1	56.3	58.7	--	--	11.3	12.3	12.3	--
Mace	--	88	74	90	--	--	59.1	56.5	58.7	--	--	11.1	11.9	11.9	--
Striker	--	100	79	90	--	--	61.4	57.3	59.1	--	--	11.7	12.3	11.9	--
Decade	84	--	59	95	--	58.0	--	54.6	57.9	--	11.8	--	12.2	12.8	--
WB-Matlock	--	89	74	92	--	--	61.2	58.9	59.7	--	--	11.7	12.9	12.7	--
Camelot	--	--	72	94	--	--	--	57.0	59.2	--	--	--	12.7	12.8	--
Carter	--	--	65	95	--	--	--	57.5	59.5	--	--	--	12.4	12.3	--
SY-Wolf	--	--	74	94	--	--	--	57.2	59.0	--	--	--	12.1	12.2	--
CDC Buteo	88	97	--	--	--	61.3	62.1	--	--	--	11.2	11.1	--	--	--
Expedition	85	109	--	--	--	60.0	60.7	--	--	--	11.9	10.9	--	--	--
Alice	82	100	--	--	--	59.1	60.7	--	--	--	11.4	11.3	--	--	--
Roughrider	71	--	--	--	--	60.8	--	--	--	--	11.9	--	--	--	--
Radiant	83	--	--	--	--	59.4	--	--	--	--	11.7	--	--	--	--
NuDakota	80	--	--	--	--	56.6	--	--	--	--	12.0	--	--	--	--
LSD 5%	7.9	10.4	13.5			1.2	0.7	1.8			0.8	0.7	0.8		

<b>HRWW Summary, Langdon 2008-2010</b>																	
<b>Variety</b>	<b>Winter Survival (%)</b>				<b>Heading Date (after June1)</b>				<b>Height (in)</b>				<b>Lodging (0-9)</b>				
	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	
	CDC Falcon	98	91	100	96	27	51	19	32	34	33	34	34	0.0	0	2.0	0.7
Jagalene	96	90	100	95	27	53	16	32	35	34	36	35	0.5	0	2.2	0.9	
Jerry	93	90	100	94	29	52	20	34	43	42	42	42	0.5	0	3.5	1.3	
Millennium	100	95	100	98	25	55	18	33	41	38	41	40	0.0	0	1.5	0.5	
Wesley	97	96	100	97	23	53	14	30	30	32	34	32	0.0	0	1.0	0.3	
Yellowstone	98	93	100	97	30	56	22	36	41	38	38	39	0.0	0	1.8	0.6	
Darrell	100	91	100	97	25	55	15	32	38	38	37	38	0.3	0	1.8	0.7	
Hawken	98	92	100	97	21	50	12	28	32	30	33	32	0.0	0	0.0	0.0	
Accipiter	98	89	100	96	29	55	22	36	37	35	40	37	0.0	0	1.5	0.5	
Peregrine	98	95	100	98	28	54	20	34	45	44	44	44	1.5	0	2.3	1.3	
Lyman	94	91	100	95	24	52	15	30	38	36	37	37	0.8	0	3.7	1.5	
Overland	100	97	100	99	24	51	15	30	39	37	39	38	0.5	0	1.5	0.7	
Art	--	95	100	--	--	51	16	--	--	33	36	--	--	0	1.0	--	
Boomer	--	90	100	--	--	54	20	--	--	37	39	--	--	0	1.8	--	
Mace	--	89	100	--	--	50	19	--	--	32	35	--	--	0	1.8	--	
Striker	--	86	100	--	--	53	17	--	--	33	35	--	--	0	0.8	--	
Decade	98	--	100	--	27	--	17	--	36	--	36	--	0.0	--	1.7	--	
WB-Matlock	--	85	100	--	--	55	19	--	--	37	39	--	--	0	1.3	--	
Camelot	--	--	100	--	--	--	14	--	--	--	37	--	--	--	3.2	--	
Carter	--	--	100	--	--	--	16	--	--	--	32	--	--	--	3.3	--	
SY-Wolf	--	--	100	--	--	--	16	--	--	--	36	--	--	--	0.5	--	
CDC Buteo	98	93	--	--	27	54	--	--	43	41	--	--	2.3	0	--	--	
Expedition	95	93	--	--	23	52	--	--	35	36	--	--	0.0	0	--	--	
Alice	97	88	--	--	23	51	--	--	33	32	--	--	0.0	0	--	--	
Roughrider	91	--	--	--	29	--	--	--	44	--	--	--	3.8	--	--	--	
Radiant	96	--	--	--	29	--	--	--	41	--	--	--	0.0	--	--	--	
NuDakota	92	--	--	--	25	--	--	--	30	--	--	--	0.0	--	--	--	
LSD 5%	4.3	NS				2.4	2.1				2.1	2.2				0.9	NS

2010 data is average of fungicide and no fungicide plots



## HRWW Summary - Tolna, Leeds, Lakota - 2010

Variety	Yield (bu/a)								Test Weight (lbs/bu)							
	No Fungicide				E. Flower Fungicide				No Fungicide				E. Flower Fungicide			
	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave
Accipiter	77	95	96	89	87	101	106	98	59.9	59.5	61.5	60.3	61.2	62.1	63.0	62.1
Boomer	77	101	98	92	83	107	108	99	58.5	59.1	59.6	59.1	58.5	61.0	60.7	60.1
Camelot	88	98	95	94	94	108	109	104	59.4	58.2	60.7	59.4	59.7	60.7	62.0	60.8
CDC Falcon	81	91	96	90	91	102	106	99	59.1	58.2	60.2	59.2	60.1	61.0	61.3	60.8
Hawken	85	97	89	90	91	97	104	97	60.4	59.2	60.6	60.0	61.1	60.7	62.2	61.3
Jerry	79	106	99	95	91	112	104	102	59.0	58.4	60.3	59.2	59.6	60.5	61.2	60.4
Lyman	86	110	98	98	91	108	100	100	60.4	60.4	61.5	60.8	60.2	59.4	61.7	60.4
Millennium	83	106	107	99	88	113	112	104	59.6	60.0	61.1	60.3	60.2	59.5	61.7	60.5
Overland	88	109	99	99	92	119	104	105	60.0	59.9	60.9	60.3	60.0	60.7	61.2	60.6
Peregrine	83	97	104	95	89	99	109	99	60.6	59.5	61.4	60.5	60.5	60.8	61.8	61.0
Striker	80	97	94	91	89	109	103	100	59.3	58.8	61.0	59.7	60.4	60.5	61.4	60.8
WB-Matlock	82	104	101	95	84	114	106	101	60.5	59.7	60.8	60.3	60.2	61.4	61.6	61.1
Site Average	82	101	98	94	89	107	106	101	59.7	59.2	60.8	59.9	60.1	60.7	61.6	60.8
LSD 5%	6	16.0	10.0		6	16.0	10.0		0.7	1.4	1.0		0.7	1.4	1.0	

Variety	Protein (%)								Foliar Necrosis % at Soft Dough							
	No Fungicide				E. Flower Fungicide				No Fungicide				E. Flower Fungicide			
	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave
Accipiter	10.9	11.3	10.1	10.8	11.3	11.1	10.4	10.9	77	65	33	58	50	40	20	37
Boomer	11.6	11.7	10.9	11.4	11.7	12.0	10.9	11.5	88	87	77	84	80	50	20	50
Camelot	11.4	12.1	11.5	11.7	11.3	12.3	11.7	11.8	77	75	43	65	47	60	17	41
CDC Falcon	10.8	11.6	10.6	11.0	11.6	11.6	10.9	11.4	80	65	80	75	67	60	23	50
Hawken	11.6	12.8	11.5	12.0	11.8	13.0	11.5	12.1	80	85	73	79	53	55	30	46
Jerry	11.8	12.2	11.8	11.9	12.1	12.0	11.6	11.9	70	50	33	51	43	30	23	32
Lyman	11.8	12.4	12.5	12.2	11.7	12.2	12.4	12.1	83	60	33	59	53	40	17	37
Millennium	11.3	11.7	11.2	11.4	11.3	11.6	11.0	11.3	85	75	40	67	70	60	13	48
Overland	11.5	11.7	11.5	11.6	11.3	11.7	11.9	11.6	77	70	27	58	53	40	17	37
Peregrine	10.9	11.4	10.4	10.9	11.1	11.7	10.5	11.1	57	50	50	52	40	45	17	34
Striker	11.3	11.8	11.5	11.5	11.9	11.8	11.4	11.7	77	70	73	73	70	40	30	47
WB-Matlock	11.6	12.0	11.7	11.8	11.6	12.1	11.8	11.8	63	70	67	67	57	35	33	42
Site Average	11.4	11.9	11.3	11.5	11.6	11.9	11.3	11.6	76	69	53	66	57	46	22	42
LSD 5%	0.6	0.5	1.2		0.6	0.5	1.2									

Variety	Tombstone Kernel (%)								Height (in)				Lodging (0-9)			
	No Fungicide				E. Flower Fungicide				Height (in)				Lodging (0-9)			
	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave	Tolna	Leeds	Lakota	Ave
Accipiter	1.0	2.0	1.3	1.4	0.0	0.0	0.0	0.0	36	37	36	36	0.3	0.3	0.0	0.2
Boomer	1.7	3.3	3.3	2.8	0.3	1.3	1.3	1.0	31	31	31	31	0.3	0.5	0.0	0.3
Camelot	1.3	0.3	2.0	1.2	0.7	0.0	0.0	0.2	35	38	36	36	0.3	0.2	0.7	0.4
CDC Falcon	2.0	3.7	3.7	3.1	0.7	0.7	1.3	0.9	36	35	35	35	1.7	1.8	1.7	1.7
Hawken	1.7	0.3	2.0	1.3	0.7	0.3	0.0	0.3	33	34	33	33	0.3	0.0	0.2	0.2
Jerry	0.3	0.7	0.3	0.4	0.3	0.7	0.0	0.3	42	41	42	42	0.7	2.3	1.8	1.6
Lyman	0.7	0.7	0.3	0.6	0.3	0.0	0.0	0.1	37	36	36	36	2.7	3.5	3.6	3.3
Millennium	1.0	1.7	1.0	1.2	0.7	0.3	0.3	0.4	38	38	40	39	0.3	0.7	1.0	0.7
Overland	0.0	0.3	0.0	0.1	0.3	0.0	0.3	0.2	36	37	37	37	0.3	0.3	0.8	0.5
Peregrine	1.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	43	42	42	42	1.2	2.2	2.3	1.9
Striker	2.0	2.0	2.0	2.0	1.3	1.0	1.3	1.2	35	33	33	34	0.3	0.3	0.3	0.3
WB-Matlock	2.0	1.3	0.0	1.1	0.0	0.0	0.3	0.1	38	38	38	38	0.3	0.8	1.8	1.0
Site Average	1.2	1.4	1.3	1.3	0.4	0.4	0.4	0.4	37	37	37	37	0.7	1.1	1.2	1.0
LSD 5%																

Early Flower Fungicide = Prosaro at early flower, 6.5 oz/a + NIS 0.125% v/v

Height and lodging data is an average of fungicide and no fungicide plots

## HRWW Disease Summary, Langdon 2007-2010

Variety	Foliar Necrosis (%)			Leaf Rust (%)			FHB Field Severity (%)			FDK (%)			Stripe Rust (%)		Bacterial Leaf (%)				
	NoF** wF**			NoF** wF**			NoF** wF**			NoF** wF**			2010		2009				
	08	09	10	07	10	10	08	10	10	08	10	10	2yr	2010	2009				
CDC Falcon	35	58	90	27	52	24	1	0	8	0.2	2.2	0.3	0.9	0.3	15	9	8	0.0	0.0
Jagalene	43	55	100	23	55	25	8	0	11	1.8	15.5	2.8	6.7	5.0	32	23	20	11.3	0.0
Jerry	24	25	30	12	23	5	0	0	2	0.2	0.1	0.0	0.1	0.8	6	4	4	0.3	0.0
Millennium	25	58	37	10	32	15	1	0	5	0.1	0.5	0.1	0.2	1.0	18	8	9	0.0	3.8
Wesley	43	35	53	27	40	18	3	0	7	0.7	18.2	2.9	7.3	1.5	39	18	19	0.3	0.0
Yellowstone	43	48	83	27	50	30	8	0	13	2.0	4.8	0.3	2.4	7.8	28	11	15	0.0	3.5
Darrell	23	25	67	10	31	35	2	0	12	0.2	3.3	0.2	1.2	0.3	14	4	6	0.7	0.0
Hawken	25	45	73	23	42	--	0	0	--	0.3	14.2	3.6	6.0	0.8	25	19	15	1.0	6.3
CDC Accipiter	30	30	57	17	33	--	1	0	--	0.3	0.5	0.0	0.3	1.8	14	2	6	0.3	0.0
CDC Peregrine	15	15	53	20	26	--	0	0	--	0.1	0.4	0.1	0.2	0.0	5	3	3	0.3	0.0
Lyman	28	35	30	13	27	--	0	0	--	0.2	0.2	0.1	0.2	0.3	10	7	6	0.0	0.0
Overland	23	25	30	13	23	--	0	0	--	0.1	1.4	0.3	0.6	0.5	17	11	10	0.3	0.0
Art	--	43	57	17	--	--	0	0	--	--	1.6	0.2	--	--	17	6	--	0.3	2.5
Boomer	--	28	47	17	--	--	0	0	--	--	0.5	0.0	--	--	16	8	--	1.0	0.0
Mace	--	55	57	23	--	--	0	0	--	--	0.7	0.0	--	--	17	7	--	0.0	0.0
Striker	--	55	70	27	--	--	1	0	--	--	4.2	2.3	--	--	22	14	--	0.0	0.5
Decade	35	--	90	13	--	--	8	0	--	1.1	4.6	1.2	2.3	2.5	42	23	22	0.0	--
WB-Mattlock	--	48	63	30	--	--	2	0	--	--	0.2	0.3	--	--	11	4	--	0.7	0.0
Camalot	--	--	77	23	--	--	0	0	--	--	7.1	2.0	--	--	31	14	--	0.0	--
Carter	--	--	93	20	--	--	0	0	--	--	2.2	0.5	--	--	16	4	--	0.0	--
SY-Wolf	--	--	33	13	--	--	0	0	--	--	8.7	0.5	--	--	28	13	--	0.7	--

NoF = No Fungicide, wF = Prostaro at early flower, 6.5 oz/a + NIS 0.125% v/v  
 2009 had very low levels of leaf rust and FHB



**Winter Cereals Sustainability in Action**, in northeast ND, is a joint research and education initiative between Ducks Unlimited, Bayer Crop Science, NDSU Extension Service and NDSU Langdon R/E Center. The objective is to improve agricultural productivity of winter wheat. Thus, increasing winter wheat acres to provide improved habitat for wildlife in areas with low levels of grassland. This program now provides all salaries and operating funds for the winter wheat effort based at the NDSU Langdon R/E Center. Fungicide, fertility and weed control research on winter wheat is also in progress. Contact John Lukach at the Langdon R/E Center for additional information.

### Barley Summary - Langdon - 2006-2010

Variety	Yield (bu/a)						Test Weight (lbs/bu)						Lodging (0-9)						Plump (%)					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Lacey	116	106	139	121	128	129	49.6	49.8	50.1	48.1	50.3	49.5	1.8	2.8	2.8	0	0	0.9	81	86	91	93	94	93
Stellar-ND	120	94	127	123	128	126	48.8	48.6	49.1	47.6	49.1	48.6	1.0	4.8	1.0	0	0	0.3	89	89	96	98	97	97
Tradition	115	90	125	125	131	127	48.5	48.7	50.2	48.5	49.8	49.5	2.3	3.8	1.0	0	0	0.3	78	84	96	95	95	95
Rasmusson	--	105	138	124	150	137	--	49.4	50.1	48.1	48.9	49.0	--	2.8	1.8	0	0	0.6	--	87	93	94	94	93
Celebration	--	--	126	134	123	128	--	--	49.8	48.3	49.4	49.2	--	--	1.0	0	0	0.3	--	--	94	96	92	94
Quest	--	--	128	130	133	130	--	--	48.8	46.0	48.4	47.7	--	--	0.5	0	0	0.2	--	--	91	86	88	88
Innovation	--	--	--	--	126	--	--	--	--	--	49.6	--	--	--	--	--	0	--	--	--	--	--	93	--
Drummond	107	97	128	115	--	--	47.0	49.0	49.3	47.4	--	--	0.8	2.0	0.3	0	--	--	66	86	94	94	--	--
Legacy	109	90	145	120	--	--	46.2	47.9	49.3	47.5	--	--	5.0	4.5	2.5	0	--	--	68	81	91	89	--	--
Robust	106	93	123	132	--	--	49.1	50.2	50.8	48.8	--	--	2.8	3.8	0.3	0	--	--	71	88	95	91	--	--
MNBrite	88	--	--	--	--	--	48.0	--	--	--	--	--	6.5	--	--	--	--	--	66	--	--	--	--	--
AC Metcalfe*	104	81	129	124	122	125	49.0	49.2	49.2	48.5	50.0	49.2	2.3	7.3	3.0	0	0	1.0	82	78	88	87	94	89
Conlon*	107	90	127	114	125	122	52.1	50.2	51.0	49.8	51.5	50.8	2.8	6.5	2.3	0	0	0.8	95	91	95	94	97	95
Pinnacle*	116	83	134	133	130	133	51.0	48.8	51.1	49.7	49.1	50.0	1.0	6.8	0.3	0	0	0.1	96	85	95	94	95	94
Rawson*	111	93	140	132	140	137	49.5	49.4	48.9	47.2	48.7	48.3	2.3	6.0	3.5	0	0	1.2	96	93	94	95	98	96
CDC Copeland*	--	85	129	133	136	133	--	48.5	48.6	47.9	48.2	48.2	--	7.5	1.3	0	0	0.4	--	81	93	90	97	93
Lilly*	--	--	--	--	116	--	--	--	--	--	50.6	--	--	--	--	--	0	--	--	--	--	--	91	--
Sunshine*	--	--	--	--	128	--	--	--	--	--	49.8	--	--	--	--	--	0	--	--	--	--	--	96	--
Conrad*	--	73	128	130	--	--	--	49.2	49.1	48.0	--	--	--	7.8	3.5	0	--	--	--	81	88	87	--	--
Scarlett*	--	73	120	116	--	--	--	47.3	48.8	49.2	--	--	--	6.0	3.8	0	--	--	--	83	90	94	--	--
Bowman*	110	78	125	--	--	--	51.7	48.6	50.5	--	--	--	2.8	7.0	4.3	--	--	--	91	81	91	--	--	--
Eslick*	119	--	--	--	--	--	49.8	--	--	--	--	--	5.0	--	--	--	--	--	81	--	--	--	--	--
Harrington*	95	--	--	--	--	--	45.9	--	--	--	--	--	6.5	--	--	--	--	--	65	--	--	--	--	--
Haxby*	118	--	--	--	--	--	52.4	--	--	--	--	--	0.3	--	--	--	--	--	88	--	--	--	--	--
LSD 5%	9.4	11.6	14.4	14.1	13.7		1.6	1.0	1.0	1.2	0.7		2.7	3.1	NS	NS	NS		11.2	5.4	4.6	5.8	0.5	

\*2-row

<b>Barley Summary - Langdon - 2006-2010</b>																		
<b>Variety</b>	<b>Height (in)</b>						<b>Protein (%)</b>						<b>Days to Head</b>					
	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>
Lacey	36	35	39	33	39	37	12.0	12.5	13.4	11.8	12.3	12.5	53	58	65	57	64	62
Stellar-ND	37	36	38	34	39	37	11.1	13.0	12.6	12.2	12.1	12.3	52	59	65	57	64	62
Tradition	38	36	37	37	40	38	11.7	13.0	12.7	12.1	12.0	12.3	55	61	66	59	65	63
Rasmusson	--	35	36	32	37	35	--	12.1	12.3	11.6	12.1	12.0	--	58	64	56	66	62
Celebration	--	--	36	36	38	37	--	--	13.1	12.8	12.3	12.7	--	--	66	57	66	63
Quest	--	--	36	38	39	38	--	--	12.1	12.5	11.9	12.2	--	--	65	57	66	63
Innovation	--	--	--	--	38	--	--	--	--	--	12.3	--	--	--	--	--	64	--
Drummond	38	37	39	36	--	--	12.3	12.6	13.2	12.5	--	--	54	59	66	57	--	--
Legacy	39	35	40	38	--	--	11.2	12.9	12.7	12.7	--	--	55	61	67	59	--	--
Robust	40	36	40	39	--	--	12.6	13.4	12.8	13.1	--	--	54	59	66	57	--	--
MNBrite	39	--	--	--	--	--	13.8	--	--	--	--	--	57	--	--	--	--	--
AC Metcalfe*	36	33	39	38	38	38	12.7	13.5	12.9	12.3	11.9	12.4	56	61	68	59	67	65
Conlon*	35	34	34	35	35	35	11.6	13.2	12.6	12.0	12.3	12.3	51	55	62	53	60	58
Pinnacle*	37	34	35	37	39	37	10.6	12.1	11.2	10.9	10.8	11.0	54	61	65	58	66	63
Rawson*	37	35	36	37	38	37	10.6	12.2	12.2	11.9	11.3	11.8	49	57	63	55	63	60
CDC Copeland*	--	34	38	39	40	39	--	12.8	11.6	11.3	11.3	11.4	--	63	68	62	70	67
Lilly*	--	--	--	--	32	--	--	--	--	--	11.2	--	--	--	--	--	67	--
Sunshine*	--	--	--	--	32	--	--	--	--	--	11.5	--	--	--	--	--	68	--
Conrad*	--	32	34	36	--	--	--	14.4	13.0	12.5	--	--	--	64	68	60	--	--
Scarlett*	--	30	30	32	--	--	--	13.4	12.8	12.7	--	--	--	66	70	63	--	--
Bowman*	35	34	34	--	--	--	12.4	13.9	13.3	--	--	--	52	57	63	--	--	--
Eslick*	37	--	--	--	--	--	11.6	--	--	--	--	--	55	--	--	--	--	--
Harrington*	38	--	--	--	--	--	13.0	--	--	--	--	--	57	--	--	--	--	--
Haxby*	35	--	--	--	--	--	11.5	--	--	--	--	--	53	--	--	--	--	--
LSD 5%	1.6	1.9	2.5	3.1	1.0		1.0	0.6	1.2	0.9	0.5		1.7	1.1	0.9	1.2	1.0	

\*2-row

<b>Barley Summary - Walsh County - 2006-2010</b>																								
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Protein (%)						Plump (%)					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Lacey	112	87	149	128	103	127	52.3	50.3	50.1	49.5	49.4	49.7	12.0	11.8	12.9	11.6	11.6	12.0	97	94	97	96	99	97
Stellar-ND	113	74	148	131	108	129	52.5	48.9	48.4	47.7	47.4	47.8	11.8	11.3	12.6	11.8	11.7	12.0	98	94	98	95	99	97
Tradition	102	70	136	127	101	121	52.8	49.9	49.3	48.7	48.7	48.9	12.4	11.9	12.7	11.8	11.6	12.0	95	93	97	96	98	97
Pinnacle*	--	80	140	141	105	129	--	51.0	48.7	48.8	48.8	48.8	--	10.3	11.8	11.1	10.6	11.2	--	97	97	96	99	97
Rasmusson	--	--	155	141	101	132	--	--	49.9	48.9	48.8	49.2	--	--	12.5	11.5	11.0	11.7	--	--	98	94	97	96
Celebration	--	--	--	133	95	--	--	--	--	49.0	48.5	--	--	--	--	12.2	12.4	--	--	--	--	96	96	--
Quest	--	--	--	--	99	--	--	--	--	--	48.1	--	--	--	--	--	11.8	--	--	--	--	--	93	--
Drummond	102	--	--	--	--	--	52.2	--	--	--	--	--	12.6	--	--	--	--	--	96	--	--	--	--	--
Legacy	113	--	--	--	--	--	50.8	--	--	--	--	--	12.1	--	--	--	--	--	96	--	--	--	--	--
LSD 5%	NS	10.3	7.6	NS	NS	NS	0.3	0.5	0.5	0.8	0.5	0.5	0.4	0.6	0.6	NS	0.7	0.7	0.9	1.5	NS	NS	1	1

\*Two row barley

Barley trials are conducted in Pembina County in odd number years and Walsh County in even numbered years. 2007 and 2009 data is from Pembina County.

<b>Barley Summary - Towner County - 2006-2010</b>																														
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Lodging (0-9)						Protein (%)						Plump (%)					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Lacey	51	77	73	122	118	104	39.8	47.5	46.2	50.1	50.8	49.0	0	0	0	0	2.3	0.8	14.9	12.7	13.9	11.9	12.2	12.7	25	76	77	98	95	90
Stellar-ND	57	80	73	125	112	103	39.0	47.2	45.1	48.6	49.2	47.6	0	0	0	0	2.8	0.9	14.3	12.2	14.1	11.3	11.8	12.4	27	86	82	98	97	92
Tradition	67	72	79	122	123	108	42.0	46.6	47.4	49.5	50.6	49.2	0	0	0	0	1.0	0.3	14.5	12.5	14.1	11.7	12.4	12.7	31	76	87	98	96	94
Pinnacle*	--	80	86	125	121	111	--	49.4	49.8	50.9	51.7	50.8	--	0	0	0	0.0	0.0	--	11.0	12.9	11.0	10.9	11.6	--	92	97	99	98	98
Rasmusson	--	--	75	128	128	110	--	--	45.8	49.8	50.5	48.7	--	--	0	0	4.3	2.2	--	--	14.1	11.6	11.7	12.5	--	--	73	97	91	87
Celebration	--	--	--	126	116	--	--	--	--	49.4	49.5	--	--	--	--	0	6.3	--	--	--	--	11.8	12.8	--	--	--	--	98	92	--
Quest	--	--	--	--	120	--	--	--	--	--	48.4	--	--	--	--	--	2.3	--	--	--	--	--	12.3	--	--	--	--	--	87	--
Drummond	50	76	--	--	--	--	40.3	46.7	--	--	--	--	0	0	--	--	--	--	14.6	12.7	--	--	--	--	34	75	--	--	--	--
Legacy	47	63	--	--	--	--	38.0	45.2	--	--	--	--	0	0	--	--	--	--	14.6	12.6	--	--	--	--	23	78	--	--	--	--
LSD 5%	10.2	4.1	7.2	NS	NS	NS	1.7	0.5	0.8	0.4	0.7	0.7	--	--	--	--	1.0	1.0	NS	0.3	0.5	0.4	0.4	0.4	NS	5.3	9.1	0.6	3	3

\*2-row barley

## Oats Summary, Langdon 2006-2010

Variety	Yield (bu/a)						Test Weight (lbs/bu)						Days to Head					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
AC Pinnacle	152	149	197	222	175	198	33.2	37.8	36.0	34.7	33.7	34.8	59	68	71	61	73	68
Beach	148	133	183	190	174	182	36.8	39.6	38.8	38.9	37.3	38.3	56	65	69	59	70	66
Buff*	102	93	129	131	132	131	46.8	46.0	44.7	44.9	46.6	45.4	53	59	65	53	65	61
CDC Dancer	148	135	186	203	188	192	36.8	40.2	38.2	37.4	37.9	37.8	58	67	70	59	72	67
HiFi	159	161	175	197	204	192	37.7	40.0	38.4	38.4	40.1	39.0	57	66	69	59	71	66
Hytest	123	118	152	146	141	146	40.2	40.3	41.6	41.8	41.5	41.6	54	62	67	56	67	63
Jerry	134	122	170	152	140	154	37.5	39.3	39.1	38.6	38.4	38.7	54	61	66	56	67	63
Killdeer	135	135	185	176	172	178	34.6	36.9	37.5	37.2	35.9	36.9	55	63	68	57	68	64
Maida	141	131	156	165	152	158	37.2	38.9	37.4	36.7	38.5	37.5	56	62	69	58	70	65
Morton	159	141	166	181	143	163	39.1	40.4	39.2	39.1	37.4	38.6	56	64	68	59	70	66
Otana	113	105	186	149	123	153	32.6	32.8	38.1	35.1	29.9	34.4	57	66	71	62	71	68
Paul*	98	101	125	151	125	134	42.3	44.7	43.7	41.9	44.0	43.2	59	68	72	62	72	69
Rockford	152	169	177	206	191	191	38.6	41.2	39.9	39.5	40.6	40.0	58	67	70	60	71	67
Souris	161	150	187	204	197	196	36.9	40.2	37.6	37.5	39.4	38.2	57	65	69	58	70	66
Stark*	105	116	131	156	136	141	40.8	43.8	41.7	42.4	43.1	42.4	59	68	73	62	73	69
Youngs	138	143	183	189	140	171	35.0	37.9	36.9	36.7	33.4	35.7	59	68	71	60	72	68
Stallion	--	153	171	168	176	171	--	39.6	40.3	39.1	39.0	39.5	--	65	69	60	69	66
Furlong	--	--	177	171	157	168	--	--	36.0	36.4	34.4	35.6	--	--	72	64	73	69
Minstrel CDC	--	--	185	180	157	174	--	--	35.9	34.7	32.3	34.3	--	--	69	57	70	65
Leggett	--	--	--	207	212	--	--	--	--	36.5	38.1	--	--	--	--	59	72	--
Monida	--	--	--	--	116	--	--	--	--	--	29.0	--	--	--	--	--	72	--
Shelby427	--	--	--	--	168	--	--	--	--	--	41.3	--	--	--	--	--	65	--
Streaker	--	--	--	--	120	--	--	--	--	--	48.7	--	--	--	--	--	65	--
AC Assiniboia	114	105	--	--	--	--	32.2	35.1	--	--	--	--	60	68	--	--	--	--
AC Ronald	104	99	--	--	--	--	32.5	33.7	--	--	--	--	60	70	--	--	--	--
CDC Weaver	121	126	--	--	--	--	32.1	35.8	--	--	--	--	60	68	--	--	--	--
AC Kaufman	126	--	--	--	--	--	33.8	--	--	--	--	--	57	--	--	--	--	--
Ebeltoft	146	--	--	--	--	--	33.2	--	--	--	--	--	60	--	--	--	--	--
Leonard	138	--	--	--	--	--	35.5	--	--	--	--	--	57	--	--	--	--	--
LSD 5%	13.8	15.3	15.5	23.5	18.1		1.1	1.1	0.9	1.3	1.7		0.9	1.7	1.5	1.2	1.0	

\*Naked-hull variety

<b>Oats Summary, Langdon 2006-2010</b>																		
<b>Variety</b>	<b>Height (in)</b>						<b>Protein(%)</b>						<b>Lodging (0-9)</b>					
	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>	<b>06</b>	<b>07</b>	<b>08</b>	<b>09</b>	<b>10</b>	<b>3yr</b>
AC Pinnacle	49	46	43	43	49	45	8.9	12.3	12.0	7.5	10.3	9.9	7.8	4.0	0.3	0.8	8.5	3.2
Beach	51	51	46	45	52	48	10.8	13.3	13.4	9.1	11.2	11.2	5.3	3.5	0.3	0.0	8.7	3.0
Buff*	45	41	39	39	47	41	14.4	14.8	14.4	10.9	13.5	12.9	3.0	4.8	0.0	0.0	7.8	2.6
CDC Dancer	49	47	45	46	51	47	10.6	11.7	11.7	7.3	10.1	9.7	4.0	3.5	1.0	0.0	8.2	3.1
HiFi	49	44	45	45	54	48	11.5	13.1	13.1	9.1	12.8	11.7	6.3	3.8	0.0	0.0	6.3	2.1
Hytest	50	47	47	46	52	48	14.5	15.4	16.0	12.2	15.4	14.5	7.3	6.0	0.5	0.3	8.4	3.1
Jerry	48	44	44	42	50	45	12.1	12.6	14.7	10.0	11.6	12.1	5.8	4.8	0.0	1.5	8.9	3.5
Killdeer	41	41	38	37	44	40	10.0	12.1	12.5	8.0	10.8	10.4	3.8	6.0	0.0	1.0	8.8	3.3
Maida	50	44	42	44	50	45	12.1	12.9	14.2	9.4	12.0	11.9	6.3	3.3	0.0	2.3	9.1	3.8
Morton	53	51	46	46	54	49	13.4	13.9	14.2	8.8	12.0	11.7	5.0	4.3	0.0	0.5	6.0	2.2
Otana	49	46	48	48	52	49	10.0	11.7	13.6	7.3	10.9	10.6	7.0	5.5	1.8	7.3	9.0	6.0
Paul*	51	48	46	45	52	48	15.2	16.0	17.9	12.9	14.9	15.2	7.0	4.5	0.0	0.8	5.4	2.1
Rockford	50	47	44	48	53	48	12.0	14.1	13.7	9.5	13.0	12.1	5.8	3.5	0.0	1.0	6.8	2.6
Souris	47	45	41	39	48	42	11.5	13.5	13.4	8.9	12.5	11.6	7.3	3.8	0.0	0.0	6.5	2.2
Stark*	50	47	45	44	51	47	13.4	14.8	14.7	10.5	13.8	13.0	5.8	4.5	0.0	1.0	6.7	2.6
Youngs	50	46	48	46	53	49	11.4	14.2	14.4	10.4	12.7	12.5	6.3	5.8	1.5	0.0	7.7	3.1
Stallion	--	47	47	47	53	49	--	13.6	15.0	10.5	13.7	13.1	--	7.0	1.3	3.3	8.3	4.3
Furlong	--	--	43	43	49	45	--	--	13.6	9.5	12.2	11.8	--	--	1.3	1.8	9.0	4.0
Minstrel CDC	--	--	41	40	47	43	--	--	11.3	6.7	9.0	9.0	--	--	0.0	0.0	8.9	3.0
Leggett	--	--	--	42	48	--	--	--	--	10.2	12.9	--	--	--	--	1.8	7.3	--
Monida	--	--	--	--	50	--	--	--	--	--	10.7	--	--	--	--	--	9.1	--
Shelby427	--	--	--	--	48	--	--	--	--	--	13.3	--	--	--	--	--	7.1	--
Streaker	--	--	--	--	49	--	--	--	--	--	16.3	--	--	--	--	--	8.8	--
AC Assiniboia	49	47	--	--	--	--	9.7	13.1	--	--	--	--	5.3	3.0	--	--	--	--
AC Ronald	46	42	--	--	--	--	9.8	10.8	--	--	--	--	8.3	0.8	--	--	--	--
CDC Weaver	50	46	--	--	--	--	9.8	10.1	--	--	--	--	3.8	2.3	--	--	--	--
AC Kaufman	50	--	--	--	--	--	9.6	--	--	--	--	--	4.8	--	--	--	--	--
Ebeltoft	45	--	--	--	--	--	10.5	--	--	--	--	--	5.5	--	--	--	--	--
Leonard	48	--	--	--	--	--	12.0	--	--	--	--	--	4.3	--	--	--	--	--
LSD 5%	2.4	2.5	2.3	3.0	2.0		0.8	1.1	0.7	0.8	0.8		3.2	2.2	NS	2.0	1.2	

\*Naked-hull variety

<b>Oat Disease Summary, 2009-10</b>															
<b>Variety</b>	<b>Crown Rust %</b>			<b>Variety</b>	<b>Crown Rust %</b>			<b>Variety</b>	<b>Crown Rust %</b>			<b>Variety</b>	<b>Crown Rust %</b>		
	<b>09</b>	<b>10</b>	<b>2yr</b>		<b>09</b>	<b>10</b>	<b>2yr</b>		<b>09</b>	<b>10</b>	<b>2yr</b>		<b>09</b>	<b>10</b>	<b>2yr</b>
Beach	2	12	7	HiFi	0	0	0	Morton	1	26	14	Souris	0	1	1
Buff	1	4	3	Killdeer	4	28	16	Otana	53	73	63	Stallion	0	0	0
CDC Dancer	2	5	4	Leggett	0	0	0	Paul	0	1	1	Stark	1	1	1
Furlong	5	15	10	Maida	1	10	6	AC Pinnacle	2	4	3	Streaker	--	2	--
Hytest	1	14	8	Minstrel CDC	7	47	27	Rockford	0	0	0	Youngs	1	7	4
Jerry	7	49	28	Monida	--	40	--	Shelby427	--	0	--	LSD 5%	12	8	

Crown Rust - % flag leaf



Flax Summary, Langdon 2006-2010																														
Variety	Yield (bu/a)						Test Weight (lbs/bu)						Lodging (0-9)						Height (in)						Days to Flower					
	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr
Bison	37	17	34	29	45	36	52.6	52.1	53.1	49.1	52.4	51.5	0	5.5	0	4.5	0.5	1.7	27	26	23	31	31	28	51	59	63	53	42	52
Carter*	37	36	34	37	47	39	52.8	53.6	53.7	50.8	53.0	52.5	0	0.5	0	1.5	0.0	0.5	25	27	23	30	29	27	53	60	65	53	42	53
CDC Arras	42	23	37	36	48	40	51.9	51.6	53.1	49.8	52.6	51.8	0	2.5	0	3.3	0.5	1.3	26	26	22	30	32	28	51	59	62	53	43	53
CDC Bethune	38	29	38	37	51	42	52.8	52.7	53.0	50.3	53.2	52.1	0	1.5	0	2.0	0.0	0.7	26	27	22	30	32	28	52	59	63	53	43	53
Hanley	42	29	36	35	51	41	52.6	53.0	53.6	50.1	53.0	52.2	0	2.8	0	2.5	0.5	1.0	24	26	21	26	30	25	51	57	63	52	41	52
Lightning	36	33	35	40	48	41	52.4	53.4	53.7	51.7	52.9	52.8	0	0.5	0	0.5	0.3	0.3	24	25	21	28	31	27	50	58	62	52	43	52
Linott	37	23	37	35	46	39	52.7	52.2	53.6	51.2	52.9	52.6	0	5.3	0	3.3	0.0	1.1	26	26	22	31	32	28	51	59	63	52	43	53
McGregor	36	30	36	38	51	42	52.8	52.8	53.7	51.5	53.2	52.8	0	1.0	0	2.8	0.0	0.9	23	27	22	31	31	28	52	61	65	54	43	54
Neché	35	19	37	42	50	43	53.2	51.9	53.6	52.1	52.8	52.8	0	6.3	0	2.0	0.2	0.7	26	26	22	32	33	29	50	59	63	53	43	53
Nekoma	38	30	36	40	49	42	53.5	53.5	53.7	52.5	53.2	53.2	0	2.0	0	2.8	0.2	1.0	25	27	22	31	30	28	50	58	63	53	42	52
Omega*	36	28	36	31	45	37	52.6	52.9	53.4	49.9	52.9	52.1	0	1.3	0	4.3	0.0	1.4	24	26	22	27	28	26	53	60	65	52	42	53
Pembina	35	35	35	40	49	41	52.9	53.1	53.6	52.9	52.7	53.1	0	1.0	0	1.0	0.3	0.4	26	27	22	31	32	28	51	59	63	53	42	53
Prairie Blue	40	32	38	41	50	43	52.4	52.8	52.9	50.0	52.6	51.8	0	0.0	0	1.5	0.7	0.7	23	25	21	30	31	27	52	61	64	54	43	54
Rahab 94	40	32	36	40	50	42	52.6	53.2	53.0	51.0	52.5	52.2	0	1.3	0	2.0	0.0	0.7	25	26	22	29	29	27	49	58	62	53	43	53
Webster	37	33	37	37	54	43	52.9	52.7	53.8	51.4	53.6	53.0	0	2.5	0	3.3	0.0	1.1	27	27	21	32	33	29	53	59	63	54	43	53
York	39	30	37	42	48	42	53.4	53.6	54.3	52.1	52.4	52.9	0	3.3	0	2.5	0.0	0.8	23	27	20	31	30	27	52	60	64	53	42	53
Prairie Thunder	--	35	37	28	51	39	--	53.1	53.5	48.1	52.1	51.2	--	0.5	0	2.0	0.7	0.9	--	26	21	26	28	25	--	58	64	52	41	52
CDC Sorrel	--	--	40	34	45	39	--	--	53.5	50.8	52.5	52.3	--	--	0	5.0	1.0	2.0	--	--	23	30	34	29	--	--	64	56	44	55
Prairie Grande	--	--	--	--	30	51	--	--	--	47.8	52.3	--	--	--	--	2.8	0.7	--	--	--	25	25	--	--	--	51	40	--		
AC Watson	36	29	--	--	--	--	52.3	52.7	--	--	--	--	0	1.8	--	--	--	26	26	--	--	--	--	50	57	--	--	--		
Scorpion*	--	29	--	--	--	--	--	52.7	--	--	--	--	--	0.5	--	--	--	--	23	--	--	--	--	--	58	--	--	--		
Cathay	35	--	--	--	--	--	52.8	--	--	--	--	--	0	--	--	--	--	26	--	--	--	--	--	52	--	--	--			
LSD 5%	4.1	5.7	3.2	7.0	3.3		0.5	0.6	0.4	1.1	0.9		--	1.9	--	2.2	0.8	1.9	1.1	1.2	1.5	3.5		0.8	1.0	0.7	0.8	0.8		

\*Yellow seeded.

<b>Canola - Liberty Link, Clearfield Varieties - 2009-2010</b>																	
Company/Brand	Variety	Type <sup>1</sup>	Blackleg Rating <sup>2</sup>	Days to First Flower				Days to End Flower				Days to Mature			% Cover		
				09	10	2yr	09	10	2yr	09	10	2yr	09	10	2 yr	09	10
Bayer CropScience	InVigor 5440	H,LL,TR	R	50	48	49	71	70	70	101	94	97	89	59	74		
Bayer CropScience	InVigor 8440	H,LL,TR	R	48	46	47	72	66	69	101	92	97	95	61	78		
Bayer CropScience	InVigor Health 1145	H, LL, HO	R	--	46	--	--	68	--	--	92	--	--	60	--		
Bayer CropScience	InVigor L130	H,LL,TR	R	--	47	--	--	68	--	--	93	--	--	64	--		
Bayer CropScience	InVigor L150	H,LL,TR	R	--	47	--	--	69	--	--	93	--	--	59	--		
Croplan Genetics	XCEED 8571	OP,CL,TR	R	--	42	--	--	68	--	--	93	--	--	51	--		
Croplan Genetics	XCEED 8470	OP,CL,TR	R	--	42	--	--	68	--	--	93	--	--	40	--		
DL Seeds	09DL30512	H,CL,TR	R	--	48	--	--	69	--	--	94	--	--	41	--		
Pioneer Brand	45H73	H,CL,TR	R	--	45	--	--	65	--	--	92	--	--	59	--		
RR Check	HyCLASS 940 <sup>3</sup>	H,TR	R	47	44	45	68	63	66	99	88	94	95	73	84		
RR Check	DKL 72-55 <sup>3</sup>	H,TR	R	47	41	44	68	63	65	100	87	94	93	73	83		
LSD 5%				0.7	1.1		1.8	1.2		1.5	0.9		5.5	10.5			

<sup>1</sup>OP-Open Pollinated, H-Hybrid, SYN-Synthetic, LL-Liberty Link, CL-Clearfield System

TR-Traditional Oil type, HO-High Oleic Oil Type

<sup>2</sup>Blackleg Rating: S=Susceptible, MS=Moderately Susceptible, MR=Moderately Resistant, R=Resistant,

Ratings provided by the company.

<sup>3</sup>Roundup ready check variety.

### Canola - Liberty Link, Clearfield Varieties - 2007-2010

Company/Brand	Variety	Height (in)		Lodging(0-9)		Oil (%)		Yield (lbs/a)								
		09	10	2 yr	09	10	2 yr	09	10	08	09	10	2yr	3yr		
Bayer CropScience	InVigor 5440	40	50	40	0.5	2.0	0.5	43.8	43.6	43.8	3178	2814	3190	3381	3286	3128
Bayer CropScience	InVigor 8440	39	47	39	0.3	1.0	0.3	44.0	45.5	44.0	3179	2809	3443	3445	3444	3232
Bayer CropScience	InVigor Health 1145	--	47	--	--	2.0	--	--	46.4	--	--	--	--	3119	--	--
Bayer CropScience	InVigor L130	--	49	--	--	2.3	--	--	44.6	--	--	--	--	3294	--	--
Bayer CropScience	InVigor L150	--	50	--	--	2.0	--	--	44.5	--	--	--	--	3308	--	--
Croplan Genetics	XCEED 8571	--	51	--	--	1.5	--	--	41.4	--	--	--	--	3314	--	--
Croplan Genetics	XCEED 8470	--	47	--	--	1.5	--	--	44.2	--	--	--	--	2612	--	--
DL Seeds	09DL30512	--	46	--	--	2.8	--	--	43.8	--	--	--	--	2970	--	--
Pioneer Brand	45H73	--	44	--	--	2.0	--	--	44.3	--	--	--	--	3099	--	--
RR Check	HyCLASS 940 <sup>1</sup>	40	42	--	1.0	3.5	1.0	43.3	44.5	--	--	--	3127	3090	3109	3109
RR Check	DKL 72-55 <sup>1</sup>	39	42	--	0.8	3.0	0.8	46.9	44.8	--	--	--	3190	3090	3140	3140
LSD 5%		2.4	2.4		1.0	0.8		1.6	1.8		258	367	NS	255		

<sup>1</sup>Roundup ready check variety.

### Canola - Roundup Ready - 2009-2010

Company	Variety	Type <sup>1</sup>	Blackleg Rating <sup>2</sup>	Days to First Flower			Days to End Flower			Days to Mature			Cover % <sup>3</sup>			
				Flower		2yr	Flower		09	10	2yr	Mature		09	10	2yr
				09	10	46	47	48	09	10	71	102	90	96	75	57
Brett Young	6040 RR	H,TR	R	50	46	48	75	67	71	102	90	96	75	57	66	
Brett Young	6130 RR	Syn,TR	R	--	45	--	--	65	--	--	89	--	--	65	--	
Brett Young	H8111	H,TR	R	--	45	--	--	66	--	--	89	--	--	48	--	
Canterra Seeds	1950	H,TR	MR	50	45	47	74	65	70	104	90	97	63	62	62	
Canterra Seeds	1956	Syn,TR	R	49	45	47	72	66	69	102	90	96	85	69	77	
Canterra Seeds	1918	OP,TR	R	--	46	--	--	67	--	--	89	--	--	38	--	
Cargill	V2035	H,HO	R	--	47	--	--	65	--	--	90	--	--	64	--	
Cargill	V2018	H,HO	MR	49	47	48	74	67	70	102	89	96	73	69	71	
Cargill	V2030	H,HO	MR	50	47	48	74	67	70	102	89	96	75	66	70	
Cargill	V1040	H,HO	R	--	45	--	--	65	--	--	91	--	--	70	--	
Croplan Genetics	HyCLASS 921	H,TR	R	49	45	47	71	65	68	100	89	95	65	71	68	
Croplan Genetics	HyCLASS 940	H,TR	R	48	43	46	71	62	66	98	88	93	76	80	78	
Croplan Genetics	HyCLASS 947	H,TR	R	--	44	--	--	65	--	--	90	--	--	61	--	
Croplan Genetics	HyCLASS 988	H,TR	R	--	45	--	--	68	--	--	90	--	--	63	--	
DEKALB	DKL51-45	H,TR	R	--	43	--	--	63	--	--	88	--	--	65	--	
DEKALB	DKL72-40	H,TR	R	--	44	--	--	64	--	--	89	--	--	54	--	
DEKALB	DKL30-42	H,TR	R	46	42	44	69	62	65	98	89	93	90	75	82	
DEKALB	DKL72-55	H,TR	R	47	41	44	70	62	66	100	89	95	81	81	81	
DL Seeds	30220-D8	H,TR	R	51	47	49	78	69	74	106	90	98	73	60	66	
DL Seeds	09DL30418	H,TR	R	--	44	--	--	64	--	--	89	--	--	62	--	
DL Seeds	30217-C7	H,TR	R	--	44	--	--	65	--	--	88	--	--	64	--	
DL Seeds	30511-D8	H,TR	R	--	44	--	--	64	--	--	90	--	--	89	--	
DL Seeds	30512-D8	H,TR	R	--	45	--	--	68	--	--	90	--	--	74	--	
DL Seeds	09DL90114	H,TR	R	--	44	--	--	65	--	--	89	--	--	72	--	
DL Seeds	09DL90122	H,TR	R	--	45	--	--	66	--	--	91	--	--	83	--	
DL Seeds	09DL90210	H,TR	R	--	44	--	--	66	--	--	89	--	--	79	--	
Integra Fortified Seed	7121R	H,TR	R	47	43	45	70	64	67	100	89	95	81	61	71	
Integra Fortified Seed	7150R	H,TR	R	--	43	--	--	63	--	--	90	--	--	60	--	
Monsanto	G86382	H,TR	R	--	44	--	--	64	--	--	90	--	--	68	--	

### Canola - Roundup Ready - 2009-2010 (continued)

Company	Variety	Type <sup>1</sup>	Blackleg Rating <sup>2</sup>	Days to First Flower				Days to End Flower				Days to Mature				Cover % <sup>3</sup>	
				09	10	2yr	09	10	2yr	09	10	2yr	09	10	2yr	09	10
Monsanto	G84602	H,TR	R	--	44	--	--	64	--	--	90	--	--	63	--	63	--
Monsanto	G98059	H,TR	R	--	44	--	--	63	--	--	89	--	--	67	--	67	--
Monsanto	G89304	H,TR	R	--	43	--	--	62	--	--	88	--	--	69	--	69	--
Monsanto	G98022	H,TR	R	--	43	--	--	63	--	--	89	--	--	56	--	56	--
Monsanto	G98073	H,TR	R	--	44	--	--	63	--	--	88	--	--	75	--	75	--
Monsanto	G98046	H,TR	R	--	44	--	--	63	--	--	89	--	--	75	--	75	--
Monsanto	G98034	H,TR	R	--	45	--	--	65	--	--	90	--	--	66	--	66	--
Monsanto	G72818	H,TR	R	--	44	--	--	64	--	--	89	--	--	67	--	67	--
Monsanto	G88666	H,TR	R	--	44	--	--	63	--	--	89	--	--	69	--	69	--
Monsanto	G82746	H,TR	R	--	43	--	--	63	--	--	89	--	--	70	--	70	--
Monsanto	G99894	H,TR	R	--	44	--	--	64	--	--	89	--	--	57	--	57	--
Pioneer Brand	45H29	H,TR	R	--	45	--	--	65	--	--	90	--	--	68	--	68	--
Pioneer Brand	45S51	H,TR	R	47	46	47	70	65	67	100	89	95	86	63	75	63	75
Pioneer Brand	45H28	H,TR	R	48	45	46	70	64	67	101	90	96	78	67	72	67	72
Proseed	50 Caliber	H,TR	R	49	45	47	73	66	69	102	90	96	63	52	57	52	57
Proseed	30 Caliber	Syn,TR	R	53	48	50	80	69	75	107	90	98	53	41	47	41	47
LSD 5%				1.3	2.1		2.9	1.0		2.0	1.5		2.3	1.3			

<sup>1</sup>OP-Open Pollinated, H-Hybrid, Syn-Synthetic. TR-Traditional Oil Type, HO-High Oleic Oil Type

<sup>2</sup>Blackleg Rating: S=Susceptible, MS=Moderately Susceptible, MR=Moderately Resistant, R=Resistant, Ratings are provided by the companies.

<sup>3</sup> % Cover- Visual rating of percent area of plot covered by plant growth. This is a measure of stand and vigor. Plants were at 5-6 leaf stage.

### Canola - Roundup Ready - 2007-2010

Company	Variety	Height (in)		Lodging (0-9)		Oil (%)			Yield (lbs/a)							
		09	10	2yr	09	10	2yr	09	10	07	08	09	10	2yr	3yr	
Brett Young	6040 RR	38	49	43	0.8	2.5	1.7	42.9	45.5	44.2	--	--	3070	2824	2947	--
Brett Young	6130 RR	--	43	--	--	3.1	--	--	46.2	--	--	--	3185	--	--	--
Brett Young	H8111	--	43	--	--	2.3	--	--	45.5	--	--	--	2548	--	--	--
Canterra Seeds	1950	40	45	43	1.8	2.1	2.0	41.4	42.3	41.9	--	--	2889	3225	3057	--
Canterra Seeds	1956	38	45	41	0.8	2.0	1.4	44.6	46.1	45.4	--	--	3122	3298	3210	--
Canterra Seeds	1918	--	43	--	--	2.5	--	--	47.0	--	--	--	2832	--	--	--
Cargill	V2035	--	42	--	--	2.7	--	--	47.4	--	--	--	2950	--	--	--
Cargill	V2018	36	45	41	1.3	1.6	1.5	43.3	45.4	44.4	2679	2743	3048	2894	2971	2895
Cargill	V2030	40	47	44	2.8	2.8	2.8	43.1	45.0	44.1	--	3464	2913	2829	2871	3069
Cargill	V1040	--	43	--	--	2.3	--	--	44.3	--	--	--	3018	--	--	--
Croplan Genetics	HyCLASS 921	35	44	39	1.8	3.4	2.6	46.8	47.8	47.3	--	--	2596	3094	2845	--
Croplan Genetics	HyCLASS 940	35	42	38	1.0	2.5	1.8	44.2	45.5	44.9	2870	3321	2984	3199	3091	3168
Croplan Genetics	HyCLASS 947	--	44	--	--	2.2	--	--	48.3	--	--	--	3346	--	--	--
Croplan Genetics	HyCLASS 988	--	48	--	--	2.4	--	--	47.2	--	--	--	3115	--	--	--
DEKALB	DKL51-45	--	40	--	--	3.3	--	--	47.2	--	--	--	3359	--	--	--
DEKALB	DKL72-40	--	42	--	--	2.7	--	--	47.2	--	--	--	3329	--	--	--
DEKALB	DKL30-42	35	39	37	0.5	3.0	1.8	44.8	46.4	45.6	--	3332	3219	3565	3392	3372
DEKALB	DKL72-55	36	40	38	1.0	2.8	1.9	45.8	47.3	46.6	--	3502	3373	3257	3315	3377
DL Seeds	30220-D8	40	49	44	0.5	2.6	1.6	42.8	43.5	43.2	--	--	3228	3102	3165	--
DL Seeds	09DL30418	--	42	--	--	2.4	--	--	45.4	--	--	--	3241	--	--	--
DL Seeds	30217-C7	--	46	--	--	2.6	--	--	46.9	--	--	--	3115	--	--	--
DL Seeds	30511-D8	--	44	--	--	2.8	--	--	47.9	--	--	--	3694	--	--	--
DL Seeds	30512-D8	--	46	--	--	2.4	--	--	46.4	--	--	--	3420	--	--	--
DL Seeds	09DL90114	--	46	--	--	2.6	--	--	46.6	--	--	--	3365	--	--	--
DL Seeds	09DL90122	--	48	--	--	2.2	--	--	44.9	--	--	--	3005	--	--	--
DL Seeds	09DL90210	--	45	--	--	1.7	--	--	45.3	--	--	--	3159	--	--	--
Integra Fortified Seed	7121R	38	41	39	0.8	2.3	1.6	42.0	45.2	43.6	--	--	3334	3134	3234	--
Integra Fortified Seed	7150R	--	41	--	--	1.8	--	--	48.6	--	--	--	3590	--	--	--
Monsanto	G86382	--	43	--	--	2.6	--	--	48.0	--	--	--	3610	--	--	--
Monsanto	G84602	--	45	--	--	2.4	--	--	46.2	--	--	--	3253	--	--	--

**Canola - Roundup Ready - 2007-2010 (continued)**

Company	Variety	Height (in)		Lodging (0-9)		Oil (%)		Yield (lbs/a)					
		09	10	09	10	09	10	07	08	09	10	2yr	3yr
Monsanto	G98059	--	41	--	2.9	--	49.6	--	--	--	3375	--	--
Monsanto	G89304	--	40	--	3.0	--	49.2	--	--	--	3356	--	--
Monsanto	G98022	--	45	--	3.0	--	46.3	--	--	--	3234	--	--
Monsanto	G98073	--	41	--	2.6	--	48.4	--	--	--	3288	--	--
Monsanto	G98046	--	42	--	2.6	--	46.6	--	--	--	3459	--	--
Monsanto	G98034	--	45	--	2.3	--	46.0	--	--	--	3142	--	--
Monsanto	G72818	--	45	--	1.4	--	47.7	--	--	--	3501	--	--
Monsanto	G88666	--	43	--	2.1	--	49.2	--	--	--	3431	--	--
Monsanto	G82746	--	41	--	1.4	--	47.7	--	--	--	3142	--	--
Monsanto	G99894	--	42	--	2.6	--	48.5	--	--	--	3412	--	--
Pioneer Brand	45H29	--	44	--	2.1	--	47.5	--	--	--	3436	--	--
Pioneer Brand	45S51	38	42	40	2.3	2.4	42.1	46.0	44.1	--	2681	2975	2828
Pioneer Brand	45H28	37	45	41	1.8	3.2	45.1	46.8	46.0	--	3634	2714	3183
Proseed	50 Caliber	38	44	41	1.0	2.6	43.0	44.3	43.7	2465	3029	2763	2659
Proseed	30 Caliber	41	47	44	1.3	3.3	42.5	45.4	44.0	2598	3107	3096	2646
LSD 5%		3.6	2.7		1.2	1.0	2.1	1.9		346	522	392	344



### Langdon - Drybean Summary - 2007-2010

Variety	Type	Yield (lbs/a)					Days to		100 Seed Wt. (gms)				
		07	08	09	10	3yr	Mature		07	08	09	10	3yr
							08	10					
Buster	Pinto	3895	2714	2785	--	--	109	--	40	41	36	--	--
GTS 900	Pinto	3643	3018	2352	--	--	114	--	38	37	37	--	--
GTS 907	Pinto	--	--	--	2780	--	--	94	--	--	--	34	--
La Paz	Pinto	--	2874	3213	3100	3062	119	97	--	34	34	31	33
Lariat	Pinto	3933	3162	2607	3208	2992	112	99	46	42	38	36	39
Mariah	Pinto	--	--	--	2296	--	--	93	--	--	--	31	--
Maverick	Pinto	3843	1857	2672	2976	2502	111	96	40	41	37	35	38
Medicine Hat	Pinto	--	--	--	2804	--	--	94	--	--	--	36	--
ND 307	Pinto	--	--	2465	2520	--	--	97	--	--	38	36	--
Othello	Pinto	3200	2379	2240	--	--	105	--	39	43	38	--	--
Stampede	Pinto	3846	2658	2408	2384	2483	111	97	41	40	33	34	35
Stanta Fe	Pinto	--	--	--	2384	--	--	101	--	--	--	39	--
Windbreaker	Pinto	--	--	2894	2280	--	--	94	--	--	37	35	--
Avalanche	Navy	--	2363	1824	3020	2402	109	98	--	21	18	19	19
Ensign	Navy	--	2539	2001	2816	2452	111	100	--	20	19	18	19
HMS Medalist	Navy	--	--	--	3512	--	--	99	--	--	--	17	--
Lightning	Navy	--	--	--	3172	--	--	99	--	--	--	20	--
Mayflower	Navy	--	--	1704	3000	--	--	102	--	--	18	17	--
Navigator	Navy	--	2275	2246	2952	2491	111	100	--	18	18	17	18
Norstar	Navy	--	--	--	2332	--	--	100	--	--	--	17	--
Vista	Navy	3531	2179	2142	3052	2458	113	102	19	19	18	17	18
Eclipse	Black Turtle	3428	2511	1819	3016	2449	111	99	22	20	20	19	20
Jaguar	Black Turtle	3429	2183	2139	--	--	110	--	20	19	18	--	--
T-39	Black Turtle	3174	2259	1750	2736	2248	118	103	22	21	19	18	19
Zorro	Black Turtle	--	--	--	3336	--	--	100	--	--	--	20	--
Matterhorn	Great Northern	4012	2383	2636	2796	2605	110	96	39	37	34	32	34
Merlot	Small Red	3527	2459	2402	2896	2586	111	103	36	38	29	34	34
Sedona	Pink	3275	2187	2394	2856	2479	108	99	40	36	35	35	36
LSD 5%		535	504	429	385		3.2	1.9	--	--	--	1.6	

### Field Pea - Langdon - 2008-2010

Variety	Days to 1st Flower	Days to Mature	Vine Length in	Canopy Ht at Harvest in	Height Index <sup>1</sup> %	Harvest Ease <sup>2</sup> 0-9	Protein %	Seeds/ Pound	1000 KWT gms	Test Weight lb/bu	Yield			Average year	
											2008	2009	2010		
<b>Yellow Cotyledon Type</b>															
Agassiz	65	103	41	17	42	4.8	23.7	2090	218	62.0	--	95.8	83.1	89.5	--
Audit	63	104	42	14	33	5.5	23.1	1875	243	62.9	--	--	90.7	--	--
Avantgarde	61	102	45	14	31	5.5	22.7	1726	263	63.2	--	--	96.8	--	--
CDC Centennial	65	103	37	10	26	8.3	22.7	1840	247	62.4	--	100.3	88.0	94.2	--
CDC Golden	65	103	40	12	29	6.5	23.4	2244	203	62.9	--	82.1	81.5	81.8	--
CDC Meadow	63	101	40	14	35	6.3	23.2	2423	191	62.7	--	83.5	75.7	79.6	--
DS Admiral	65	101	44	14	31	6.8	21.9	1969	231	62.6	66.9	80.2	84.7	82.5	77.3
LN4206	63	101	43	16	37	5.8	22.7	2141	213	62.4	--	--	76.8	--	--
PUSA 09003	65	105	43	17	39	4.3	22.6	1884	242	62.1	--	96.5	79.6	88.1	--
<b>Green Cotyledon Type</b>															
CDC Patrick	65	102	42	13	32	6.5	22.5	3020	153	62.4	--	--	73.8	--	--
CDC Striker	65	102	43	13	30	7.5	23.6	1978	230	62.7	72.8	89.3	83.0	86.2	81.7
Cruiser	65	101	40	14	35	7.0	22.4	2337	194	62.6	59.5	80.9	75.6	78.3	72.0
LAN 1103	66	82	43	15	35	5.3	22.0	1683	271	62.6	--	84.3	83.0	83.7	--
Majoret	64	102	45	14	32	7.0	23.5	2144	213	62.8	73.6	92.4	79.9	86.2	82.0
Mean	64	101	42	14	33	6.2	22.8	2097	222	62.6	71.1	89.9	82.3	--	--
C.V. %	1.1	11.8	6.1	15.2	17.1	19.1	1.7	8.7	6.4	0.7	5.4	5.3	9.7	--	--
LSD 5%	1.0	NS	3.6	3.0	8.1	1.7	0.8	392	31	0.6	5.5	6.8	11.5	--	--

<sup>1</sup> Height Index: Plant height at time of harvest relative to plant height at the end of bloom.

<sup>2</sup> Harvest Ease: 0=plants standing erect, 9=plants laying horizontal.

### Langdon - Conventional Soybeans - 2008-2010

Brand	Variety	Maturity Group <sup>1</sup>	Plant Height in	Maturity Date <sup>2</sup>	Visual Stand %	Protein %	Oil %	Lodging 0-9	Weight lbs/bu	Yield		
										2008	2009	2010
Meridian	OT05-20	00.8	37.0	9/20	95	34.8	16.8	4.3	58.6	--	--	47.7
NDSU	Cavalier	00.7	31.9	9/16	85	33.6	17.8	2.0	58.3	38.8	36.1	45.7
NDSU	Trail	0.0	32.9	9/20	82	34.6	17.4	1.7	58.1	--	42.1	44.7
Thunder Seed	07005	00.5	39.8	9/19	92	33.8	17.8	5.0	58.1	35.8	47.1	47.3
Trial Mean			34.6	9/22	86	33.5	17.8	2.1	57.6	35.6	36.5	46.2
C.V. %			7.0	1.4	7.2	2.0	1.5	60.6	2.3	8.5	10.1	7.4
LSD 5%			4.1	2.9	10.4	1.5	0.6	2.1	NS	NS	5.4	5.7

<sup>1</sup>Maturity Group provided by company

<sup>2</sup>Days to physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color.)  
Yield, oil and protein reported at 13% moisture.

## Langdon - Roundup Ready Soybeans 2008-2010

Brand	Variety	Maturity Group <sup>1</sup>		Plant Height		Maturity date <sup>2</sup>		Visual Stand		White Mold <sup>3</sup>		Lodging		Protein		Oil		Test Weight			Yield			
		in	date	%	%	0-9	0-9	%	%	0-9	0-9	lbs/bu	lbs/bu	2008	2009	2010	2010	2008	2009	2010	2010	2008	2009	2010
		bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a	bu/a
AgSource	6003	00.8	9/22	98	0.8	2.6	32.8	17.9	57.0	--	--	51.7	--	--	--	--	--	--	--	--	--	--	--	--
AgSource	6012	00.8	9/20	98	2.0	5.7	33.9	17.9	57.0	--	--	53.2	--	--	--	--	--	--	--	--	--	--	--	--
AgSource	6009	00.9	9/21	99	3.6	3.4	33.2	18.1	57.6	--	--	44.4	--	--	--	--	--	--	--	--	--	--	--	--
Dyna-Gro Seed	30P05	00.5	9/12	94	0.9	0.6	34.4	18.9	56.8	--	--	46.6	--	--	--	--	--	--	--	--	--	--	--	--
Dyna-Gro Seed	30RY09	00.9	9/20	98	1.3	4.6	33.5	17.7	57.5	--	--	57.5	--	--	--	--	--	--	--	--	--	--	--	--
Dyna-Gro Seed	35RY01	0.1	9/20	100	3.7	5.8	33.3	18.3	57.9	--	--	47.7	--	--	--	--	--	--	--	--	--	--	--	--
Dyna-Gro Seed	32B02	0.2	9/11	93	0.9	0.1	34.2	18.7	56.9	--	--	44.1	--	--	--	--	--	--	--	--	--	--	--	--
G2 NutTech	6005	00.5	10/1	92	0.4	1.5	34.4	17.3	57.7	--	--	48.6	--	--	--	--	--	--	--	--	--	--	--	--
G2 NutTech	6008	00.8	9/19	97	0.5	0.3	33.9	17.9	55.6	--	--	49.9	--	--	--	--	--	--	--	--	--	--	--	--
G2 NutTech	0090 RR	00.9	9/19	97	2.9	4.5	34.8	18.7	57.2	--	--	48.3	--	--	--	--	--	--	--	--	--	--	--	--
G2 NutTech	6030	0.2	9/26	93	3.2	3.0	33.7	17.5	56.4	--	--	41.4	--	--	--	--	--	--	--	--	--	--	--	--
G2 NutTech	6049	0.2	9/27	91	1.1	4.0	32.3	18.3	57.1	--	--	54.3	--	--	--	--	--	--	--	--	--	--	--	--
Hefty Seed	H0086R	00.8	9/19	90	1.9	3.9	34.0	18.5	57.4	--	--	41.7	--	--	--	--	--	--	--	--	--	--	--	--
Hefty Seed	H0099R	00.9	9/19	82	1.4	4.3	33.5	18.5	56.8	--	--	55.3	--	--	--	--	--	--	--	--	--	--	--	--
Hefty Seed	H008Y11RR2Y	00.8	9/22	98	1.6	4.0	33.5	17.8	56.6	--	--	61.2	--	--	--	--	--	--	--	--	--	--	--	--
Hyland Seeds	RR Russell	00.5	9/12	94	5.0	6.6	33.5	19.0	58.0	--	--	42.2	--	--	--	--	--	--	--	--	--	--	--	--
Hyland Seeds	HS 02R28	0.2	9/25	94	4.0	5.3	32.8	17.6	63.0	--	--	39.6	--	--	--	--	--	--	--	--	--	--	--	--
Hyland Seeds	EXP 009RY01	00.9	9/20	97	2.6	3.8	33.4	18.0	57.1	--	--	56.9	--	--	--	--	--	--	--	--	--	--	--	--
Hyland Seeds	EXP 01RY02	0.2	9/23	96	3.3	3.5	33.3	17.8	56.8	--	--	49.3	--	--	--	--	--	--	--	--	--	--	--	--
Hyland Seeds	HXR2Y20	0.2	9/22	97	0.7	0.5	34.6	17.4	55.7	--	--	50.2	--	--	--	--	--	--	--	--	--	--	--	--
Integra/Wilbur Ellis	20090 R2Y	00.9	9/22	94	2.8	4.1	32.8	18.4	57.4	--	--	55.1	--	--	--	--	--	--	--	--	--	--	--	--
Integra/Wilbur Ellis	97007RS	00.7	9/25	100	3.0	5.0	33.8	17.5	56.4	--	--	45.9	--	--	--	--	--	--	--	--	--	--	--	--
Integra/Wilbur Ellis	97001R	00.3	9/12	92	1.7	1.8	34.3	18.8	57.2	--	--	38.4	--	--	--	--	--	--	--	--	--	--	--	--
Mon/Asgrow	AG00501	00.5	9/18	100	0.5	5.3	32.6	18.2	57.6	--	--	59.4	--	--	--	--	--	--	--	--	--	--	--	--
Mon/Asgrow	AG00931	00.9	9/21	97	4.9	6.9	34.8	17.6	57.5	--	--	40.6	--	--	--	--	--	--	--	--	--	--	--	--
Mustang Seed	M-0096RR	00.9	9/19	91	2.1	3.0	35.2	18.5	56.0	--	--	47.6	--	--	--	--	--	--	--	--	--	--	--	--
Mustang Seed	00971	00.9	9/21	96	1.8	4.6	33.8	17.8	57.5	--	--	60.3	--	--	--	--	--	--	--	--	--	--	--	--
NK Brand	S01-C9	0.1	9/16	100	3.7	4.5	35.1	18.6	58.5	--	--	47.2	--	--	--	--	--	--	--	--	--	--	--	--
NK Brand	S02-K3	0.2	9/21	97	2.6	3.5	33.7	18.6	57.6	--	--	53.9	--	--	--	--	--	--	--	--	--	--	--	--
NorthStar Genetics	NS0084RR	00.8	9/18	85	2.1	3.9	33.7	18.5	56.6	--	--	58.0	--	--	--	--	--	--	--	--	--	--	--	--
NorthStar Genetics	NS0011RR	00.4	9/12	91	1.3	2.1	32.9	19.3	56.5	--	--	55.4	--	--	--	--	--	--	--	--	--	--	--	--
NorthStar Genetics	NS0024RR	00.4	9/13	93	1.0	2.0	32.9	19.3	57.6	--	--	52.5	--	--	--	--	--	--	--	--	--	--	--	--
NorthStar Genetics	NS0034RR	00.4	9/14	88	0.2	1.2	33.6	19.0	57.0	--	--	50.2	--	--	--	--	--	--	--	--	--	--	--	--
NuTech	6007	00.7	9/19	97	3.1	5.7	33.8	17.9	57.0	--	--	54.2	--	--	--	--	--	--	--	--	--	--	--	--

## Langdon - Roundup Ready Soybeans 2008-2010 (continued)

Brand	Variety	Maturity		Plant		Visual		White		Lodging		Protein		Oil		Test		Yield					
		Group <sup>1</sup>	Group <sup>1</sup>	Height	in	date <sup>2</sup>	Stand	%	Mold <sup>3</sup>	0-9	0-9	%	%	Oil	Weight	lbs/bu	2008	2009	2010	2010	2011	2012	2013
NuTech	6011	0.1		37	9/24	87	1.0	1.6	34.2	17.5	56.1	--	--	45.6	--	--	--	--	--	--	--	--	--
NuTech	6006	0.1		46	9/25	96	2.2	5.4	32.2	18.3	56.7	--	--	53.7	--	--	--	--	--	--	--	--	--
NuTech	6022	0.2		39	9/22	92	1.9	4.1	33.3	18.4	58.3	48.1	63.0	60.2	61.6	57.1							
PFS	EX2010.01RR2Y	0.1		38	9/22	96	2.6	4.6	32.8	18.3	56.5	--	--	53.7	--	--	--	--	--	--	--	--	--
PFS	07008RR	00.8		37	9/17	88	2.0	3.2	33.5	18.8	57.4	44.9	56.9	52.0	54.5	51.3							
PFS	11008RR	00.8		38	9/24	92	0.7	2.7	33.5	17.9	57.0	--	--	49.2	--	--	--	--	--	--	--	--	--
PFS	1000RR	0.1		38	9/25	90	1.2	4.1	32.9	18.1	57.4	--	--	53.1	52.7	52.9							
Pioneer Brand	900Y71	00.7		33	9/11	92	0.3	0.1	35.6	17.5	55.9	--	--	47.3	--	--	--	--	--	--	--	--	--
Proseed	10-06	00.6		39	9/23	94	0.5	2.4	31.4	18.3	57.8	--	--	49.2	--	--	--	--	--	--	--	--	--
Proseed	P2 10-08 RR2Y	00.8		43	9/20	98	2.6	4.6	33.7	18.0	56.7	--	--	62.1	--	--	--	--	--	--	--	--	--
REA	5825RR	00.4		32	9/12	85	0.9	1.7	31.7	19.7	57.9	--	--	52.7	--	--	--	--	--	--	--	--	--
REA	5909RR	00.9		40	9/21	97	1.0	2.4	33.6	17.7	57.7	--	--	53.2	--	--	--	--	--	--	--	--	--
REA	59G51	00.9		40	9/19	96	1.8	3.6	31.9	18.6	57.1	--	--	58.6	--	--	--	--	--	--	--	--	--
Stine	0046-4	00.5		35	9/12	90	1.7	2.1	32.8	19.5	56.8	--	--	52.2	--	--	--	--	--	--	--	--	--
Thunder Seed	29004RR	00.4		37	9/21	69	1.0	3.3	33.0	18.5	56.4	--	--	53.8	43.5	48.6							
Thunder Seed	31009R2Y	00.9		41	9/21	95	2.5	4.1	33.0	18.5	57.2	--	--	57.9	--	--	--	--	--	--	--	--	--
Thunder Seed	30005RR	00.5		40	9/28	87	1.4	2.1	33.0	17.9	57.1	--	--	51.7	52.3	52.0							
Thunder Seed	29008RR	00.8		37	9/24	93	1.8	2.7	33.4	17.7	55.8	--	--	40.4	42.6	--							
Thunder Seed	29002RR	00.2		37	9/13	92	2.3	4.9	34.8	18.0	57.7	--	--	51.0	--	--	--	--	--	--	--	--	--
Wensman Seed	W 20051RR	00.5		37	9/14	95	2.8	2.6	33.9	19.0	56.5	43.4	52.4	47.7	50.0	47.8							
Wensman Seed	W 30084R2	00.8		43	9/20	100	3.7	4.9	33.7	17.8	57.7	--	--	58.9	--	--	--	--	--	--	--	--	--
Wensman Seed	W 30091R2	00.8		45	9/23	99	2.4	4.8	33.3	18.3	56.5	--	--	52.1	--	--	--	--	--	--	--	--	--
Trial Mean				39	9/20	94	2.0	3.5	33.5	18.2	57.1	42.8	48.2	50.9	--	--	--	--	--	--	--	--	--
C.V. %				9.4	1.7	6.7	75.0	39.7	2.4	1.8	2.2	7.7	8.6	10.1	--	--	--	--	--	--	--	--	--
LSD 5%				5.2	2.8	8.8	2.1	1.9	1.6	0.7	1.8	4.6	5.8	7.2	--	--	--	--	--	--	--	--	--

<sup>1</sup>Maturity Group provided by company

<sup>2</sup>Days to physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color).

<sup>3</sup> Sclerotinia stem rot (white mold) rating. Visual estimate of severity of white mold. 0=none, 9=severe.

Yield, oil and protein reported at 13% moisture.

## Pembina County - Roundup Ready Soybeans - 2008-2010

Brand	Variety	Maturity Group <sup>1</sup>	Plant		Lodging	Protein %	Oil %	Test Weight lbs/bu	Yield			2008	2009	2010	year	year
			Height	Maturity date <sup>2</sup>					2008	2009	2010					
			in						bu/a	bu/a	bu/a					
AgSource	6003	00.8	38	9/22	3.3	26.9	20.2	57.2	--	--	59.7	--	--			
AgSource	6007	00.7	38	9/20	2.8	30.2	20.4	57.1	--	50.7	61.2	56.0	--			
AgSource	6009	00.9	41	9/24	4.7	30.6	19.6	57.9	--	--	61.0	--	--			
Dyna-Gro Seed	30P05	00.5	33	9/19	1.4	30.1	20.6	57.5	--	--	53.9	--	--			
Dyna-Gro Seed	30RY09	00.9	43	9/28	4.6	31.7	19.1	57.4	--	--	67.4	--	--			
Dyna-Gro Seed	35RY01	0.1	42	9/26	5.3	28.5	20.2	58.6	--	--	65.5	--	--			
Dyna-Gro Seed	32B02	0.2	32	9/20	0.6	30.1	20.6	55.5	--	--	52.0	--	--			
G2 NuTech	6005	00.5	39	10/4	2.9	32.5	18.5	58.1	--	--	61.4	--	--			
G2 NuTech	6008	00.8	38	9/24	0.5	33.1	18.9	56.1	--	--	57.7	--	--			
G2 NuTech	0090 RR	00.9	38	9/26	4.5	31.9	20.2	56.5	--	--	60.4	--	--			
G2 NuTech	6030	0.2	36	9/29	1.7	32.1	18.8	56.5	--	--	56.0	--	--			
G2 NuTech	6049	0.2	47	10/3	3.4	30.1	19.6	58.1	--	52.0	63.0	57.5	--			
Gold Country Seed	9008	00.8	40	9/25	2.8	30.2	19.4	58.2	--	52.0	56.6	54.3	--			
Gold Country Seed	0140	0.1	40	9/26	5.2	32.2	19.1	58.1	--	--	69.3	--	--			
Hefty Seed	H0086R	00.8	40	9/26	6.3	29.7	20.8	56.8	43.9	50.3	65.4	57.8	53.2			
Hefty Seed	H0099R	00.9	42	9/28	6.6	31.7	19.7	57.0	37.3	47.7	60.0	53.8	48.3			
Hefty Seed	H008Y11RR2	00.8	42	9/26	3.8	29.1	19.8	58.3	--	--	58.1	--	--			
Hyland Seeds	RR Russell	00.5	41	9/20	4.8	28.1	21.0	58.8	--	--	53.3	--	--			
Hyland Seeds	HS 02R28	0.2	40	9/29	6.5	29.6	18.8	58.9	45.1	46.8	57.7	52.2	49.9			
Hyland Seeds	EXP 009RY01	00.9	41	9/28	4.4	30.7	19.6	58.0	--	--	68.9	--	--			
Hyland Seeds	EXP 01RY02	0.2	44	9/26	5.3	30.1	19.5	58.3	--	--	64.8	--	--			
Hyland Seeds	HXR2Y20	0.2	43	9/27	4.9	32.1	19.1	57.7	--	--	64.8	--	--			
Integra/Wilbur Ellis	97009R	00.9	37	9/25	5.6	30.0	20.4	57.7	--	--	67.5	--	--			
Integra/Wilbur Ellis	97001R	00.3	38	9/19	3.9	29.0	21.1	56.9	43.7	47.0	65.5	56.3	52.1			
Mon/Asgrow	AG00501	00.5	37	9/21	4.4	28.7	20.6	56.7	49.1	60.6	58.1	59.4	55.9			
Mon/Asgrow	AG00931	00.9	38	9/24	5.0	29.8	19.6	57.1	--	--	57.9	--	--			
Mon/Asgrow	AG0131	0.1	44	9/20	2.2	30.8	19.6	58.2	--	--	69.7	--	--			
NK Brand	S01-C9	0.1	39	9/25	3.7	30.8	20.0	55.6	39.9	46.7	54.1	50.4	46.9			
NK Brand	S02-K3	0.2	38	9/27	4.6	27.7	20.7	58.6	--	50.4	57.0	53.7	--			
NorthStar Genetics	NS0084RR	00.8	42	9/29	5.6	31.1	19.7	56.8	--	48.9	62.1	55.5	--			
NorthStar Genetics	NS0091RR	00.9	39	9/26	5.7	31.7	20.2	56.8	--	--	64.8	--	--			
NorthStar Genetics	NS0092RR	00.9	38	9/26	6.6	30.6	20.3	56.7	--	--	68.9	--	--			
NorthStar Genetics	NS0011RR	00.4	36	9/21	3.8	28.2	21.2	56.7	--	--	54.4	--	--			
NorthStar Genetics	NS0096R2	00.9	42	9/24	4.4	30.6	19.5	58.6	--	--	62.0	--	--			
NuTech	6007	00.7	37	9/20	2.0	30.3	20.3	57.0	--	--	57.4	--	--			
NuTech	6011	0.1	39	9/29	1.4	26.5	20.1	56.2	--	--	56.0	--	--			
NuTech	6006	0.1	38	9/28	6.1	30.5	20.4	56.9	--	--	67.2	--	--			
NuTech	6022	0.2	40	9/30	5.5	31.7	20.0	57.2	52.9	53.4	68.3	60.9	58.2			
PFS	EX2010.01RR2Y	0.1	44	9/25	4.4	28.6	20.1	58.4	--	--	63.9	--	--			
PFS	07008RR	00.8	39	9/29	6.3	29.6	20.5	56.5	46.2	52.2	65.0	58.6	54.5			
PFS	11008RR	00.8	38	9/27	3.8	27.4	20.3	57.2	--	--	61.9	--	--			
PFS	1000RR	0.1	44	9/30	6.0	30.6	20.2	56.6	--	--	65.5	--	--			
Pioneer Brand	900Y71	00.7	37	9/16	0.0	33.6	19.1	56.3	--	--	55.8	--	--			
Prairie Brand Seed	PB-00639RR	00.6	39	9/29	5.7	29.1	19.7	57.5	--	52.4	59.6	56.0	--			

**Pembina County - Roundup Ready Soybeans - 2008-2010 (continued)**

Brand	Variety	Maturity Group <sup>1</sup>	Plant		Lodging	Protein	Oil	Test Weight	Yield			2008	2009	2010
			Height	Maturity					2008	2009	2010			
			in	date <sup>2</sup>	0-9	%	%	lbs/bu	-----bu/a-----			year	year	year
Prairie Brand Seed	PB-0401R2	0.4	38	9/25	4.9	32.2	18.8	57.5	--	--	62.1	--	--	--
Prairie Brand Seed	PB-00950R2	00.9	40	9/26	5.4	32.2	19.0	57.4	--	--	69.6	--	--	--
Prairie Brand Seed	PB-0230R2	0.2	42	9/26	5.5	30.0	19.9	57.0	--	--	63.3	--	--	--
Prairie Brand Seed	PB-0301X	0.3	40	9/26	4.6	32.2	18.9	57.9	--	--	62.5	--	--	--
Proseed	10-06	00.6	37	9/26	3.8	25.5	20.8	57.7	--	--	55.4	--	--	--
Proseed	P2 10-08 RR2Y	00.8	42	9/25	4.6	30.8	19.5	58.2	--	--	63.7	--	--	--
REA	5825RR	00.4	37	9/20	3.3	27.3	21.3	56.2	--	--	52.9	--	--	--
REA	5909RR	00.9	39	9/23	3.5	28.3	20.2	58.3	--	--	54.2	--	--	--
REA	59G51	00.9	42	9/27	4.2	29.9	19.5	58.9	--	--	65.3	--	--	--
REA	61G21	0.1	42	9/28	5.8	30.2	20.0	57.1	--	--	70.9	--	--	--
Stine	0098-84	0.0	38	9/28	5.2	29.4	20.3	57.0	43.5	44.2	60.0	52.1	49.2	
Thunder Seed	29004RR	00.4	44	9/28	5.7	31.8	19.7	56.9	--	48.6	58.6	53.6	--	
Thunder Seed	31009R2Y	00.9	42	9/26	4.8	29.7	19.8	58.9	--	--	63.9	--	--	
Thunder Seed	30005RR	00.5	38	9/26	3.3	31.0	19.9	56.8	--	49.5	69.8	59.6	--	
Thunder Seed	29008RR	00.8	38	9/29	5.0	29.6	19.8	57.7	--	50.1	60.7	55.4	--	
Thunder Seed	29002RR	00.2	30	9/15	0.2	32.4	19.5	57.1	--	--	55.1	--	--	
Wensman Seed	W20051RR	00.5	37	9/25	3.4	27.1	21.1	57.4	45.7	45.9	57.7	51.8	49.8	
Wensman Seed	W20074RR	00.7	40	9/28	6.2	30.2	20.6	56.7	48.4	50.7	65.9	58.3	55.0	
Wensman Seed	W30084R2	00.8	43	9/29	4.6	31.0	19.3	58.1	--	--	63.4	--	--	
Wensman Seed	W30091R2	00.9	39	9/26	4.1	29.7	19.8	57.0	--	--	68.1	--	--	
Trial Mean			39	9/25	4.2	30.1	19.9	57.4	44.5	48.2	61.6	--	--	
C.V. %			6.7	2.2	30.2	4.3	1.8	2.1	4.7	7.2	10.4	--	--	
LSD 5%			3.7	4	1.8	2.6	0.7	1.7	2.9	4.8	9.0	--	--	

<sup>1</sup>Maturity Group provided by company

<sup>2</sup>Days to physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color.)

Yield, oil and protein reported at 13% moisture.

## Ramsey County - Roundup Ready Soybeans - 2010

Brand	Variety	Maturity Group <sup>1</sup>	Plant			Protein %	Oil %	Test Weight lbs/bu	Yield 2010 bu/a
			Height in	Lodging 0-9	Maturity date <sup>2</sup>				
AgSource	6007	00.7	33	2.8	9/16	32.1	19.0	56.3	54.0
AgSource	6009	00.9	33	3.6	9/21	31.7	18.9	55.8	53.1
AgSource	0330 RR	0.3	35	2.8	9/27	32.9	18.8	55.9	52.0
Dairyland	DSR-0101/RR	0.1	32	5.3	9/21	31.6	19.4	56.7	59.7
Dairyland	DST03-001/RR	0.3	34	4.3	9/25	33.3	18.5	55.8	53.9
Dyna-Gro Seed	30P05	00.5	30	1.6	9/14	30.5	20.1	57.3	54.8
Dyna-Gro Seed	30RY09	00.9	38	3.8	9/20	32.7	18.3	57.0	62.2
Dyna-Gro Seed	35RY01	0.1	37	5.1	9/21	32.6	18.6	56.9	60.9
Dyna-Gro Seed	32B02	0.2	30	1.3	9/13	31.4	20.3	56.7	54.5
G2 NuTech	6008	00.8	34	1.8	9/17	32.6	18.9	56.9	54.2
G2 NuTech	0090 RR	00.9	34	2.8	9/15	31.1	20.0	56.1	55.2
G2 NuTech	6030	0.2	32	1.8	9/23	32.5	18.4	56.1	51.7
G2 NuTech	6049	0.2	41	2.8	9/26	30.4	18.7	56.8	52.0
G2 NuTech	6050	0.4	35	1.5	9/25	31.1	18.6	57.2	56.2
Gold Country Seed	9008	00.8	38	3.5	9/18	31.2	18.8	57.2	55.2
Gold Country Seed	0140	0.1	38	4.1	9/21	32.1	18.6	56.9	61.8
Hefty Seed	H0086R	00.8	35	4.6	9/16	30.2	19.9	55.0	51.8
Hefty Seed	H0099R	00.9	37	3.9	9/17	31.2	19.3	56.7	54.2
Hefty Seed	H008Y11RR2	00.8	39	4.2	9/19	31.3	18.9	57.7	58.2
Hyland Seeds	RR Russell	00.5	32	5.4	9/12	31.7	20.1	58.3	48.6
Hyland Seeds	HS 02R28	0.2	36	6.4	9/24	31.3	18.2	58.2	56.2
Hyland Seeds	EXP 009RY01	00.9	39	4.6	9/20	31.9	18.5	56.2	61.1
Hyland Seeds	EXP 01RY02	0.2	37	3.9	9/22	31.5	19.0	56.6	59.2
Hyland Seeds	HXR2Y20	0.2	38	3.9	9/20	32.9	18.3	55.9	55.9
Integra/Wilbur-Ellis	97009R	00.7	35	5.2	9/16	30.5	19.8	56.2	53.3
Integra/Wilbur-Ellis	97001	00.3	31	1.8	9/13	31.9	19.9	55.9	55.8
Mon/Asgrow	AG00931	00.9	37	5.7	9/19	32.8	18.5	55.9	54.1
Mon/Asgrow	AG0131	0.1	37	3.7	9/18	33.2	18.6	56.8	58.4
Mon/Asgrow	AG0231	0.2	37	4.7	9/21	33.1	18.0	55.8	65.2
Mon/Asgrow	AG0331	0.3	38	4.9	9/23	33.3	17.8	56.5	60.6
Mustang	02311	0.2	38	3.9	9/22	33.6	18.0	55.4	54.8
Mustang	M-036RR	0.3	40	3.6	9/25	32.1	18.2	57.5	56.7
NK Brand	S01-C9	0.1	36	2.2	9/16	33.6	18.9	57.1	48.5
NK Brand	S02-K3	0.2	36	3.8	9/18	31.0	19.7	57.5	60.4
NorthStar Genetics	NS0084RR	00.8	38	4.5	9/19	32.4	19.0	56.6	49.8
NorthStar Genetics	NS0096R2	00.9	38	4.3	9/19	31.2	18.9	57.9	60.8
NorthStar Genetics	NS0216R2	0.2	37	3.0	9/23	32.3	18.5	55.1	54.6
NuTech	6016	0.1	35	4.3	9/21	32.4	18.7	56.5	56.4
NuTech	6011	0.1	34	1.8	9/22	31.7	18.6	56.4	56.9
NuTech	6006	0.1	34	4.5	9/21	31.3	19.7	56.3	60.1



## Ramsey County - Roundup Ready Soybeans - 2010 (continued)

Brand	Variety	Maturity Group <sup>1</sup>	Plant			Protein %	Oil %	Test Weight lbs/bu	Yield 2010 bu/a
			Height in	Lodging 0-9	Maturity date <sup>2</sup>				
NuTech	6022	0.2	32	3.1	9/18	32.3	19.4	55.6	56.2
PFS	EX2010.01RR2Y	0.1	37	5.6	9/22	32.1	18.6	57.1	63.9
PFS	07008RR	00.8	35	4.1	9/17	30.8	19.7	56.7	51.1
PFS	1000RR	0.1	33	4.6	9/22	30.7	19.9	56.3	59.4
PFS	1002RR	0.2	34	3.4	9/17	32.0	19.3	56.5	55.5
PFS	EX2010.02RR2Y	0.2	37	3.6	9/23	32.5	18.5	56.6	60.9
Pioneer Brand	900Y71	00.7	30	1.4	9/12	32.6	19.2	55.4	48.4
Proseed	80-20	0.2	33	2.8	9/18	32.7	19.0	56.6	53.8
Proseed	P2 10-20 RR2Y	0.2	37	5.2	9/23	32.5	18.5	56.8	63.3
Proseed	90-40	0.4	35	4.9	9/28	32.2	18.6	55.3	56.0
Proseed	P210-40 RR2Y	0.4	35	3.9	9/22	33.2	18.1	57.0	60.7
REA	5909RR	00.9	37	3.4	9/17	31.4	18.8	56.2	54.9
REA	59G51	00.9	38	5.2	9/20	33.1	18.2	56.8	60.9
REA	61G21	0.1	37	4.7	9/21	32.5	18.7	56.3	63.2
REA	63G31	0.3	35	3.9	9/22	31.2	18.4	56.5	56.8
Stine	0098-84	0.0	35	3.8	9/19	32.2	19.0	56.2	53.4
Thunder Seed	29004RR	00.4	39	5.5	9/18	34.0	17.8	55.9	50.3
Thunder Seed	31009R2Y	00.9	37	5.0	9/20	31.9	18.6	57.0	60.6
Thunder Seed	30005RR	00.5	32	3.7	9/21	31.9	19.2	57.6	55.3
Thunder Seed	29008RR	00.8	34	4.0	9/21	31.6	19.0	55.6	55.8
Thunder Seed	29002RR	00.2	30	0.3	9/12	33.8	18.9	56.6	47.7
Wensman Seed	W 30084R2	00.8	39	4.3	9/20	33.3	18.1	56.8	62.4
Wensman Seed	W 30091R2	00.9	38	4.3	9/19	30.3	19.4	56.7	61.6
Wensman Seed	W 3000R2	00.0	37	3.4	9/22	33.0	18.4	56.2	53.9
Trial Mean			36	3.8	9/20	32.0	18.9	56.5	56.4
C.V. %			4.4	30.2	1.7	3.0	1.8	1.8	5.6
LSD 5%			2.2	1.6	3	1.9	0.7	1.4	4.4

<sup>1</sup>Maturity Group provided by company

<sup>2</sup>Days to physiological maturity at R7 stage (one brown pod on the main stem obtains mature brown or tan color.)

Yield, oil and protein reported at 13% moisture.

## Langdon - Oil Sunflower - 2008-2010

Brand	Hybrid	Hybrid Type <sup>1</sup>	Days to Flower (days)	Plant Height (inch)	Head Rot <sup>2</sup> (%)	Stalk Rot <sup>3</sup> (%)	Broken Stems <sup>4</sup> (%)	Oil <sup>5</sup> (%)	Test Weight (lb/bu)	Yield @ 10% moisture (lbs/a)				
										2008	2009	2010	Average	
Croplan Genetics	306 DMR NS	NS, DMR	75	65	14	18	0	42.3	31.0	2199	1176	2120	1648	1832
Croplan Genetics	3080 DMR NS	NS, DMR	74	64	15	22	0	42.7	30.1	1967	862	1737	1299	1522
Croplan Genetics	356A NS	NS	79	66	16	37	0	42.3	31.5	--	--	1935	--	--
Croplan Genetics	460 E NS	NS, EX	79	74	10	19	1	43.3	31.4	--	1336	1777	1556	--
Croplan Genetics	555 CL DMR NS	NS, CL, DMR	77	71	7	11	3	41.7	29.7	--	1438	2265	1852	--
Croplan Genetics	559 CL DMR NS	NS, CL, DMR	80	73	5	14	0	41.3	30.4	--	--	2397	--	--
Croplan Genetics	564 CL NS	NS, CL	79	72	6	42	12	40.0	31.7	--	--	1743	--	--
Dalhgren	4421	NS	72	67	18	28	0	36.0	27.8	2486	1649	2304	1977	2146
Genosys	6007	NS, CL	79	72	6	33	16	39.0	33.9	--	--	1711	--	--
Genosys	7052	HO, CL	79	73	11	24	32	38.7	35.5	--	--	1281	--	--
Genosys	7163	NS	77	68	7	27	0	39.0	29.6	--	--	2437	--	--
Genosys	8037	NS, CL	81	71	12	26	12	39.3	32.9	--	--	1664	--	--
Genosys	8064	HO, CL	82	72	0	13	5	34.7	33.1	--	--	1618	--	--
Integra Fortified Seed	516 NSDM	NS, DMR	78	66	11	31	3	41.3	31.6	--	--	1525	--	--
Integra Fortified Seed	735 NSCLDM	NS, CL, DMR	76	69	8	35	0	38.7	30.0	2056	1124	1803	1463	1661
Integra Fortified Seed	IX09-95010 NSDM	NS, DMR	72	59	12	33	1	43.7	33.5	--	729	1704	1216	--
Integra Fortified Seed	IX10-10576	NS, CL	79	73	16	13	0	40.3	33.1	--	--	2358	--	--
Integra Fortified Seed	IX10-94 NSSU	NS, EX	79	69	13	44	0	38.0	30.4	--	--	1756	--	--
Mycogen Seeds	8N270CLDM	NS, CL, DMR	73	69	11	28	0	41.0	32.2	1866	1309	2265	1787	1813
Mycogen Seeds	8H288CLDM	HO, CL, DMR	75	66	20	17	0	41.0	30.5	1651	847	2060	1454	1519
Mycogen Seeds	8N358CLDM	NS, CL, DMR	76	68	11	21	0	42.3	30.6	2173	1298	1961	1630	1811
Mycogen Seeds	8D310	NS	73	68	5	37	0	34.7	28.0	2270	1678	2100	1889	2016
Mycogen Seeds	8D481	NS	79	75	5	43	0	37.3	33.0	--	1118	1684	1401	--
Mycogen Seeds	8H449DM	HO, DMR	79	69	21	30	0	42.0	32.2	--	--	1539	--	--
Pioneer Brand	P63ME70	NS, EX, DMR	78	72	6	15	0	41.7	30.9	--	--	1889	--	--
Pioneer Brand	P64HE01	HO, EX, DMR	76	68	4	16	6	39.3	35.3	--	--	2139	--	--
Proseed	E-85	NS, DMR	76	73	9	20	0	39.3	28.7	1944	1430	2021	1725	1798
Proseed	E-4	NS, DMR	75	69	12	31	0	37.3	29.9	--	1547	1875	1711	--
Proseed	E-8	NS, DMR	76	74	2	21	4	39.0	30.3	--	1525	2126	1826	--
Proseed	CL9001	NS, CL	75	66	6	47	0	39.0	31.1	--	1324	1823	1573	--

### Langdon - Oil Sunflower - 2008-2010 (continued)

Brand	Hybrid	Hybrid Type <sup>1</sup>	Days to Flower (days)	Plant Height (inch)	Head Rot <sup>2</sup> (%)	Stalk Rot <sup>3</sup> (%)	Broken Stems <sup>4</sup> (%)	Oil <sup>5</sup> (%)	Test Weight (lb/bu)	Yield @ 10% moisture (lbs/a)				
										2008	2009	2010	2yr	Average
Seeds 2000	Cobra	NS, EX	76	63	11	27	0	41.0	29.8	--	--	2034	--	--
Seeds 2000	Defender Plus	NS, DMR	75	64	7	34	1	39.7	31.4	2069	1158	1948	1553	1725
Seeds 2000	X9866	NS, CL, DMR	80	72	1	36	2	40.7	29.4	--	--	1869	--	--
Seeds 2000	X9828	NS, CL, DMR	79	68	4	30	0	38.0	31.5	--	--	2338	--	--
Syngenta	2930 NS/DM	NS, DMR	73	67	15	26	0	41.7	31.4	1971	1382	1849	1616	1734
Syngenta	3433 NS/DM	NS, DMR	79	64	21	40	4	40.3	31.1	1897	1382	2133	1758	1804
Syngenta	3480 NS/CL/DM	NS, CL, DMR	79	72	3	23	10	43.7	31.5	2143	891	1869	1380	1634
Syngenta	7120 HO/DM	HO, DMR	72	61	7	26	0	39.0	32.3	2258	877	1836	1356	1657
Syngenta	3980 NS/CL	NS, CL	81	75	8	32	0	41.3	30.8	--	1049	1829	1439	--
Triumph	610CLD	NS, CL, DMR	76	63	18	31	6	39.0	31.8	--	--	1763	--	--
Check-USDA	894	TRAD	75	69	11	28	10	42.0	29.3	2051	986	1948	1467	1662
Trial Mean			77	68	10	28	3	40.0	31.2	2007	1196	1934	--	--
C.V. %			1.6	4.6	69	52	220.6	3.4	3.1	13.1	21.4	17.9	--	--
LSD 5%			2.0	5.1	11	NS	10.9	2.2	1.6	425	417	562	--	--

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional, CL = Clearfield, EX= Express, DMR = Downy Mildew Resistant.

<sup>2</sup>Sclerotinia head rot. Indicates percent incidence of head rot for each hybrid. It does not indicate severity.

<sup>3</sup>Sclerotinia stalk rot. Indicates percent incidence of basal or mid-stalk rot for each hybrid.

<sup>4</sup>Broken stems were laying flat on the ground. Breakage may have resulted from stalk rot, phoma, insects, or wind. Plants were not harvested.

<sup>5</sup>Oils were adjusted to 10% moisture. Oil % of NuSun and Traditional hybrids were adjusted for oil type.

### Langdon -Confection (non-oil) Sunflower - 2008-2010

Brand	Hybrid	Days to Plant										Yield				
		Flower Height	Test Weight	Head Rot <sup>3</sup>	Stalk Rot <sup>4</sup>	Broken Stems <sup>5</sup>	Seed over screen	@ 10% moisture			Average					
		(days)	(inch)	(lbs/bu)	(%)	(%)	(%)	22/64	20/64	18/64	2008	2009	2010	2 yr	3yr	
Croplan Genetics	179	70	21.8	3	32	0	67	87	95	--	1290	1685	1487	--		
Dahlgren	9530	76	22.7	4	25	0	68	87	94	2365	1570	2218	1894	2051		
Dahlgren	9592	75	20.4	5	12	0	73	89	94	2588	1821	2038	1930	2149		
Dahlgren	95EXCL-9530CL <sup>1</sup>	77	21.7	8	16	0	50	81	94	2437	1471	1698	1585	1869		
Mycogen Seeds	8C451	74	20.0	4	19	0	76	93	96	2218	1707	1805	1756	1910		
RRC	2215 CL <sup>1</sup>	79	21.9	3	23	0	60	90	96	--	--	1665	--	--		
RRC	2215	76	22.0	3	20	0	63	92	96	2572	1632	2225	1928	2143		
RRC	2217	75	20.4	2	8	0	72	93	96	--	1559	2105	1832	--		
Seeds 2000	Jaguar <sup>1</sup>	74	22.1	5	20	6	44	82	93	2208	2136	1785	1960	2043		
Seeds 2000	Panther DMR <sup>2</sup>	72	22.5	2	35	2	30	78	93	2084	1819	1925	1872	1943		
Seeds 2000	6946 DMR <sup>2</sup>	73	22.9	5	28	8	3	38	84	--	--	1512	--	--		
Seeds 2000	X9151	74	23.5	1	17	1	7	41	80	--	--	2038	--	--		
Triumph	TRX10454C	74	22.2	4	11	3	69	90	96	--	--	2218	--	--		
Triumph	747C	72	21.4	7	11	0	73	87	95	2408	1399	1751	1575	1853		
Check-USDA	924	72	24.2	11	28	2	34	72	89	2249	1167	2071	1619	1829		
Trial Mean		75	22.0	5	20	2	--	--	--	2315	1614	1916	--	--		
C.V. %		1.2	3.8	2.6	97	321	--	--	--	12.1	13.5	13.3	--	--		
LSD 5%		1.5	4.5	1.0	NS	NS	NS	15.8	NS	465	364	427	--	--		

<sup>1</sup> Clearfield hybrid

<sup>2</sup> Downy mildew resistant

<sup>3</sup> Sclerotinia head rot. Indicates percent incidence of head rot for each hybrid. It does not indicate severity.

<sup>4</sup> Sclerotinia stalk rot. Indicates percent incidence of basal or mid-stalk rot for each hybrid.

<sup>5</sup> Broken stems were laying flat on the ground. Breakage may have resulted from stalk rot, phoma, or insects. Plants were not harvested.

## Langdon - Corn Grain Summary - 2010

Brand	Hybrid	RM	Plant	Days to	Harvest	Test	Perf.	Yield	
			Height inches	Silk	Moist. %	Weight lbs/bu	Index <sup>1</sup> PI	2010	2 yr
								bu/a	
AgSource Seeds	3A-382-GT	81	113	78	24.7	50.0	101	141.1	--
AgSource Seeds	3T-083 VT3	82	111	78	26.3	53.5	101	151.5	--
Dekalb	DKC30-20 (VT3)	80	109	76	22.1	55.2	117	147.3	--
Dyna-Gro Seed	50K21	78	112	76	22.6	53.8	115	147.8	105.1
Dyna-Gro Seed	51V45	82	111	78	25.5	54.5	101	145.8	106.4
G2 Genetics	5H-080 RR/HX	80	108	78	26.9	48.5	81	123.3	--
G2 Genetics	5H-884 RR/HX	82	108	76	26.7	51.5	96	145.6	106.2
G2 Genetics	5H-885 RR/HX	82	111	78	27.9	50.1	102	161.6	--
Gold Country Seed	77-02 VT3	77	108	76	24.2	54.5	110	151.4	--
Gold Country Seed	81-21 VT3	81	110	78	25.6	53.3	109	158.9	--
Hyland Seeds	Baxxos RR	76	109	73	26.1	55.2	99	146.4	111.7
Hyland Seeds	HL B18R	78	106	73	27.9	57.6	97	153.2	124.5
Hyland Seeds	HL B22R	79	106	77	23.0	54.2	101	132.0	100.4
Hyland Seeds	H9301BR	80	109	76	23.2	54.0	113	149.3	--
Integra Fortified Seed	EXP 011080 VT3	80	104	74	23.6	53.1	104	140.0	--
Integra Fortified Seed	EXP 911080 R	80	106	76	22.5	54.9	103	131.6	--
NuTech Seed	3T-482 VT3	81	109	79	22.3	56.2	116	146.7	--
NuTech Seed	0A-183	82	111	78	24.9	49.7	95	134.0	--
NuTech Seed	3A-484RR	82	112	78	26.0	51.6	101	149.2	104.6
NuTech Seed	1B-485 CB/LL	82	107	78	27.0	49.9	95	145.6	--
PFS	21A78	78	110	76	24.9	55.8	110	156.1	104.2
Pioneer Brand	39D95	79	102	73	23.6	55.4	109	146.0	--
Proseed	981 GTCBLL	81	109	77	22.8	51.7	108	139.3	100.9
Proseed	781BT	81	105	78	34.9	48.7	73	145.0	91.8
Proseed	984VT2		111	78	24.9	53.4	89	126.4	--
REA Hybrids	1T114	78	105	75	25.7	51.9	101	147.7	--
REA Hybrids	1T345	79	105	78	23.6	53.8	107	143.2	102.7
Seeds 2000	2823	82	113	78	27.4	50.8	93	144.7	--
Seeds 2000	2781 RR	78	107	77	24.0	54.0	102	139.7	102.0
Seeds 2000	8201 VT3	82	108	79	24.8	52.1	102	143.7	103.0
Thunder Seed	TS 7952 RR	77	111	75	22.8	54.8	117	152.0	--
Thunder Seed	TS 8000 RR	81	103	78	31.9	49.0	79	142.7	--
Wensman Seed	W 7080VT3	80	110	78	23.2	53.6	100	131.6	--
Wensman Seed	W 8082VT2PRO	82	108	79	25.9	53.6	95	139.8	--
Wensman Seed	W 8085VT2PRO	82	106	77	26.5	51.5	98	147.5	--
Trial Mean			108	77	25.3	52.9		144.2	
C.V. %			2.2	1.4	6.3	1.5		9.0	
LSD 10%			3.2	1.4	2.2	1.1		17.6	
LSD 5%			3.8	1.7	2.6	1.3		NS	

<sup>1</sup> Performance index identifies hybrids that are outstanding for grain yield and moisture. This index helps identify early hybrids with high productivity. High ratings(greater than 100) suggest better than average performance.

Total GDD for the trial was 1690, 61 above normal. First killing frost was October 2, 28<sup>0</sup> F.

Mustard																									
Variety	Yield (lbs/a)			Days to Flower			Lodging (0-9)			Height (in)			Disease <sup>1</sup>												
Yellow	06	07	08	09	10	3yr	06	07	08	09	10	3yr	06	07	08	09	10	3yr	09						
AC Pennant	1952	1753	1777	1288	1670	1578	40	42	47	37	35	40	0	2.3	0.0	0	1.8	0.6	42	46	42	41	50	44	6.8
Ace	1928	1659	1951	1714	2237	1968	41	41	47	37	37	40	0	3.8	0.0	0	0.8	0.3	45	47	44	44	52	47	2.8
Andante	2086	1766	2146	2057	2231	2145	40	41	47	37	36	40	0	3.3	0.0	0	1.0	0.3	46	44	43	42	51	45	2.8
Tilney	1851	1836	2004	1857	2069	1977	40	40	47	36	36	40	0	2.8	0.5	0	0.0	0.2	44	44	43	42	50	45	3.5
Forge	--	2514	2361	2086	2611	2352	--	46	51	44	42	46	--	4.0	0.3	0	1.8	0.7	--	49	52	52	49	51	0.0
Comm.Brown	--	1486	2106	1923	2287	2105	--	48	51	44	41	45	--	7.3	0.0	0	2.3	0.8	--	44	49	50	48	49	0.3
Duchess	--	2089	2278	1900	2284	2154	--	47	50	44	42	45	--	8.0	0.3	0	3.0	1.1	--	49	48	49	47	48	0.0
LSD 5%	NS	381	325	440	381		NS	0.9	0.8	1.0	0.6		NS	2.2	NS	--	NS		2.5	NS	2.5	3.5	1.9		2.2

<sup>1</sup>Disease was primarily sclerotinia.

Buckwheat																				
Variety	Yield (lbs/a)			Test Weight (lbs/bu)			Height (in)			Lodging (0-9)										
	07	08	09	10	4yr	07	08	09	10	4yr	07	08	09	10	4yr					
Manor	2342	953	2840	2377	2128	48.1	42.4	48.0	44.5	45.8	42	42	43	45	43	0.8	2.5	1.0	7.5	3.0
Koma	2386	1081	2929	2197	2148	49.1	43.3	50.7	46.1	47.3	41	44	45	44	44	1.3	3.8	2.0	7.3	3.6
Koto	--	--	3176	2616	--	--	--	50.7	46.4	--	--	--	46	48	--	--	--	0.3	6.3	--
Mancan	2282	1358	--	--	--	48.8	43.3	--	--	--	41	46	--	--	--	1.0	3.0	--	--	--
LSD 5%	NS	NS	NS	NS	NS	0.7	1.5	1.1	0.9		NS	NS	NS	NS	NS	NS	NS	NS	NS	1.0

Camelina															
Variety	Yield (lbs/a)		Days to Flower		Test Wt. (lb/bu)		Height (in)		Oil (%)						
	09	10	2yr	09	10	2yr	09	10	2yr	09	10	2yr	09	10	2yr
Blaine Creek	2208	2062	2135	45	43	44	53.0	52.2	52.6	33.6	32.5	33.1	36.7	35.7	36.2
Calena	2360	2113	2236	46	42	44	52.5	52.1	52.3	33.3	32.7	33.0	36.9	36.7	36.8
CO46	2174	2010	2092	42	41	41	50.1	50.4	50.3	32.5	31.4	32.0	37.2	36.3	36.8
CO54-97	2260	2333	2296	44	41	42	52.3	52.3	52.3	34.1	32.2	33.2	36.6	36.6	36.6
Galena	2413	2305	2359	45	41	43	52.0	52.4	52.2	33.0	33.4	33.2	36.8	37.4	37.1
Ligene	2316	2080	2198	44	42	43	51.3	51.2	51.3	34.0	31.2	32.6	38.3	37.4	37.9
Robinson	2302	2269	2286	44	42	43	51.9	52.0	52.0	34.3	32.8	33.6	36.7	36.7	36.7
Suneson	2169	2022	2096	43	41	42	53.1	52.7	52.9	33.1	32.9	33.0	37.5	36.1	36.8
Celine	2242	--	--	47	--	--	52.9	--	--	33.1	--	--	37.7	--	--
LSD 5%	NS	NS	NS	1.0	NS	NS	1.7	0.4		NS	NS	NS	NS	NS	NS

## Evaluation of foliar fungicide on several HRSW cultivars and two durum cultivars, Langdon 2010

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### Materials and Methods

A field experiment was planted on 14 May at the North Dakota State University Langdon Research Extension Center located at Langdon in NE North Dakota. The trial was conducted using best management practices for hard red spring wheat including seeding date and rate, fertility, weed control and harvest management. The experiment was a randomized complete block design with a split plot arrangement with four replications. The previous crop was soybean. The soil type was Svea-Barnes loam. Whole plot factors were cultivars; all cultivars were seeded at a rate of 1.5 million pure live seeds/acre. Subplot factor were Prosoaro fungicide or untreated. Plots seven rows wide by 21 ft. long, 6-in row spacing, were planted with an Almaco plot planter equipped with double disk openers and press wheels. Fusarium inoculum consisting of two isolates were hand-broadcast at a rate of 150 grams/plot two and three weeks prior to flowering to encourage development of Fusarium head blight disease (FHB). After herbicide application was completed, an overhead irrigation system was installed to provide supplemental water to wet the Fusarium inoculum and the grain heads to encourage the development of FHB. The Prosoaro fungicide was tank mixed with Induce adjuvant at a rate of 6.5 fl. oz./acre and 0.25% v/v, respectively and applied with a CO<sub>2</sub>-pressurized backpack sprayer operated at 40 psi and delivering 18.4 GPA. The sprayer was equipped with a three-nozzle boom, nozzles spaced 20 inches on center. The foliar treatments were made using Spraying Systems XR8002 nozzles oriented vertically. The flowering treatments were made using Spraying Systems XR8001 nozzles mounted on a double swivel and oriented to spray forward and backward 30 degrees downward from horizontal. The fungicide applications were made at Feekes growth stage 10.51. Because of the different growth of the cultivars they reached growth stage Feekes 10.51 on three different dates. The fungicide applications were on 6 Jul (wind speed ten MPH, temperature 64° F at 8:15 a.m., cultivar Brick), 9 Jul (wind speed five MPH, temperature 66° F at 8:30 a.m., cultivars, Dapps, Briggs, Glenn, Steele-ND, Trooper, Howard, Barlow, Brennan and Traverse ) and 12 Jul (no wind, temperature 50° F at 8:00 a.m., cultivars, Ada, Alsen, Faller, Sampson, Reeder, Sabin and Granger) by maturity. Fusarium head blight (FHB) incidence (I), head severity (HS) and index (FS) were determined from a twenty grain head sample collected at Feekes 11.2 growth stage. Leaf severity was determined from a sample of five leaves at the same growth stage. Plots were harvested 7 Sept with a small plot combine and the yield and test weight determined.

The fungicide treatment had a significant effect on all characters measured except heading date. Yield, test weight and DON averaged over cultivars was 7.6 bu/a higher, 1.1 lb/bu higher and 1.66 ppm lower, respectively, compared to the untreated treatment. The fungicide x cultivar interaction for yield was non-significant meaning all cultivars had similar yield responses to fungicide. There was significant fungicide x cultivar interactions for other characteristics which indicates the differences between the fungicide and untreated treatments varied among cultivars.

Table 1. Heading date, yield, test weight, Fusarium head blight incidence, index and head severity, deoxynivalenol and leaf necrosis by cultivar or fungicide, Langdon 2010.

Cultivar or Fungicide	Heading Date		Yield		Test Weight		Fusarium Head Blight			Leaf Necrosis	
	DAP <sup>1</sup>	Date	Bu./acre	Lb./bu.	Weight	Incidence	Index	Head Severity	DON <sup>2</sup>	Leaf Necrosis	
					Lb./bu.	%		%	Ppm	%	
Ada	52.9		61.9	59.3	59.3	96.9	28.3	29.4	1.56	63.7	
Alsen	50.9		60.0	58.8	58.8	96.9	25.6	27.0	0.99	65.6	
Barlow	49.9		64.5	59.4	59.4	71.9	8.7	13.9	1.53	32.4	
Brennan	50.5		58.1	57.5	57.5	88.1	15.8	18.7	0.94	35.2	
Brick	47.5		68.3	59.8	59.8	63.8	5.9	13.7	0.38	30.6	
Briggs	49.0		70.3	58.5	58.5	75.0	10.2	16.0	0.93	31.7	
Dapps	49.8		62.7	57.3	57.3	65.0	6.3	12.4	2.47	20.2	
Divide <sup>4</sup>	58.8		56.5	54.5	54.5	96.3	24.0	25.1	1.51	47.5	
Faller	51.4		82.0	58.6	58.6	88.8	15.2	18.0	1.06	57.4	
Glenn	48.8		66.7	61.0	61.0	66.9	7.7	12.7	0.96	38.1	
Granger	50.0		62.9	57.5	57.5	87.1	34.5	39.1	1.31	57.6	
Granite	54.6		59.9	61.0	61.0	88.8	19.4	21.2	1.27	56.9	
Howard	50.4		66.4	59.0	59.0	85.6	13.5	17.7	1.57	44.5	
Jenna	54.3		62.2	56.6	56.6	98.1	39.2	40.2	2.71	38.1	
Reeder	52.3		60.9	57.8	57.8	94.4	23.0	24.6	2.99	65.6	
Sabin	53.9		61.2	57.8	57.8	100.0	24.4	24.4	0.77	73.6	
Samson	51.9		67.2	56.7	56.7	98.8	32.2	32.7	5.82	70.1	
Steele-ND	50.3		64.7	58.8	58.8	73.8	9.4	13.8	1.93	41.2	
Tioga <sup>4</sup>	58.8		55.7	54.1	54.1	88.8	14.0	16.5	2.91	27.8	
Traverse	48.8		70.1	54.9	54.9	68.1	6.4	12.8	0.83	49.3	
Trooper	49.1		68.0	58.6	58.6	76.1	7.9	12.5	1.73	46.8	
LSD (0.05)	NA <sup>3</sup>		4.6	0.6	0.6	12.7	6.3	5.8	1.8	11.4	
Untreated	51.6		60.5	57.5	57.5	92.2	24.1	26.1	2.55	51.3	
Fungicide	51.6		68.1	58.6	58.6	76.3	11.3	16.0	0.89	43.3	
LSD (0.05)	NA		1.3	0.1	0.1	3.8	2.2	2.0	0.33	3.8	

<sup>1</sup>DAP = days after planting. <sup>2</sup>DON = deoxynivalenol. <sup>3</sup>NA = not an applicable calculation. <sup>4</sup>Durum cultivar.



Table 2. Heading date, yield, test weight, Fusarium head blight incidence, index and head severity, deoxynivalenol and leaf necrosis by cultivar and fungicide treatment and source of variation, Langdon 2010.

Cultivar and Treatment	Heading Date		Yield Bu./acre	Test Weight Lb./bu.	Fusarium Head Blight			DON <sup>2</sup> Ppm	Leaf Necrosis %	
	DAP <sup>1</sup>	Incidence %			Index	Head Severity %			DON <sup>2</sup> Ppm	Leaf Necrosis %
						Incidence %	Head Severity %			
Ada	52.8	100.0	58.9	58.9	39.8	39.8	2.42		64.5	
<b>Ada + F</b>	<b>53.0</b>	<b>93.8</b>	<b>59.6</b>	<b>59.6</b>	<b>16.8</b>	<b>19.0</b>	<b>0.70</b>		<b>62.8</b>	
Alsen	51.0	98.8	58.5	58.5	31.6	32.1	1.48		66.5	
<b>Alsen + F</b>	<b>50.8</b>	<b>95.0</b>	<b>59.1</b>	<b>59.1</b>	<b>19.7</b>	<b>21.9</b>	<b>0.51</b>		<b>64.8</b>	
Barlow	49.8	86.3	58.7	58.7	13.8	17.5	2.29		30.8	
<b>Barlow + F</b>	<b>50.0</b>	<b>57.5</b>	<b>60.0</b>	<b>60.0</b>	<b>3.5</b>	<b>10.3</b>	<b>0.77</b>		<b>34.0</b>	
Brennan	50.5	96.3	57.0	57.0	22.3	24.0	1.50		25.8	
<b>Brennan + F</b>	<b>50.5</b>	<b>80.0</b>	<b>57.9</b>	<b>57.9</b>	<b>9.3</b>	<b>13.5</b>	<b>0.38</b>		<b>44.7</b>	
Brick	47.8	78.8	59.1	59.1	8.8	14.0	0.58		37.8	
<b>Brick + F</b>	<b>47.3</b>	<b>48.8</b>	<b>60.5</b>	<b>60.5</b>	<b>3.0</b>	<b>13.3</b>	<b>0.18</b>		<b>23.5</b>	
Briggs	49.0	83.8	58.0	58.0	14.7	19.1	1.13		39.0	
<b>Briggs + F</b>	<b>49.0</b>	<b>66.3</b>	<b>59.0</b>	<b>59.0</b>	<b>5.8</b>	<b>12.9</b>	<b>0.74</b>		<b>23.9</b>	
Dapps	49.5	80.0	56.8	56.8	9.8	14.1	4.01		25.0	
<b>Dapps + F</b>	<b>50.0</b>	<b>50.0</b>	<b>57.8</b>	<b>57.8</b>	<b>2.8</b>	<b>10.6</b>	<b>0.94</b>		<b>15.3</b>	
Divide <sup>4</sup>	58.8	100.0	53.7	53.7	29.4	29.4	2.10		44.8	
<b>Divide + F<sup>4</sup></b>	<b>58.8</b>	<b>92.5</b>	<b>55.4</b>	<b>55.4</b>	<b>18.5</b>	<b>20.8</b>	<b>0.93</b>		<b>50.3</b>	
Faller	51.3	95.0	58.1	58.1	21.5	23.3	1.47		68.2	
<b>Faller + F</b>	<b>51.5</b>	<b>82.5</b>	<b>59.1</b>	<b>59.1</b>	<b>8.8</b>	<b>12.8</b>	<b>0.65</b>		<b>46.5</b>	
Glenn	48.8	81.3	60.7	60.7	12.2	15.3	1.37		36.0	
<b>Glenn + F</b>	<b>48.8</b>	<b>52.5</b>	<b>61.3</b>	<b>61.3</b>	<b>3.3</b>	<b>10.0</b>	<b>0.55</b>		<b>40.3</b>	
Granger	50.3	100.0	57.2	57.2	47.2	47.2	2.08		56.8	
<b>Granger + F</b>	<b>49.8</b>	<b>74.3</b>	<b>57.9</b>	<b>57.9</b>	<b>21.7</b>	<b>31.0</b>	<b>0.54</b>		<b>58.5</b>	
Granite	54.5	100.0	60.1	60.1	31.3	31.2	2.26		62.0	
<b>Granite + F</b>	<b>54.8</b>	<b>77.5</b>	<b>61.9</b>	<b>61.9</b>	<b>7.5</b>	<b>11.2</b>	<b>0.29</b>		<b>51.8</b>	
Howard	50.8	88.8	58.2	58.2	14.8	18.4	2.47		66.3	
<b>Howard + F</b>	<b>50.0</b>	<b>82.5</b>	<b>59.7</b>	<b>59.7</b>	<b>12.1</b>	<b>17.1</b>	<b>0.67</b>		<b>22.8</b>	
Jenna	54.3	100.0	55.9	55.9	52.4	52.4	4.45		38.3	
<b>Jenna + F</b>	<b>54.3</b>	<b>96.3</b>	<b>57.3</b>	<b>57.3</b>	<b>25.9</b>	<b>28.0</b>	<b>0.98</b>		<b>38.0</b>	

Table 2. Continued

Cultivar and Treatment	Heading		Test		Fusarium Head Blight			DON <sup>2</sup> Ppm	Leaf Necrosis %
	Date DAP <sup>1</sup>	Yield Bu./ acre	Weight Lb./ bu.	Incidence %	Index	Head Severity %			
Reeder	52.3	57.5	57.3	100.0	33.1	33.1	4.50	73.8	
<b>Reeder + F</b>	<b>52.3</b>	<b>64.4</b>	<b>58.4</b>	<b>88.8</b>	<b>13.0</b>	<b>16.2</b>	<b>1.48</b>	<b>57.5</b>	
Sabin	53.8	59.4	57.5	100.0	27.4	27.4	1.07	80.3	
<b>Sabin + F</b>	<b>54.0</b>	<b>63.0</b>	<b>58.1</b>	<b>100.0</b>	<b>21.5</b>	<b>21.5</b>	<b>0.48</b>	<b>67.0</b>	
Samson	52.3	62.3	55.6	100.0	44.6	44.6	8.36	74.3	
<b>Samson + F</b>	<b>51.5</b>	<b>72.2</b>	<b>57.8</b>	<b>97.5</b>	<b>19.8</b>	<b>20.8</b>	<b>3.28</b>	<b>66.0</b>	
Steele-ND	50.3	60.0	58.1	92.5	14.5	16.8	2.27	51.3	
<b>Steele-ND + F</b>	<b>50.3</b>	<b>69.5</b>	<b>59.4</b>	<b>55.0</b>	<b>4.3</b>	<b>10.7</b>	<b>1.58</b>	<b>31.0</b>	
Tioga <sup>4</sup>	58.8	51.7	53.8	96.3	18.3	19.7	4.00	27.8	
<b>Tioga + F<sup>4</sup></b>	<b>58.8</b>	<b>59.6</b>	<b>54.4</b>	<b>81.3</b>	<b>9.6</b>	<b>13.2</b>	<b>1.83</b>	<b>27.8</b>	
Traverse	48.8	66.5	55.5	75.0	8.0	14.2	1.14	52.5	
<b>Traverse + F</b>	<b>48.8</b>	<b>73.7</b>	<b>56.4</b>	<b>61.3</b>	<b>4.8</b>	<b>11.4</b>	<b>0.52</b>	<b>46.0</b>	
Trooper	49.0	61.8	57.9	83.8	10.6	14.7	2.72	56.0	
<b>Trooper + F</b>	<b>49.3</b>	<b>74.2</b>	<b>59.2</b>	<b>68.8</b>	<b>5.3</b>	<b>10.3</b>	<b>0.73</b>	<b>37.5</b>	
LSD <sub>(0.05)</sub> <sup>3</sup>	NS	NS	0.7	NS	10.1	9.1	1.5	17.3	
<u>Source of variation</u>									
Rep	<0.0001	0.0007	<0.0001	0.1881	0.0570	0.0175	0.0253	0.0461	
Cultivar	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	
Rep * Cultivar	0.1230	0.1841	0.0153	0.3743	0.8336	0.7885	<0.0001	0.7222	
Fungicide Treatment	0.6104	<0.0001	<0.0001	<0.0001	<0.0001	<0.0003	<0.0001	<0.0001	
Cultivar*Fungicide	0.3549	0.5947	0.0343	0.0863	0.0049	0.0021	0.0040	0.0075	
% C.V.	1.0	6.4	0.8	14.5	40.5	30.6	62.5	25.9	

<sup>1</sup>DAP = days after planting. <sup>2</sup>DON = deoxynivalenol. <sup>3</sup>LSD = to compare fungicide treatment for each cultivar. <sup>4</sup>Durum cultivar.

### Durum (Lebsock) Uniform Fungicide Study, Langdon 2010

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Table 1. Fusarium head blight incidence, index and severity, deoxynivalenol (DON) and leaf necrosis by fungicide and durum (Lebsock) growth stage at time of fungicide treatment, Langdon 2010.

Fungicide	Growth Stage Feekes	Fusarium Head Blight				
		Incidence %	Index	Head Severity %	DON <sup>1</sup> ppm	Leaf Necrosis %
Untreated control		92.5	16.5	18.9	7.63	32.5
DPX-LEM17	10.51 (early anthesis)	81.3	15.1	21.3	10.48	25.7
A9232D (Cogito EC)	10.51	80.0	9.3	14.1	7.13	35.0
Prosaro	10.5 (or approximately 5 days prior to 10.51)	88.8	16.0	19.8	7.98	14.6
Prosaro	10.5.1	83.3	7.3	16.8	6.83	18.7
Prosaro	5 days after 10.51 treatments are applied	71.3	9.3	16.1	5.90	17.1
Caramba	10.5	90.0	14.2	17.4	7.68	19.5
Caramba	10.5.1	76.3	10.0	16.3	6.23	9.7
Caramba	5 days after 10.5.1 treatments are applied	80.0	10.6	16.5	6.78	17.0
Headline	9.0 (flag leaf fully emerged)	91.3	20.4	23.7	10.13	15.5
Headline	10.0 (boot stage)	90.0	15.5	19.2	9.13	16.9
Headline	10.5	77.5	8.8	14.2	10.38	12.3
LSD <sub>(0.05%)</sub>		13.2	7.1	NS	3.06	NS
Pr>F		0.0341	0.0133	0.0541	0.0294	0.2842
% C.V.		10.94	38.59	22.22	26.49	70.10

<sup>1</sup>DON = Deoxynivalenol

Table 2. Yield and test weight by fungicide, fungicide and adjuvant rate and durum (Lebsock) growth stage at time of fungicide treatment Langdon, 2010.

Fungicide	Fungicide Rate <sup>1</sup>		Growth Stage Feekes	Yield		Test Weight	
	Fl. oz./acre			Bu. /acre	Lbs. / bushel		
Untreated control	NA			79.5	58.5		
DPX-LEM17	24		10.51 (early anthesis)	73.3	58.0		
A9232D (Cogito EC)	7		10.51	78.2	58.1		
Prosaro	6.5		10.5 (or approximately 5 days prior to 10.51)	78.9	58.6		
Prosaro	6.5		10.5.1	83.0	58.7		
Prosaro	6.5		5 days after 10.51 treatments are applied	81.1	59.3		
Caramba	13.5		10.5	75.9	57.7		
Caramba	13.5		10.5.1	85.0	59.3		
Caramba	13.5		5 days after 10.5.1 treatments are applied	78.2	58.5		
Headline	6		9.0 (flag leaf fully emerged)	72.9	57.9		
Headline	6		10.0 (boot stage)	74.6	57.8		
Headline	6		10.5	73.2	57.9		
LSD <sub>(0.05%)</sub>				7.6	NS		
Pr>F				0.0367	0.2170		
% C.V.				6.82	1.60		

<sup>1</sup> All fungicide treatments except A9232D and DPX-LEM17 included Induce adjuvant at rate of 0.125% v/v. DPX-LEM17 was tank mixed with Induce adjuvant at a rate of 0.25% v/v.

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### Six-Row Barley (Celebration) Uniform Fungicide Study, Langdon 2010

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Table 1. Fusarium head blight incidence, index and severity, deoxynivalenol (DON) and leaf necrosis by fungicide and six-row barley (Celebration) growth stage at time of fungicide treatment, Langdon 2010.

Fungicide	Growth Stage Feekes	Fusarium Head Blight				
		Incidence %	Index	Head Severity %	DON <sup>1</sup> Ppm	Leaf Necrosis %
Untreated control		98.8	8.9	9.2	1.9	27.0
DPX-LEM17	10.51 (early anthesis)	97.5	8.3	8.7	0.9	36.7
A9232D (Cogito EC)	10.51	96.3	8.3	8.8	1.0	26.8
Prosaro	10.5 (or approximately 5 days prior to 10.51)	100.0	10.2	10.2	1.5	27.9
Prosaro	10.5.1	96.3	8.2	8.9	1.4	31.5
Prosaro	5 days after 10.51 treatments are applied	97.5	7.9	8.3	0.5	42.8
Caramba	10.5	98.8	9.5	9.7	1.5	27.3
Caramba	10.5.1	100.0	8.9	8.9	0.8	33.1
Caramba	5 days after 10.5.1 treatments are applied	96.3	8.1	8.7	0.8	37.8
Headline	9.0 (flag leaf fully emerged)	97.5	8.0	8.4	1.6	33.3
Headline	10.0 (boot stage)	97.5	8.1	8.4	1.5	23.8
Headline	10.5	100.0	8.4	8.4	1.7	28.3
LSD <sup>(0.05%)</sup>		2.8	1.3	1.0	0.463	NS
Pr>F		0.0225	0.0104	0.0130	<0.0001	0.0895
% C.V.		2.84	14.7	11.8	36.7	38.7

<sup>1</sup>DON = Deoxynivalenol

Table 2. Yield, test weight and plump by fungicide, fungicide and adjuvant rate and six-row barley (Celebration) growth stage at time of fungicide treatment Langdon, 2010.

Fungicide	Fungicide Rate <sup>1</sup>		Growth Stage Feekes	Yield		Test Weight		Plump	
	Fl. oz./acre	NA		Bu./acre	Lbs./bushel	Lbs./bushel	%		
Untreated control		NA		120.3	47.4	94.1			
DPX-LEM17	24		10.51 (early anthesis)	115.4	48.0	96.0			
A9232D (Cogito EC)	7		10.51	118.5	47.4	94.7			
Prosaro	6.5		10.5 (or approximately 5 days prior to 10.51)	113.8	48.5	96.1			
Prosaro	6.5		10.5.1	114.0	48.1	95.6			
Prosaro	6.5		5 days after 10.51 treatments are applied	113.3	48.4	96.9			
Caramba	13.5		10.5	118.6	47.9	94.7			
Caramba	13.5		10.5.1	113.5	47.9	95.4			
Caramba	13.5		5 days after 10.5.1 treatments are applied	120.2	48.0	96.7			
Headline	6		9.0 (flag leaf fully emerged)	109.3	47.5	94.7			
Headline	6		10.0 (boot stage)	117.9	48.1	96.8			
Headline	6		10.5	113.3	48.3	96.1			
LSD <sub>(0.05%)</sub>				5.0	0.7	2.0			
Pr>F				0.0003	0.0431	0.0415			
% C.V.				4.3	1.5	36.7			

<sup>1</sup>All fungicide treatments except A9232D and DPX-LEM17 included Induce adjuvant at rate of 0.125% v/v. DPX-LEM17 was tank mixed with Induce adjuvant at a rate of 0.25% v/v.

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## FLAX FUNGICIDE APPLICATION FOR REDUCING THE EFFECTS OF PASMO DISEASE

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### MATERIALS AND METHODS

This study was designed as a randomized complete block with four replicates, and was conducted at the Langdon Research Extension Center, NDSU at Langdon, North Dakota (N48° 45.3', W98° 17.5') and conducted in 2010. Plots were 7 rows wide 6-inch spacing between rows and 20 ft. row length and were planted with a double disk Almaco plot drill on 9 May. Seeding rate was 2.8 million PLS<sup>-acre</sup>. An untreated plot was planted between treated plots to collect and minimize spray drift to the adjacent plots. Crop production practices recommended by North Dakota State University Extension Service were followed (Kandel, 2007).

The Canadian cultivar CDC Bethune was used in this study. The plots were artificially inoculated with pasmo by spreading infected straw collected from 2009 in the center of each plot 6-8 days prior to the initiation of flowering at the rate of 80 grams of straw. Treatments are listed in Table 1. Early flower growth stage application was made on 6 Jul (wind speed 10 MPH from the W and air temperature 66° F at 9:30 a.m.) and late bloom growth stage application on 14 Jul (wind speed 2 MPH from the SW and air temperature 66° F at 9:00 a.m.). An untreated check was included as a control (Table 1). Fungicide was applied with a CO<sub>2</sub> backpack spray unit equipped with a three nozzle boom operated at 40 psi with Spraying Systems XR8001 nozzles oriented vertically delivering 9.2 GPA.

The soil type was a Barnes/Svea complex (fine-loamy, mixed superactive Frigid, Calcic Hapludolls/mixed superactive Frigid, Pachic Hapludolls) (Soil Survey Staff, 2008). Hard red winter wheat was produced on this site in 2009. The soil was tilled in the fall with a chisel plow with attached spring tooth harrows once. In spring prior to planting and tilling, N fertilizer (28-0-0) was broadcast on the site to bring the soil and applied N level to 75 lb. acre<sup>-1</sup>. The site was tilled with a spring tooth cultivator equipped with 23 cm sweeps on 18 cm spacing with attached spring tooth harrows immediately before planting.

Pasmo disease was assessed on leaves on 6, 13 and 21 Jul and 3 and 19 Aug and the stems on 21 Jul and 31 Aug. The leaves were assessed using the 1-9 scale with 1 = no sign of disease and 9 = high disease severity and leaf death. Stem severity was assessed using the 1-9 scale with 1 = no sign of disease and 9 = high disease severity and plant death. The plot was harvested on 25 Aug with a Hege plot combine and

the threshed sample collected. Yield, test weight, seed weight and oil concentration were determined. Area under disease progress curve (AUDPC) was calculated for each location. The data were analyzed with analysis of variance separating means with Fischer's protected least significant differences ( $P \leq 0.01$ ) with SAS (SAS, 1999).

## Results and Discussion

The supplemental watering system was not used in 2010 due to excessive distance from the water source. Pasm disease developed less intensely in 2010 than in previous studies that received supplemental water. The flax matured earlier in 2010 than 2009 and was harvested nearly a month earlier. At the 6 Jul assessment date the Headline treatment had lower disease score than Quash (3 oz. /a), Q8X63, Stratego Pro with Induce, Picoxystrobin with Induce and Luna Privilege with Induce, Table 1. No differences in foliar disease were measured on 13 Jul. At the 21 Jul assessment date Quash (4 oz. /a), both Picoxystrobin treatments without Induce and LEM17 had lower disease scores than some of the other fungicides. Only the picoxystrobin treatments had lower disease scores than the untreated. At the 3 Aug assessment date several treatments were statistically better than the untreated. The list includes all treatments **except**; LEM 17 and Quash. At the 19 Aug all the leaves had senesced. Several treatments had lower disease levels than the untreated when comparing the AUDPC (area under the disease progress curve. These treatments included both two fungicide application treatments, both Picoxystrobin without Induce and Q8X63, ProPulse with Induce and both Stratego Pro treatments. Pasm was not present on the stem at the first sample date and at very low levels at the second sample date. No differences were measured with this assessment indicating a questionably value in quantifying disease with this method in some environments. Many of the disease survey assessments use incidence on the stem to determine prevalence of Pasm. Several treatments increased yield. The most effective treatments were two fungicide timings and the Stratego Pro with Induce. Ineffective treatments for increasing yield included LEM17, ProPulse and Quash as a single treatment. Only the high rate of LEM17 and Quash failed to increase test weight over the untreated. All fungicide applications increased seed weight compared to the untreated. Oil was not statistically affected by fungicide treatment in this study. All fungicide applications reduced the dark brown damaged seed count in the sample compared to the untreated. No differences were determined for damage seed for black or scabby seeds. In previous studies at Langdon we have been unable to isolate any pathogen from any of the visually scabby seed. This damage may be related to weathering which would not be affected by a fungicide application.

Headline, the only commercially labeled fungicide for use on flax again increased yield over the untreated. Several other fungicide treatments also were effective in increasing yield. Some of the new fungicides offer different mode of action and should benefit growers if a label could be obtained. The results of this study and the Carrington study will be forwarded to the fungicide suppliers in hopes of generating interest in further testing and label acquisition of one or more of the fungicides for use on flax.



Table 1. Pasmio leaf and stem disease score, yield, test weight, seed weight, oil and visually damage seed by category, Langdon, 2010.

Fungicide/ Adjuvant	Leaf Disease Score					Stem Disease Score				
	Rate/acre	Supplier	6 Jul	13 Jul	21 Jul	3 Aug	19 Aug	AUDPC	21 Jul	19 Aug
Untreated			2.25	3.50	4.75	7.75	9.0	303.3	0	1.5
Headline	6 fl. oz.	BASF	1.50	3.50	5.00	6.25	9.0	277.9	0	1.0
LEM17	24 fl. oz.	DuPont	1.75	2.75	3.75	7.75	9.0	282.8	0	1.0
LEM17	16 fl. oz.	DuPont	2.25	3.75	4.00	6.75	9.0	277.1	0	1.0
Luna Privilege	6.84 fl. oz.	Bayer	1.75	3.75	5.25	5.50	9.0	270.6	0	1.0
Luna Privilege	6.84 fl. oz.	Bayer	2.75	4.00	5.25	6.25	9.0	288.5	0	1.3
+ Induce	+0.125%/v									
Penncozeb and	2 lb. and	UPI and	2.25	3.50	4.00	4.75	8.8	238.4	0	1.0
Proline	5.7 fl. oz.	Bayer								
Penncozeb and	2 lb. and	UPI and	2.00	3.75	4.50	5.25	9.0	256.9	0	1.0
Quash	3 oz.	Valent								
Picoxystrobin	6 fl. oz.	DuPont	2.25	2.75	3.50	5.25	9.0	237.1	0	1.0
Picoxystrobin	4 fl. oz.	DuPont	1.75	2.75	3.50	5.25	9.0	235.6	0	1.0
Picoxystrobin	6 fl. oz. +	DuPont	2.75	3.50	4.00	6.25	9.0	268.1	0	1.0
+ Induce	0.25%/v									
ProPulse	10.26 fl. oz.	Bayer	2.00	3.50	5.00	5.75	9.0	270.6	0	1.5
ProPulse +	10.26 fl. oz.	Bayer	2.25	3.25	4.25	5.00	9.0	246.4	0	1.0
Induce	+0.125%/v									
Q8X63	19.2 fl. oz.	DuPont	2.50	4.00	4.25	4.75	9.0	248.0	0	1.0
Quash	3 oz.	Valent	2.50	3.25	5.75	6.75	9.0	298.0	0	1.3
Quash	4 oz.	Valent	2.00	3.75	3.75	7.25	9.0	281.8	0	1.3
Stratego Pro	4.65 fl. oz.	Bayer	2.25	2.75	4.25	6.25	9.0	264.8	0	1.3
Stratego Pro	4.65 fl. oz.	Bayer	2.50	3.00	5.00	5.50	9.0	264.3	0	1.0
+ Induce	+0.125%/v									
LSD (0.05)			0.8	NS	1.20	1.28	NS	37.6	0	NS
<u>Source of Variation</u>										
Replicate			0.0480	<0.0001	0.0100	<0.0001	0.4005	<0.0001		0.7633
Treatment			0.0962	0.1052	0.0072	<0.0001	0.4736	0.0095		0.2333
% C.V.			25.4	20.2	19.1	15.2	1.3	9.9		27.9

Fungicide	Fungicide/ Adjuvant Rate/acre	Application Timing	Yield Bu./a	Test		Seed Weight g/1000	Oil %	Visually Damaged Seed Count/100			
				Weight Lb./bu.	Dark Brown			Black	Scabby 1	Scabby 2	
Untreated			28.2	52.0	5.18	40.4	5.24	2.8	1.2	0.4	
Headline	6 fl. oz.	Late bloom	34.4	53.2	5.80	42.7	0.24	1.7	0.3	0.2	
LEM17	24 fl. oz.	Late bloom	31.4	52.2	5.53	42.2	1.22	2.2	0.7	0.0	
LEM17	16 fl. oz.	Late bloom	32.7	53.2	5.70	42.3	0.46	3.4	0.0	0.5	
Luna Privilege	6.84 fl. oz.	Late bloom	37.3	53.0	5.76	44.2	0.47	0.3	0.7	1.0	
Luna Privilege	6.84 fl. oz.	Late bloom	34.5	53.2	5.53	42.1	0.00	5.3	0.0	0.5	
+ Induce	+0.125%/v										
Penncozeb and	2 lb. and	Early and	38.6	53.6	6.01	43.0	0.96	1.9	0.0	0.2	
Proline	5.7 fl. oz.	late bloom									
Penncozeb and	2 lb. and	Early and	39.9	53.6	5.95	43.3	0.86	1.0	1.0	0.7	
Quash	3 oz.	late bloom									
Picoxystrobin	6 fl. oz.	Late bloom	32.7	53.5	5.80	42.3	0.22	1.0	0.7	0.5	
Picoxystrobin	4 fl. oz.	Late bloom	35.4	53.8	5.78	43.1	0.70	1.2	0.0	0.2	
Picoxystrobin	6 fl. oz. +	Late bloom	35.7	53.6	5.77	42.6	1.20	2.2	5.9	1.2	
+ Induce	0.25%/v										
ProPulse	10.26 fl. oz.	Late bloom	32.3	53.4	6.07	43.1	0.70	0.2	0.4	0.5	
ProPulse	10.26 fl. oz.	Late bloom	33.3	53.5	6.02	41.8	0.49	1.2	0.0	0.5	
+ Induce	+0.125%/v										
Q8X63	19.2 fl. oz.	Late bloom	35.0	53.6	5.87	43.3	0.47	1.1	1.6	0.9	
Quash	3 oz.	Late bloom	33.3	53.3	5.76	42.0	0.67	2.3	0.2	0.2	
Quash	4 oz.	Late bloom	32.9	52.6	5.67	43.4	1.08	0.9	0.4	0.2	
Stratego Pro	4.65 fl. oz.	Late bloom	35.3	53.9	5.81	42.7	0.44	2.3	0.5	1.6	
Stratego Pro	4.65 fl. oz.	Late bloom	38.7	53.6	6.11	43.2	0.24	3.1	0.7	1.0	
+ Induce	+0.125%/v										
LSD (0.05)			5.8	1.0	0.04	NS	2.12	NS	NS	NS	
<u>Source of Variation</u>											
Replicate			0.0056	<0.0001	0.0073	<0.0001	0.2739	<0.0001	0.4054	0.6543	
Treatment			0.0303	0.0170	0.0022	0.2406	0.0098	0.1174	0.2937	0.6675	
% C.V.			11.7	1.3	4.6	3.4	171.8	106.5	308.2	158.9	

## **LREC Foundation Seed Increase Program**

The Langdon Research Extension Center produces, conditions, and sells Foundation grade seed for producers and seedsmen in the region. The varieties of crops that are available for the 2011 growing season are listed below:

**HRSW** – Glenn, Faller

**Durum** – Lebsock

**Barley** – Lacey, Celebration

**Flax** – Rahab 94

Growers who have grown seed for certification in one of the last four years who request seed prior to December 1 will be guaranteed an allocation. Any seed inventories available after December 1 will be sold on a first come, first serve basis. Seed availability and prices may be obtained by calling the Langdon Research Extension Center.

**Visit our web site at [www.ag.ndsu.nodak.edu/langdon](http://www.ag.ndsu.nodak.edu/langdon)**

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Scott Halley	Crop Protection
John Lukach	Extension Area Specialist/Winter Cereals Agronomist
Sharon Ring	Administrative Assistant and Horticulture
Richard Wilhelmi	Research Specialist
Kevin Beauchamp	Research Technician
James Chaput	Research Technician
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