

Use of this Report

The 2008 Annual Research Report is intended to provide the producer with long term variety yield, agronomic, and disease data from the Langdon Research Extension Center and its off-station locations. Some older varieties, variety trials and variety agronomic information are omitted because of space limitations, but can be found on our web site.

Choosing a variety is one of the most important decisions a producer makes in raising a successful crop. Factors to consider when selecting a variety include yield, disease resistance, protein, straw strength, height, stability across years, maturity, test weight, 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. For small grain and flax variety descriptions get extension bulletins A-574, A-1049, A-1067 and A-1196 from your extension office.

The data in this report are averages of several plots at each location. The trials are designed so that "real" yield differences can be statistically separated from yield differences that occur by chance. The least significant difference (LSD) values given in this 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 2 varieties is less than 5 bushels, they are not significantly different from one another. If there is a "NS" for an LSD 5% value it means there was no real difference between any varieties or the trial was too variable to detect a real difference.

2004-2008 Growing Season Summaries

2004

Cold! This best describes what will be remembered for the 2004 growing season. Temperatures were much below normal May-August. Corn GDD was only 70-80% of normal across NE ND. Fewer GDD delayed development of early season crops at least two weeks but the effect on later row crops was far more severe. An August 20 frost across the region resulted in damage to many crops, especially corn, drybeans and soybeans. August was the coldest on record at Langdon. Mid-May brought rain, snow and ice to the region which delayed spring planting two weeks or more. Precipitation levels across the region were 100-

125% of normal from April to September. Harvest conditions from August to mid-September were poor resulting in reduced quality especially in small grains. Many corn, drybean and soybean fields across the region were not harvested.

2005

Precipitation in September-October 2004 was generally above normal across the region while November 2004 - April 2005 precipitation was below normal. Stored soil moisture levels were adequate for the start of the 2005 growing season. Precipitation levels in May were slightly above normal and were nearly double the normal in June. This resulted in many drowned out areas in fields or saturated soil conditions which had a detrimental effect on crop yields. Temperatures were below normal in May and August, near normal in June and July and above normal in September. The first killing frost occurred in early to late October which allowed soybeans and row crops to mature. Fusarium head blight was at the highest levels seen for several years resulting in reduced yields and quality. Sclerotinia in canola and sunflowers were at low levels.

2006

Precipitation levels in September-October 2005 were generally below normal while the November 2005 - April 2006 precipitation was above normal. Stored soil moisture levels were good for the start of the growing season. Even though May precipitation levels were below normal, most crops got off to a good start with adequate stands. Precipitation amounts for June and July were much below normal in many areas. Rainfall events were spotty. Despite the lack of rainfall yield levels were better than expected because of the good stored soil moisture levels. Quality of the crop was excellent. Disease levels of fusarium head blight and sclerotinia in canola and sunflowers were almost non-existent.

2007

Precipitation levels in September-October 2006 were generally below normal while the November 2006 - April 2007 precipitation was near normal. May rainfall was 200-300% above normal while June rainfall was 100-200% above normal. July rainfall was also above normal will August rainfall dropped to 50-100% of normal. The early heavy rain caused some stand problems in canola. Foliar diseases on

small grain were the main disease problem during the growing season.

2008

Precipitation levels in September-October 2007 were near normal in the RRV while below normal elsewhere. November-April precipitation was mostly below normal. May rainfall was generally 25-50% of normal with temperatures 4-5 degrees below normal. June brought rainfall 100-150% of normal with temperatures 2-3 degrees below normal. July and August rainfall was variable across the region ranging from 50 to 200% of normal. July temperatures were below normal while August was near normal. The cool temperatures with adequate moisture resulted in excellent small grain yields. The row crops matured because of the late frost but harvest was difficult with wet field conditions.

2008 Variety Trials

The NDSU Langdon Research Extension Center, in addition to its on-station research program, conducted variety research trials at five off-station locations in 2008. Trial locations were 1 mile west of Michigan, 2 miles north of the Perth, Walsh small grains at the Walsh County Farm at Park River, Walsh soybeans 3 miles east and 1 mile north of Park River, Pembina County trials 2.5 miles north of the junction of Hwy 5 and 18 east of Cavalier and the Ramsey County trials 2 miles west of Devils Lake on Hwy 2. These locations are in cooperation with the farmer, the Extension Service and the County Agricultural Improvement Association.

Frost Dates

Length of growing season in Northeast North Dakota varies quite dramatically from the northwest to southeast. The performance of a variety or hybrid in a given year can also vary dramatically depending on the number of frost free days. Knowing the average frost free period in your area is particularly important when choosing a variety or hybrid of corn, sunflower, soybeans and drybeans.

The following table gives the frost dates 32⁰ and 28⁰ F, and the number of days above 32⁰ and 28⁰ F for Langdon, Cavalier, Park River, and Devils Lake. Normal (50 percent probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date) frost dates and frost free days are from 1961-1990.

	32 degrees F			28 degrees F		
	Last Spr.	First Fall	Frost Free Days	Last Spr.	First Fall	Frost Free Days
Langdon	Frost	Frost	Days	Frost	Frost	Days
Normal	5/28	9/13	108	5/17	9/21	128
2008	5/27	10/10	136	5/27	10/14	140
2007	5/27	9/9	105	4/14	10/22	191
2006	5/21	9/8	110	5/12	9/28	139
2005	5/16	10/5	142	5/15	10/6	144
2004	5/27	8/20	85	5/14	10/1	140
Cavalier						
Normal	5/18	9/23	127	5/5	10/2	149
2008	5/27	10/3	129	5/11	10/16	158
2007	5/27	9/11	107	4/25	9/12	140
2006	5/21	9/9	111	5/5	9/9	127
2005	5/15	10/5	143	5/15	10/19	157
2004	5/16	8/20	96	5/16	10/2	139
Park River						
Normal	5/16	9/25	132	5/5	10/3	151
2008	5/11	10/20	162	5/11	10/27	169
2007	5/12	9/9	132	4/13	10/24	194
2006	5/21	10/9	157	4/8	10/11	186
2005	5/15	10/5	143	5/03	10/26	176
2004	5/14	8/20	98	5/14	10/3	142
Devils Lake						
Normal	5/17	9/21	127	5/6	10/1	148
2008	5/27	10/14	140	5/5	10/20	168
2006	5/11	9/28	140	4/8	9/28	173

2008 Off-Station Crop Management						
Location(County/ Field Trial	Previous Crop	Seeding Rate Unit/Acre	Yield Goal	Planting Date	Harvest Date	Row Spacing
Cavalier (Pembina)						
HRSW	wheat	1.50 million pls	60 bu	5/1	8/25	6
Soybeans	wheat	200,000 pls	60 bu	5/22	10/17	6
Drybeans	wheat	70,000-90,000 pls	2000 lb	5/22	9/30	30
Park River (Walsh)						
HRSW	fallow	1.50 million pls	60 bu	5/2	8/26	6
Barley	fallow	1.25 million pls	110 bu	5/2	8/15	6
Soybean	wheat	200,000 pls	60 bu	5/16	10/16	6
Michigan (Nelson)						
HRSW	barley	1.50 million pls	60 bu	5/2	8/26	6
Devils Lake (Ramsey)						
HRSW	wheat	1.50 million pls	60 bu	5/5	8/28	6
Durum	wheat	1.50 million pls	60 bu	5/5	8/28	6
Barley	wheat	1.25 million pls	120 bu	5/5	--	6
Soybean	wheat	200,000 pls	50 bu	5/21	11/2 Conv	6
RR trial not harvest, wet field conditions						
Perth (Towner)						
HRSW	wheat	1.50 million pls	60 bu	5/5	8/19	6
Durum	wheat	1.50 million pls	60 bu	5/5	8/19	6
Barley	wheat	1.25 million pls	100 bu	5/5	8/14	6
Location	Soil Type					
Cavalier	Dovray silty clay loam					
Park River	Wheat-Glyndon silt loam, Soybean-Fairdale silt loam					
Michigan	Hamerly loam					
Devils Lake	Overly silty clay loam					
Perth	Hamerly-Barnes					

pls=pure live seeds

2008 Crop Management - Langdon						
Field Trial	Previous Crop	Seeding Rate Unit/Acre	Yield Goal	Planting Date	Harvest Date	Row Spacing
Barley	Soybean	1.25 million pls	120 bu	4/29	8/19	6
Buckwheat	Soybean	700,000 pls	1700 lb	5/28	10/1	6
Canola - Conv, LL, CL	Soybean	610,000 pls	2500 lb	5/8	9/10	6
Canola - RR	Soybean	610,000 pls	2500 lb	5/8	9/10	6
Corn	Soybean	28,000 thinned	110 bu	5/15	10/31	30
Durum	Soybean	1.50 million pls	60 bu	4/29	9/8,9	6
Drybean	Soybean	70-90,000 pls	2500 lb	5/23	10/1	30
Field Pea	Soybean	300,000 pls	60 bu	4/30	9/9	6
Flax	Soybean	2.8 million pls	40 bu	4/30	9/17	6
Forage (Cool Season)	Soybean	varied	varied	5/8	8/5	6
Forage (Warm Season)	Soybean	varied	varied	6/4	9/3	6
HRSW	Soybean	1.50 million pls	60 bu	4/29	8/29	6
HRWW	Soybean	1.0 million pls	60 bu	9/12/07	8/21,25	6
Mustard	Soybean	610,000 pls	2000 lb	5/8	8/19	6
Oats	Soybean	1.0 million pls	120 bu	4/29	9/19	6
Soybean - Conventional	Soybean	200,000 pls	60 bu	5/20	10/8	6
Soybean - RR	Soybean	200,000 pls	60 bu	5/20	10/9	6
Sunflower - Confection	Wheat	17,000 thinned	2500 lb	5/15	10/24	30
Sunflower-Oil	Wheat	20,000 thinned	2500 lb	5/15	10/24,27	30
Soil Type - Svea-Barnes loam						