B.C. GRAIN PRODUCERS ASSOCIATION

2011 FIELD CROP VARIETY PERFORMANCE

Funding provided by …

Canada

Investment Agriculture Foundation of British Columbia

B.C. PEACE RIVER GRAIN INDUSTRY DEVELOPMENT COUNCIL

BC Grain Producers Association
2011 Field Crop Variety Performance
BC Peace River Region

Introduction, Acknowledgements, and Cautionary Notes

This report summarizes the *Field Crop Variety Performance Trials* that were conducted by the *Research Committee* of the *BC Grain Producers Association*, and is the result of funding and partnering with the following organizations:

Investment Agriculture Foundation of British Columbia – IAF
BC Peace River Grain Industry Development Council - BCPRGIDC

LOUIS DREYFUS (Dawson Creek office) should be recognized for their contribution via kernel protein analysis, **HADLAND SEED FARM LTD.** and **HILL FARMS LTD.** for bulk certified seed contributions, as well as several other anonymous local producers for their own certified seed-lot contributions, whom should all be recognized for their help with these trials and thus the results you see here. We thank these individuals/organizations for their "in-kind" support towards making our field-testing and the production of this book possible. Various other private organizations make financial contributions for field days, etc., throughout the year; an invaluable influx of funds to the support of the research department. Special thanks also extended to the site cooperators who continue to generously give their support of the program, ***Vic Blanchette*** for the Fort St. John site, and ***School District 59*** for the use of the ***Hudson School Farm*** near Dawson Creek, BC**.** A further word of thanks goes out to ***Dennis Meier*** of Dawson Creek who continuously and generously offers us space on his adjacent farm for all our field equipment.

We should also thank our field and lab team whom once again helped to make this year yet another successful year. They are full-time technicians ***Satoru Nosho***, ***Brandi Smith***, and ***Michelle Whelpton*** whom all worked very hard and well together. Many thanks yet once again to ***Colleen Anderson*** for her help this time, in the review of this report. We extend a notice of thanks as well to all our part-time workers too numerous this season to list, but whom were invaluable in a year of increased workload (largest number of plots tested historically) and with all the heavy weeding pressures associated with the intense rainfall.

This document reports all tested materials grown during the 2011 growing season from performance trials placed at both the Dawson Creek and Fort St. John research farms, and as such the **data compiled in this report is derived from "head-to-head" comparisons only**. Materials not included in 2011, but which were previously tested, may now be viewed via earlier publications and are available for viewing or downloading at ***www.bcgrain.com***.

Multiple-year testing for any one variety is our goal, but often new materials have only been tested for one year, the current year usually. This can sometimes result in an unfair representation of the new single-year materials against statistically stronger multiple-year materials even though this report cautions readers about this possible effect. To try to resolve this issue starting in 2007 we now display the results in two graphs for each crop type, one with only the current year's results, and one with multiple-year results. In the multiple-year graphs, new one-year data is left out. Where one-year results are shown, be it in current-year graphs or in charts, readers still **must interpret and use such one-year data with considerable caution**, as a variety may change position regarding both yield and maturity as additional results are obtained. This is simply the effect of compiling data from variable weather patterns over time. The more station years, (defined as one test site at one location in one year), that can be used to produce an average, the more stable and reliable the result will be, hence the association's steadfast efforts to procure multi-year data. By providing readers now with a separate "current year graph" for each crop-type, many of the risks with looking at one-year data is still there but the chances of misrepresenting a new entry against its older neighbors is greatly reduced.

This book is produced without bias and is reported to the best of our ability from our own site data collection (except where noted as in any additional canola data). It should only be used as a guide, and where labels are available with your product, be it seed or other product, always follow label directions.

For More Information Contact:

Martin Moore - Research Committee Chair
B.C. Grain Producers Association
P.O. Box 6004, Fort St.John, BC V1J 4H6
Tel: (250) 787-2588

Clair F. Langlois - Research Manager
B.C. Grain Producers Association
401 - 114th Avenue, Dawson Creek, BC V1G 2Z7
Tel: (250) 782-2557 FAX: (250) 784-2299

Kerry Clark - P.Ag. Crop Protection Specialist,
B.C. Ministry of Agriculture, Dawson Creek, BC FAX: (250) 784-2299 Tel: (250) 784-2559 or 1-877-772-2200

BC Grain Producers Association
- Reference & Terminology -

Station Years
The number of station years that the variety has been tested can be seen in the yield tables inside the square brackets [ ]. A station year is one test site at one location in one year. For example, a canola trial conducted at two locations over three years would have six station years, or [6]. We advise using caution if the data is based on *less than three station years in total*, or less than two years at both locations. This of course is a concern for canola where often a line does not even stay in the seed market for more than two years.

Interpreting Yield Results
Crops in this book are managed using the same level of inputs as field sized recommendations would suggest. Small-plot research plots offer better consistency and can be better controlled, whereas wet areas and variable soil fertility affect field-scale crop production. However, small plots are subject to *edge effect*. "Edge effect" is caused by the spaces around the individual plots allowing extra sunlight to penetrate, boosting yields on these exposed outer plants, as compared to the average plant in a field scale situation that would be shadowed by its neighbors. **The important concept here is that these effects are *equal* for *all* small plots in a given trial, and we can therefore compare varieties in each trial and look at resulting yields *relative to one another*.** Yields here are thus the result of *small plot production* and the same *level* of production is unlikely to be achieved on a large-scale basis. Unfortunately statistics, which are vital, cannot be used on "*percent of check variety*" data. Thus, we elected to show *bushels per acre* for this current year for the sole purpose of displaying statistical results for the current year. Treat *all* yields, (*percent of check* and *bushels per acre*), as relative results. Agronomic information for the check variety has been bolded in all the tables to identify it.

Plant Breeders Rights
The Plant Breeders' Rights (PBR) gives plant breeders "copyright" protection of a variety for up to 18 years. Once a variety has been granted PBR, the breeder has control over the multiplication and sale of the seed. The breeder can take legal action for damages if someone infringes on their rights. Farmers may save some seed for seeding the next year on their own farm, but the sale of the crop as seed for planting purposes to others is not allowed. Many new transgenic herbicide-tolerant varieties have additional restrictions through '*technical use agreements*', so be aware of these too, as they often replace PBR status and can have strong consequences if ignored. Varieties protected by PBR can be identified by their PBR logo on a seed bag, seed tag, or advertising material. This book tries to identify such PBR lines within "*Variety Description*" tables with a solid square box. Ultimately however, it is the responsibility of the grower to know which line is PBR.

Certified Seed
The cost of *certified seed* is a small additional expense in relation to total crop production input costs, especially when changing to a different variety. Certified seed assures genetic purity, high germination rates and low percentage of foreign seed when compared to common seed. Certified seed can be purchased in bulk through authorized seed dealer networks, (see "Seed Distributors" at the back of this report).

Seed Treatment
Choosing disease-resistant varieties and using certified seed is good, but treated seed goes a long way in the fight against plant diseases too. The cost of a fungicide or a combined fungicide/insecticide seed treatment can be a small price to pay for the amount of protection and peace of mind they provide. The right seed treatment choice is important as some perform better than others for certain crop types. Treated seed must not contaminate grain delivered to an elevator or be used for feed.

- Cereal seed should be treated to control *true loose smut* and early season *seedling* diseases.
- Seed of rye, winter wheat, and flax should be treated to control *seedling blight*. Winter wheat and rye also require protection against *smut*.
- Canola seed should be treated to control seed borne *blackleg*, *damping off*, and early *flea beetle* attack.

Ergot
The fungal disease Ergot can attack the grain of all varieties of wheat, barley, rye, triticale, and most common species of grass. Oat varieties are rarely attacked. Grain having 0.1% ergot is considered poisonous to livestock and should not be used as feed. The black rice-like "*seed mummies*" can be spotted prior to harvest in heads during a field inspection.

Seed Inoculation
Peas can make much of their nitrogen (N) requirement from the air through a partnership with soil bacteria called *Rhizobium*. The pea seed must be inoculated immediately before or during seeding with a proper strain of bacteria specific to peas. *Rhizobia* are living organisms so check the expiry date on the package and follow inoculant label directions carefully. Generally it is a good idea prior to its use and even during use if possible, to try and reduce the inoculant's exposure to sunlight, open-air, and warmth. Granular formulations placed with the seed have traditionally offered good results in Peace soils, but new inoculants are constantly entering the market place which may offer excellent inoculation as well. Survival of residual rhizobia organisms in our cool Peace soils is not consistently reliable; making use of inoculant with seed is a good form of insurance. High soil nitrogen levels (over 60 kg N/ha) will reduce nodulation in the field regardless of inoculation. Cool, dry, or excessively wet soils, provide a harsh environment for proper inoculation and under these conditions, a low level of nodulation formation will be seen. Granular inoculant placed with the seed at plant was used on all pea-trials seen here in this report.

Seeding Rates

While the following *range* of seeding rates has given consistent yields for each crop in these trials, experience has shown that the top end of the range provides even more consistent results. **Risk can be reduced under conditions of stress that impair emergence by increasing seeding rates.** In addition, higher seeding rates can reduce the amount of secondary tillering, **produce earlier and more uniform maturity**, and reduce the amount of green kernels at harvest.

For example, tests conducted by the Beaverlodge Research Station several years ago throughout the Peace region showed that by increasing the seeding rate of wheat from 80 to 120 lbs/ac (90 to 134 kg/ha), that the time to maturity was reduced by two days. Our own BCGPA trials involving seeding rates in barley did not show similar results upon conclusion. Initially our results did show that when increasing seeding rates to 2.25 to 2.5 bushels per acre for barley, it decreased maturity from 2 to even 4 days, which is significant by harvest. However, over the full 5 years of the project, results became less significant. Wheat was not tested.

Suggested Rates of Seeding

Wheat	90 - 120 lb/ac	100 - 135 kg/ha
CPS Wheat	130 - 180 lb/ac	145 - 200 kg/ha
Barley	75 - 100 lb/ac	85 - 110 kg/ha
Oats	70 - 90 lb/ac	85 - 100 kg/ha
Flax	26 - 40 lb/ac	30 - 35 kg/ha
Rye	65 - 85 lb/ac	73 - 95 kg/ha
Peas	150 - 300 lb/ac	165 - 330 kg/ha
Argentine Canola	5 - 8 lb/ac	6 - 9 kg/ha
Polish Canola	5.5 lb/ac	6 kg/ha

Due to large differences in seed sizes, seeding rates can vary considerably. Therefore, one should base the seeding rate on a *target number* of *viable seeds per square foot*. Using the 1000 kernel weights, adjusting for percent germination, and allowing for seed decay (3%), calculate the number of pounds of seed required per acre.

Crop Type	Seeds / sq.ft	Avr. 1000 K wt
Wheat - CWRS	24 - 25	35 - 44 g
- CPS / CWES	24 - 25	44 - 52 g
Barley - 6 Row	24 - 25	35 - 43 g
- 2 Row	24 - 25	44 - 53 g
Oats - Hulled	24 - 25	38 - 47 g
Rye	24	30 - 35 g
Peas	8	200 - 345 g

Example (using peas):

Target **8** pea plants per square foot, the variety has a 1000 K wt. of **250** grams, and you estimate that between seed decay and percent germination of the seed lot that you will have, **90**% of the seeds will grow into healthy plants. Thus…

$$\frac{\textbf{8}\ \text{plants/sq.ft} \times \textbf{250}\ \text{(g/1000 K)}}{\textbf{90}\ (\%)} \times \textbf{10} = \textbf{222}\ \text{lb/acre}$$

Answer: You would plant 222 lbs. of pea seed/acre.

BC Grain Producers Association - 2011 Growing Conditions -

Our farming season started on the cool side with sufficient moisture, delaying planting by about a week from "normal", if one can still define what a "normal spring" is anymore. Good fortune occurred during planting with only a few interruptions from light rains and one significant wet snowfall, but all research plots made it into the ground prior to any significant deadlines commercial operations would face such as "crop insurance deadline" on canola. All crops emerged beautifully showing great prospects for a good crop year, however in mid-June until mid-July it all changed with heavy rains. Worst was at the Dawson Creek (DC) site but both DC and Fort St. John (FSJ) sites produced record breaking rainfall at this time. At one point the entire field at DC was under water for at least 24-36 hours. There were three such major rain events in 2011 over just three weeks, which delayed weed control from finishing or even starting (depending on the crop) and it caused significant root-rot in canola at the DC site. This root-rot eventually took its toll on over half of the canola trials at DC – fortunately without long-last affects however on those canola trials that make up the data in this publication. All other crop trials (and surviving canola trials) all seemed to pull through the flooding without any long-lasting affects and went on to produce incredibly high yields of high quality and with little to no lodging by harvest.

Harvest was of course delayed under this scenario as crops (all crops) just did not want to stop growing which put us all into the leaner daylight days of autumn with little heat to offer, morning fogs, and early evening dews, meaning a very late harvest as most producers can relate to. To our fortune however, a killing frost stayed away from both the DC and FSJ sites until well after Thanksgiving, a highly unusual event, but one that allowed harvest of all trials to finish up (however with encouragement from crop desiccation in most cases), and get any post-harvest site preparations to occur before the snow flew too. The real amazing thing through all this is that other than field peas, even with the higher than normal heights and heavy yields, lodging was a non-event.

Interpreting Data

The yield for each variety is reported on a regional basis for the Dawson Creek and Fort St.John areas as well as an average for the entire BC Peace. Also, the number of years each variety has been tested is given for each of the two regions. In the following examples, the number of years is indicated in **[ ]** right after the yield. "Station years" are the total number of times a variety has been tested in these trials.

Two Row Barley — **Yield as % of AC Metcalfe**

Variety		Type	Dawson Creek 2011 Yield	Dawson Creek 2003-2011 Avg.	Dawson Creek Stn.Yrs.	Fort St.John 2011 Yield	Fort St.John 2003-2011 Avg.	Fort St.John Stn.Yrs.	B.C. Peace 2011 Yield	B.C. Peace 2003-2011 Avg.	B.C. Peace Stn.Yrs.
XENA	2-row	feed	115	113	[3]	125	105	[5]	120	109	[8]

Number of **years** the variety was tested at **each station**

Number of **times** in total the variety was tested in the **BC Peace**.

note: above example is dramatization

Statistical Values Entries into the Regional trials are replicated (or repeated) four times (three times minimum) at both locations. Replication is used to derive an overall average per entry per trial, and allow for statistical analysis.

Coefficient of Variance (CV value) , given as a percentage, it tells us how statistically sound or reliable a given data set is. Generally, any value less than or equal to 15% is considered to be acceptable and indicates "sound" data. This means if you were to repeat the trial under similar conditions, you would get similar results, or at least we are 95% confident that we would. We tend to be a little more lenient on this 15% for such things as disease or insect data, as these are normally highly variable due to the nature of the beast, but we do not like to see yield data from a single trial with a high CV value. Anything less than 10% is considered excellent.

Least Significant Difference test (LSD value) , are those little letters behind the *data means* . Basically, if two or more *data means* (or averages) have the same letter behind their number, they are NOT significantly different from one another according to statistics. Therefore, means or averages with the same letter should not be viewed as one being "superior" or "inferior" from the other or others of the same letter. LSD takes variability into account, and compares "apples" to "apples".

Example:

	Dawson Creek		
	2011	2003-2011	
Variety	**Yield**	**Avg.**	**Stn.Yrs.**
Super X	105 ab	102	[3]
Superdooper Y	107 a	105	[3]
So-So 101	100 b	98	[2]
Old Goody	95 c	97	[6]

In this example, some people might think variety "*Superdooper Y*" is superior to variety "*Super X*" and "*So-So 101*". This is not true according, to statistics, "*Superdooper Y*" is superior to variety "*So-So 101*", but is equivalent to "*Super X*" in yield because both "*Superdooper*" and "*Super X*" have the letters "*a*" with them. In this example, "*Super X*" is not superior (or significantly different), from variety "*So-So 101*" either, as both have a "*b*" behind their means. Also, "*Superdooper Y*", "*Super X*", and "*So-So 101*" are superior to, (or a better term is significantly different from), "*Old Goody*". Note, in this report, we only have LSD values for this current year's data, and thus you should still take notice of the long term averages. Note that preferably data should have six station years, (usually meaning 3 years at each site), but that for **any varieties with less than three station years of data, you must compare data with caution.**

Fertilizer Rates Used In 2011

Fort St. John, B.C. **Legal Description: SW19 Tp84 R18 W6**

Crop	Fertilizer Applied	kg/ha	Placement	lbs actual/ac Recom. vs. Applied	Enviro-Test Labs N	$P_2 0_5$	K_2O	S
Canola	27-0-0-12	214	banded	Recommended* =	35	25	15	25
	6-26-30	55	banded	Actually applied =	57.7	26.7	14.7	22.9
	12-52-0	30	in-furrow					
Flax	27-0-0-12	214	top dressing	Recommended* =	40	30	15	15
	6-26-30	50	banded	Actually applied =	57.4	25.5	13.4	22.9
	12-52-0	30	in-furrow					
Cereals	34.5-0-0-0	95	banded	Recommended* =	0	32	15	10
	6-26-30	50	banded	Actually applied =	34.7	25.5	13.4	0
	12-52-0	30	in-furrow					
Peas	20-0-0-24	55	banded	Recommended* =	0	25	15	10
	6-26-30	50	banded	Actually applied =	15.7	25.5	13.4	11.8
	12-52-0	30	in-furrow					

Dawson Creek, B.C. **Legal Description: SW20 Tp78 R14 W6**

Crop	Fertilizer Applied	kg/ha	Placement	lbs actual/ac Recom. vs. Applied	Enviro-Test Labs N	$P_2 0_5$	K_2O	S
Canola	27-0-0-12	214	banded	Recommended* =	35	25	15	25
	6-26-30	55	banded	Actually applied =	57.7	26.7	14.7	22.9
	12-52-0	30	in-furrow					
Flax	27-0-0-12	214	banded	Recommended* =	0	25	20	12
	6-26-30	50	banded	Actually applied =	57.4	25.5	13.4	22.9
	12-52-0	30	in-furrow					
Wheat & Barley	34.5-0-0-0	160	banded	Recommended* =	50	22	20	5
	6-26-30	50	banded	Actually applied =	54.4	25.5	13.4	0
	12-52-0	30	in-furrow					
Malt Barley & Oats	34-0-0-0	127	banded	Recommended* =	35	22	15	10
	6-26-30	50	banded	Actually applied =	44.4	25.5	13.4	0
	12-52-0	30	in-furrow					
Peas	20-0-0-24	55	banded	Recommended* =	0	20	15	12
	6-26-30	50	banded	Actually applied =	15.7	25.5	13.4	11.8
	12-52-0	30	in-furrow					

Recommended* = recommendations given by Enviro-Test Labs of Calgary, Alberta, calculated from soil samples pulled earlier in the spring of the same calendar year.

Pesticide Applications

Fort St. John, B.C.	Legal Description: SW19 Tp84 R18 W6		
Crop	**Date Applied**	**Product Used**	**Product Rate**
Canola	18-Jun-11	Muster (ethametsulfuron methyl)	12 g/ac
		Lontrel 360 (clopyralid)	227 ml/ac
		Poast Ultra (sethoxydim)	200 ml/ac
		Merge	400 ml/ac
Field Peas	9-Jun-11	Sencor (metribuzin) 75%DF	77g/ac
		MCPA Sodium	190ml/ac
Flax	18-Jun-11	Buctril - M (bromoynil + MCPA)	400 ml/ac
Wheat, Barley, Oat	18-Jun-11	Buctril - M (bromoynil + MCPA)	400 ml/ac

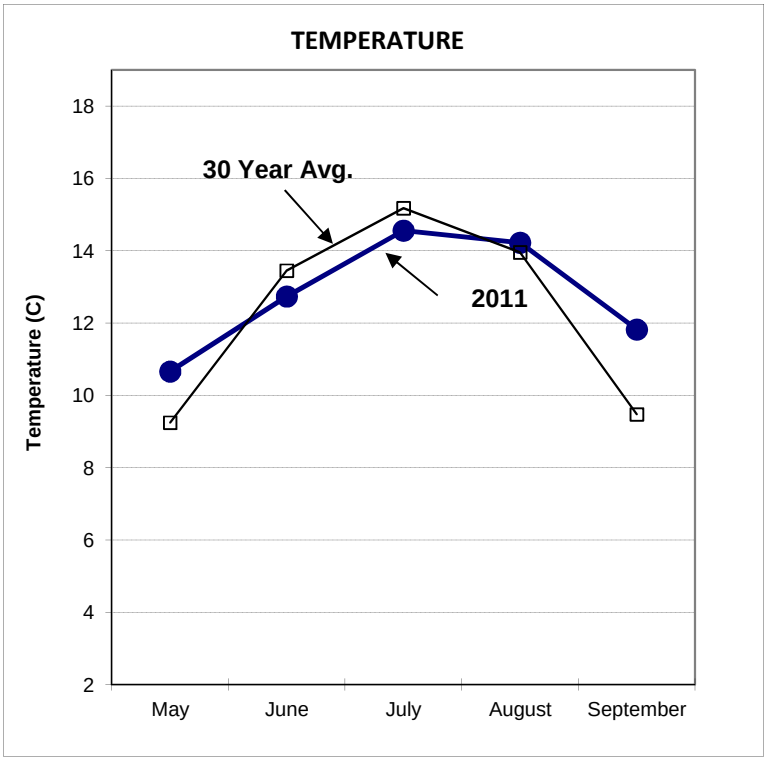
Dawson Creek, B.C.	Legal Description: SW20 Tp78 R14 W6		
Crop	**Date Applied**	**Product Used**	**Product Rate**
Canola (napus & rapa)	11-Jun-11	Muster (ethametsulfuron methyl)	12 g/ac
		Lontrel 360 (clopyralid)	227 ml/ac
		Poast Ultra (sethoxydim)	200 ml/ac
		Merge	400 ml/ac
Field Peas	8-Jun-11	Sencor (metribuzin) 75%DF	77 g/ac
		MCPA Sodium	190 ml/ac
	22-Jun-11	Assure II	200ml/ac
		Sure-Mix	6L/1000L H2O
Flax	13-Jun-11	Buctril-M (bromoynil + MCPA)	400 ml/ac
	22-Jun-11	Assure II	200ml/ac
		Sure-Mix	6L/1000L H2O
Malt Barley	22-Jun-11	Refine SG	12 g/ac
Oat		Ag Surf	2L/1000L H2O
		MCPA Ester	228ml/ac
Wheat, Barley, Trit	8-Jun-11	Refine SG	12 g/ac
		Ag Surf	2L/1000L H2O
		MCPA Ester	228ml/ac

All seed was treated with seed treatment; canola with Helix Xtra®, cereal & flax with Raxil FL®, and pea seed with Apron Maxx RTA.

Planting and Harvest Information

Loc.	Crop	Seeding rate lbs/ac	Seeding rate kg/ha	Date Planted	Soil Temp (C^o) @ plant	Seeding Depth	Harvest Date	Harvesting Method
FSJ	**Napus Canola**	8	8.9	16-May-11	12	0.5 - 1 inch	15-Oct-11	desiccate/direct
	Flax	40	45	13-May-11	10	0.75 - 1 inch	19-Oct-11	desiccate/direct
	Barley	77	86	25-May-11	10	0.5 - 1 inch	19-Sep-11	desiccate/direct
	CWRS Wheat	90	101	25-May-11	10	0.5 - 1 inch	9-Oct-11	desiccate/direct
	CPS/CWES	90	101	25-May-11	10	0.5 - 1 inch	24-Oct-11	desiccate/direct
	Oats	81	90	25-May-11	10	0.5 - 1 inch	9-Oct-11	desiccate/direct
	Triticale	117	131	25-May-11	10	0.5 - 1 inch	24-Oct-11	desiccate/direct
	Peas	149	167	10-May-11	5	1 - 2 inch	8-Sep-11	desiccate/direct
DC	**Napus Canola**	8	8.9	15-May-11	10	0.5-1 inch	14-Oct-11	desiccate/direct
	Flax	40	45	12-May-11	7	0.5-1.25 inch	16-Oct-11	desiccate/direct
	Barley	77	86	21-May-11	11	0.5 - 1 inch	14-Sep-11	desiccate/direct
	CWRS Wheat	90	101	21-May-11	11	0.5 - 1 inch	7-Oct-11	desiccate/direct
	CPS/CWES	90	101	21-May-11	11	0.5 - 1 inch	20-Oct-11	desiccate/direct
	Oats	81	90	28-May-11	11	0.5 - 1.25 inch	8-Oct-11	desiccate/direct
	Triticale	117	131	21-May-11	11	0.5 - 1 inch	20-Oct-11	desiccate/direct
	Peas	149	167	11-May-11	8	0.5-1.25 inch	12-Sep-11	desiccate/direct

Dawson Creek Weather Information 2011



TEMPERATURE

Month	Monthly Avg. Temp. (C)	Temp.* 30 year Avg. (C)
May	11	9
June	13	13
July	15	15
August	14	14
September	12	9

Frost Events: -1.3 May 7 -1 Sept 28
-1.8 May 8 **-2.5 Oct 1**

Killing Frost (-2.2 C) Free Period: 163 days
April 21 - October 1

Accumulated Growing Degree Days:
2011: 1137
1994-2011 Average: 1164

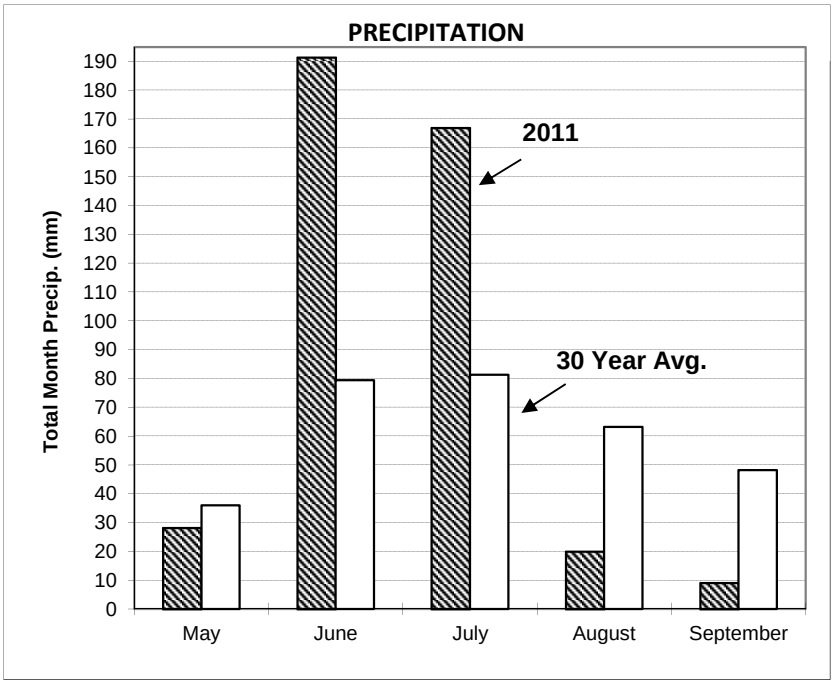
* 30 year average DC from 1968-1997
Source: Environment CANADA

PRECIPITATION

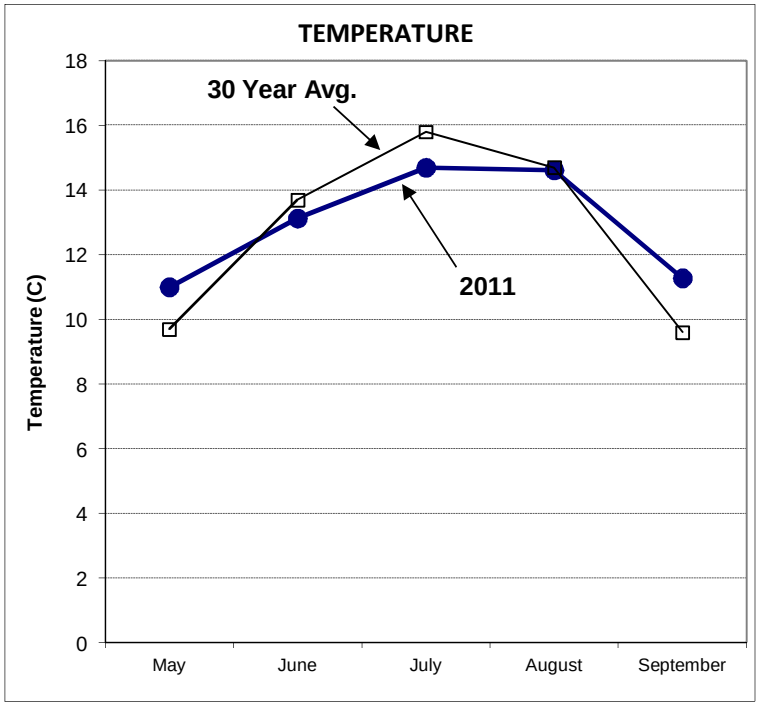
Month	Monthly Precipitation (mm)	Precipitation * 30 year Avg. (mm)
May	28	36
June	191	79
July	167	81
August	20	63
September	9	48

Data is provided by an on site weather station maintained by the Canadian Wheat Board through its Weatherfarm® program (a cooperation with WeatherBug®) and in conjunction with the BC Grain Producers Association.

weatherfarm



Fort St. John Weather Information 2011



TEMPERATURE

Month	Monthly Avg. Temp. (C)	Temp.* 30 year Avg. (C)
May	11	10
June	13	14
July	15	16
August	15	15
September	11	10

Frost Events: **-2.2 May 1** -1.9 Sept 13
-2.2 June 5 **-2.3 Oct 3**

Killing Frost (-2.2 C) Free Period: 120
June 5 - October 3

Accumulated Growing Degree Days:
2011: 1159
1994-2011 Average: 1152

* 30 year average FSJ from 1968-1997
source: Environment CANADA

PRECIPITATION

Month	Monthly Precipitation (mm)	Precipitation * 30 year Avg. (mm)
May	11	39
June	128	71
July	115	81
August	11	58
September	19	49

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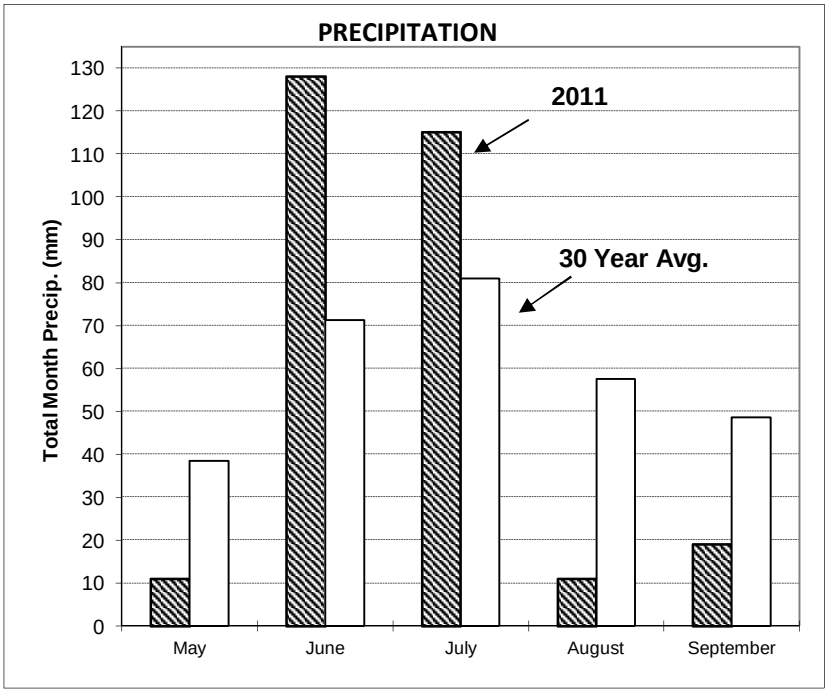
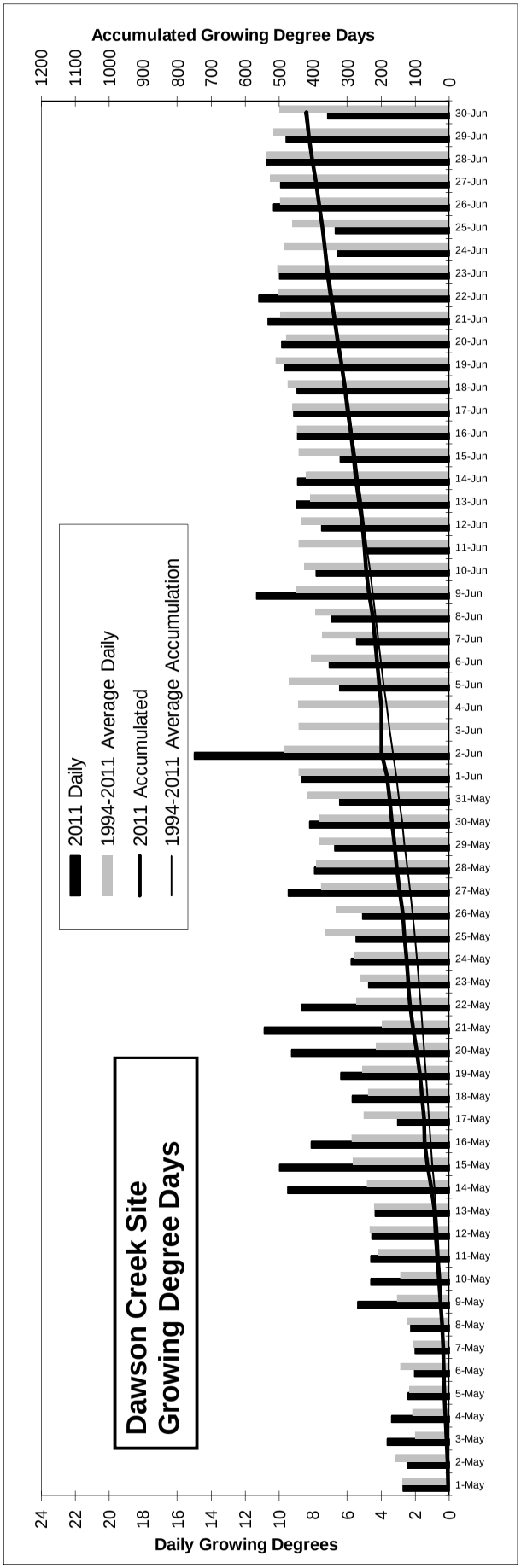
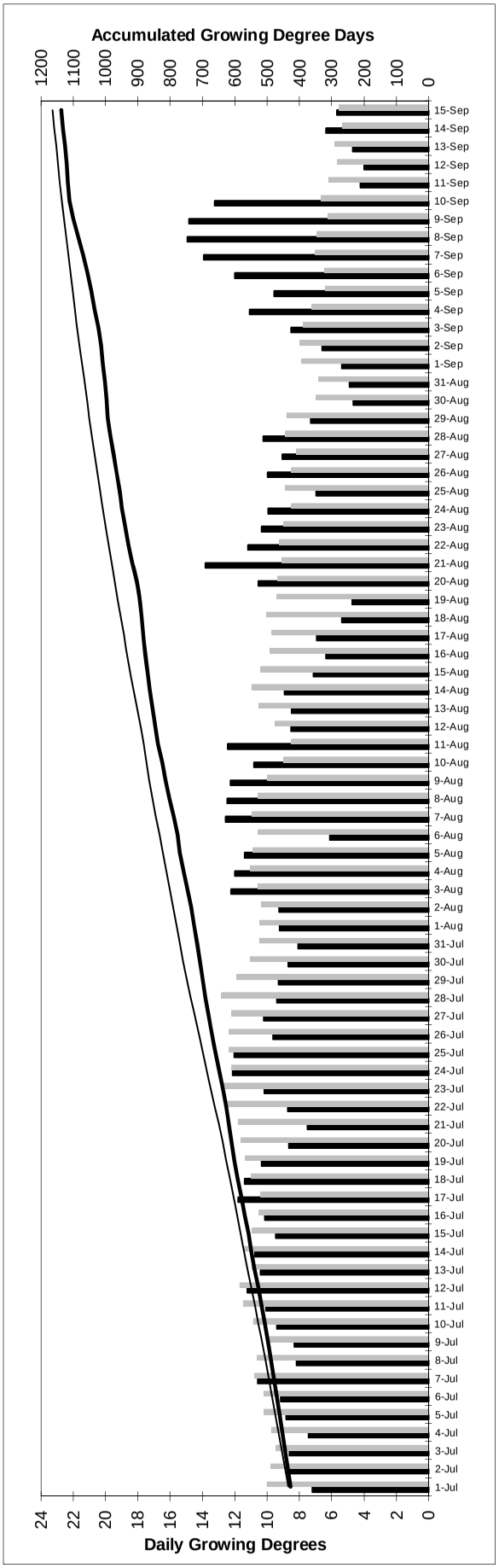
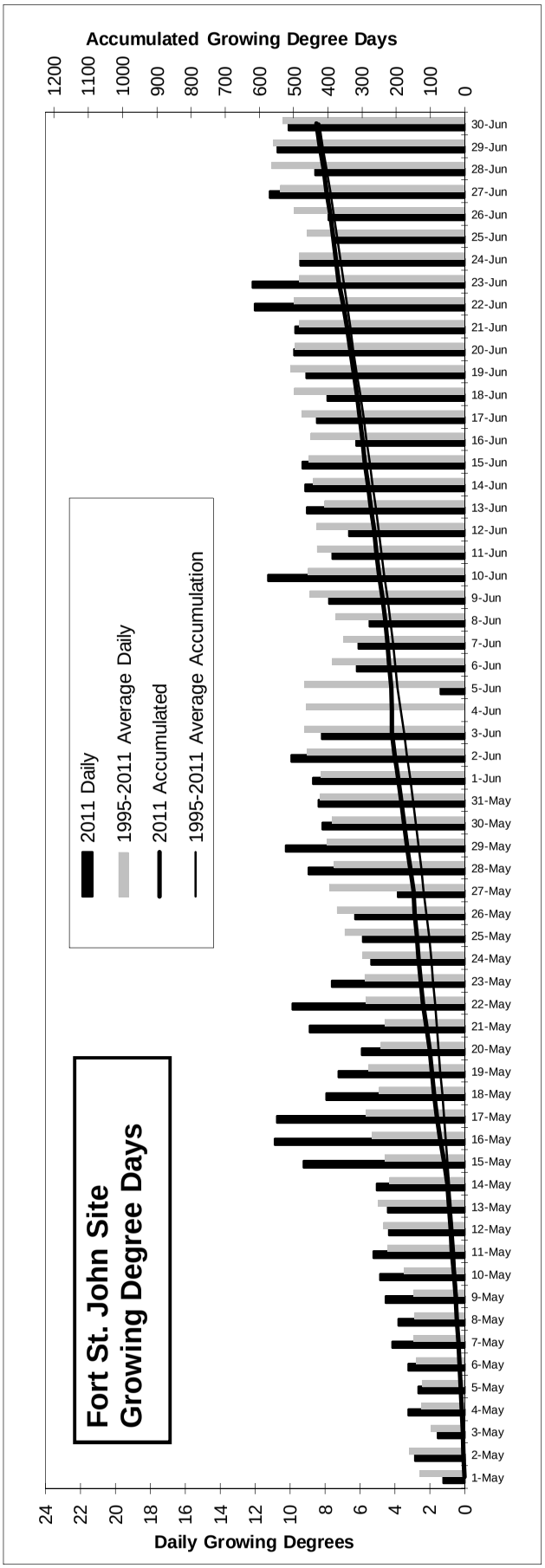
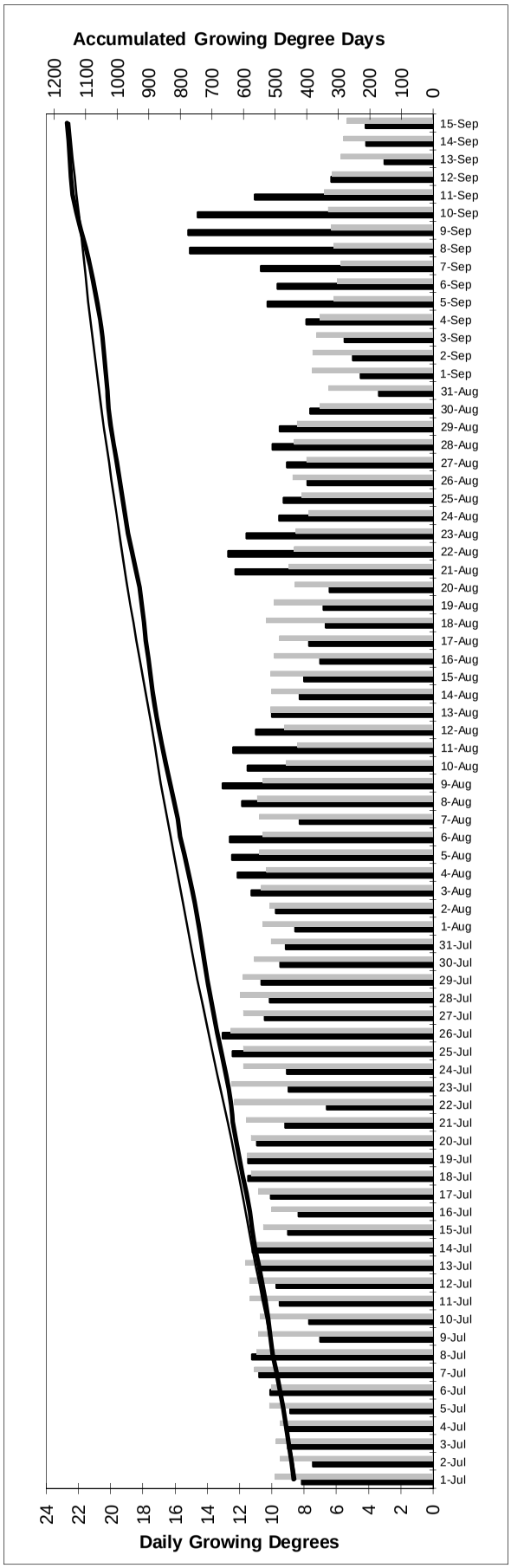
weatherfarm




Dawson Creek Site
Growing Degree Days
2011 Daily
1994-2011 Average Daily
2011 Accumulated
1994-2011 Average Accumulation
Accumulated Growing Degree Days
Daily Growing Degrees


Accumulated Growing Degree Days
Daily Growing Degrees


Accumulated Growing Degree Days
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
30-Jun
29-Jun
28-Jun
27-Jun
26-Jun
25-Jun
24-Jun
23-Jun
22-Jun
21-Jun
20-Jun
19-Jun
18-Jun
17-Jun
16-Jun
15-Jun
14-Jun
13-Jun
12-Jun
11-Jun
10-Jun
9-Jun
8-Jun
7-Jun
6-Jun
5-Jun
4-Jun
3-Jun
2-Jun
1-Jun
31-May
30-May
29-May
28-May
27-May
26-May
25-May
24-May
23-May
22-May
21-May
20-May
19-May
18-May
17-May
16-May
15-May
14-May
13-May
12-May
11-May
10-May
9-May
8-May
7-May
6-May
5-May
4-May
3-May
2-May
1-May
2011 Daily
1995-2011 Average Daily
2011 Accumulated
1995-2011 Average Accumulation
Fort St. John Site
Growing Degree Days
24
22
20
18
16
14
12
10
8
6
4
2
0
Daily Growing Degrees


Accumulated Growing Degree Days
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
15-Sep
14-Sep
13-Sep
12-Sep
11-Sep
10-Sep
9-Sep
8-Sep
7-Sep
6-Sep
5-Sep
4-Sep
3-Sep
2-Sep
1-Sep
31-Aug
30-Aug
29-Aug
28-Aug
27-Aug
26-Aug
25-Aug
24-Aug
23-Aug
22-Aug
21-Aug
20-Aug
19-Aug
18-Aug
17-Aug
16-Aug
15-Aug
14-Aug
13-Aug
12-Aug
11-Aug
10-Aug
9-Aug
8-Aug
7-Aug
6-Aug
5-Aug
4-Aug
3-Aug
2-Aug
1-Aug
31-Jul
30-Jul
29-Jul
28-Jul
27-Jul
26-Jul
25-Jul
24-Jul
23-Jul
22-Jul
21-Jul
20-Jul
19-Jul
18-Jul
17-Jul
16-Jul
15-Jul
14-Jul
13-Jul
12-Jul
11-Jul
10-Jul
9-Jul
8-Jul
7-Jul
6-Jul
5-Jul
4-Jul
3-Jul
2-Jul
1-Jul
24
22
20
18
16
14
12
10
8
6
4
2
0
Daily Growing Degrees

List of Certified Seed Distributors

Alliance Seed Corp.
c/o Parrish & Heimbecker 2149 Imperial Access Rd.
Dawson Creek Toll-Free:1(800) 315-6336
www.allianceseed.com
www.parrishandheimbecker.com

Bayer CropScience Inc. Canada
#100, 3131-114 Ave. SE Calgary, AB T2Z 3X2
Toll-Free :1(888) 283-6847 Phone:(403)-723-7400
www.bayercropscience.ca

Brett - Young Seeds Ltd.
P.O. Box 99, St. Norbert Postal Station,
Winnipeg, MB R3V 1L5
Toll-Free: 1(800) 665-5015
www.brettyoung.ca

Canseed Ltd.
R.R. #1, Box 1155 Stettler, AB T0C 2L0
Phone: (403)-742-4091 Fax: (403)-742-0621

Canterra Seeds Ltd.
201-1475 Chevier Blvd. Winnipeg, MB R3T 1Y7
Phone: (204)-988-9750 Fax:(204) 487-7682
www.canterra.com

Cargill Ltd.
P.O. Box 5900 300-240 Graham Avenue Winnipeg, MB
R3C 4C5 Phone:(204)-947-0141 Fax:(204)-947-6444
www.cargill.ca

DL Seeds
P.O. Box 2499 Morden, MB R6M 1C2
Phone: (204)-331-2361 Fax:(204)-325-8052
www.dlseeds.ca

FP Genetics
426 McDonald Street Regina, SK S4N 6E1
Toll Free: 1(877) 791-1045 Fax: 1(877) 791-1046
www.fpgenetics.ca

Hadland Seed Farm Ltd.
8161 253 Rd, Baldonnel BC,V0C 1C0
Phone: (250)-789-3646

Mastin Seeds
RR #1 Sundre, AB T0M 0X0
Phone:(403)-556-2609 Fax: (403)-507-2609
www.mastinseeds.com

Monsanto Canada Inc (DEKALB)
900 - 1 Research Road Winnipeg, MB R3T 6E3
Toll-Free:1(800) 667-4944 Phone: (204)-985-1000
www.monsanto.ca

Pioneer Hi-Bred Ltd. (DuPont)
P.O. Box 730, 7398 Queen's Line Chatham, ON
N7M 5L1 Phone: (519)-352-6350
www.pioneer.com/canada

Richardson International
2800 One Lombard Place, Winnipeg, MB
R3B 0X8
http://www.richardson.ca

Saskatchewan Pulse Growers
104 - 411 Downey Road Saskatoon, SK S7N 4L8
Phone: (306)-668-5556 Fax: (306)-668-5557
www.saskpulse.com

SeCan Association
501-300 March Road Kanata, ON K2K 2E2
Toll-Free:1(800) 764-5487 Phone: (613)-592-8600
www.secan.com

Seed Depot Corp.
P.O. Box 208 Pilot Mound, MB R0G 1P0
Phone: (204)-825-2000
www.seeddepot.ca

SeedNet
Ron Markert Phone: (403)-485-6708
http://www.seednet.ca

Solick Seeds Ltd.
Po Box 97 Halkirk, AB T0C 1M0
Phone: (403)-884-2358 Fax: (403)-884-2360

Syngenta Seeds Canada Inc.
15910 Medway Road, RR 1 Arva, ON N0M 1C0
Toll-Free:1(800) 756-7333
www.nkseed.com
www.syngenta.ca

T & L Seeds
P.O. Box 216 North Battleford, SK S9A 2Y1

Viterra
P.O. Box 6600 CanWest Global Place 201
Portage Avenue Winnipeg, MB R3C 3A7
Toll Free:1(866) 569-4411 Fax: 1(866) 310-4156
Dawson Creek Phone:(250)-782-9264
Fort St.John Phone:(250)-785-3445
www.viterra.ca

Wedge Farms(Smart&Natural Foods ltd)
box 276 363 River Road Arborg, MB R0C 0A0
toll free: 1(877) 738-2144 fax: 1(204)-376-2201
www.mysmartfoods.com

Wagon Wheel Seed Corp.
Box 229 Churchbridge, SK S0A 0M0
Phone: (306)-896-2236 Fax: (306)-896-2696
http://www.wagonwheelseeds.sk.ca

Western Ag Labs
#3-411 Downey Road Saskatoon, SK. S7N 4L8
Toll Free:1(888) 978-0373 Fax:(306)-978-4140
http://www.westernaglabs.com