B.C. GRAIN PRODUCERS ASSOCIATION

FIELD CROP VARIETY PERFORMANCE

Cereal Plots at Fort St. John

B.C. PEACE RIVER REGION 2002

B.C. PEACE RIVER GRAIN INDUSTRY DEVELOPMENT COUNCIL

PEACE RIVER AGRICULTURE DEVELOPMENT FUND

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BC Grain Producers Association
2002 Field Crop Variety Performance
BC Peace River Region

Introduction and Acknowledgements

This report summarizes the *Field Crop Variety Performance Trials* that are 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 BC
BC Peace River Grain Industry Development Council
Peace River Agricultural Development Fund

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Cameron Fines, Fort St. John

Further thanks goes out to the field and lab team who helped make this a successful year. They are Research Assistant **Colleen Giesbrecht**, and Field Technicians **Greg Anderson**, **Adam Boe**, and **Dean Mattson**.

This report, like past issues of "*Field Crop Variety Performance Trials*", reports all regional trial results from plots grown during the 2002-growing season. Readers of this report must **interpret and use one-year data with considerable caution,** particularly when viewing the scatter-point graphs on yield and maturity. A variety more often than not changes position on the graph after additional results are obtained, simply as the result of variable weather patterns averaged in over time. This publication reports the 2002 research results from both Dawson Creek and the Fort St. John site, with a summary of 1995-2002 data where available.

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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 be six station years. We advise using caution if the data is based on less than six station years in total, or three years at any given location.

Interpreting Yield Results
Yields are displayed as *percentage of the check varieties* and as *bushels per acre (bus/ac)*, wherever possible. Yields here are the result of *small plot production*, and the same level of production is unlikely to be achieved on a large-scale basis. Wet areas and variable soil fertility affect field scale production, in contrast to the research plots where consistency is attempted. However, the crops in this book are managed using the same level of inputs as field sized recommendations would suggest, but 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 as such we can therefore compare varieties in each trial and look at resulting yields as *relative to one another*.** Unfortunately statistics, which are vital, cannot be used on "*percent of check variety*". Thus we elected to show *bushels per acre* where possible, for the sole purpose of displaying statistical results. Treat *all* yields, (*percent of check* and *bushels per acre*), as relative.

Agronomic information for the check variety has been bolded in all the tables.

Plant Breeders Rights
The Plant Breeders' Rights (PBR) gives plant breeders' "copyright" protection of a new variety for up to 18 years. Once a variety has been granted PBR, the breeder has control over the multiplication and sale of seed of a new variety. The breeder can take legal action for damages if someone infringes on their right. Farmers may save some seed for seeding the next year on their own farm. Sale of the crop as seed for planting purposes is not allowed. Some new transgenic herbicide tolerant varieties have additional restrictions through '*technical use agreements*'.

Varieties protected by PBR can be identified by their PBR logo on a seed bag, seed tag or advertising material.

Good 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 other crop and weed seeds when compared to common seed. Certified seed can be purchased in bulk from authorized establishments, (see page 42).

Seed Treatment
Choosing disease-resistant varieties and using certified, plump, treated seed goes a long way in the fight against plant disease. The cost of a fungicide or combined fungicide/insecticide seed treatment is a small price to pay for the amount of protection they can provide. 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*.
- 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
Ergot can attack 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 grain.

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. Granular formulations placed with the seed, have had good results in our Peace soils. Rhizobium is living organisms so check the expiry date on the package and follow inoculant label directions carefully. High soil nitrogen levels (over 60 kg N/ha) will reduce nodulation in the field. 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 was used on all pea trials seen here.

Seeding Rates
While the following range of seeding rates has given equal yields for each crop in trials, experience has shown that the top end of the range provides 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.

Tests conducted by the Beaverlodge Research Station several years ago throughout the Peace 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.

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 size with a crop like peas, seeding rates can vary considerably. A preferred way of dealing with seeding rate is to base it 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	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

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 grow into healthy plants.

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

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

BC Grain Producers Association 2002 Growing Conditions

The spring of 2002 was delayed in the BC Peace River region by about three weeks due to late spring moisture and cool backward weather. However, most crops made up for the lost time rapidly during the month of June, when above normal warm weather set in. Heading and flowering dates were only a day or two off from last year's calendar dates within the research plots.

Unfortunately two things then happened. In the South Peace precipitation stopped after June, giving a total of only some 149 mm of rainfall over the entire barley-growing period for example. The second thing to happen for the whole BC Peace region was to see a return to cool weather for the months of July and August. Crops were once again set back in growth, although drought induced stress in the South Peace area "helped" force crops to catch up at the expense most often of quality.

Drought brought outbreaks of *Thrips*, (very small plant-juice sucking insect), to barley and wheat mainly in southern areas, which brought an early death to those all so important flag leaves. Their presence often went unnoticed as the pest congregated under the leaf sheath of the flag leaf, but the final result was a noticeable downgrading of seed quality, (such as frost-like symptoms reducing plumpness, color, and bushel weights).

Late season moisture, although minimal in total amounts, came in September and October, which caused a lot of re-growth issues to develop across the entire BC Peace, and even delayed maturity further. In the fall harvest was delayed due to this continued dampness, which took the form mainly as heavy prolonged fog, but also some early snow.

The lack of strong rains meant lodging was never a large issue, nor was disease on most crops. Some *Scald* on barley and *Septoria* on wheat was present in plots in the North Peace, and results have been used here to add to the database.

2002 was a tough year all around, but one that can be used to help screen out late lines for most crops.

Refer to the back of this report for a total weather report via graphs.

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.

Six Row Barley — **Yield as % of Harrington**

Variety	Type	Dawson Creek 2001 Yield	Dawson Creek 1993-2001 Avg.	Dawson Creek Stn.Yrs.	Fort St.John 2001 Yield	Fort St.John 1993-2001 Avg.	Fort St.John Stn.Yrs.	B.C. Peace 2001 Yield	B.C. Peace 1993-2001 Avg.	B.C. Peace Stn.Yrs.
AC HARPER	feed		113	[3]	125	105	[5]	125	109	[8]

Number of years the variety was tested at each station

Statistical Values Entries into the Regional trials in 2002 were replicated (or repeated) four times at both locations. Replication is used to derive an overall average per entry per trial, and allow for statistics.

Coefficient of Variance (CV value) , is a number given as a percentage, that basically 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 or "sound" data. This means if you were to repeat the trial under similar conditions, you would likely get the same 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 such things are normally highly variable due 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, which most of 2002 data is.

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		
	2001	1993-2001	
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 2002 data, and thus you should still take great notice of the long term averages. **For any varieties with less than three station years of data, you must compare data with caution.**

Fertilizer Rates

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

Estimated available	N	P	K	S	Fertilizer Applied	kg/ ha	Placement	Product: Recom. vs. Applied	Enviro-Test Labs N	P_2O_5	K_2O	S
Canola												
kg/ha					27-0-0-12	214	banded	Recommended =	50	30	15	12
lb/ac					6-26-30	100	banded	Actually applied =	76	47	34	29
					12-52-0	30	in-furrow	(soil sampling results came in after planting)				
Flax												
kg/ha	40	46	1345	55	20-10-10-5	171	banded	Recommended =	40	30	15	0
lb/ac	36	41	1200	49				Actually applied =	42	37	19	10
pH 6.4					12-52-0	30	in-furrow					
Wheat & Barley												
kg/ha	85	33	751	37	20-10-10-5	151	banded	Recommended =	30	35	10	5
lb/ac	76	29	670	33				Actually applied =	38	34	17	8
pH 6.1					12-52-0	30	in-furrow					
Oats					20-10-10-5	100	banded	Actually applied =	21	23	9	4
Peas												
kg/ha	28	15	628	22	20-0-0-24	75	banded	Recommended =	25	40	15	15
lb/ac	25	13	560	20	6-26-30	75	banded	Actually applied =	26	39	25	20
pH 6.2					12-52-0	12	in-furrow					

Dawson Creek, B.C. **Legal Description:** NE18 Tp78 R14 W6

Estimated available	N	P	K	S	Fertilizer Applied	kg/ ha	Placement	Product: Recom. vs. Applied	Enviro-Test Labs N	P_2O_5	K_2O	S
Canola												
kg/ha	93	50	706	30	27-0-0-12	214	banded	Recommended =	50	30	15	12
lb/ac	83	45	630	27	6-26-30	100	banded	Actually applied =	76	47	34	29
pH 5.7					12-52-0	30	in-furrow	(soil sampling results came in after planting)				
Flax												
kg/ha	62	35	829	34	20-10-10-5	123	banded	Recommended =	12	30	12	5
lb/ac	55	31	740	30				Actually applied =	32	31	14	7
pH 6.3					12-52-0	30	in-furrow					
Wheat & Barley												
kg/ha	117	49	740	38	20-10-10-5	137	banded	Recommended =	30	30	15	10
lb/ac	104	44	660	34	0-0-62	20	banded	Actually applied =	35	54	29	8
pH 5.7					12-52-0	30	in-furrow					
Oats	(20-10-10-5 not applied with oats)							Actually applied =	8	33	15	0
Peas												
kg/ha	161	66	729	39	20-0-0-24	45	banded	Recommended =	0	30	15	15
lb/ac	144	59	650	35				Actually applied =	11	14	0	10
pH 5.6					15-52-0	30	in-furrow					

Herbicide Applications

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

Crop	Date Applied	Product Used	Rate
Canola	13-Jun-02	Muster (ethametsulfuron methyl)	12 g/ac
		Poast Ultra (sethoxydim)	190 ml/ac
		Lontrel (clopyralid)	227 ml/ac
		Merge	400 ml/ac
	13-Jun-02	Decis (Insecticide for Flea Beetle)	60 ml/ac
	8-Jul-02	Matador (Insecticide for Lygus Bug)	40 ml/ac
	25-Sep-02	Reglone (diquat)	1 L/ac
		AgSurf	150 ml/ac
Flax	22-Jun-02	Buctril M (bromoxynil + MCPA)	400 ml/ac
		Poast Ultra (sethoxydim)	220 ml/ac
		Merge	400 ml/ac
Wheat, Barley, Oats, Triticale	12-Jun-02	Buctril M (bromoxynil + MCPA)	400 ml/ac
Peas	14-Jun-02	Odessey (imazamox 35% & imazethapyr 35%)	17 g/ac
		Poast Ultra (sethoxydim)	190 ml/ac
		Merge	400 ml/ac

Dawson Creek, B.C. — **Legal Description: NE18 Tp78 R14 W6**

Crop	Date Applied	Product Used	Rate
Canola	14-Jun-02	Lontrel (clopyralid)	337 ml/ac
		Decis (Insecticide for Flea Beetle)	60 ml/ac
	8-Jul-02	Matador (Insecticide for Lygus Bug)	40 ml/ac
Flax	22-Jun-02	Buctril M (bromoxynil + MCPA)	400 ml/ac
		Poast Ultra (sethoxydim)	430 ml/ac
Wheat, Barley, Triticale	12-Jun-02	Curtail M (clopyralid + MCPA ester)	800 ml/ac
Oats	11-Jun-02	Curtail M (clopyralid + MCPA ester)	800 ml/ac
Peas	14-Jun-02	Odessey (imazamox 35% & imazethapyr 35%)	17 g/ac
		Poast Ultra (sethoxydim)	190 ml/ac
		Merge	400 ml/ac

Planting and Harvest Information

Loc.	Crop	Seeding rate lbs/ac	Seeding rate kg/ha	Date Planted	Air/Soil Temp (C°) @ plant	Seeding Depth	Harvest Date	Harvesting Method
FSJ	**Napus Canola**	8	8.9	20-May-02	12 / 9	0.5 inch	8-Oct-02	desiccate/direct
	Rapa Canola	5.8	6.5	20-May-02	12 / 9	0.5 inch	20-Sep-02	desiccate/direct
	Flax	38	43	25-May-02	18 / 12	0.75 inch	30-Oct-02	direct cut
	Barley	77	86	23-May-02	6 / 8	0.5 - 1 inch	17-Sep-02	direct cut
	CWRS Wheat	90	101	23-May-02	6 / 8	0.5 - 1 inch	8-Oct-02	direct cut
	CPS/CWES	90	101	23-May-02	6 / 8	0.5 - 1 inch	14-Oct-02	direct cut
	Oats	81	90	23-May-02	6 / 8	0.5 - 1 inch	20-Sep-02	direct cut
	Triticale	117	131	23-May-02	6 / 8	0.5 - 1 inch	14-Oct-02	direct cut
	Peas	149	149	23-May-02	12 / 9	1.5 inch	5-Oct-02	desiccate/direct
DC	**Napus Canola**	8	8.9	17-May-02	12 / 9	0.5 inch	--	
	Rapa Canola	5.8	6.5	17-May-02	12 / 9	0.5 inch	18-Sep-02	desiccate/direct
	Flax	38	43	27-May-02	23 / 16	1 inch	5-Nov-02	direct cut
	2Row Barley	77	86	22-May-02	10 / 8	1-1.5 inch	9-Sep-02	direct cut
	6Row Barley	77	86	22-May-02	10 / 8	1-1.5 inch	11-Sep-02	direct cut
	Hulless Barley	77	86	22-May-02	10 / 8	1-1.5 inch	11-Sep-02	direct cut
	CWRS Wheat	90	101	22-May-02	10 / 8	1-1.5 inch	24-Sep-02	direct cut
	CPS/CWES	90	101	22-May-02	10 / 8	1-1.5 inch	4-Oct-02	direct cut
	Oats	81	90	22-May-02	10 / 8	1.5 inch	17-Sep-02	direct cut
	Triticale	117	131	22-May-02	10 / 8	1.5 inch	4-Oct-02	direct cut
	Peas	149	149	23-May-02	8 / 9	2 inch	25-Sep-02	desiccate/direct

Summary of 2002 Trials

(Information used for this report)

Regional Variety Trials	Site	Varieties	Replicates	Plots	Source
Regional 2 Row Barley	DC	17	4	68	Steven Dusek - AAFCDC Lacombe
Regional 6 Row Barley	DC	20	4	80	Steven Dusek - AAFCDC Lacombe
Regional Hulless Barley	DC	8	4	32	Steven Dusek - AAFCDC Lacombe
Regional Oats	DC	17	4	68	Steven Dusek - AAFCDC Lacombe
Regional CWRS Wheat (HRSW)	DC	22	4	88	Steven Dusek - AAFCDC Lacombe
Regional CPS / CWES Wheat	DC	10	4	40	Steven Dusek - AAFCDC Lacombe
Regional Soft White Spring Wheat	DC	5	4	20	Steven Dusek - AAFCDC Lacombe
Regional Triticale	DC	4	4	16	Steven Dusek - AAFCDC Lacombe
Regional Rapa Canola	DC	5	4	20	Steven Dusek - AAFCDC Lacombe
Regional Flax	DC	12	4	48	Collin Wildschut - CDCSD Brooks
Regional Green Field Pea	DC	13	4	52	Collin Wildschut - CDCSD Brooks
Regional Yellow Field Pea	DC	17	4	68	Collin Wildschut - CDCSD Brooks
Regional 2 Row Barley	FSJ	17	4	68	Steven Dusek - AAFCDC Lacombe
Regional 6 Row Barley	FSJ	20	4	80	Steven Dusek - AAFCDC Lacombe
Regional Hulless Barley	FSJ	8	4	32	Steven Dusek - AAFCDC Lacombe
Regional Oats	FSJ	17	4	68	Steven Dusek - AAFCDC Lacombe
Regional CWRS Wheat (HRSW)	FSJ	22	4	88	Steven Dusek - AAFCDC Lacombe
Regional CPS / CWES Wheat	FSJ	10	4	40	Steven Dusek - AAFCDC Lacombe
Regional Soft White Spring Wheat	FSJ	5	4	20	Steven Dusek - AAFCDC Lacombe
Regional Triticale	FSJ	4	4	16	Steven Dusek - AAFCDC Lacombe
Regional Napus Canola #1	FSJ	29	4	116	Steven Dusek - AAFCDC Lacombe
Regional Napus Canola #2	FSJ	29	4	116	Steven Dusek - AAFCDC Lacombe
Regional Rapa Canola	FSJ	5	4	20	Steven Dusek - AAFCDC Lacombe
Regional Flax	FSJ	12	4	48	Collin Wildschut - CDCSD Brooks
Regional Green Field Pea	FSJ	13	4	52	Collin Wildschut - CDCSD Brooks
Regional Yellow Field Pea	FSJ	17	4	68	Collin Wildschut - CDCSD Brooks

(Data used for Plant Breeding and Variety Registration Support)

Varietal Development	Site	Varieties	Replicates	Plots	Source
B-y5 Barley Pre-Co-op (Jim Helm)	DC	22	3	66	Donna Westling - AAFCDC Lacombe
2-Row Western Co-op Barley	DC	44	3	132	Bryan Harvey - U of S Malt B Prgm
6-row Western Co-op Barley	DC	25	3	75	Mario Therrien - Ag Canada Brandon
Private flax F2FSJ1AQ	FSJ	10	3	30	Rob Doel - AgQuest / Svalof Wiebull
Early Wheat CWES-A2 (3m plots)	FSJ	42	2	84	Gavin Humphreys - AAFC Winnipeg
Early Wheat CBW-A2 (3m plots)	FSJ	30	2	60	Steve Fox - AAFC Winnipeg
Early Wheat PEF6PR (3m plots)	FSJ	84	1	84	Gavin Humphreys - AAFC Winnipeg
Early Oat Pre-Co-op (3m plots)	DC	20	3	60	Jennifer Mitchell-Fetch - AAFC Winnipeg
Early Wheat PEF8PR3 (3m plots)	FSJ	56	1	56	Gavin Humphreys - AAFC Winnipeg
Field Pea Co-op "A"	FSJ	25	3	75	Dr. Dengjin Bing - MRC Morden
Field Pea Co-op "B"	FSJ	25	3	75	Dr. Dengjin Bing - MRC Morden
Northern Solin Trials	DC	16	3	48	Dr. Paul Dribnenki - Agricore United
Northern Solin Trials	FSJ	16	3	48	Dr. Paul Dribnenki - Agricore United
Early Flax CFET A	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET B	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET C	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET D	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET E	DC	16	3	48	Dr. Scott Duguid - MRC Morden
Early Flax CFET A	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET B	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET C	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET D	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax CFET E	FSJ	16	3	48	Dr. Scott Duguid - MRC Morden
Early Flax PREFTSJ BK 02	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRFFTSJ BK 02	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden

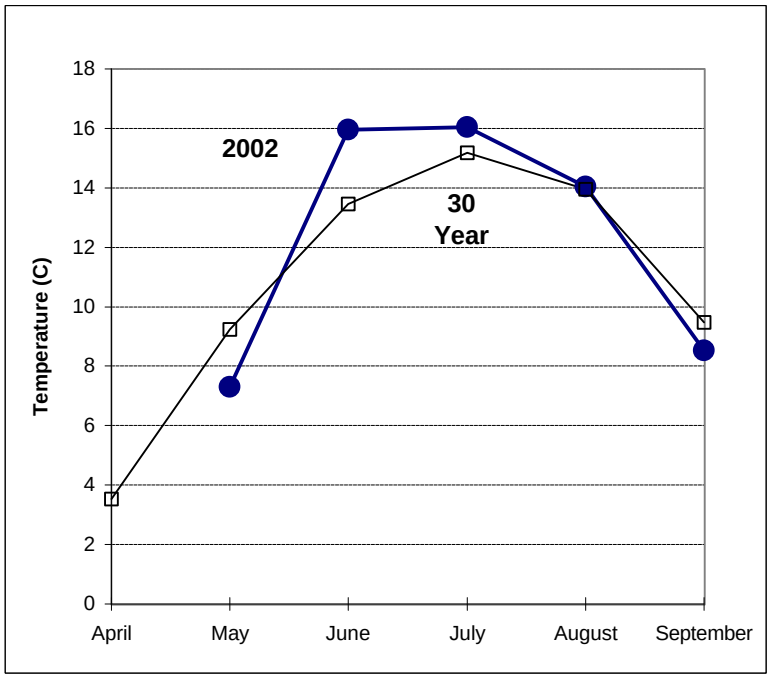
Varietal Development *continued …*	Site	Varieties	Replicates	Plots	Source
Early Flax PRGFTSJ BK 02	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRHFTSJ BK 02	FSJ	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRKDAW BK 02	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRLDAW BK 02	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRMDAW BK 02	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Early Flax PRNDAW BK 02	DC	25	3	75	Dr. Scott Duguid - MRC Morden
Parkland 'C' Wheat Co-op	DC	25	3	75	Alanna Olson - AAFC Beaverlodge
Parkland 'C' Wheat Co-op	FSJ	25	3	75	Alanna Olson - AAFC Beaverlodge
AGRICORE UNITED Wheat Marketing	DC	23	4	92	Kevin McCallum -AgricoreUnited(Calgary)
AGRICORE UNITED Barley Co-op 1	DC	20	3	60	Jim Anderson - AgricoreUnited (Calgary)
AGRICORE UNITED Barley Co-op 2	DC	16	3	48	Jim Anderson -Agricore United (Calgary)
AGRICORE UNITED Northern Solin Flax Co-op	DC	16	3	48	Dr. Paul Dribnenki - Agricore United (MB)
AGRICORE UNITED Northern Solin Flax Co-op	FSJ	16	3	48	Dr. Paul Dribnenki - Agricore United (MB)
Soybeans	DC	15	4	60	BCGPA
Forage Seed Association	BALD	50	4	200	Sandra Burton

Other studies in Agronomy and Privately Contracted work amounts to an additional 760 plots.

Site: FSJ = Cameron Fines, Fort St. John
DC = Dennis Meier, Dawson Creek
BAL = Sandra Burton (Site Manager), Baldonnel

Sources: AAFC = Agriculture & Agrifood Canada
AAFCDC = Agriculture & Agrifood Crop Development Centre
CDCSD = Crop Development Centre, South Division, Brooks Alberta
MRC = Morden Research Centre, Agriculture & Agrifood Canada, Morden, Manitoba
UofA = University of Alberta, Edmonton, Alberta

Dawson Creek Weather Information 2002



TEMPERATURE

Month	Monthly Avg. Temp. (C)	Temp.* 30 year Avg. (C)
April		3.5
May	7.3	9.2
June	16.0	13.5
July	16.0	15.2
August	14.0	14.0
September	8.5	9.5

Frost Events:
May 17 -2.5
May 19 -2.5
May 25 -2.0
Sept. 6 -1.4
Sept 25 -3.0

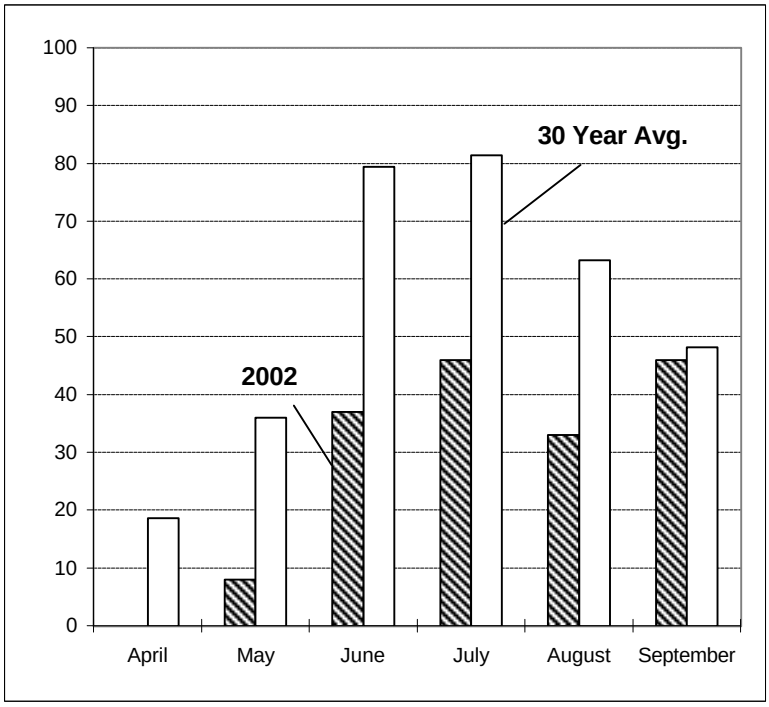
Killing Frost Free Period: 129 days
(May 19 - September 25)

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

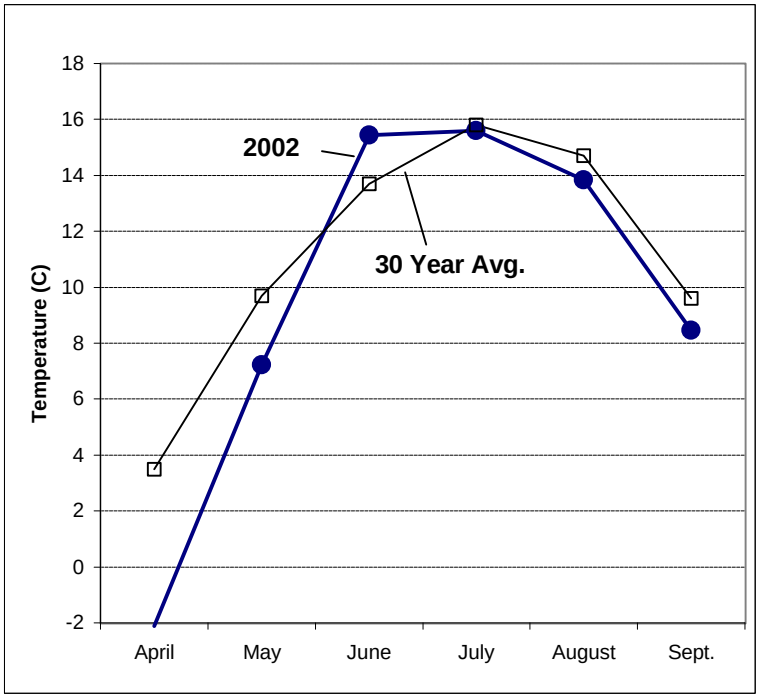
PRECIPITATION

Month	Monthly Precipitation (mm)	Precipitation * 30 year Avg. (mm)
April		19
May	8	36
June	37	79
July	46	81
August	33	63
September	46	48

Data is provided by an on site weather station maintained by the Agriculture Risk Management Branch of the BC Ministry of Agriculture, Food and Fisheries.



Fort St. John Weather Information 2002



TEMPERATURE

Month	Monthly Avg. Temp. (C)	Temp.* 30 year Avg. (C)
April	-2.1	3.5
May	7.2	9.7
June	15.4	13.7
July	15.6	15.8
August	13.8	14.7
Sept.	8.4	9.6

Frost Events:

May 9	**-4.0**	Sept 6	-1.7
May 10	-1.5	Sept 7	-2.0
May 25	-0.7	**Sept 22**	**-2.8**

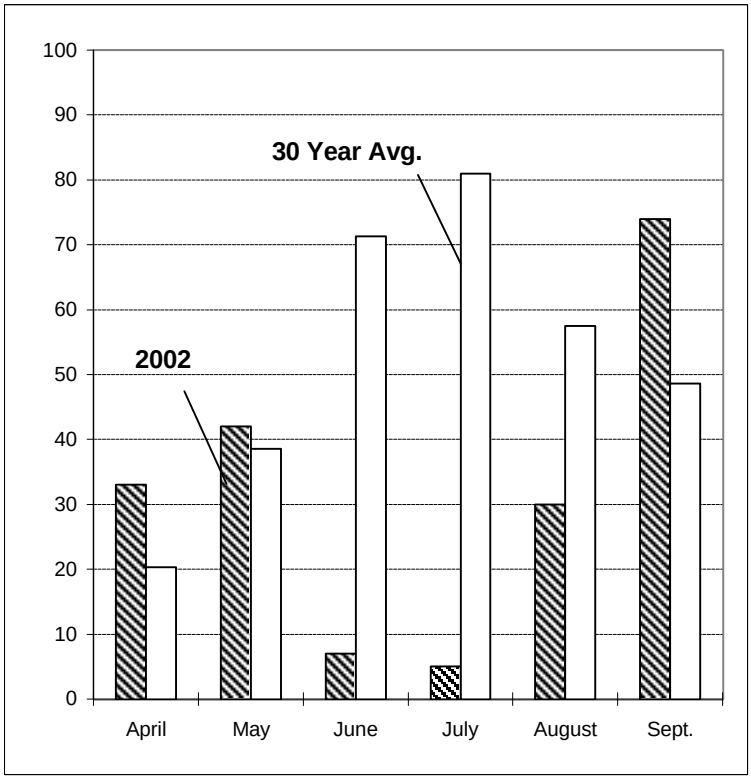
Killing Frost Free Period: 136 days
(May 9 - September 22)

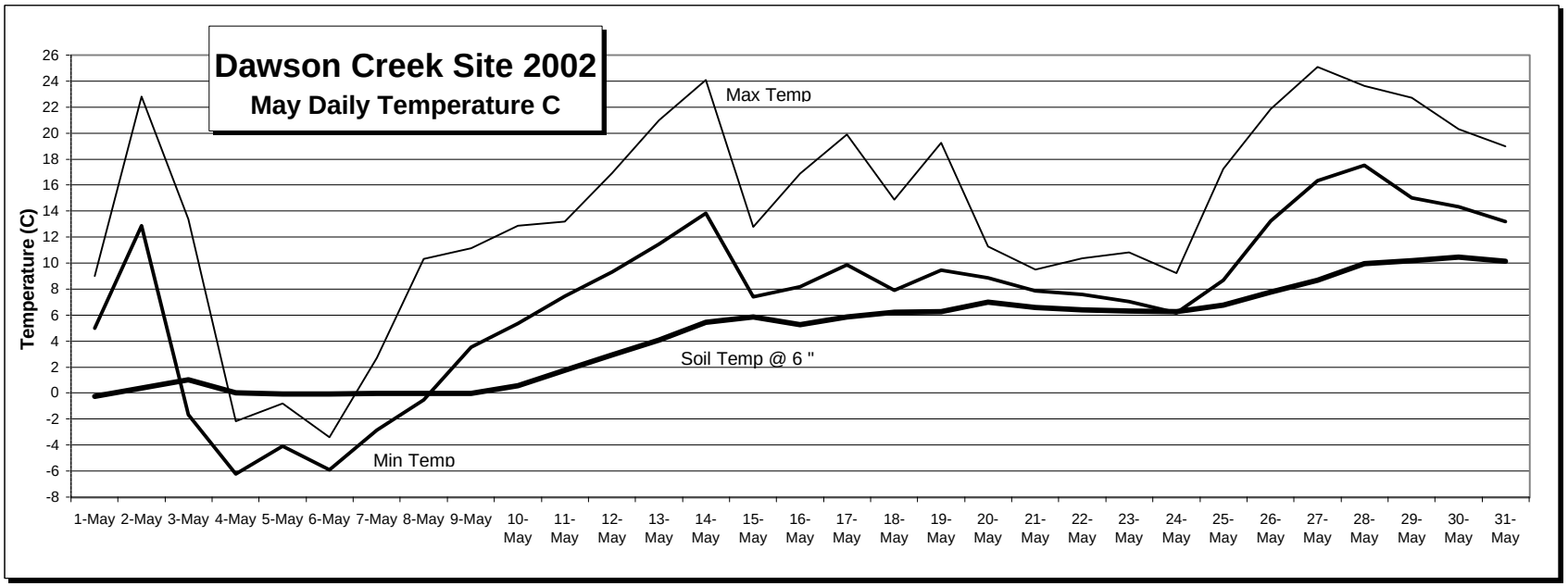
* 30 year average FSJ from 1968-1997
source: Environment CANADA

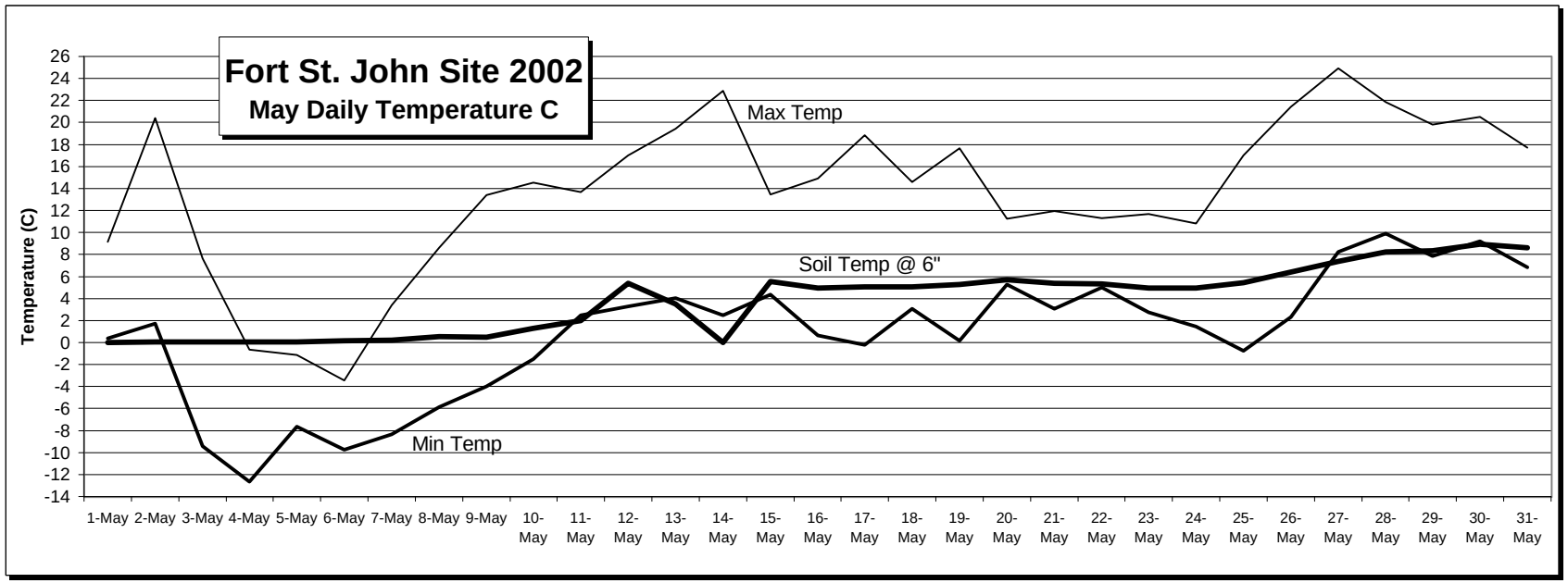
PRECIPITATION

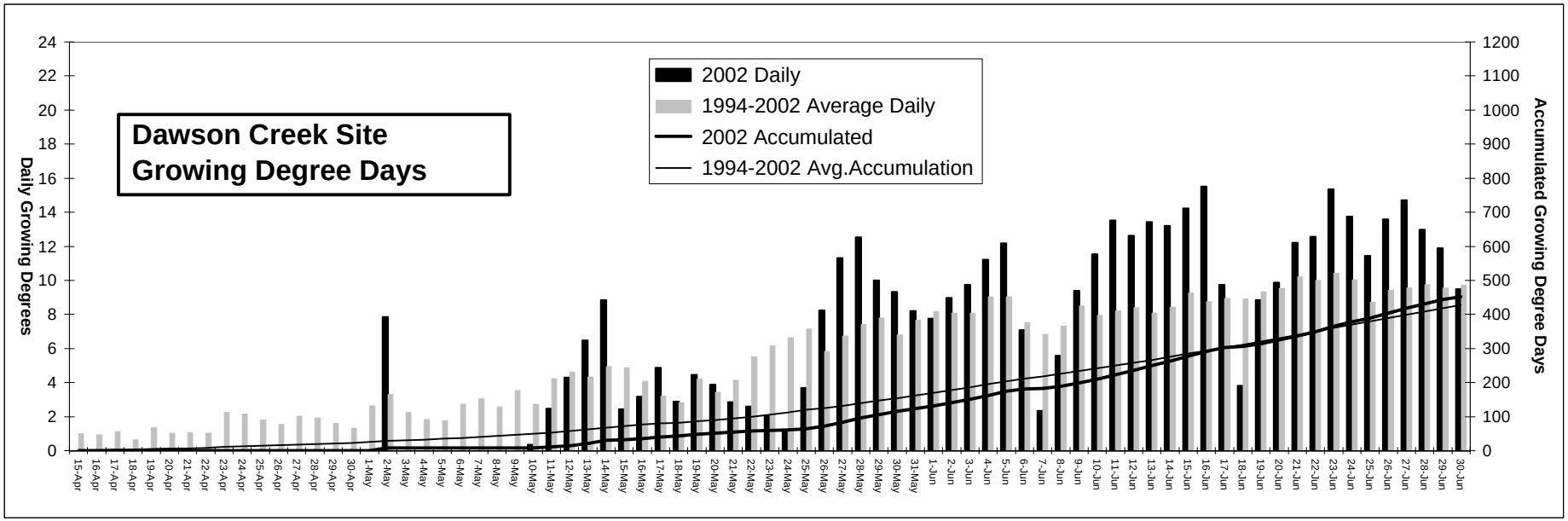
Month	Monthly Precipitation (mm)	Precipitation * 30 year Avg. (mm)
April	33	20.3
May	42	38.5
June	7	71.3
July	5	80.9
August	30	57.5
Sept.	74	48.6

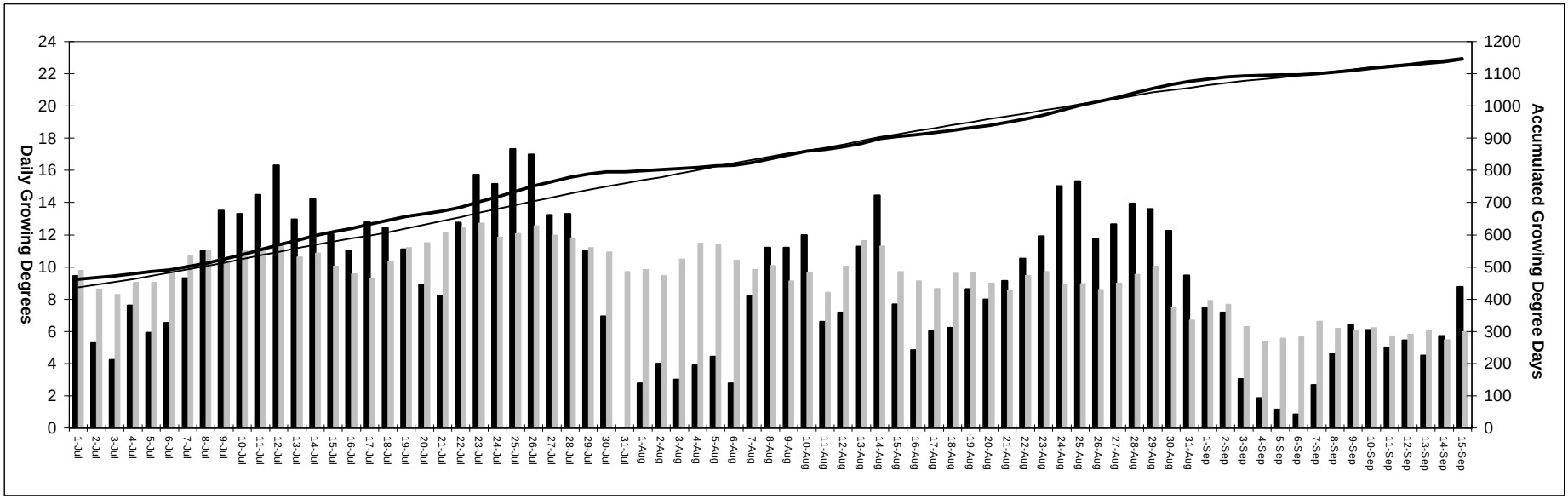
Data is provided by an on site weather station maintained by the Agriculture Risk Management Branch of the BC Ministry of Agriculture, Food and Fisheries.

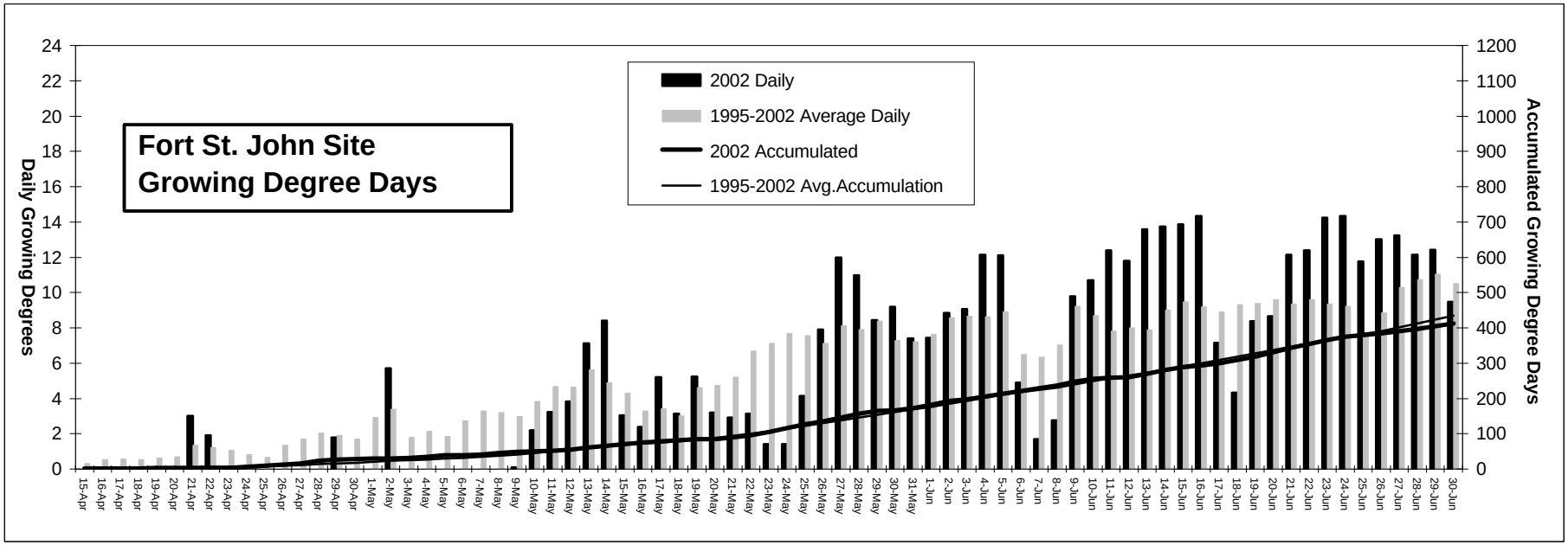


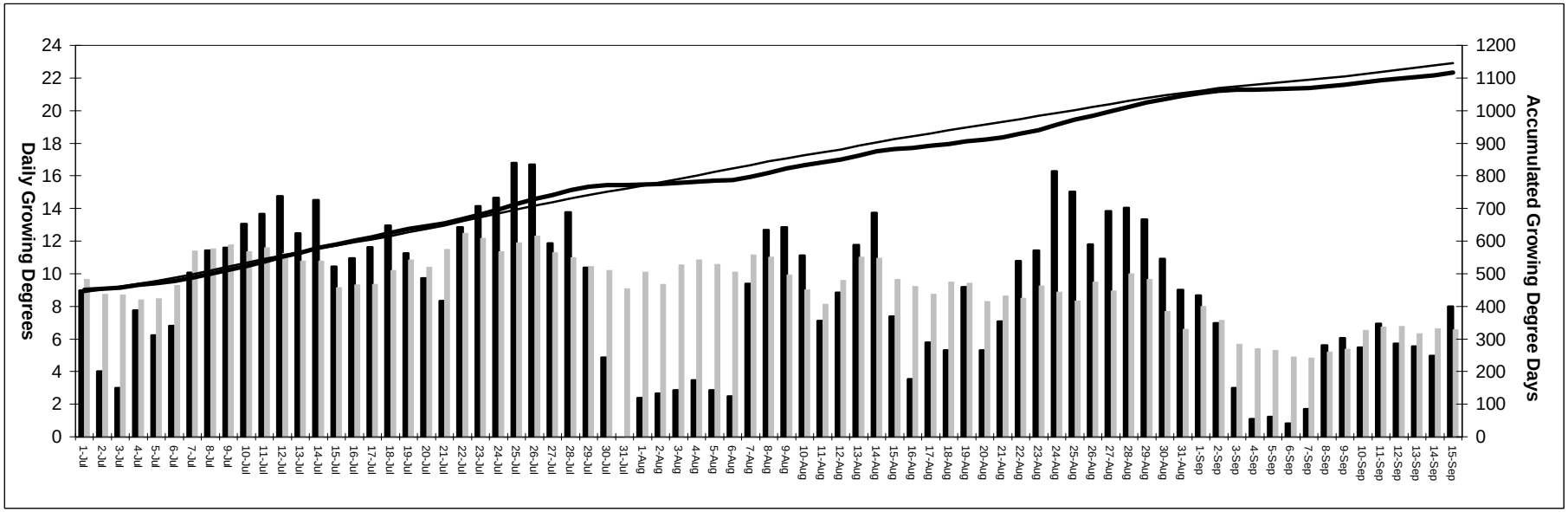

Dawson Creek Site 2002
May Daily Temperature C
Max Temp
Soil Temp @ 6 "
Min Temp
Temperature (C)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
1-May 2-May 3-May 4-May 5-May 6-May 7-May 8-May 9-May 10-May 11-May 12-May 13-May 14-May 15-May 16-May 17-May 18-May 19-May 20-May 21-May 22-May 23-May 24-May 25-May 26-May 27-May 28-May 29-May 30-May 31-May


Fort St. John Site 2002
May Daily Temperature C
Max Temp
Soil Temp @ 6"
Min Temp
Temperature (C)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
1-May 2-May 3-May 4-May 5-May 6-May 7-May 8-May 9-May 10-May 11-May 12-May 13-May 14-May 15-May 16-May 17-May 18-May 19-May 20-May 21-May 22-May 23-May 24-May 25-May 26-May 27-May 28-May 29-May 30-May 31-May


Dawson Creek Site
Growing Degree Days
2002 Daily
1994-2002 Average Daily
2002 Accumulated
1994-2002 Avg.Accumulation
Daily Growing Degrees
Accumulated Growing Degree Days


Daily Growing Degrees
Accumulated Growing Degree Days


Fort St. John Site
Growing Degree Days
2002 Daily
1995-2002 Average Daily
2002 Accumulated
1995-2002 Avg.Accumulation
Daily Growing Degrees
Accumulated Growing Degree Days


Daily Growing Degrees
Accumulated Growing Degree Days

List of Certified Seed Distributors

Advanta Canada Inc.
PO Box 181, Rycroft, AB T0H-3A0
Tel: (780) 518-3963 Nick Sekulic
Tel: (800) 661-9000
www.advantacan.com

Agricore United / Proven Seeds
Dawson Creek Tel: (250) 782-9264
Fort St.John Tel: (250) 785-3445
Proven Seeds Tel: (800) 565-7333
www.provenseed.com
www.agricoreunited.com

AgriPro
Tel: (877) 247-4746 (USA)
www.agripro.com

Agriprogress Inc.
Box 2499 Morden, MB R6M-1C2
Tel: (204) 822-4956

Bayer CropScience Canada Co. (Aventis)
#100, 3131-114 Ave. SE Calgary AB T2Z-3X2
Tel: (888) 283-6847
www.bayercropscience.ca

Bonis & Company Ltd.
P.O. Box 217 Lindsay, ON K9V-5Z4
Tel: (705) 324-0544

Brett - Young Seeds Ltd.
Box 99, St. Norbert Postal Station,
Winnipeg, MB R3V-1L5
Tel: 1-800-665-5015
www.byseeds.com

Canseed Ltd.
Tel: (403) 742-0621

Canterra Seeds Ltd.
Tel: (204) 992-2727
www.canterra.com

Cargill
6711-93 Ave., Fort St. John, BC V1J-6K8
Tel: (250) 787-0638
www.cargill.com

Columbia Seed Co. Ltd.
Tel: (403) 654-2158
www.klempnauer.ab.ca/cseed

Dekalb Canada Seeds (Monsanto)
Tel: (800) 667-4944
www.dekalb.com

DSV Canada Inc. Tel: (204) 261-7932

Prairie Seeds Ltd.
1805 - 8 Street, Nisku AB T9E-7S8
Tel: (780) 955-7906 or (800) 222-6443
www.prairieseeds.com

Progressive Seeds Ltd.
Tel: (403) 443-9661

Pioneer Hybrid
Box 730 Country Rd 264
Chatham, ON N7M-5L1
Tel: (250) 782-4800 or (800) 265-9435
www.pioneer.com/canada

Quality Assured Seeds
422 McDonald St. Regina SK S4N-6E1
Tel: (877) 791-0500
www.qualityassuredseeds.com

SeCan Association
201-52 Antares Dr. Ottawa ON K2E-7Z1
Tel: (613) 225-6891 or (800) 764-5487
www.secan.com

Seed-Link Inc.
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www.seed-link.ca

S.S. Johnson Seeds Ltd.
Tel: (204) 376-5228
www.johnsonseeds.com

St. Denis Seed Farm Inc.
Tel: (780) 961-3368

Svalof Weibull Ltd.
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S7N-4L8 Tel: (306) 477-5230
www.swseed.ca

Syngenta
Tel: (403) 327-2411
www.syngenta.com

University of Alberta
114 St.-89 Ave. Edmonton AB T6G-2M7
Tel: (403) 492-3239
www.ualberta.ca

Western Growers Seed Corp.
Tel: (306) 373-2400