



B.C. GRAIN PRODUCERS ASSOCIATION

Annual Year-end Project Report

Covering Period: April 1, 2005 to March 31, 2006
Reported: April 24th, 2006

For:
PEACE RIVER AGRICULTURE DEVELOPMENT FUND

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Research Projects:

- 1. Short-Season Variety Selection & Agronomic Performance Project**
- 2. Peace Region Growing Degree Days Project**
- 3. Determinant Soybean - New Crop Potential Project**
- 4. Short-Season Flax Breeding Co-op**
- 5. Higher Value Barley - Malt Barley Enhancement Project**

TRANSMITTAL NOTICE:

"I Clair F. Langlois certify that the information contained in this report is accurate and that this project is being carried out/has been carried out in compliance with the terms as laid out in the PRAD application. I certify that I am authorized to represent and sign on behalf of the organization with regards to these five research projects."

Recipient's Designated Officer:

(Signature)

Clair F. Langlois

(Printed Name)

April 24 2006

(Date)

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Executive Summary:

All research data for all research projects generated from the 2005 growing-season have been processed, recorded and analyzed appropriately. Good growing conditions existed at both Dawson Creek and Fort St. John in 2005, but Fort St. John had a delay of almost three weeks come harvest for all crops due to actually too much rainfall throughout the season. Despite the delay, the season remained open long enough to get the plots off at Fort St. John, and the result of a lack of a killing frost till deep into October, (unlike Dawson Creek which had several before even the end of September), combined with the heavier rains, produced some tremendous yields for Fort St. John with most crops. Yields for Dawson Creek were still very respectable too however, as normal rainfall amounts occurred at the southern site. Since tillage and planting practices at Dawson Creek had been converted to minimum tillage in 2004 and now the Fort St. John site in 2005, both sites were able to go into the winter prepared for next spring after the trash had been chopped by our new large tractor mower, followed shortly after by a quick pass of heavy-harrows. The reduced tillage methods did not only save time, but will be better for the soil, prevent soil erosion over the winter and early spring, and most importantly, it will mimic the changes found elsewhere around the Peace region as minimum tillage practices are replacing conventional methods almost in a 2:1 ratio overall (north & south combined). To help us adapt to this new method and remain independent so that the work can be done when needed, our research department now has a modified heavy-harrow to use. It is exactly the same as a full-sized farm piece found on any minimum tilled farm, but was designed to be small enough for our needs plus it was designed in such a way as to be completely portable under highway regulations so we can transport it to either the north or south sites without special permits. It is truly a unique one-of-a-kind piece that will help us stay current with accepted tillage practices used in our area.

Some of the best data, (as described by coefficient of variance statistical values), to have been produced over the last four years was produced this past season. This was due in part to more normal weather patterns for the Peace River region in 2005, but also due to due diligence of the seasonal and permanent staff working in the research department. It was a year of few mistakes or mishaps either from human error or the environment. After last season's weather related disasters, it was very much appreciated in 2005. This year's data should go a long way to support strong conclusions for most if not all of our projects.

The data keeps coming in for all projects, this being year four of the five year project A0348, and even the weather data portion of the project relating to Growing Degree Days had a quick run through this past March 2006, at least barley and wheat. The weather data-mining module used to grab the appropriate data was up and running finally, but the new spring season did not allow for an extensive preliminary report in time. Just the same, a brief report is attached describing what results seem to be developing from that project. A third permanent staff member has come on board with the education necessary to help with reports in the future, just in time to help with the final year of this project A0348.

There are no unusual surprises in the attached budget, and finished the fiscal year by being just a few dollars over-budget, but for all intensive purposes, it is about as close to a zero balance as one can possibly get. Again, this can be accredited mostly to reasonable weather for most activities, overall small but significant increases to key areas of our budget that were allowed last fiscal year, excellent summer staff, and certain modifications to our methods to increase efficiency. Most of these modifications were either addressed in our last progress report or mentioned above.

Since the last progress report, (end of December 2005), our annual general meeting was held, in which we had a good turnout and positive responses to the research portion of the meeting. Next to the summer tour(s), it is the second most important time to maximize our "reach and communications".

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Apparently, we did a good job doing just that. A small report on the entire meeting can be seen on our website, www.bcgrain.com, as written up by a local freelance writer. The site also displays this year's *2005 Field Crop Variety Performance* book. We made some changes (improvements) to our 2005 book, such as how we now present maturity data, (now "+/- days to the check" for all crops), set the maximum number of calendar years to be used per overall average to four, (so all data is more comparable to current environmental changes), and we dropped older historical data (greyed sections) in lieu of the fact we have older data readily available on our website. Feedback so far has been very positive on the changes, and the changes bring us more in tune with other performance testing reporting methods used across the prairies. Despite the increasing use of the Internet, the total number of our hardcopy volumes of the book continue to rise, and distribution continues to spread.

All in all, the 2005 fiscal year and crop-growing season, was a very good year.

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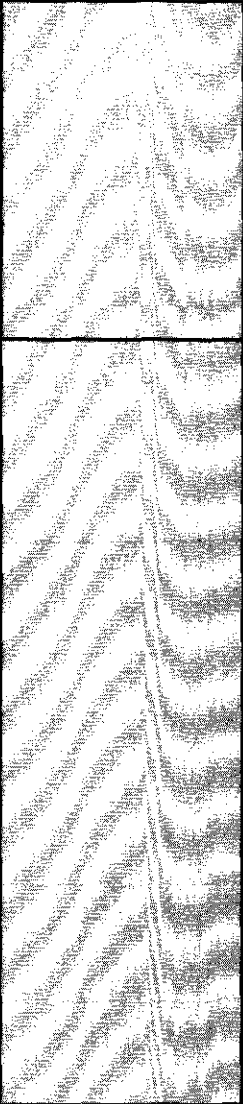
Reporting Period: From April 1, 2005 to March 31, 2006

Due Date	Activities		Status			Comments	Internal Use - Staff Comments
	Proposed	Delivered	Not Started	In Progress	Complete		
Jun 30/05	Seed delivery and weighing, plot preparation, seeding, planting, weed and pest control	Yes			✓	Executed as planned, however some seed deliveries (outside our control) were a bit slow at arriving which put unnecessary pressure on the staff to prepare the plots in time for planting.	
Oct 31/05	Plot maintenance, conducting tours, plant/weed disease monitoring and control, in-field data collection, harvesting, drying samples, Fall site management and seeding winter crops	Yes			✓	Good weed control was maintained. Field plot assessments completed on schedule. Tours occurred on July 12 th (sponsored by a local company) and July 20 th for the main public tour (sponsored by the BCGPA thus our funding organizations). Another company-sponsored tour occurred mid-August. Our main tour was well advertised and well attended in the north. Once again attendance for the southern portion of the tour was low but likely due to the fact many farmers turned out a week earlier on the 12 th tour. Our main tour on July 20 th featured public wheat, oat, pea, and flax breeders from Manitoba and Alberta to explain their input to our work themselves. Harvest is complete and plot ground is prepared for winter at both locations.	
Dec 31/05	Processing harvest samples, compiling data, conducting statistical analyses and drafting reports	Yes			✓	All yearly statistical analysis and reporting complete. A first attempt to summarize data for the weather Growing Degree Days portion of the project was also undertaken, but the initial results suggest more thought on the matter will be needed before the close of the project. A brief summary is attached to this report.	
Mar 31/06	Finalizing reports, disseminating results to industry.	Yes			✓	All raw data, (data summarized by end-user which then reports back to us), has been processed and has been sent to project contributors and research contractors. Annual reports (produced by the BCGPA directly) were completed on schedule.	
	Planning for next season, ordering supplies, and equipment maintenance	Yes			✓	Supplies ordered and many already obtained for the next season.	

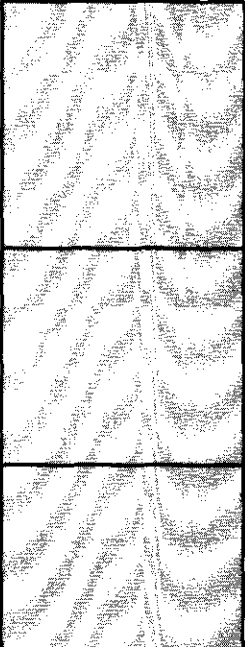
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Due Date	Outputs/Deliverables		Status			Comments	Internal Use - Staff Comments
	Proposed	Delivered	Not Started	In Progress	Complete		
Oct 31/05	Farm Tours	Yes			✓	A total of three tours occurred in 2005, two sponsored by local agri-business companies, and one sponsored by the BCGPA. All were well received but attendance was lower for the southern portion of our tour for reasons suggested above. For all three tours those in attendance as well as the guest speakers, held the quality of the plots in high regard.	
Mar 31/06	Presentations to growers	Yes			✓	This occurs on farm tour days and at AGM held in Feb of each calendar year. Both have occurred and the AGM was well attended this past February, with very positive feedback given toward the research portion of the meeting.	
Mar 31/06	Field Crop Variety Performance Report	Yes			✓	The report was released in the first week of February 2006. The new changes caused a week's delay, but according to all the positive feedback on the changes, the extra delay was worth it.	
Mar 31/06	Research results on the development of a heat unit model for wheat, barley, oats and peas	No		✓		The glitch with the computer module owned by BC Crop Insurance has been fixed and data extraction by the BCGPA has started. The repair happened too close to spring start-up to get a full interim report, but a brief report of what we are finding so far is attached. Weather data needed to "link up" with maturity data points continues to be compiled from the two electronic weather stations at both DC & FSJ.	

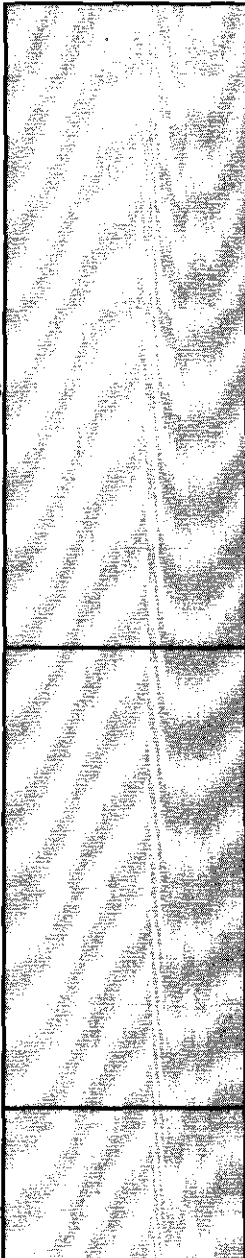
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Mar 31/06	Research results on lines of soybeans tested in 2005.	Yes	<p>✓ Plots were harvested, cleaned, weighed, and analyzed, but yields were still too low to be a practical crop choice here. We will be trying to plant our soybeans in 2006 at the same time as our pea plots; as we witnessed volunteer soybeans in 2005 at the 2nd trifoliolate stage while planting the soybean plots in 2005. This represents a valuable two-week head start that we can take advantage of hopefully as learned purely by accident. The beans seem to be less sensitive to cold nights in the spring than when flowering, so we will risk the earlier planting in 2006. 2005 data summary for soybeans is attached.</p>	
Mar 31/06	Research results on linseed flax lines tested in 2005	Yes	<p>✓ Dr. Scott Duguid has received our locally produced raw data from us after the 2005 harvest (last crop to come off the fields next to soybeans). He is now making selections based upon our data that he has analyzes at his end. Flax data produce good statistical results in 2005, although flax grown at Dawson Creek was adversely effected by early frost that resulted in some "bleached" unfinished seeds in many lines that may lower the seed quality from the samples we have sent Dr. Duguid post-harvest. We have yet to see a new flax line from this program that is early enough to meet our goals. A new flax line, (called 2161), was registered this past winter by Dr. Duguid, and although it is about three days earlier in maturity to the flax co-op test check variety <i>Flanders</i>, it is believed to be still several days later in maturity than our currently earliest materials like <i>NorLin</i>, <i>CDC Normandy</i>, or even <i>Hanley</i>. For this reason we do not share the same excitement over this new flax variety as perhaps others further east or south in the prairies. Perhaps five years is just too short a timeframe to expect results or perhaps earlier cross generations from the breeders (F2-F4 generations) need to be grown here to help the breeder more. This would involve single row plots and increases the efforts from several hundred plots we now grow to perhaps several thousands of plots, something that we may or may not be capable of handling here without help from other qualified research organizations. We still hope to see earlier materials in our trials this coming final year.</p>	

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Mar 31/06	Research results on barley trials	Yes	✓	<p>Annual results were produced after harvest 2005. A second "across the years" data summary will not be attempted again for those trials compiled in 2004 (i.e. Malt Barley Seeding Rates), until March 2007, as other interim reports need our attention first. Data summarized from 2005 was very good and very sound data. Malt quality was also very good, at least for those trials grown at DC. FSJ quality was not as good, due to a delayed maturity.</p>	
Mar 31/06	Identification of high performing varieties of wheat, barely, oats, argentine canola and field peas which mature 7 days earlier on average and identification of high performing varieties of triticale and flax which mature 14 days earlier on average	Yes	✓	<p>Every AGM meeting the earliest materials are identified during the research annual update presentation. Annual results are included in our annual "Field Crop Variety Performance Book". Both of which were produced and delivered as planned. After results from 2006 are known, an overview of the full research period will be summarized.</p>	
Mar 31/06	Model that results in a heat unit value being assigned to any current or future variety linked with a heat zone map of the BC Peace River region	No	✓	<p>This is part of the weather data project, and will all fall together once we can clearly identify a quantitative date for maturity of a given crop / variety. See above comments near the bottom of page 4 and the brief report attached regarding the current status of this section of the report.</p>	

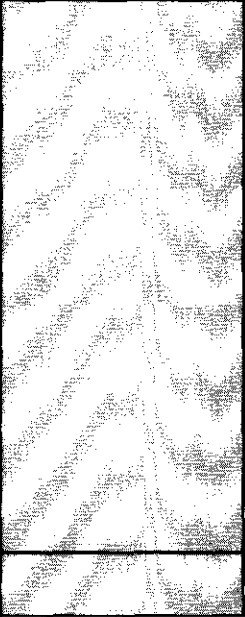
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Mar 31/07	Determination of whether soybeans can be a viable crop in the Peace	No	✓	<p>An answer will be known by this closing date. Yearly summaries continue each fall. Harvest has occurred in 2005 but yields were hurt badly by the early hard frosts on both August 16th and 17th. Getting the soybeans out of the ground faster in the spring is still believed to be the biggest issue, so that they will flower earlier in the short nights of early July rather than the cooler nights in late July, and then this will allow seed to finish filling before frost. As mentioned in earlier progress reports, while we were planting our soybeans in 2005, soybeans that had been disked under earlier this spring from last year's early snowfall, were voluntarily emerging and were at the 2nd trifoliate leaf stage already. What this means, learned purely by the situation that presented itself, is that perhaps we should not be afraid to plant the beans as early as possible, say when we plant field peas. Apparently, soybeans are less sensitive to low temperatures in the spring here than once thought as these "volunteer" soybeans already had a two-week head start on the ones we were planting. The earlier planting now planned for the spring of 2006 will be our last attempt to thwart the effects of early fall frost or cool nights at flowering that greatly reduces the yield potentials of the beans here in the Peace region.</p>	
Mar 31/07	Identification of at least 3 lines of high quality linseed flax which mature 14 days earlier on average than those tested in 2001	No	✓	<p>Again, we supply raw data to Dr. Duguid, and knowing that breeding is a long process a final look at success will only be known at the end of the project. It is expected that a few earlier lines should be released, (registered in Canada), by the end of the program, but if the new flax variety 2161 (newly supported for registered in February 2006), is an example of what some are considering as earlier materials, our hopes for the success of this portion of the project are quickly becoming pessimistic. Whether they are early enough to meet our criteria will not likely be known until the end of the project. When we started this project, there was basically only one line that showed any promise (Norlin), and during this past year we identified several others that show promise, but they are just test numbers at this point in time and may or may not be moved forward for quality or other issues.</p>	
Mar 31/07	Identification of at least two or more barley varieties which consistently produce quality traits desired by the malt and brewing industry	No	✓	<p>An answer will be known by this closing date. Yearly data summaries continue each fall. Our continuous problem is high proteins, although we did well in 2005 in this regard, even though we are not over fertilizing for malt production. Why this is, is unclear.</p>	

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Due Date	Results		Status			Comments	Internal Use - Staff Comments
	Proposed	Delivered	Not Started	In Progress	Complete		
Mar 31/07	Improved access by BC Peace growers to varieties of wheat, barely, oats, argentine canola, field peas, triticale and flax suitable to their growing conditions	Yes (yearly) No (long term)		✓		<p>Every year we produce valuable data (much of it confidential to protect plant breeder's breeding rights) but which results in new registered lines available to the public involving many public and private breeders from across Western Canada and covers all major Western field crops. The end result is that the breeders (which are usually located in more southern climates) get a better understanding of our area. This then results in better choices of available varieties for BC Peace growers to choose from, which exhibit traits more suited to this particular short-season environment.</p> <p>In some crops, (such as in field peas), we are told that we currently are the only source of variety selection data for the northern regions of all the prairie provinces, and so this component of our project is of extreme importance to some breeders who work with us to bring us new lines to grow. It has actually spawned interest from Dr. Bing of Lacombe, Alberta, and an Agriculture Canada field pea breeder, to possibly work with us starting in 2007 for an early "Peace pea" project. A small preliminary IAF project (#SP028) is underway in 2006 to see if this is indeed the route to take in 2007.</p>	

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Mar 31/07	Improved crop selection by growers in specific heat zone areas of the BC Peace Region and improved performance	No	✓	<p>As stated above and in earlier progress reports, this will all fall together once the maturity issue has been proven reliable. Unfortunately, preliminary investigations into consistency of Growing Degree Days data are meeting up with some difficulties, (see attached report on this topic). If it can be figured out or proven reliable, then the only chance of failure for this particular component on its own is if the suggestive power of possible litigation from land investors causes the BCGPA to shy away from publicly releasing the "heat zone" maps developed earlier by the BCGPA. Apparently, some people could use the newly released maps to de-value property or use for alternative motives other than their original intent. These legal aspects were not foreseen earlier and thus will need to be looked into at a later date. Research will move forward in establishing values for specific crops / varieties, as even without a heat unit map of the BC Peace, the data will still be valuable if growers are honest with themselves on the heat unit potential for their own particular lands.</p>	
Mar 31/07	Increased diversification of crops grown in the area	No	✓	<p>This outcome depends on the eventual conclusions of such projects as the flax and soybean projects.</p>	

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Reach and Communications:

A copy of the *2005 Field Crop Variety Performance* book is attached to this report. About 600 copies of the book have been distributed to agribusinesses and government agricultural departments across both the North and South Peace of BC, and to some extent the western sections of the Alberta Peace as well, (hence an increase in numbers from 500 copies in 2003 to 600 in 2004 and 2005). Changes made to the book in 2005 (mentioned and described in Executive Summary above), has been well received and has only helped to make our report even more short and concise, and still remains a well-used reference book. It is available to download from our website at www.bcgrain.com which makes the audience even wider than originally anticipated. We cannot tell if hits to our website are downloading the book or not, but feedback received from local retailers suggests that it indeed is being downloaded as it was intended. Other than these easily made available printed reports, most in-season verbal communication and dissemination of results produced by these five projects occurs on farm tour days and at the AGM held in February of the following calendar year from when results are collected. As mentioned in our last interim progress report, the farm tours had occurred on schedule and went well overall, (very well in the North Peace actually). The AGM was also well attended, and the feedback from participants places the research portion of the meeting high on their list. For these reasons, 2005 was a successful year for "reach and communications" too.

Final Comments:

To our surprise, despite the fact our Fort St. John site was overburdened with too much rainfall throughout most of the 2005-growing season and produced delays in harvest that took us dangerously close to losing plots to winter weather, results once analyzed turned out very good, with good statistical values generated for almost all trials, some of the best values we have seen yet over the last four years. The few with poor stat values, such as the soybean trials, had good reason to be, due to early frosts in the south (Dawson Creek), and incredible delayed maturation in the north (the Fort St. John site), and so do not detract from the overall good data collected in 2005. Combined with good grower turnouts to both our summer tours and our AGM this past February, all which were well received, plus a budget that is as close to a zero balance as one can get, 2005 actually proved to be one of the best years so far over the past five years. With seed weighing and plot organization well underway for the new 2006-season, a new staff member recently hired with the education and experience to hopefully help in the area of both data summary and report production, the following year looks very promising.