

The background of the cover features several woven baskets filled with different types of pulses. In the top left, there are black lentils. To the right, there are red kidney beans. Below the black lentils is a large basket of brown lentils. To the right of the brown lentils is a basket of green lentils. In the bottom left, there is a basket of yellow lentils, and in the bottom right, there is a basket of orange lentils. The baskets are made of light-colored straw or reeds.

SASKATCHEWAN

pulse
Growers



2009-2010
Annual Report
Investing in Opportunity

Our Mission

To provide leadership for an innovative, profitable, and sustainable
Saskatchewan pulse industry through research, market development
and communication in collaboration with stakeholders.



Our Business

Background

The Saskatchewan Pulse Crop Growers Association was formed in 1976. In a 1983 vote, producers chose to institute a mandatory, non-refundable check-off to fund programs that would develop the industry. The Saskatchewan Pulse Crop Development Board was created, later known as Saskatchewan Pulse Growers or SPG.

Funding

A mandatory, non-refundable check-off of 1% of the gross value of sale is deducted at the first point of sale when a producer sells a pulse crop.

Leadership

SPG is guided by a Board of seven producer elected pulse growers from all across Saskatchewan.

Programs

SPG invests producer check-off dollars into six program areas to achieve our vision and to increase demand, increase production, represent the pulse industry, and attract resources.

Communications – Our key communications initiatives include: *PulsePoint* magazine, *Pulse Market Report*, Annual Report, website, Pulse Days conference, Regional Pulse Development Workshops, sponsorship activities, nutritional promotions, media relations and strategic communications planning.

Market Development – Our efforts focus on developing international and domestic market opportunities for pulses in human and animal diets, in co-operation with Pulse Canada and the Alberta Pulse Growers.

Operations – SPG staff members combine industry knowledge and individual expertise to deliver programs to support the three-year strategic plan developed by the SPG Board.

Policy – SPG provides leadership on issues such as government investment and regulation, producer security, crop protection, and crop insurance.

Research and Development – Our program provides funding and leadership for ongoing research including: disease management, genetic improvement and quality assessment, agronomy, weed control, processing and utilization of pulse crops, and animal nutrition.

Variety Release Program – SPG supports the development of new pulse varieties through the pulse breeding program at the University of Saskatchewan's Crop Development Centre. The SPG Variety Release Program offers Breeder seed without royalties to Select status seed growers in Saskatchewan and Alberta, while specialty varieties are tendered to seed companies who bid on the opportunity to grow, disseminate, and commercialize seeds that are in a unique or niche market class.





Our Vision

Saskatchewan will be an industry leader in the production, processing,
and marketing of high quality and high value pulse products for a
viable and profitable Canadian pulse industry.



2009-10 Board of Directors

Our Leaders

Murray Purcell, Chair

Saskatoon, SK | Tel: 306-241-7432
Email: mgpurcell@sasktel.net

Murray's family farm is outside of Saskatoon, near Pike Lake. He is a graduate of the University of Saskatchewan with an Education degree. He is past Chair of the Agriculture Council of Saskatchewan Board, Vice-President of the Saskatchewan Agricultural Hall of Fame Board, Director and Executive Member of the Saskatchewan Municipal Hail Insurance Board. Murray is also a member of the Canada Grains Council and sits on the committee for the Grains Innovation Roundtable and on the Federal Minor Use of Pesticides committee. Murray sits on the SPG Audit and Finance Committee and joined the Board in 2007.

Dwayne Moore, Vice-Chair

Rosetown, SK | Tel: 306-882-3151
Email: mooreassociates.dwayne@sasktel.net

Dwayne Moore farms with his wife and brother in the Rosetown area growing lentils, peas, and durum. He dedicates at least fifty per cent of his seeded acres to pulses.

Dwayne graduated with a Commerce degree from the University of Saskatchewan and currently operates an accounting, insurance, and real estate business in Rosetown. Dwayne has sat on the Biofuels Committee for the Agriculture Council of Saskatchewan.

Dwayne is the Chair of the SPG Audit and Finance Committee and joined the Board in 2009.

John Bennett, Director

Biggar, SK | Tel: 306-948-2852
Email: bennettjs@sasktel.net

John has farmed in the Biggar area for more than 30 years. He has a no-till operation growing pulses, oilseeds, and cereals. John is Past President of the Saskatchewan Soil Conservation Association (SSCA) and a past Director on the Board of the Saskatchewan Research Council. He was named SSCA Farmer of the Year in 1993 and Canadian No-Till Farmer of the Year in 2000. In 2007, John was awarded an Honorary Life Membership with the Saskatchewan Institute of Agrologists. John joined the SPG Board in 2005 and is Chair of the SPG Research and Development Committee.

Vicki Dutton, Director

Paynton, SK | Tel: 306-441-6699
Email: v.dutton@sasktel.net

Since 1974, pulse crops have added value to Vicki's farm in the Paynton area where she farms with her husband David. Today, pulse crops represent 25 to 33 per cent of their rotation growing peas, and red lentils. In addition to commercial production as Pedigreed and Select status seed growers, Vicki participates in the growth and distribution of new varieties through her family's company Western Grain Trade Ltd. where she has spent the last 20 years. Vicki represents SPG on the Canadian Grain Commission Western Grain Standards Committee and Pulse Sub-Committee. She is also on the SPG Research and Development Committee. Vicki joined the SPG Board in 2010.

Dan Flynn, Director

Beechy, SK | Tel: 306-859-7885
Email: danflynn@djfholdingsltd.com

Dan farms near Beechy with his father Jim and has been involved in the family farm operation since 1999. They grow a variety of pulse crops which include red lentils, large green lentils, yellow peas, and have in the past included chickpeas. He farms 5,500 cultivated acres and half are seeded to pulse crops each year. Dan is on the SPG Audit and Finance Committee. Dan joined the SPG Board in 2010.

David Nobbs, Director

Kindersley, SK | Tel: 306-460-9272
Email: d.nobbs@sasktel.net

David farms 3,400 cultivated acres with his father and his brother on the family farm near Lancer. Crops grown include lentils, kabuli chickpeas, coriander, durum wheat and canary seed. He is currently employed as General Manager and Director of Canpulse Foods in Kindersley – a special crop exporting and processing plant. He represents SPG on the Pulse Canada Board and the Canadian Grain Commission Western Grain Standards Committee and Pulse Sub-Committee. David joined the SPG Board in 2006.

Jeff Sopatyk, Director

Saskatoon, SK | Tel: 306-227-7867
Email: spat@shaw.ca

Jeff and his wife operate Sopatyk Seed Farms in the Saskatoon area. They farm 9,000 acres of Pedigreed seed peas, lentils, chickpeas, canola, barley, wheat, and hemp. Jeff has a diploma from the School of Agriculture at the University of Saskatchewan and attended an additional two years in the College of Agriculture. He has also served as a Director for Farm Pure Seeds. Jeff is a Select status seed grower. He is currently representing SPG on the Pulse Canada Board. Jeff joined the SPG Board in 2008.



From left to right: Dan Flynn, David Nobbs, Murray Purcell, Dwayne Moore, Vicki Dutton, John Bennett, and Jeff Sopatyk.

Our Values

At Saskatchewan Pulse Growers we:

- Strive for excellence
- Conduct ourselves with honesty and respect
- Show respect for the individual
- Act with professionalism



Our Team

Executive Director
Garth Patterson

Commercial Seed Manager
Raelene Regier

Accounting Clerk
Melanie Goring

Director of Research
Dr. Kofi Agblor

Communications Manager
Amanda Olekson

Records Administrator
Shelly Weber

Research Project Manager
Allison Fletcher

Communications Specialist
Rachel Kehrig

Administrative Assistant
Jennifer Saunders

Research Project Manager
Ron Mantyka

Controller
Helen Baumgartner

From left to right: Melanie Goring, Allison Fletcher, Amanda Olekson, Rachel Kehrig, Garth Patterson, Raelene Regier, Kofi Agblor, Jennifer Saunders, Shelly Weber, Ron Mantyka, and Helen Baumgartner.





Chair's Report

This past year was a challenging growing season for pulse farmers. Things got off to a late start and with a downturn in the weather this season, we saw a lot of poor production. However, that is not to say it has not been a successful year for the pulse industry. Pulse export values reached record amounts and demand for our pulses continues to grow.

Saskatchewan Pulse Growers (SPG) three-year strategic plan has just been completed as the financial year came to an end this August. We worked hard the last three years to achieve the goals of increasing demand, increasing production, representing the pulse industry, and attracting and retaining resources.

Increasing demand was a key objective in the strategic plan and SPG accomplished this by minimizing barriers to pulse trade with our funding to Pulse Canada. Another objective of the plan was to increase human consumption of pulses and this was achieved by promoting the health benefits of Canadian pulses through activities such as SPG's participation at the Saskatchewan Pavilion during the 2010 Olympic Winter Games, and with the development of the pulse recipe booklet in partnership with Pulse Canada and the provincial pulse organizations. To date, SPG has distributed 20,000 recipe booklets and have plans to continue with promotions to increase consumption of Saskatchewan pulses.

Increasing production was also a priority in the SPG three-year plan. To accomplish this, SPG's goal was to improve of the quality and production of Saskatchewan pulse crops. Research has been a key investment that has contributed to production growth. Results from a 2008 producer survey indicated that breeding is a research priority for producers so SPG continued to increase research investments in breeding, agronomy, plant nutrition, plant diseases, and environmentally sustainable rotations. As of August 31, 2010, SPG is funding 90 projects valued at \$24 million in the areas of agronomy and sustainable production, genetic improvement, and processing and utilization. Growers are receiving a \$20 return on investment for every \$1 that is invested in pulse research.

SPG's relationship with the University of Saskatchewan's (U of S) Crop Development Centre (CDC) continued to prosper this year. Our funding to the pulse breeding program at the CDC is SPG's largest and most important investment. Breeding research has allowed Saskatchewan pulse producers to have access to the best pulse varieties available. This year, SPG also contributed funding to support Dr. Bert Vandenberg's position as a Natural Sciences and Engineering Research Council (NSERC) Industrial Research Chair. Dr. Vandenberg will study lentil genetics to improve the crop's ability to resist emerging diseases and allow producers to use fewer pesticides and fungicides on their crops. He will also conduct genetic research to breed lentils with higher nutritional value to sell to more consumers around the world.

SPG is building relationships with the CDC and partners such as the National Research Council – Plant Biotechnology Institute (NRC-PBI) by funding additional projects at the U of S, such as a cell and tissue culture application to develop double haploid technology. SPG has also invested funding into genomics research, not to be confused with genetically modified or GMO, to produce better crops for Saskatchewan farmers at a more reasonable cost. Using these genomic tools, breeders can develop new varieties and look at agronomic traits such as disease resistance, maturity, seed quality and seed nutrition. This July, SPG also made a \$1 million investment to the U of S phytotron for upgrades to the controlled growth plant chambers. The phytotron allows breeders to produce varieties in the early testing phases. It is this kind of research at the U of S that has allowed Saskatchewan pulses to remain competitive, and open the door to new market opportunities for Saskatchewan pulses.

The SPG Communications program has continued to grow. Pulse Days continues to be a success with an average of over 900 people in attendance at both locations in Saskatoon. At Pulse Days 2010, SPG presented Tim Marshall of Saskatchewan Trade and Export Partnership (STEP) with the Pulse Promoter of the Year Award for his contributions to the pulse industry. SPG's quarterly magazine, *PulsePoint*, has continued to provide growers with up to date research and production information, and the *Pulse Market Report* has given growers important marketing information to help them make business decisions. In February, SPG also redesigned our website and launched a new consumer-focused portal to communicate the health benefits of pulses. This new site includes links to recipes, nutritional information, and our pulse recipe booklet.

SPG has continued to build relationships with the trade, Pulse Canada and the other provincial pulse organizations, provincial and federal governments and organization such as STEP. The staff have worked closely with these groups to ensure they understand the priorities of the pulse industry. Building relationships with these groups has allowed SPG to have access to the best resources available, leverage research funding, and allow for collaboration.

The SPG Board is now reviewing and updating a strategy for the next three years and identifying new ways to continue to meet the organization's vision and mission. The availability and production capacity of Saskatchewan pulses is on track with our goal of exporting seven million tonnes of pulses from Saskatchewan by 2025.

Murray Purcell, Board Chair



Executive Director's Report

It was another year of growth for the Saskatchewan pulse industry – the export value of pulses from Canada reached \$2.2 billion, with \$1.8 billion coming from Saskatchewan. World demand for Saskatchewan pulses has led to a 36 fold increase in pea, lentil, and chickpea production in Saskatchewan since 1985. The average annual rate has been five per cent over the past 10 years. This growth can be attributed to Saskatchewan's climate, soils, production technology and research capacity, which has allowed us to produce high quality pulse crops.

World population growth is fuelling demand for Saskatchewan pulses and there are opportunities to expand into even more markets. According to a report Saskatchewan Pulse Growers (SPG) received from Brian Clancey of STAT Publishing, overall pulse consumption is expected to increase 10 per cent in the coming decade and 23 per cent by 2030, especially in pulse consuming regions such as Asia and Africa. These regions make up 71 per cent of world pulse consumption and could increase up to 76 per cent. Clancey projected that global consumption will increase from 61 million metric tonnes in 2009 to 73 million metric tonnes in 2030. This means there could be three to four million tonnes of potential new demand for Saskatchewan pulses. SPG has been taking a number of actions to keep Saskatchewan competitive in these markets. We ensure producers have access to the best varieties available from the Crop Development Centre (CDC), and provide funding to Pulse Canada to address any trade barriers that arise, and to seek improvements to the transportation system.

New market opportunities exist in a number of countries, and SPG has been paying close attention to the two major importing regions to increase demand even further. This past year I joined Minister Gerry Ritz and Pulse Canada CEO Gordon Bacon on a mission to China to promote the Canadian pulse industry. The delegation was very well received by Chinese government officials and business leaders. While in China, Minister Ritz announced that China agreed to remove restrictions on Canadian pea imports containing naturally high levels of selenium. This allows Canada to continue to export to one of the top pulse importing regions with no delays and to develop new markets for Canadian pulses in China.

New market opportunities were identified in China by incorporating pulses into existing foods, such as the use of pea flour with wheat flour in baking to increase the nutritional value, or the use of yellow pea starch in vermicelli noodles, which is a large food market in China. Canada has a large market share in China so finding new ways to increase pea consumption in China is important to expand trade volumes.

Trade volumes can also be increased in another large pulse importing region – India. For the past year SPG has been working with the trade to develop the qualifications for a dehulled split green lentil grown in Saskatchewan to be sold in southern India under the brand Kanadal. This product from Saskatchewan will be marketed as a high quality product from Saskatchewan that is quick cooking and packed with nutrients – something India is in need of due to malnutrition concerns among its population.

SPG funded a project with the Tamil Nadu Agricultural University (TNAU) in Coimbatore, India that looked at utilizing Saskatchewan grown dehulled green lentils in traditional Indian foods. TNAU conducted research that included a comparative study of the food related characteristics of native pulses versus dehulled green lentil from Saskatchewan. TNAU developed 30 green lentil based food products, and further expanded 11 of these products that were market tested and well received by consumers. Research showed that the physical and nutritional characteristics of the food products prepared were on par or better, compared to products developed from more commonly used pulses grown in India. The next step? A marketing campaign in India to promote the Kanadal brand. SPG believes that in the long-term, this could result in over 200,000 metric tonnes of green lentil exports to India.

SPG also identified market opportunities to increase consumption of Saskatchewan pulses in North America. SPG staff participated in the Saskatchewan Pavilion at the 2010 Olympic Winter Games to promote the health benefits of Saskatchewan lentils. The staff visited with over 100,000 guests to the pavilion, handed out 10,000 lentil snacks and gave away 12,500 recipes booklets. SPG has identified lentil as a strategic crop due to its health benefits, and ease of cooking. The staff have been working with Pulse Canada to promote the advantages of Canadian lentils with the intent to increase consumption here at home.

Growth has been a driver for SPG in the last year, and to continue expanding this industry, new market opportunities must be identified. Support for research allows SPG to provide farmers with the most up to date varieties available and allows this industry to grow each year, whether it be expanding exports to China and India, or eating more of what we grow in North America.

Garth Patterson, Executive Director

The Year in Review



September 2009

Claire Sullivan is named the recipient of the Alfred E. Slinkard Post Graduate Scholarship and Mohammad Tahir is named the recipient of the Don Jaques Memorial Postgraduate Fellowship.

October 2009

SPG staff attend the ANUGA food show in Cologne, Germany to learn about new food trends and assist the Canadian Special Crops Association at their booth.

November 2009

SPG hosts a reception at the Legislature Building in Regina to showcase the success of the pulse industry to Saskatchewan government representatives.

December 2009

Dan Flynn of Beechy, SK and Vicki Dutton of Paynton, SK are newly elected to the SPG Board of Directors. Murray Purcell is re-elected for his second term.



January 2010

SPG provides farmers with *Tools to Success* at Pulse Days 2010.

Tim Marshall is named the Pulse Promoter of the Year.

SPG announces the winners of the Pulse Days 2010 Research Poster Session. There were ties in two categories:

- Sally Vail and Tamira Delgerjav in the Genetic Improvement Category
- Tanya Der and Julianne Rook in the Value Added Processing Category

Over 70 Select status seed growers attend the Select Grower Meeting during Crop Production Week.

Director Murray Purcell is elected Chair of the SPG Board, and Director Dwayne Moore is elected Vice-Chair of the SPG Board.

The 2010 releases for the Variety Release Program are finalized. This includes three new lentil varieties, five new pea varieties, and three new chickpea varieties.

February 2010

Over 750 producers attend the Regional Pulse Development Workshops across Saskatchewan. Outlook was added as a new location for the workshops which were also held in Yorkton, Swift Current, Moose Jaw, and Weyburn.

The SPG Communications team attends the 2010 Winter Olympic Games in Vancouver to promote the health benefits of Saskatchewan lentils at the Saskatchewan Olympic Pavilion. SPG staff hand out 5,000 nutritional brochures, 12,500 recipe booklets, and 10,000 samples of a lentil snack. SPG also has a feature day at the Pavilion where a Greek lentil salad sample is distributed to visitors. Over the duration of the Olympic Games the Saskatchewan Pavilion welcomes over 100,000 visitors.



SPG launches a new consumer-focused website. The site focuses on the health benefits of pulses and includes links to recipes, nutritional information, and our recipe booklet.

For the 2009 tax year, 27% of the Saskatchewan pulse check-off qualifies for the investment tax credit through the Scientific Research and Experimental Development (SR&ED) program.

March 2010

SPG participates in a Canadian delegation led by Pulse Canada to meet with representatives from the State Administration of Grain (ASG), China Cereals and Oils Association (CCOA) and the Academy of the State Administration of Grain (ASAG).

SPG Staff and Board attend Pulse Day on Parliament Hill in Ottawa. Staff and Board attend various meetings on issues such as transportation and market access, and network with government officials at an evening reception.

April 2010

Agriculture and Agri-Food Canada (AAFC) approve \$7 million of funding to support the Pulse Science Cluster. Of this funding, \$3.2 million is allocated to projects led by AAFC researchers and \$3.8 million is allocated to non AAFC researchers. SPG's contribution is approximately \$965,000.

May 2010

Saskatchewan pulse producers seed 5.45 million acres of pulse crops, including 2.4 million acres of peas, 2.9 acres of lentils, and 150,000 acres of chickpeas.

June 2010

SPG awards five, first-year undergraduate students entering the University of Saskatchewan with a \$5,000 scholarship to put towards their tuition. The recipients were sons or daughters of Saskatchewan pulse producers and accepted into a degree program that would benefit the pulse industry. The winners are: Brayden Holman of Luseland, Alanna Howell of Swift Current, Robert Keller of Wilkie, Steven Tetreault of Leoville, and Allan Walter of Lampman.

July 2010

SPG holds their annual Select Grower Field Day. Pulse breeders at the University of Saskatchewan's Crop Development Centre tour over 35 attendees through plots featuring new pulse varieties.





2009 Pulse Promoter of the Year

SPG launches a billboard campaign to promote Saskatchewan pulses. One billboard is placed along Highway 11 to inform people that Saskatchewan exports 67% of the world's lentils and another is placed at the Saskatoon airport to inform Canadian Special Crops Association delegates they are in the heart of pulse country. SPG also purchases space on a billboard in New York City Times Square to encourage the world to eat more Canadian lentils by promoting their health benefits.

SPG partners with Pulse Canada to host local, national, and international media on the *From Field To Plate Pulse Media Tour* in Saskatoon. With a focus on the health and environmental benefits of pulses, members of media outlets including *Canadian Living*, *Chatelaine*, *Kraft*, *Vegetarian Times*, *International Food Ingredients* and *Prepared Foods* are shown the journey Saskatchewan pulse crops take to get from the farmer's field to a consumer's dinner plate.

SPG and STEP organize an international pulse buyer tour where 15 international pulse buyers are given tours of CP rail sites, three major processing facilities, and taken to a farm outside Regina to see where pulses in Saskatchewan are grown.

SPG partners with STEP in a booth in the Institute of Food Technologists Annual Meeting and Food Expo to promote the nutritional and environmental advantages of Canadian lentils.

SPG announces \$1 million dollars in funding for the University of Saskatchewan's phytotron.

August 2010

The Hon-ourable Shri Subodh Kant Sahai, Minister for Food Processing Industries for the Government of India visits Saskatoon and meets with SPG staff and Board.



Tim Marshall was born in Warwick, England.

After graduation Tim moved to Zambia with Voluntary Service Overseas (VSO). Taking up a position as Farm Management Research Officer with the Zambian Ministry of Rural Development, he worked on resettlement schemes for small indigenous farmers.

Tim returned to England after some time but soon decided that Africa was a better bet. He returned to Zambia as Farm Machinery Officer for the same Ministry working at the newly built Farm machinery Test Unit at Magoye Agricultural Research Station in Southern Zambia. His main work was developing ox drawn equipment and adapting imported equipment for conditions in Zambia.

Later Tim was moved by the Ministry to the Research Station at Mount Makulu, just outside the Capital of Lusaka where he was given the title of Station Manager and maintained Zambia's agricultural research stations fleet of tractors, trucks, Land Rovers, etc. It was here that Tim met his wife Hanne, who was a Danish volunteer at the time.

After a couple of years Tim decided to return to the United Kingdom (UK) where he was offered a position with the London Rhodesia Company (Lonrho). Starting in the service department, Tim eventually became General Manager of two companies - Commercial Motors, the Peugeot Car Distributor for Zambia and Power Equipment, and the Massey Ferguson

Tractor Distributor for Zambia. During his time with these companies,

Tim started an assembly operation from CKD kits that were imported from France for Peugeot, and built Massey Fergusons sales to as many as 750 tractors per year. He also began importing large numbers of combines from Massey's factory at Brantford in Canada and swathers from MacDon in Winnipeg.

Zambia was going through tough times and hard currency was difficult to get so Tim made a deal with the Chinese government. They were desperate for local currency to buy cement and diesel for their construction

company that was building the TanZam railway from Dar es Salaam, Tanzania to Lusaka, Zambia. Tim agreed to be paid with poor Chinese copies for an MF 35 tractor called a Feng Shui. This business kept the company afloat during a particularly tough period.

Tim also became very involved in barter trade to raise hard currency, exporting cotton seed to South Africa and copper rod to Italy, using the proceeds to import tractors from the UK and Italy and to acquire parts from South Africa. It was this barter business that came to the attention of the Government of Saskatchewan. The Saskatchewan Government was looking to use barter as a means to export agricultural machinery, agriculture commodities, and livestock genetics to Eastern Europe and the Soviet Union. Tim was offered the position of Vice President of Agdevco, a Saskatchewan Crown Corporation. Tim, his wife Hanne and their two boys Christian and Simon moved to Saskatchewan, arriving December 5, 1986. It was -35°C that night, quite a shock from having left Lusaka, Zambia at a temperature of +35°C. Tim and Hanne have a daughter, Elisa - born in 1988, the only Canadian-born member of the family.

In this new position Tim was also responsible for the Pulse Crop trading division, working with Inge Ryan, John Galoway and Milos Menhart. Agdevco was privatized in 1990 and Tim was moved to the Saskatchewan Department of Economic Development, where he continued to work with responsibilities for Africa-Asia. Saskatchewan Trade and Export Partnership (STEP) was formed in 1996 and Tim was moved over to this new stand-alone agency. Today, Tim is Senior Director for Asia, Africa with STEP and is very active in promoting Saskatchewan products in the Eastern Hemisphere.

Tim is a Fellow of the British Institute of Agricultural Engineers (FIAGEng) and is a member of the European Society of Agricultural Engineers (EurAgEng). He is also a Certified International Trade Professional (CITP) and the Honorary Consul for Mongolia in Saskatchewan.



Research and Development Highlights and Success

- Saskatchewan Pulse Growers (SPG), The National Research Council's Plant Biotechnology Institute (NRC-PBI) and the University of Saskatchewan (U of S) began a partnership in pulse genomics, to build on the strengths of the pulse breeding program at the Crop Development Centre (CDC). The project, valued at \$3.8 million over three years, will bring together scientists at NRC-PBI and the CDC to jointly pursue the goal of developing and implementing breeding tools for the genetic improvement of pulse crops.
- SPG provided a \$1 million contribution to the College of Agriculture and Bioresources Phytotron Renewal Project. The plant growth facility allows researchers to conduct experiments in a controlled environment. The renewal of the phytotron will enable the U of S to maintain its position as a leader in training, education, research, and innovation.
- Researchers at the U of S determined that consuming 50 grams of lentil, pea, bean, or chickpea is a good dietary source of selenium, iron, zinc, magnesium, manganese and potassium. These results provide a scientific basis for both a marketing strategy based on the micronutrient nutrition of Saskatchewan-produced pulse crops and a crop improvement strategy based on micronutrient biofortification.
- Ongoing studies in the lab of Dr. Joyce Boye, Agriculture and Agri-Food Canada, St. Hyacinthe, demonstrated that red lentil protein hydrolysates possessed Angiotensin I Converting Enzyme (ACE) inhibitory properties, which are often employed in pharmaceutical drugs that are used in the treatment of hypertension. Dr. Boye subsequently confirmed the presence of ACE inhibitory peptides in green lentil, pea, and chickpea protein hydrolysates. It was demonstrated that the ACE inhibitory property of the pulse hydrolysates varied as a function of the type of pulse and the protein type. Results further showed that pulse protein concentrates and their hydrolysates have bile acid binding properties.
- A project initiated in 2006 had the Canadian International Grains Institute (CIGI) conducting research to understand and optimize the processing quality of Canadian pulses and pulse flours. Results

included product prototypes developed from pea, lentil, bean, and chickpea flours and parameters for improving red lentil milling efficiency. Based on these successes, a second phase of the program, with a specific focus on Saskatchewan grown pulses, was initiated in 2010, valued at \$369,341. The overall goal of the new program is to enhance world markets for Saskatchewan pulses through secondary processing and value added research.

- The U of S CDC began the second term of their Pulse Breeding Agreement with SPG. This included an investment of \$9.2 million from SPG into the Pulse Breeding Program at the CDC over the next five years. SPG's investment in the Pulse Breeding Program at the CDC allows SPG to have exclusive global distribution rights to all pulse varieties generated at the CDC, while providing the breeding program with a level of stability going into the future.



Research and Development

Our Strategic Objective

Increased net farm value of pulse production through 2020
by advancing science in the areas of genetic improvement,
sustainable crop production, and crop utilization.



Ongoing SPG Funded Research and Development Projects 2009-10

(Prepared by Management)

AGRONOMY			
Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Controlling Indeterminate Lentil Crop Growth Through Nitrogen Supply	Bueckert, University of Saskatchewan	Objective: Test if non-inoculated lentil, relying mainly on soil supplied nitrogen, can have earlier maturity, higher yield, and a higher harvest index compared to inoculated lentil that relies on nitrogen fixation.	\$0*
Best Management Practices to Improve the Quality Attributes of Red Lentils	Gan, Agriculture and Agri-Food Canada	Results: Seeding date had a significant effect on the seed yield and harvest index at both Swift Current and Saskatoon. Results showed that there was very little difference in percent whole versus split seed between seeding dates. Plant population had a highly significant impact on days to maturity and seed yield. Increased plant density significantly shortened plant maturity and increased seed yield for all varieties tested.	\$17,524
	Shirliffe/ Vandenberg, University of Saskatchewan		\$8,663
Decision Support Parameters for Chickpea Producers in Saskatchewan	Goodwin, Pulse Canada	Results: Two spray decision support tools have shed new light on how to best present disease management options to chickpea growers. The first tool is a 'glove compartment' resource that provides information to producers and agronomists on the disease cycle, scouting and diagnostic techniques, disease management, and a decision tree for determining when to apply fungicides. The second tool is a 'sentinel system' that allows the research and extension community to provide an early warning system that will inform growers when spores have become prevalent in fields in a given region.	\$0*
Reducing the Use of Organophosphate Insecticides for Grasshopper Control in Lentils	Goodwin, Pulse Canada	Results: A grasshopper identification booklet was printed and circulated at extension events and online. Research into a biocontrol agent is ongoing. Grasshopper forecasting website connected with Weather Farm for the 2010 season.	\$0*
Integrated Pest Management of the Pea Leaf Weevil (PLW)	Carcamo, Agriculture and Agri-Food Canada	Results: It was consistently demonstrated that the proportion of seedlings with terminal leaf damage provided an adequate indication of overall plant damage and, to some extent, potential yield losses. Plot studies also provided support to maintain the action threshold of 30 per cent of seedlings with terminal leaf damage. It also appears that trap crops may be a useful management tool for control. Several tests were conducted to screen new chemistries, including various doses of the registered seed treatment and comparisons with the current foliar option registered for this pest. An important native ground beetle predator was found to consume a large amount of eggs, pointing towards the need to establish a classical biocontrol program.	\$0*
Reducing Production Risks of Chickpeas by Optimizing Fungicide Applications	Banniza, University of Saskatchewan	Objectives: Investigate the effect of fungicide application timing and frequency on the control of ascochyta blight in new chickpea cultivars with partial resistance to <i>A. rabiei</i> . Compare the efficacy of different fungicide rotations on ascochyta blight control.	\$40,250
Interaction of Herbicide Applications and Reaction to Ascochyta Blight in Chickpea	Tar'an, University of Saskatchewan	Results: Under specific conditions, pre-emergent application of low rate imazethapyr slightly increased the severity of ascochyta infection but only caused minor effects on plant injury, days to flowering, days to maturity, plant height and yield of chickpea. Post-emergent applications of imazamox, imazethapyr and metribuzin caused increases in ascochyta blight disease, delayed flowering and maturity and reduced yield in chickpea. Sulfentrazone was a safer option for broadleaf weed control in chickpea.	\$17,457
Investigation of the Relationship Between Fungicides, Microbial Community and Performance of Crops After Chickpeas	Gan, Agriculture and Agri-Food Canada	Objectives: Determine the effect of repeated applications of azoxystrobin, pyraclostrobin, boscalid, and chlorothalonil in various sequences in chickpea on microorganism community, diversity, and enzymes in the soil. Define cereal yields in relation to changes of soil micro-organisms due to various practices of fungicide use.	\$64,600
Lifecycle and Socio-Economic Analysis of Pulse Crop Production and Pulse Grain Use in Western Canada	Wismer, Saskatchewan Research Council	Objectives: Conduct a life cycle analysis to assess the environmental impact of pulse crop production in crop rotation and subsequent pulse grain use as animal feed and for human consumption in Western Canada. Assess the socio-economic impacts of pulse crop production in Western Canada.	\$32,386

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Soil Carbon and Nitrogen Balance Under Lentil	Lemke, University of Saskatchewan	Objectives: Compare soil gross mineralization and gross nitrification rates on a continuous wheat and a wheat-lentil system. Compare soil quality parameters on a continuous wheat and wheat-lentil system. Track and quantify the below-ground carbon and nitrogen contribution of lentil into specific soil organic matter fractions.	\$39,445
Validation of the Mustard Root Bioassay for Detection of New Group 2 Herbicides	Schoenau, University of Saskatchewan	Objectives: Determine if the mustard root bioassay is effective in detecting pyroxsulam and thienencarbenzone residues in soil. Determine the phytotoxicity of these two compounds in different soil types relative to flucarbazone.	\$8,211
Combinations of Sulfentrazone and Saflufenacil for an Improved Spectrum of Broadleaf Weed Control in Chickpea	Johnson, Agriculture and Agri-Food Canada	Objective: Investigate combinations of various rates of sulfentrazone and saflufenacil to provide the widest spectrum of broadleaf weed control in chickpea.	\$26,000
Assessing Nitrogen Fixation of Faba Bean for the Prairies	Bueckert, University of Saskatchewan	Objectives: Improve the nitrogen contribution of pulses in the cropping rotation by assessing the nitrogen budget of faba bean. Measure the biomass and nitrogen content of a range of faba bean genotypes and cultivars. Assess the nitrogen fixation ability of faba bean genotypes by shoot nitrogen metabolism under typical dryland prairie conditions and controlled stress conditions. Develop a ureide and specific amino acid screening technique to economically screen for high nitrogen fixation.	\$33,335
Infection Studies of <i>Ascochyta blight</i> on Wild Chickpea Germplasm	Banniza, University of Saskatchewan	Objective: Gain a better understanding of ascochyta blight resistance, specifically the underlying mechanisms at the cellular level found in the resistant cultivar CDC Frontier, and resistant annual and perennial wild chickpea accessions.	\$22,379
Diseases of Field Pea in the Black Soil Zone of Northern Saskatchewan	Banniza, University of Saskatchewan	Objectives: Determine yield losses associated with soil-borne pathogens of field pea in north central and northeast Saskatchewan. Identify the pathogens involved and evaluate the benefit of seed treatments to improve and/or stabilize pea seed yield. Identify the pathogens of the ascochyta blight complex in field pea in north central and northeast Saskatchewan. Determine the economic benefit of foliar fungicide application to control ascochyta blight in this region.	\$37,030
Limiting the Prevalence and Distribution of Stem Nematode <i>Ditylenchus dipsaci</i> in Field Pea	Tenuta, University of Manitoba	Objectives: Determine the race, frequency of occurrence and population levels and geographical extent of <i>D. dipsaci</i> in Saskatchewan and Alberta pea fields. Determine geographical occurrence of the pest in relation to management conditions and environmental factors. Determine if pea is the primary host of the pest.	\$21,000
Impact and Control of Root Rot in Faba Bean	McLaren, Agriculture and Agri-Food Canada	Objective: Assess the impact of Fusarium root rot on emergence, nodulation, root rot, and yield of faba bean.	\$8,000
	Chang, Alberta Agriculture and Rural Development		\$4,000
Prairie Soil Carbon Balance Project	Wiebe/McConky, Saskatchewan Soil Conservation Association/ Agriculture and Agri-Food Canada	Objective: Determine carbon sequestration accomplished by Saskatchewan producers from adoption of direct seeding and improved rotations.	\$18,200
Research & Development of Canadian <i>Metarhizium</i> as a Biological Agent for Control of Grasshoppers in Pulse Crops	Johnson, University of Lethbridge	Objective: Assess the biocontrol agent <i>Metarhizium anisopliae</i> isolated from soil collected in southern Alberta.	\$22,380
Richardson Ground Squirrel (RGS) Control	Harvey, Saskatchewan Association of Rural Municipalities	Objective: Find an effective, economical and environmentally friendly control method(s) for the control of Richardson Ground Squirrels (RGS).	\$4,900
Development of Crop Management Practices Using Plant Growth Regulators to Manage Secondary Crop Growth and Accelerate Crop Maturity of Rainfed and Irrigated Kabuli Chickpea	Bandara, Alberta Agriculture and Rural Development	Objectives: Examine the impact of plant growth regulators (PGR) on the phenology and productivity of kabuli chickpeas. Perform the cost/benefit analysis of the use of PGR on kabuli chickpeas. Examine the relationships among yield components and phenological traits of chickpeas.	\$3,450

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Assessment of Arbuscular Mycorrhizal Fungal Inoculants for Pulse Production Systems	Walley, University of Saskatchewan	Objectives: Assess the growth promotion characteristics of commercially available Arbuscular Mycorrhizal Fungal (AMF) inoculants as compared to local inoculum sources. Assess the impact of AMF inoculation on populations and colonization success by indigenous AMF species. Examine the impact of soil and climate/ weather on the persistence of introduced commercial AMF isolates. Examine the influence of AMF inoculant rate on growth promotion and competition with other indigenous AMF and determine the economic viability of using an AMF inoculant.	\$94,267
Agronomy Total			\$523,477

BREEDING (GENETICS)

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Improving <i>Ascochyta blight</i> Resistance in Chickpea	Warkentin, University of Saskatchewan	Results: All wild perennial accessions showed significantly higher blight resistance under heavy disease pressure and no fungicide application. Crossing wild accessions with the cultivated chickpea resulted in hybrid embryo development. However, hybrid plants could not be regenerated from these crosses indicating that the rescue procedure needs further improvements.	\$23,834
Pulse Crop Advancement Agreement	Murrell, University of Saskatchewan	Objectives: Generate superior pulse crop varieties for Saskatchewan pulse crop producers, through the development of new varieties and the improvement of existing varieties. Maintain Saskatchewan competitiveness in existing pulse markets, as well as enhancing the development of new uses and markets.	\$1,418,860
Memorandum of Understanding to Hire a Pulse Crop Geneticist	Murrell, University of Saskatchewan	Result: As of February 1, 2010, Dr. Bunyamin Tar'an accepted an Assistant Professorship position at the University of Saskatchewan as Chickpea Breeder with the Crop Development Centre (CDC), becoming the fourth member of the CDC pulse breeding and pathology team.	\$24,687
Memorandum of Understanding for SPG-CDC Pulse Crop Regional Variety Trials	Warkentin, University of Saskatchewan	Objectives: Provide funding to the CDC to conduct Regional Variety Trials of pea, lentil, chickpea, dry bean and faba bean in Saskatchewan for the period 2006-2010. Provide beneficial variety data to growers, seed producers, breeders and seed companies.	\$100,000
Pathogenic, Genetic and Molecular Characterization and Differentiation of Races in <i>Colletotrichum truncatum</i> from Lentil	Banniza, University of Saskatchewan	Objectives: Investigate the infection biology of the two identified races of anthracnose on susceptible and resistant lentil genotypes. Determine the distribution of races in lentil growing areas. Illuminate the inheritance of virulence. Develop a genetic linkage map. Develop molecular markers for race identity.	\$54,421
Unlocking the Bioavailability of Phosphorous and Micronutrients Through Development of Low Phytate-Phosphorous Pea	Warkentin, University of Saskatchewan	Objectives: Characterize two low phytate mutants in pea at the physiological, genetic and molecular levels. Determine their effects on bioavailability of phosphorous and micronutrients in an animal model.	\$58,925
Breeding for Enhanced Nitrogen Fixation in Cereal-Legume Cropping Systems in Saskatchewan	Vandenberg, University of Saskatchewan	Objectives: Develop a system for screening lentil and pea cultivars on the basis of their contribution to yield and quality of subsequent spring wheat and durum cultivars. Develop a system for screening the effect of specific genotypes of spring wheat and durum on the basis of performance of subsequent pea and lentil cultivars.	\$50,000
Genetic Improvement of Bioavailable Selenium Content in Lentil Seeds	Vandenberg, University of Saskatchewan	Objectives: Conduct a series of investigations that will form the scientific basis of a marketing and breeding strategy on biofortification of selenium content for Saskatchewan grown lentil crops.	\$34,373
Collecting Pulse Germplasm on the Crimean Peninsula in Ukraine	Diederichsen, Agriculture and Agri-Food Canada	Results: Collected 127 seed samples of 55 genera. The collected germplasm will be preserved by the national genebanks of Ukraine and Canada, and made available to researchers and breeders. The lentil material will be assessed for its resistance to the diseases anthracnose and ascochyta blight.	\$5,796
Understanding and Improving Lentil and Chickpea Seed Quality - Reduction of Raffinose Family Oligosaccharides	Chibbar, University of Saskatchewan	Objectives: To improve the seed quality of chickpea and lentil. Characterize the RFO (Raffinose, stachyose and verbascose) biosynthetic pathway in lentil and chickpea. Isolate and characterize key genes participating in the RFO biosynthetic pathway. Study the regulation of key genes participating in RFO biosynthesis. Generate targeted DNA-based molecular markers to screen germplasm and breeding populations for reduced RFO.	\$56,352
Pyramiding Novel Genes for Resistance to Ascochyta Blight from <i>Pisum fulvum</i> into Field Pea Through Molecular Breeding	Warkentin, University of Saskatchewan	Objectives: Initiate a long-term strategy for the enhancement and maintenance of resistance in pea for ascochyta blight using an integrated genetic improvement approach, through interspecific hybridization, tissue culture techniques to accelerate hybrid development, plant pathology and molecular genetics.	\$77,366

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Taming the Technology: Application of Sequence Data in the Lentil Breeding Program	Bett, University of Saskatchewan	Objectives: Develop molecular maps of cultivated lentil and a wild species for use in foreground and background selection. Increase the efficiency of germplasm development through interspecific hybridization, combined with molecular marker selection for adapted background.	\$93,236
Developing Sulfentrazone Tolerance in Lentil	Holm, University of Saskatchewan	Objectives: Identify and/or develop lentil germplasm with sufficient tolerance to sulfentrazone for incorporation into the CDC lentil breeding program. Generate data to support the registration of sulfentrazone for use on lentil varieties tolerant to the herbicide.	\$107,819
Shortening Generation Time for Faster Commercialization of New Pulse Crop Varieties	Vandenberg, University of Saskatchewan	Objectives: Speed up the introduction of new pulse varieties by developing an efficient and cost effective <i>in vitro</i> technique. Apply the developed protocol to hybrids from the interspecific projects to reduce the time required for incorporating new sources of disease resistance into the cultivated species. Obtain seeds from interspecific and/or double-haploid projects where plants cannot be rooted or grafted.	\$68,705
Double-Haploid Lentils: High Speed Global Genetic Delivery System	Vandenberg, University of Saskatchewan	Objectives: Develop an efficient anther culture protocol for the production of double-haploid lentil. Apply the knowledge gained to develop an efficient microspore culture protocol. Use the best protocol on selected material from the CDC lentil breeding program to develop an efficient double-haploid method that is applicable to a wide range of genotypes.	\$84,437
Chickpea Regeneration: Development of Rescue Media Using Hormone Profiling Analysis of Anthers and Young Ovules	Abrams, National Research Council, Plant Biotechnology Institute	Objectives: Determine the hormone profiles necessary for rescue media for culturing chickpea embryos for interspecific hybrid development. Determine the hormone profiles necessary for chickpea breeding through doubled haploid technology.	\$47,966
Expanding the Repertoire of Genes in Chickpea that Provides Protection Against Ascochyta Blight	Buchwaldt, Agriculture and Agri-Food Canada	Objectives: Identify new chickpea germplasm with ascochyta resistance from diverse geographical regions such as Mexico, Ethiopia, Bulgaria, Israel, and Turkey. Identify molecular markers linked to different Quantitative Trait Loci (QTL) that confer resistance to ascochyta blight either individually, or in combination.	\$62,000
Using Pedigree-Based Genome Mapping for QTL Identification for Seed Size, Earliness and Ascochyta Blight Resistance in Chickpea	Tar'an, University of Saskatchewan	Objectives: Develop pedigree-based whole genome marker analysis using the CDC chickpea breeding program to provide useful information about the use of simple sequence repeat and single nucleotide polymorphism markers. Integration of genotypic, phenotypic, and pedigree information for immediate application in chickpea breeding.	\$95,220
Dry Bean Improvement Through the Use of Tepary Bean	Bett, University of Saskatchewan	Objectives: Characterize a core collection of cultivated and wild tepary beans in the Saskatchewan environment to identify key lines for future development. Assess adaptation and productivity relative to common bean under sub-optimal conditions micronutrient profile lines that produce seed. Assess germination and emergence under cold soil conditions and survival at sub-zero temperatures in the field, as well as field based tolerance to common bacterial blight (CBB), all relative to common bean.	\$43,712
Enhancing the Nutritional Value of Saskatchewan Pulses Through Improved Levels of Folate and Carotenoids	Warkentin, University of Saskatchewan	Objectives: Determine the genetic variation in natural folate and carotenoid content for selected pea, chickpea, and dry bean germplasm. Measure different types of carotenoids and folates present in cotyledons, seed coats, and embryo tissues of selected genotypes. Measure the total natural folate and carotenoid retention in key genotypes after storage, milling, cooking or canning. Outline a breeding strategy to enhance the levels of folate and carotenoids in Saskatchewan pulse crops.	\$0*
Perennial Cicer: Potential for Improving <i>Ascochyta rabiei</i> Resistance	Lulsdorf, University of Saskatchewan	Results: Viable, healthy seeds were collected from 68 out of 141 targeted accessions. These seeds will be stored under dry and cool conditions at Plant Gene Resources Canada in Saskatoon, keeping their viability for decades. These seeds will be a source of germplasm for future research exploring their genetic potential for chickpea improvement.	\$10,000
Contribution Agreement: Renewal of the Phytotron at the College of Agriculture and Bioresources, University of Saskatchewan	Wartman, University of Saskatchewan	Objective: Ensure CDC pulse breeders have access to adequate facilities and technology to operate a successful breeding program.	\$1,000,000

*No payments were made in 2009-10.

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Implementation of Markers for Pulses (iMAP)	Tar'an/Bett, University of Saskatchewan	Objectives: Establish a set of molecular tools and integrate them with genetic resources from the CDC breeding program and from collaborators in other countries to provide greater precision in evaluating breeding lines resulting in faster development of improved pulse cultivars, addressing the needs of growers and consumers at large.	\$712,563
	Sharpe, National Research Council, Plant Biotechnology Institute		\$269,000
Capital Expenditures for Plant Breeding and Pathology Field Work	Murrell, University of Saskatchewan	Objectives: Enhance the execution of the Pulse Crop Advancement Agreement, allowing SPG to maximize its investments. Improve field operations for crop development.	\$228,000
Pea Genetic Improvement Program	Various	Objective: Ensure that the Saskatchewan pea industry remains competitive in world markets by creating an environment that ensures Saskatchewan pulse producers have access to the best pea varieties.	\$500,000
Saskatchewan Pea Grower Survey (by Pulse Research Ltd.)		Saskatchewan Pea Grower Survey (by Pulse Research Ltd.).	\$4,501
Breeding (Genetics) Total			\$5,231,773

VALUE ADDED PROCESSES			
Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Expanding Utilization of Pulses in Meat Processing	Shand, University of Saskatchewan	Objectives: Screen and evaluate functionality of various Saskatchewan grown pulses for efficacy in meat batter production. Characterize and evaluate the contribution of protein and starch fractions of selected pulses for their role in gelation and water holding of meat gels. Consider strategies for possible modifications of some of the functional properties of pulse proteins to improve their utilization and processing qualities in meat products.	\$12,369
Enhancing the Economic Value and the Use of Field Peas by the Pork and Feed Industries	Patience, Prairie Swine Centre Inc.	Objectives: Obtain a cross-section of quality of field peas currently available in the marketplace. Conduct detailed studies of the digestibility of the nutrients in such samples and relate this information to digestible energy and net energy. Determine if altering particle size and pelleting are practical and effective in enhancing both the nutritional quality and the financial value of low quality samples. Formulate pea-based diets and feed these diets to pigs of two different ages to confirm that peas can be fed at very high levels, while maintaining equivalent animal performance.	\$0*
Development of Low Glycemic Index Breads from Pulses	Jenkins, University of Toronto	Results: Breads made of pulse flours have a low Glycemic Index (GI). The reduction in GI may be the result of the high protein and fibre content of legumes, which will make them useful in healthy diets and in disease prevention.	\$16,500
Enhancing World Markets for Canadian Pulses Through Secondary Processing and Value-Added Research	Malcolmson, Canadian International Grains Institute	Results: This project brought evidence that the moisture content of Canadian red lentils needed to be reduced to improve red lentil milling efficiency. Through several pilot processing tests on peas, lentils and desi chickpeas, knowledge has been advanced on the processing properties of pulses. Quality traits of whole pulses was undertaken in collaboration with breeders with the intention of aiding in the selection of new varieties. Technical information was generated on the functional properties of bean and pea flours, as well as pea fibre.	\$8,850
Integrated Approach for Post-Harvest Quality of Red Lentil	Cenkowski, University of Manitoba	Results: The dehulling and cooking quality of red lentils were affected mostly by the cultivar, then by the storage pre-treatment and finally by the storage time and storage moisture content. The adjustment of moisture content prior to milling could be used to partially alleviate the effects of storage pre-treatment. The application of wet/dry cycles to red lentils before storage caused the most damage to the appearance of seeds and caused a substantial decrease in dehulling efficiency, therefore cyclic moisture content changes should be avoided during storage of red lentils.	\$25,159
	Tabil, University of Saskatchewan		\$8,280
Micronutrient Profiling of Saskatchewan Pulses to Determine Potential Biofortification Strategies	Vandenberg, University of Saskatchewan	Results: The scientific information on micronutrient concentration of Saskatchewan grown pulses is being well received by both Canadian exporters and international importers. This project has provided sufficient evidence to support the concept of developing a Saskatchewan-branded pulse marketing strategy for pulses based on essential micronutrient concentrations.	\$11,604

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Low Glycemic Index Breads from Beans	Jenkins, University of Toronto	Objectives: Produce palatable bean breads for sale in supermarkets, which will have low glycemic indices and be suitable for use by individuals with diabetes or those at risk of developing diabetes.	\$57,960
Characterization of the Flavour Properties of Selected Pea Varieties Grown in Saskatchewan	Boye, Agriculture and Agri-Food Canada	Objectives: Characterize the flavour profiles of selected pea varieties (green, yellow, dun and marrowfat) grown in Saskatchewan. Determine the impact of primary processing (whole and split) and secondary processing techniques (e.g. heating, etc) on flavour development and stability. Study the interactions between the different pulse components (e.g. proteins, lipids, and starches) and determine the impact of these interactions on the flavour of the pea flours when treated under different conditions. Determine the impact of storage conditions (time, temperature, humidity) on the flavour profile of the pea seeds and flours.	*\$0
	Malcolmson, Canadian Inter- national Grains Institute		*\$0
Saponins in Peas and Their Effects on Palatability in Pigs	Gonyou, Prairie Swine Centre Inc.	Objective: Generate reliable information on the presence of saponins in Canadian pea varieties and the possible consequences for the pig feed industry and the food industry.	*\$0
Can Arsenic Toxicity in Mammals be Reduced by Feeding Saskatchewan Grown Lentils?	Smits, University of Calgary	Objectives: Determine if there is a scientific basis for superior nutritional and therapeutic qualities of Saskatchewan-grown lentil that will enhance future marketing efforts based on biofortification of nutritional components. Conduct <i>in vivo</i> mammalian toxicology studies to evaluate the effectiveness and potential synergistic effects of selenium and folate-rich lentils in mitigating symptoms of chronic arsenic toxicity.	\$49,592
Lentils as an Endurance and Performance Food in Tournament Sports	Chilibeck, University of Saskatchewan	Results: This study determined the effects of low Glycemic Index (GI), high protein pre-exercise meals on simulated soccer tournament performance using a previously validated protocol. The low and high GI meals elicited unique metabolic profiles throughout the post-prandial period. A trend towards greater fat oxidation in the low GI trial was observed.	\$10,015
Utilization of Green Lentil in Traditional Indian Foods	Pushpa/Andal, Tamil Nadu Agricultural University	Objectives: Conduct a market survey for native pulse based products. Develop green lentil based food products. Transfer technology of green lentil-based food processing to processors for production of green lentil based food products.	\$2,060
Risk Assessment for Subjects with G6PD-Deficiency of New Fava Bean Cultivars with Low Content of Vicine and Convicine (FEVITA Beans)	Arese, University of Torino	Results: In a sample of seven severely G6PD-deficient subjects, none of the parameters indicating hemolysis or oxidative red blood cell damage was changed time-dependently either short-term or up to 48 hours post-ingestion of raw dehulled faba bean seeds with low tannin and low vicine/convicine content.	\$10,200
Assessment of Angiotensin I Converting Enzyme (ACE) Inhibitory Properties of Pulse Protein Hydrolysates	Boye, Agriculture and Agri-Food Canada	Objective: Identify pulses grown in Canada which contain proteins with Angiotensin I Converting Enzyme (ACE) inhibitory properties and compare their ACE inhibitory properties with other pharmacologically active molecules.	\$111,850
Effectiveness of Pulse-Based Foods Combined with Exercise for Improving Components of the Metabolic Syndrome	Chilibeck, University of Saskatchewan	Objectives: Determine the effectiveness of a pulse-base diet combined with an exercise training program for reducing the risk of metabolic syndrome in older adults. Show that a pulse-based diet should be included as an important component of a healthy lifestyle.	\$1,610
Pulse Consumption in Canada: Analysis of Pulses in the Canadian Community Health Survey (CCHS)	Aukema, University of Manitoba	Objectives: Identify the demographic characteristics of Canadian adult pulse consumers including the amount, types, and food forms of pulses consumed. Evaluate the diet quality (nutrient and food group intakes) of Canadian pulse consumers relative to non consumers. Determine if other health outcomes (biomarkers, disease diagnosis) or weight status is related to pulse consumption in a nationally representative sample of adult Canadians.	\$26,163
Effect of Pulses on Glycemic Control and Cardiovascular Risk Factors in Type 2 Diabetes: A Low Glycemic Index Study	Jenkins, University of Toronto	Objectives: Determine if pulses improve glycemic control in non-insulin dependent diabetes, as assessed by HbA1c, and to assess whether these outcomes relate to improvements in cardiovascular health (i.e. serum lipids and measures of oxidative stress and inflammatory biomarkers).	\$0*
Knowledge, Skills, Attitudes and Behaviors of Women, Infants & Children (WIC) Recipients Regarding Pulses	Dahl, University of Florida	Objectives: Determine the knowledge, skills, attitudes, and behaviors of Women, Infants and Children (WIC) participants regarding the preparation and consumption of dried and canned pulses. Deliver a pilot low literacy canned pulse recipe and education program to the North Central Florida WIC program recipients.	\$2,989
An Investigation Into Pulse Fibre Fermentation and Nitrogen Excretion in Patients with Chronic Renal Failure	Dahl, University of Florida	Objectives: Study the effect of pulse oligosaccharides, resistant pea starch, pea cotyledon fibre, and pea hull fibre, on blood urea nitrogen, urinary nitrogen excretion, fecal nitrogen excretion, and fecal microbiota, as well as markers of metabolic stress and inflammation in patients with chronic kidney disease.	\$40,000

*No payments were made in 2009-10.

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Nutritional Impact of Saskatchewan Grown Lentil Feeding on a Sample of Healthy and Clinical Children Populations in Sri Lanka	Vandenberg, University of Saskatchewan	Objective: Generate preliminary data to support the hypothesis that high micronutrient levels in Saskatchewan lentils leads to increased bio-availability to humans.	\$69,894
Diet Approaches to Increase Lentil Consumption in Youth (DAILY): Knowledge, Beliefs and Barriers Affecting Pulse Consumption	Zello, University of Saskatchewan	Objective: Analyze consumer knowledge, beliefs and practices surrounding pulse consumption.	\$16,390
Supporting Healthy Development in the Early Years: Perceptions of Rural Caregivers Around the Promotion of Physical Activity and Pulse Crop Consumption	Humbert, University of Saskatchewan	Results: Rural caregivers identified a number of barriers to the provision of health promoting behaviors. However, some caregivers identified practices they use to overcome barriers and this in turn facilitates the promotion of physical activity and healthy eating within rural care centre's. Caregivers were excited about the prospect of incorporating locally grown pulse crops into the meals served at the care centre's.	\$4,369
Development of Prototype Expanded Snack Foods and Breakfast Foods from Pea Flour, Air-Classified Pea Starch and Pea-Cereal Blends Using Twin-Screw High Temperature Extrusion Technology	Hood-Niefer, Parrheim Foods	Objective: Identify optimal extrusion conditions for the manufacture of prototype expanded snack foods and breakfast foods from blends of pea flour, air-classified pea starch, and cereal ingredients.	\$0*
Maximizing the Use of Field Pea in a Commercial Barn Operation	Johnston, Prairie Swine Centre Inc.	Objective: Demonstrate that peas constitute a basic feed ingredient for pigs and that a commercial pig barn where pigs are fed high levels of field peas have the same performance as barns where pigs are fed with other feed ingredients.	\$75,900
Processing and Pea-Based Dog Foods: Maximizing Starch Resistance to Improve Obesity, Diabetes, Cardiovascular Health and Intestinal Health	Weber, University of Saskatchewan	Objectives: Determine which pea varieties, particle sizes, and extrusion conditions can be used to enhance resistant starch content. Examine the intestinal site where glucose is absorbed compared to when it appears in the blood. Examine impact of resistant starch sources on diabetes and cardiovascular function in normal weight dogs. Compare the pea-based diet to the most rapidly digestible diet in two longer-term dog feeding studies.	\$17,794
Does the Inclusion of Field Pea in Beef Finishing Diets Influence Beef Palatability Attributes of Multiple Muscles in Cattle Genetically Indexing for Poor Carcass Parameters?	Anderson/Carlin, North Dakota State University	Objectives: Determine the effect of field pea in finishing diets on carcass quality traits of cattle scoring in the lower one-third index for Ingenity® genetic markers palatability traits. Compare mechanical tenderness test results and human sensory panel response for ribeye, inside round, top sirloin, and chuck tender muscles from steers fed field pea or no field pea in a corn-base finishing diet.	\$23,113
Risk Assessment of New Fava Bean Cultivars with Low Content of Vicine and Convicine (FEVITA beans) in Hemizygous Male Subjects with Total G6PD-Deficiency	Arese, University of Torino	Objectives: Set up a protocol suitable to assess the lack of toxicity of FEVITA beans in highly sensitive and susceptible G6PD-deficient individuals. Provide proof of the lack of hemolytic, toxic potential of the new FEVITA beans.	\$26,600
Enhancing World Markets for Saskatchewan Pulses Through Secondary Processing and Value Added Research	Malcolmson, Canadian International Grains Institute	Objective: Undertake secondary processing and value added research for the Saskatchewan pulse industry and utilize the findings to undertake technical market development activities and promotion of Saskatchewan pulses, with a particular focus on lentils.	\$71,500
Pulse Flour Milling and Utilization in Food Products	Malcolmson, Canadian International Grains Institute	Objective: Establish Canada as a leader in pulse ingredient processing through the development of an understanding of how processing impacts the functionality of pulse crops.	\$58,538
Value Added Processes Total			\$759,299

GENERAL

Project Name	Researcher/ Institution	Project Objectives / Results	Funding Amount
Expansion of Pulse Testing and Processing Facilities at The Canadian International Grains Institute	Geddes, Canadian International Grains Institute	Objective: Enhance the Canadian International Grains Institute's ability to support and expand the marketing and competitiveness of Canadian pulses both internationally and domestically.	\$69,162
General Total			\$69,162

ONGOING SPG FUNDED RESEARCH & DEVELOPMENT PROJECTS 2009-10

Total \$6,583,711

2009-2010 Audited Financial Statements

A list of payees will be made available upon request.



To the Members of Saskatchewan Pulse Crop Development Board

We have audited Saskatchewan Pulse Crop Development Board's control as of August 31, 2010, to express an opinion as to the effectiveness of its control related to the following objectives:

- To safeguard Board resources. That is, to ensure its assets are not lost or used inappropriately; to ensure it does not inappropriately incur obligations; to establish a financial plan to achieve its goals; and to monitor and react to its progress towards the objectives established in its financial plan.
- To prepare reliable financial reports.
- To conduct its activities following laws, regulations and policies related to financial reporting, safeguarding Board resources, revenue raising, spending, borrowing and investing.

We used the control framework developed by The Canadian Institute of Chartered Accountants (CICA) to make our judgments about the effectiveness of Saskatchewan Pulse Crop Development Board's control. We did not audit certain aspects of control concerning the effectiveness, economy and efficiency of certain management decision-making processes.

The CICA defines control as comprising those elements of an organization that, taken together, support people in the achievement of the organization's objectives. Control is effective to the extent that it provides reasonable assurance that the organization will achieve its objectives.

Saskatchewan Pulse Crop Development Board's management is responsible for effective control related to the objectives described above. Our responsibility is to express an opinion on the effectiveness of control based on our audit.

We conducted our audit in accordance with standards for assurance engagements established by the CICA. Those standards require that we plan and perform an audit to obtain reasonable assurance as to the effectiveness of Saskatchewan Pulse Crop Development Board's control related to the objectives stated above. An audit includes obtaining an understanding of the significant risks related to these objectives, the key control elements and control activities to manage these risks and examining, on a test basis, evidence relating to control.

In our opinion, Saskatchewan Pulse Crop Development Board's control was effective, in all significant respects, related to the objectives stated above as of August 31, 2010, based on the CICA criteria of control framework.

Control can provide only reasonable, not absolute, assurance of achieving objectives reliably for two reasons. First, there are inherent limitations in control including judgment in decision-making, human error, collusion to circumvent control activities and management overriding control. Second, cost/benefit decisions are made when designing control in organizations. Because control can be expected to provide only reasonable assurance, not absolute assurance, the objectives referred to above may not be achieved reliably. Also, projections of any evaluation of control to future periods are subject to the risk that control may become ineffective because of changes in internal and external conditions, or the degree of compliance with control activities may deteriorate.

SASKATOON, SASKATCHEWAN
November 10, 2010

"HERGOTT DUVAL STACK LLP"
Chartered Accountants



**To the Members of Saskatchewan Pulse Crop
Development Board**

We have made an examination to determine whether the Saskatchewan Pulse Crop Development Board complied with the provisions of the following legislative and related authorities pertaining to its financial reporting, safeguarding of assets, spending, revenue-raising, borrowing and investing activities during the year ended August 31, 2010:

The AgriFood Act, 2004

The Pulse Crop Development Plan Regulations

Our examination was made in accordance with Canadian generally accepted auditing standards, and, accordingly, included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, the Saskatchewan Pulse Crop Development Board has complied, in all significant respects, with the provisions of the aforementioned legislative and related authorities during the year ended August 31, 2010.

SASKATOON, SASKATCHEWAN
November 10, 2010

"HERGOTT DUVAL STACK LLP"
Chartered Accountants

**To the Members of Saskatchewan Pulse Crop
Development Board**

We have audited the statement of financial position of Saskatchewan Pulse Crop Development Board as at August 31, 2010 and the statement of operations, statement of changes in net assets and statement of cash flows for the year. These financial statements are the responsibility of the Board's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Board as at August 31, 2010 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

SASKATOON, SASKATCHEWAN
November 10, 2010

"HERGOTT DUVAL STACK LLP"
Chartered Accountants

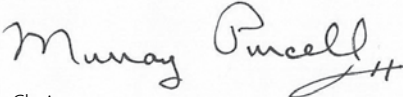
SASKATCHEWAN PULSE CROP DEVELOPMENT BOARD

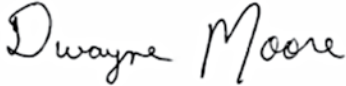
Statement of Financial Position

August 31, 2010

	<u>2010</u>	<u>2009</u>
Assets		
Current Assets		
Cash	\$ 490,017	\$ 1,303,286
Investments (Note 3)	6,198,625	5,098,172
Accounts receivable	1,210,754	1,070,546
Prepaid expenses	220,780	206,954
Accrued interest receivable	113,438	82,360
	8,233,614	7,761,318
Capital assets (Note 4)	1,050,360	1,028,440
Investments - restricted (Note 3)	4,100,000	2,800,000
Investments (Note 3)	4,820,814	3,925,211
	\$ 18,204,788	\$ 15,514,969
Liabilities		
Current Liabilities		
Accounts payable	\$ 1,155,510	\$ 1,689,713
Net Assets		
Invested in capital assets	1,050,360	1,028,440
Internally restricted	4,100,000	2,800,000
Unrestricted	11,898,918	9,996,816
	17,049,278	13,825,256
	\$ 18,204,788	\$ 15,514,969

Approved on behalf of the Board


Chair


Vice-Chair

See accompanying notes to the financial statements.

SASKATCHEWAN PULSE CROP DEVELOPMENT BOARD

Statement of Operations

Year ended August 31, 2010

	<u>2010 Budget</u> (Note 8)	<u>2010 Actual</u>	<u>2009 Actual</u>
Revenue			
Check-off	\$ 11,320,000	\$ 13,173,212	\$ 12,072,342
Research and development	72,000	73,100	72,500
Communications	218,100	273,016	325,435
Variety commercialization	326,600	309,861	245,255
Investment	275,000	330,724	272,813
Office	150,000	94,587	67,891
Domestic market development	8,300	-	-
	12,370,000	14,254,500	13,056,236
Expenses (Schedule 1)			
Research and development	8,500,000	6,669,171	5,241,575
Communications	1,627,000	1,106,992	631,508
Variety commercialization	634,000	630,794	512,663
Pulse Canada (Note 5)	944,500	944,500	927,083
Directors	314,000	275,811	259,671
Office	1,361,000	1,210,389	1,013,072
Policy development	250,000	191,324	93,683
Domestic market development	88,000	13,497	32,773
	13,718,500	11,042,478	8,712,028
Excess of revenue over expenses	\$ (1,348,500)	\$ 3,212,022	\$ 4,344,208

See accompanying notes to the financial statements.

SASKATCHEWAN PULSE CROP DEVELOPMENT BOARD

Statement of Changes in Net Assets

Year ended August 31, 2010

	<u>Invested in Capital Assets</u>	<u>Internally Restricted</u>	<u>Unrestricted</u>	<u>2010</u>	<u>2009</u>
Balance, beginning of year	\$ 1,028,440	\$ 2,800,000	\$ 9,996,816	\$ 13,825,256	\$ 9,436,848
Transfer to restricted funds	-	1,300,000	(1,300,000)	-	-
Excess of revenue over expenses	-	-	3,212,022	3,212,022	4,344,208
Pulse Field Lab contributions	-	-	12,000	12,000	44,200
Purchase of capital assets	65,625	-	(65,625)	-	-
Disposition of capital assets	(1,450)	-	1,450	-	-
Amortization	(42,255)	-	42,255	-	-
Balance, end of year	\$ 1,050,360	\$ 4,100,000	\$ 11,898,918	\$ 17,049,278	\$ 13,825,256

See accompanying notes to the financial statements.

SASKATCHEWAN PULSE CROP DEVELOPMENT BOARD

Statement of Cash Flows

Year ended August 31, 2010

	<u>2010</u>	<u>2009</u>
Cash flows from operating activities		
Excess of revenue over expenses	\$ 3,212,022	\$ 4,344,208
Items not affecting cash		
Amortization	42,255	21,533
(Gain) loss on disposal of capital assets	(46)	299
	<hr/> 3,254,231	<hr/> 4,366,040
Net change in non-cash working capital items:		
Accounts receivable	(140,208)	690,523
Inventory	-	2,978
Prepaid expenses	(13,826)	(14,914)
Accrued interest receivable	(31,078)	(30,802)
Accounts payable	(534,203)	1,039,985
	<hr/> 2,534,916	<hr/> 6,053,810
Cash flows from investing activities		
Funding of Pulse Field Lab	12,000	44,576
Proceeds from sale of capital assets	1,496	878
Purchase of capital assets	(65,625)	(14,114)
Investments	(3,296,056)	(5,220,958)
	<hr/> (3,348,185)	<hr/> (5,189,618)
Net (decrease) increase in cash during the year	(813,269)	864,192
Cash, beginning of year	1,303,286	439,094
Cash, end of year	<hr/> \$ 490,017 <hr/>	<hr/> \$ 1,303,286 <hr/>

See accompanying notes to the financial statements.

Notes to the Financial Statements

August 31, 2010

1. Nature of operations

The Saskatchewan Pulse Crop Development Board ("the Board") is a non-profit organization which was established in 1984 under the *Agri-Food Act of Saskatchewan*.

The mission of the Board is to provide leadership for an innovative, profitable and sustainable Saskatchewan pulse industry, through research, market development and communication in collaboration with stakeholders.

2. Significant accounting policies

These financial statements are prepared in accordance with Canadian generally accepted accounting principles. The significant policies are detailed as follows:

Cash

Cash consists of cash on hand and balances with banks.

Investments

Investments in equity are recorded at cost. The remaining investments consists of money market funds and guaranteed investment certificates maturing or redeemable at various dates not exceeding 55 months, at interest rates of 1.04% to 4.9% and are recorded at cost which closely approximates fair value based on year end quoted prices.

Capital assets

Land and equipment are stated at cost. Equipment is amortized using the declining balance method at rates from 20% to 50%. On acquisitions of equipment during the year, amortization is calculated based on a full year of usage. On disposals of equipment during the year, no amortization is recorded.

Appropriation of funds

The Board has approved the appropriation of certain funds generated from operations to be set aside to be used in the future as an operating reserve. The amounts of these appropriations and the appropriated balances are accounted for and disclosed separately in the financial statements as internally restricted funds.

Revenue recognition

Check-off is recognized at the time of settlement.

Government assistance and grants are recognized as related costs are incurred.

Research contributions and donations are recognized in these financial statements in the period defined in the terms and conditions of the respective agreements.

The Board follows the deferral method of accounting for contributions. Externally restricted contributions are recognized as revenue in the year in which the related expenses are incurred. Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is assured.

Income taxes

No provision for income taxes has been made in these financial statements as the Board is exempt from income tax under Section 149 (1) of the *Income Tax Act*.

Use of estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period.

By nature, asset valuations are subjective and do not necessarily result in precise determinations. Should underlying assumptions change, the estimated net recoverable amount could change by a material amount.

Management periodically reviews the carrying value of the capital assets to ensure that the carrying value can be recovered from future cash flows. Management also periodically reviews the useful lives of the capital assets to determine, in their judgment, an adequate charge against income for amortization expense.

New accounting policies

Effective September 1, 2009, the organization adopted the recommendations of the Canadian Institute of Chartered Accountants (CICA). The CICA amended

Notes to the Financial Statements

August 31, 2010

Section 4400 Financial Statement Presentation for Not-for-Profit Organizations, Section 4430 Capital Assets Held by Not-for-Profit Organizations, Section 4460 Disclosure of Related Party Transactions by Not-for-Profit Organizations, and issued Section 4470 Disclosure of Allocated Expenses by Not-For Profit Organizations. Amendments to Section 4400 eliminate the requirement to treat net assets invested in capital assets as a separate component of net assets. It also clarifies that the revenues and expenses must be recognized and presented on a gross basis when a not-for-profit organization is acting as a principle in transactions. Section 4470 introduces requirements for entities that allocate their fundraising and general support expenses to other functions, to disclose fee policies adopted for the allocation, the nature of the expense being allocated and the basis on which such allocations have been made. The Section mandates disclosure of the amounts allocated from each of its fundraising and general support functions and amounts and functions to which they have been allocated. All of the above standards are effective for fiscal years beginning on or after January 1, 2009. The adoption of these standards had no impact on the financial statements.

3. Investments

	2010	2009
Fixed income	\$ 12,764,442	\$ 9,396,827
Cash and cash equivalents	2,006,757	2,426,556
Equity funds	348,240	-
Total investments	\$15,119,439	\$ 11,823,383

Classification of the investments on the Statement of Financial Position are presented as follows:

Current assets:		
Investments	\$ 6,198,625	\$ 5,098,172
Long-term assets:		
Investments - restricted	4,100,000	2,800,000
Investments	4,820,814	3,925,211
Total investments	\$15,119,439	\$ 11,823,383

The investment balance is a result of prior years' surpluses from operations due to increased volume and value of pulse exports. Expenditures have increased at a lesser rate than revenue, resulting in growth of the accumulated surplus. The surplus money is held in investments and provides flexibility to cover expenditure commitments in years where operations result in a cash deficit. SPG continues to increase its expenditures in priority areas to further grow the pulse industry. Increased expenditures are expected to draw down the surplus over the next three years. The Board has set in place investment policy guidelines as to the portfolio mix in order to ensure the investments are safeguarded against large market fluctuations.

4. Capital assets

	Cost	Accumulated amortization	2010 Net book value	2009 Net book value
Equipment	\$ 233,751	\$ 173,226	\$ 60,525	\$ 38,605
Land	989,835	-	989,835	989,835
	\$ 1,223,586	\$ 173,226	\$ 1,050,360	\$ 1,028,440

5. Pulse Canada Commitments

Pulse Canada is a national organization comprised of pulse trade and grower organizations from Alberta, Saskatchewan, Manitoba and Ontario. Pulse Canada's key activities include:

- Market Access: To minimize additional supply chain costs created by market access barriers such as import duties, taxes, sanitary and phytosanitary measures, regulatory and other barriers.
- Business Development - Human Food and Nutrition: To develop new market opportunities for pulses in food applications to increase the demand for Canadian grown pulses.
- Business Development - Animal Feed Nutrition: To develop new market opportunities for pulses in high value feed channels such as pet food and aquaculture.
- Transportation: To eliminate barriers associated with accessing equipment and rail service to reduce risk in transporting products.

Notes to the Financial Statements

August 31, 2010

- Environment: To capitalize on the environmental value of nitrogen fixing crops for sustainable food, feed and bioproducts.

The Board is providing program and project funding to Pulse Canada. Amounts committed in each of the next three years are as follows:

2011	\$ 935,000
2012	936,000
2013	485,000

6. Research and development commitments

The Board has approved future funding for several research and development projects. Amounts committed to these projects in each of the next five years, assuming the terms of the contracts are fulfilled, are as follows:

2011	\$ 4,617,516
2012	3,957,842
2013	2,178,245
2014	2,037,901
2015	1,977,591

7. Lease commitments

A five-year lease agreement, which expires September 2011, exists with the Saskatchewan Opportunities Corporation for the premises at 411 Downey Road, Saskatoon, Saskatchewan; multi-year agreements exist with various suppliers of office equipment. Yearly rental payments due in each of the next two years are as follows:

2011	\$ 74,963
2012	10,396

8. Budgeted figures

These figures are based on the budget as presented at the Annual General Meeting held on January 11, 2010, and subsequently revised as approved by the Board of Directors on June 21, July 22 and August 26, 2010, and have been reclassified to conform to the financial statement presentation.

9. Capital disclosures

The Board's objectives when managing capital are to safeguard the entity's ability to operate and to continue to meet its mission. The organization's capital resources are managed to support achievement of its goals.

The Board plans for the use of its capital by monitoring the long-term plans to meet the needs of users and stakeholders.

10. Financial instruments

Credit risk

Credit risk arises from the potential that a counter party will fail to perform its obligations. The Board is exposed to credit risk from agents. However, the Board a significant number of agents which minimizes concentration of credit risk.

Market risk

The Board is exposed to market risk through its investments in equity funds. The Board manages its exposure to market risk through restricting the amount of cash that can be invested in equity funds and investing the remaining cash into guaranteed investments.

11. Comparative figures

The financial statements have been reclassified, where applicable, to conform to the presentation used in the current year. The changes do not affect prior year earnings.

SASKATCHEWAN PULSE CROP DEVELOPMENT BOARD

Schedule of Expenses

Year ended August 31, 2010

	2010 Budget (Note 8)	2010 Actual	2009 Actual
Research and development			
Agronomy	\$ 390,385	\$ 523,477	\$ 562,101
Breeding (genetics)	4,221,124	5,231,773	3,033,128
Value added processes	790,467	759,299	1,207,346
General	97,000	154,622	439,000
Available for new projects	3,001,024	-	-
	8,500,000	6,669,171	5,241,575
Communications			
Communications activities	1,324,100	836,968	441,249
Crop production week	185,600	164,465	144,384
Extension meetings	64,800	59,127	39,273
Other	52,500	46,432	6,602
	1,627,000	1,106,992	631,508
Variety commercialization	634,000	630,794	512,663
Pulse Canada	944,500	944,500	927,083
Directors			
Communications	13,200	9,820	9,249
Election	32,000	25,406	24,558
Honouraria	119,800	105,159	99,650
Travel	96,600	103,950	96,064
Other	52,400	31,476	30,150
	314,000	275,811	259,671
Office			
Communications	22,000	16,801	18,189
Contract work	51,700	39,097	39,494
Office	152,300	133,902	120,587
Salaries and benefits	941,000	850,388	715,131
Travel	42,000	39,981	27,051
Other	47,000	35,374	25,175
Administration of research networks	105,000	94,846	67,445
	1,361,000	1,210,389	1,013,072
Policy development	250,000	191,324	93,683
Domestic market development	88,000	13,497	32,773
	\$ 13,718,500	\$ 11,042,478	\$ 8,712,028

See accompanying notes to the financial statements.



SASKATCHEWAN

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