

PULSEPOINT

March 2016

UNLOCKING PULSE POTENTIAL

Growing Saskatchewan's
Chickpea Production

Lentils in Shortened
Rotation

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CHAIR'S MESSAGE

Pulse producers have a great story to tell

Welcome to the second issue of PulsePoint for 2016. We are looking forward to another exceptional year of pulse production to satisfy the high demand we have been experiencing from our customers overseas.

The pulse industry is celebrating the International Year of Pulses (IYP) in 2016 as designated by the United Nations. The inaugural event was held in Rome in November of 2015, and the pulse industry has been moving at full steam ever since. IYP is an opportunity to raise the awareness of pulse crops worldwide. We are anticipating that this will be the start of a transformation for our industry. As pulse producers, we have typically hid ourselves and our humble crops from the spotlight, staying in the background. Now is the time to step forward. Pulse crops provide not only robust returns to growers, but also are a healthy food for consumers and a healthy ingredient for the food industry, and this is a story we can be proud of.

The challenge for the pulse industry is threefold. We need to raise awareness of what pulse crops are, why consumers should become interested in them, and what they can do with pulses in the kitchen.

Raising awareness is a difficult task. It is even more difficult when we are trying to deal with consumers. As consumers, we are constantly

bombarded by advertisements, many of which are about new food products. Our strategy to reach consumers is to develop advocates and ambassadors who can help influence consumer decisions. We are developing relationships with people who have high profiles in the food spectrum. These may be celebrity chefs, food bloggers, dietitians, food media, or cookbook authors.

At a farm conference in Alberta in late January, a speaker by the name of Terry O'Reilly spoke on how to ensure that your product or brand has a memorable presence. We as farmers often overlook our most powerful advocates – ourselves. We meet people not connected to agriculture in many different situations. Societally, we are more removed from direct contact with farmers than ever in history. The conversations we have with our customers can shape the way they think of the food they purchase and prepare in their homes. We have many ways to tell our good stories of producing healthy food. We can have great conversations with strangers in many situations, or we can use other methods as well. Many people are on social media, so the next time you update your Facebook page, include a positive message about you and your farm. My latest habit is Twitter. It is a great way to convey a message

and to respond positively to those who challenge the way we grow and sell our crops.

At Saskatchewan Pulse Growers we are trying to shape the conversations about pulses so that consumers are interested in them and willing to try and use them in their diet. As many people are unaware of how to use pulses in their diet, we are encouraging consumers to sign up for the Pulse Pledge. At pulsepledge.com you can find information on how pulses are grown, recipes that are delicious and easy to prepare, and take the opportunity to sign up for the Pulse Pledge. The pledge is to eat a half cup of pulses per week for a 10 week period. This is an easy way to transition your eating habits to include more pulses. For more information on the Pulse Pledge, please flip to page 40. Please help us in starting, and continuing, these conversations as we try to create more awareness and demand for the great products we produce.

Tim Wiens
Chair

EXECUTIVE DIRECTOR'S MESSAGE

Grower Levy Investment Leads to Lentils Being No. 1 Agri-Food Export is SK Last Year

In early February, export statistics were released that showed that the province's agri-food exports in 2015 were \$15.1 billion. Within these record breaking export values, lentils led the way.

Lentils were the top Saskatchewan agri-food export in 2015, at \$2.5 billion. Canola and wheat were not far behind at \$2.4 and \$2.3 billion. Just three years prior, in 2012, Saskatchewan lentil exports were valued at \$673 million. With Saskatchewan pea exports topping \$1.2 billion, total Saskatchewan pulse exports were more than \$3.7 billion in 2015.

Increases in seeded area and production, along with healthy market demand growth, primarily from India, have been driving exports at a breakneck pace. The pulse industry is growing at unprecedented rate, and the investment of levy dollars by growers has played a large part in driving this growth.

While record prices in 2015 definitely contributed to lentils topping the export list, more acres dedicated to lentils were also a factor. Lentil acres in Saskatchewan have seen significant increases in the last 10 years, moving from 1.4 million acres of lentils planted in 2006/07 to more than 4.5 million acres expected in 2016. As acres have increased, so have the average yields of lentils. The 2013 year was an exceptional year with average lentil yield of 1,800 pounds per acre (lbs/ac), but the more normal yield range in recent years has been close to 1,400 lbs/ac. This compares to average yields of 1,143 lbs/acre in 2004. Average yields continue to increase even though lentil production expands beyond the "best" traditional lentil growing areas.

Much of the advancements in yields can be credited to the continual development of improved pulse crop varieties. For nearly twenty years, your levy dollars have been invested in supporting the pulse breeding program at the University of Saskatchewan's (U

of S) Crop Development Centre (CDC). The CDC has been leading the way in developing more widely adapted lentil and other pulse varieties with increased yield potential and better resistance to disease and weed pressures. As a result of SPG's partnership with the CDC, SPG makes these improved varieties available to Saskatchewan growers royalty-free.

India has long been an established market for Saskatchewan pulses, with recent imports reaching record levels. This increase is a result of limited domestic production in recent years. Short supply of locally produced pulses in India has resulted in increased prices. This has led to Canadian pulses filling some of the shortfall in production. Yellow peas from Canada were initially a substitute for Desi chickpeas in India. Canadian split green lentils supplement the short supply of locally-produced pigeon peas. Now both yellow peas and green lentils have established their own footholds in India. Imports of pulses from Saskatchewan are helping to provide food security for millions of consumers in India.

SPG recognizes that as an industry we cannot only work to produce more pulses, but that we also need to build new market demand. Recognizing early that green lentils were a possible supplement to pigeon peas, in 2008 SPG funded a research project at Tamil Nadu Agriculture University (TNAU) in India, which examined the utilization of green lentils in traditional Indian food products. The project found that not only were green lentils acceptable, in some instances they were even preferred over pigeon peas in traditional foods. India imported nearly 200,000 tonnes of green lentils from Canada in 2015. The project with Tamil Nadu is just one example of how SPG has been proactive in building new market opportunities for Canadian pulses.

India is critically important for profitable pulse production in Saskatchewan. However, we are very dependent on a handful of markets for the vast majority of pulse crop sales. Over 90 per cent of our yellow peas exports go to just three countries – India, China, Bangladesh. Eighty-five per cent of our red lentil exports go to just five markets – India, Turkey, Bangladesh, United Arab Emirates, and Egypt. It is critical we keep these markets open and we support market access work to ensure that this happens.

As part of the market diversification strategy, we continue our efforts to develop demand beyond the traditional markets in order to support the ever-expanding pulse crop production in Canada. We are actively promoting increased lentil consumption in North America by targeting dietitians, chefs, food bloggers, and media. High-value ingredient markets for pulse flours, protein, starch, and fibre within the North American food industry are also an essential part of our market diversification focus.

The investments made with grower dollars in the past 20 or more years towards agronomic research, varietal development, and developing new markets, have played a major role in bringing pulse exports to the front of the pack in 2015 and building the foundation for strong profitability for Saskatchewan farmers. We have more work to do to ensure that we have at least one economically viable pulse crop available for every acre in the province. It is important to remember that the investments you are making today will be benefiting growers now and in the years to come.

Carl Potts, Executive Director
cpotts@saskpulse.com | (306) 668-6676



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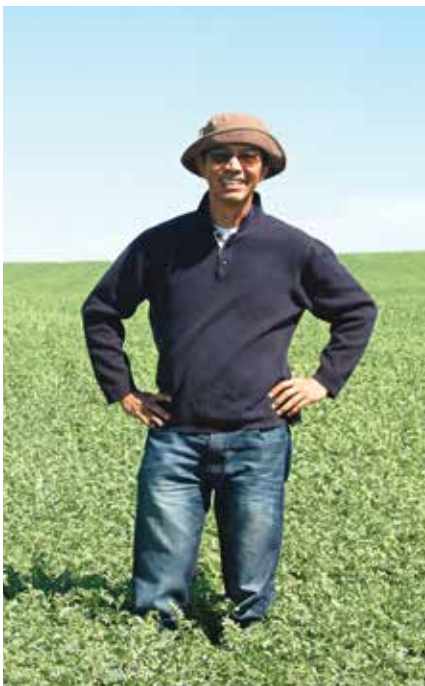
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Saskatchewan Pulse Growers

SPG COMMITS \$2 MILLION TO CONTINUATION OF WEED RESEARCH PROGRAM

Program aims to develop integrated weed management strategies for pulse growers

Saskatchewan Pulse Growers Staff



The Saskatchewan Pulse Growers (SPG) recently announced \$2 million dollars of funding over five years for the continuation of the Weed Research Program "Enhancing Weed Science in Pulse Crops: Towards a robust strategy for long-term weed management" led by University of Saskatchewan (U of S) researcher Dr. Chris Willenborg.

The objectives for the new five-year term of the program are looking to solve issues that are directly in line with feedback from pulse growers says Carl Potts, SPG's Executive Director. "We have heard from farmers the importance of developing improved integrated weed and crop management options for pulses, and this is a key area of focus for the Weed Program."

"The program is also looking to

develop control guidelines for weeds that have caused issues in pulse crops in recent years," says Potts. "This includes herbicide resistant weeds, which continue to be problematic for pulse growers."

"The risk of contributing to herbicide resistance is high in pulse crops. The work done in the Weed Program not only provides more herbicide options to growers, but also strives to develop integrated strategies that will enable growers to manage weeds economically and effectively, but also reduce the risk of evolved resistance."

Eric Johnson, a research assistant working for Dr. Willenborg at the (U of S), has described the funding the program receives from SPG as a critical component of the Weed Research Program. "Committed funding for the

next five years allows us to focus on the research, and provides a stable, productive environment for the people working in the Weed Program," says Johnson. With a multiple funding commitments, it creates the ability for

the program to plan longer-term, and to be able to recruit and train quality graduate students.

During the next term of the program, researchers are looking to build on their previous work, which focused

heavily on identifying alternative herbicide options in pulse crops. “We identified products such as clomazone, flumioxazin, and pyroxasulfone that can have a fit in pulse production, however, they are not ‘silver bullets’ and require integration with other herbicides and cultural methods to be effective,” explains Johnson. “We also have had some success with managing cleavers



in high organic matter soils by ‘herbicide layering’, which is combining pre-seed short-term soil residual herbicides with post-emergence in-crop treatments.”

They found that the layering not only provided more efficacious weed control, but the diversity of herbicide modes-of-action in the process also helps delay the onset of herbicide resistance. As part of the new program, they plan to investigate how best to integrate the diverse modes-of-action with cultural, and even mechanical practices.

The new program is also expanding to respond to emerging trends in the pulse crop sector, meaning weed management in faba beans and soybeans will receive more attention.

“There are a number of



accomplishments that we hope to achieve over the next five years,” says Johnson. “New Minor Use herbicide registrations, understanding the impact of soil residual herbicides on re-cropping restrictions for emerging pulse crops such as faba bean, provide new integrated weed management options for growers, and improve our knowledge of competitive traits in pulse crops, with the expected incorporation of these traits into future varieties.” In addition to this list, the program also has funds designated to investigate the potential of future technologies such as robotics.

The work undertaken in the Weed Research Program addresses a key priority area for Saskatchewan growers. Weed management is critical for successful production of pulses as most

pulse crops are not very competitive. “The number of herbicide options for controlling weeds in pulses is limited and is focused on a few modes-of-action,” states Johnson. “The risk of contributing to herbicide resistance is high in pulse crops. The work done in the Weed Program not only provides more herbicide options to growers, but also strives to develop integrated strategies that will enable growers to manage weeds economically and effectively, but also reduce the risk of evolved resistance.”

RED PEA VARIETIES OFFER GROWERS CHANCE FOR DIVERSIFICATION

Red pea market class expecting expanded acres

Saskatchewan Pulse Growers Staff



Split Redbat 8 red pea

Every so often, there is a variety developed by the Pulse Breeding Program at the University of Saskatchewan's Crop Development Centre (CDC) that is unlike any other. These varieties are typically a part of a market class that is undeveloped and often has limited market demand initially, but holds potential to develop into a market opportunity that could prove profitable to Saskatchewan growers.

When a variety/market class that fits into this category is developed, Saskatchewan Pulse Growers (SPG) may determine to release it through their Tender Release Program (TRP). This program partners SPG with industry to develop a closed loop system that will protect the intellectual property of the market class, while the industry partners work to scale up seed production and

develop markets for the crop.

This was the case in the development of the red pea market class, where the seed color is more comparable to a red lentil than a green or yellow pea with its red cotyledon and non-pigmented seed coat. Following a call for tenders, through their TRP program, SPG awarded a eight-year agreement for exclusive distribution of the red pea market class, including the varieties Redbat 8 and the more recent Redbat 88, to ILTA Grain Inc.

"Redbat 8 and Redbat 88 varieties were developed at the Crop Development Centre," says Tom Warkentin, Plant Breeder at the CDC. "Breeders in Europe, Agriculture and Agri-Food Canada, and the CDC have developed a few red pea varieties in the past, but these were not marketed extensively."

INTERESTED IN GROWING RED PEA VARIETIES?

Contact ILTA Grain
North Battleford
Grain Origination Manager
1-306-445-4199

Dan Burneski, President at ILTA Grain, noted that the company's interest in the CDC red pea market class stemmed from the assumption that split red peas might be a good alternative to split red lentils in the marketplace. It also helped that ILTA Grain has a splitting facility in North Battleford, SK solely dedicated to peas.

Burneski indicated that the company is planning to contract between 15-20,000 acres of red peas to be planted in 2016, noting that the varieties can be grown in any of the usual pea producing areas.

"Up until this year it has been primarily about seed production," says Burneski. "We have been contracting the variety to growers in a diversified area, in both Alberta and Saskatchewan, to manage risks related to weather."

Information on the Redbat 8 variety has been recently published in the *Varieties of Grains Crops Guide* for 2016 put out by the Saskatchewan Ministry of Agriculture, something SPG Agronomy and Seed Program Manager Sherrilyn Phelps believes is driving new interest.

"Anytime there is something new in the variety guide it sparks question," says Phelps. "Performance of the Redbat 8 variety in regional trials has it at 106 per cent and 103 per cent of CDC Golden in the south and north

parts of the province, respectively. It is competitive in terms of yield, which is often not the case with newer market classes, especially when the first variety comes out." The Redbat 8 variety is also shown in the *Varieties of Grains Crops Guide* to have medium maturity, resistance to powdery mildew, and is comparable other pea varieties such as CDC Meadow and CDC Raezer for resistance to mycosphaerella blight.

"The Redbat 8 seed size is small at 190 grams per 1,000 seeds," says Phelps. "This can be attractive for keeping planting costs down. When looking at the data from *Varieties of Grains Crops Guide* the only drawback may be with its lodging rating of 5.0, meaning it is not quite as good as some of the newer releases such as CDC Amarillo and CDC Greenwater."

The most recent red pea variety, Redbat 88 is set to be an even more attractive variety for growers. The variety is currently in seed multiplication stages, and is something growers should watch for in 2017 says Phelps.

ILTA Grain believes grower interest in the market class will continue to increase because in addition to the opportunity for growers to diversify their

fields by including red peas, production of red peas through contract with ILTA Grain offers growers a premium over yellow and green peas.

The company sees significant potential in the marketplace for the red pea market class, with anticipation that production of red peas could reach between 100-150,000 tonnes once markets have been established.

"We think we can develop the red pea market class into a sizable market by the end of our commercialization agreement with SPG," says Burneski, noting that ILTA Grain does not anticipate any major barriers to use in key markets. "Our marketing up to this point has been experimental. We have been presenting the product to a wide range of buyers, with our biggest drawback being our ability to supply large volumes."

While the company has been doing small quantity shipments to major pulse markets such as Turkey, Bangladesh, India, the United Arab Emirates, and others, it is China that has expressed the most significant interest. "There has been good acceptance of whole red peas in China," says Burneski. "Primarily for use in snack foods."



Redbat 8 red pea



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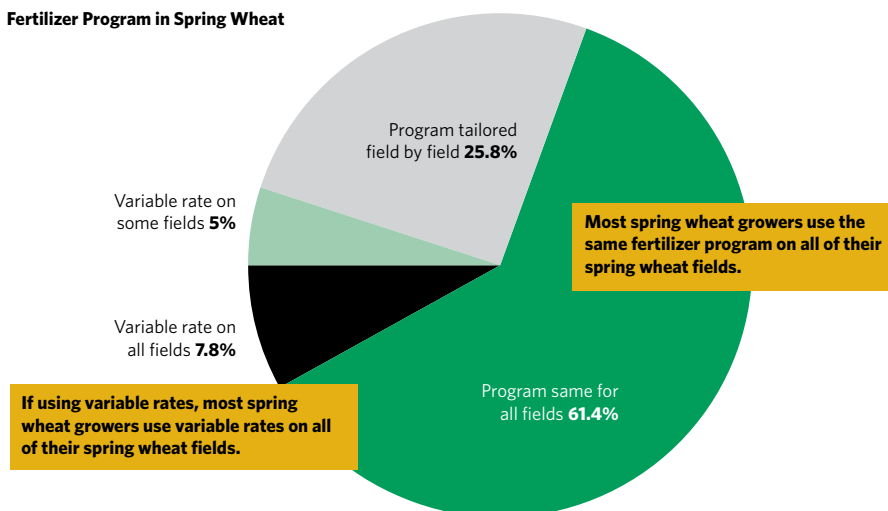
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FERTILITY MANAGEMENT SURVEY

Filling a big gap in information

Pulse Canada staff

Fertilizer Program in Spring Wheat



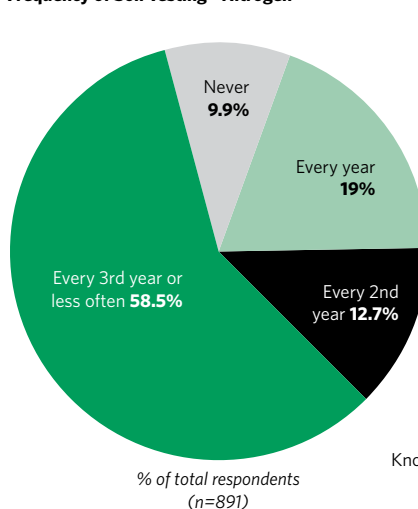
Over the past few decades, significant improvements have been made to fertilizer application management in Canada. Several practices have improved the efficiency of fertilizer use, including banding fertilizers, timing fertilizer application to maximize plant uptake, or using enhanced-efficiency fertilizers. The adoption of these practices not only benefit farmers in terms of productivity and profitability, but also the environment by reducing the potential for nutrient losses from the land. Fertility management has a major impact on environmental outcomes such as greenhouse gas emissions and water quality – both issues which are top of mind for consumers, industry, and governments.

However, there are currently no national surveys to collect information on fertilizer management practices for crop production. There is a real need to understand the current state of fertilizer management in Canadian crop production, both to frame the current landscape, and to track future changes in management.

To fill this information gap, a survey has been developed to collect fertilizer

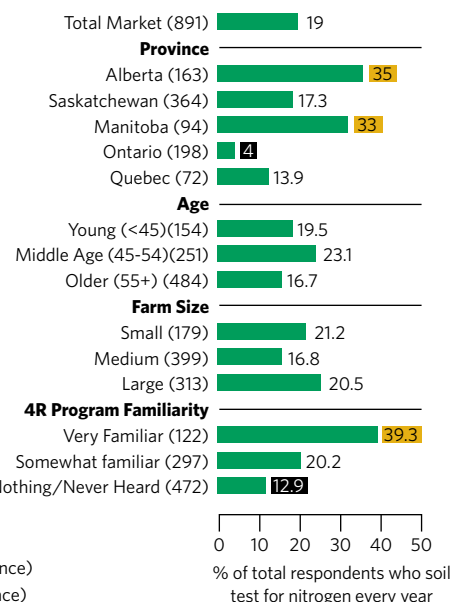
management information from Canadian producers of major grain, oilseed, and pulse crops, focusing on '4R Nutrient Stewardship' (Right Source, Right Rate, Right Time, Right Place). This survey is one part of an Agriculture and Agri-Food Canada Growing Forward 2 project with industry support from the Canadian Canola Growers Association, CroLife Canada, Fertilizer Canada, Grain Farmers of Ontario, Manitoba Pulse and Soybean Growers, and Pulse Canada.

Frequency of Soil Testing - Nitrogen

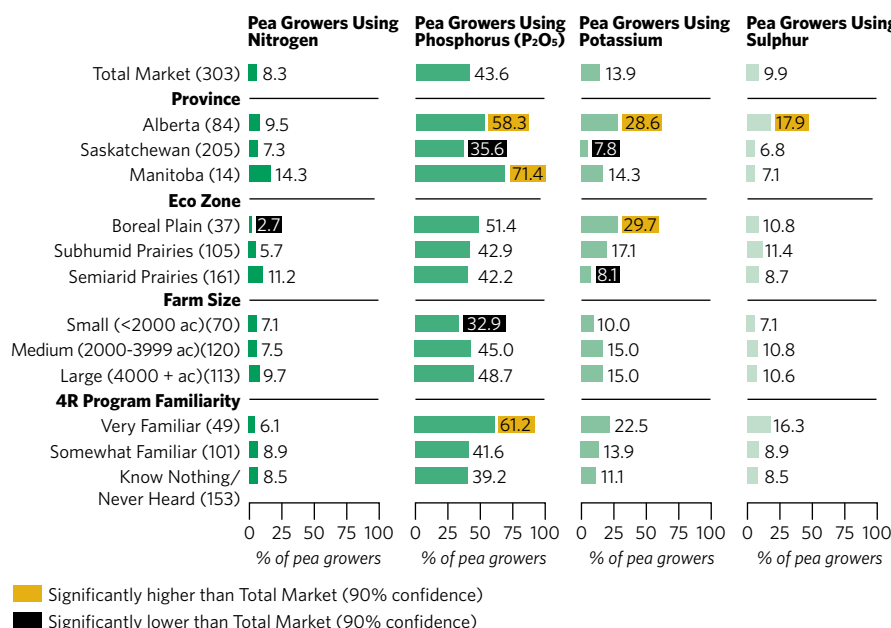


Fertility management has a major impact on environmental outcomes such as greenhouse gas emissions and water quality – both issues which are top of mind for consumers, industry, and governments.

An online survey was delivered to farmers during the winter of 2014/15. A random sample was taken of 400 farmers within Western Canada (Alberta, Saskatchewan, and Manitoba). Producers were asked to provide information on canola, spring wheat, and pea production. The survey focused on collecting information on fertilizer management practices for individual crops including: source of fertilizers (e.g. urea, anhydrous ammonia, etc.), timing of fertilization (e.g. fall application, at seeding, etc.), placement of fertilizer (e.g. broadcast and incorporated, banding, etc.), and rate of application of different nutrients. Information related to general fertility management practices was also collected, including information on soil



% of Pea Growers Using Each Nutrient by Sub-Group in 2014



sampling, approaches used to determine nutrient application rates, and use of variable rate fertility programs.

The information developed from the survey provides a clear picture of the current state of fertility management. The survey provides solid evidence that the majority of crop producers are banding fertilizer, which is the recommended practice compared to

broadcast and incorporation of fertilizer. The survey also provides evidence that the majority of nitrogen-based fertilizers in Alberta and Saskatchewan are side-banded or mid-row banded at planting (71 per cent and 58 per cent of nitrogen-based fertilizers in Alberta and Saskatchewan). By contrast, in Manitoba, 44 per cent of nitrogen-based fertilizers are applied in the fall (majority

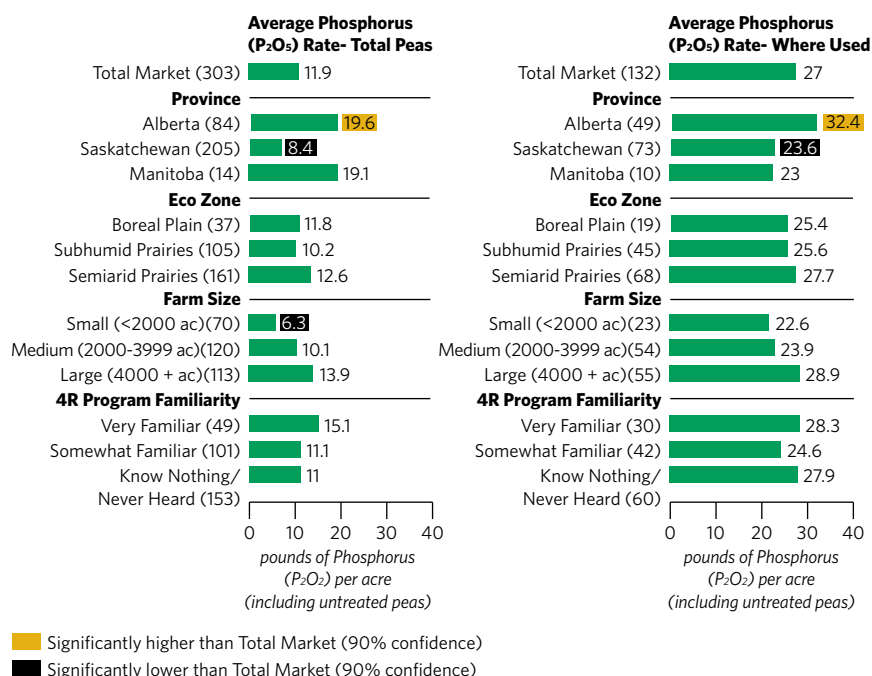
banded as anhydrous ammonia).

The survey also provides an overview of methods to manage soil fertility, demonstrating that farmers utilize many different approaches, some of which may be improved. For example, in Western Canada, annual soil sampling for nitrogen is only utilized by 24 per cent of farmers. In Saskatchewan, only 17 per cent of farmers conduct annual soil sampling for nitrogen. The majority of farmers also utilize the same fertility program for all of their canola fields (67 per cent), as well as for their wheat fields (61 per cent).

Regarding pea production, the survey also provides important insights regarding phosphorus management. For example, on average only 44 per cent of growers fertilized their pea crops with phosphorus. Fertilizing peas with phosphorus is more popular in Alberta than Saskatchewan, with 58 per cent of growers compared to 36 per cent. When peas were fertilized with phosphorus, Alberta producers also applied higher rates, with an average of 32 pounds (lbs) of phosphorus compared to 24 lbs in Saskatchewan. There are many soil fertility researchers in Western Canada that are concerned that soils are being mined of phosphorus. This survey data provides more evidence that more soil phosphorus is being removed by crop harvest than what is being replaced. The long term implications of low phosphorus fertility may have an impact on crop health, seedling vigour, and crop yields over an entire crop rotation.

The 2014 survey is the first of four surveys to be conducted during this project. Subsequent surveys will be conducted during the winters of 2015/16, 2016/17, and 2017/18. The goal is to capture baseline information for all major grain, oilseed, and pulse crop in Canada. During the winter of 2015/16, the Western Canadian survey will focus on barley and soybean production. In addition, information on canola production will be tracked throughout the survey in order to see if there are changes from year to year. The full results of the surveys will be available for download at www.fieldprint.ca.

% of Pea Growers Using Each Nutrient by Sub-Group in 2014



THE LOCAL BAR

Mission ImPULSEible winner makes good on previous investment

Trudy Kelly Forsythe



The Local Bar sources ingredients locally.

Caitlin Olauson's interest in product development began when she was a student of food science at the University of Saskatchewan, specifically in her final year in 2011, during a product development course. One of her assignments was to work with other students to develop a product and enter

"The basic idea was to take a conventional granola bar and swap out the ingredients for ones you can find locally, that have better nutritional profiles."

it in Pulse Canada's Mission: ImPULSEible annual food product development competition.

For the assignment, Olauson and two classmates developed a pulse snack bar containing chickpeas and lentils. They won first place in Saskatchewan then went on to take second place at the national level.

"While that product did not go on to be a success, the Mission ImPULSEible contest was really wonderful," said Olauson. "It definitely gave me the spark, confidence, and ambition to keep going with product development. It also helped foster my love of pulses and wanting to help make consumption of pulses easier

for our local communities. The contest itself was a really great experience."

And because of that experience, she was ready when Christie Peters, the owner of The Hollows, a local Saskatoon restaurant where Olauson worked part-time, encouraged her to keep going. It helped that Caitlin had worked as a product development specialist for more than a year before returning to school to pursue her master's degree.

"Christie loved the bar I had developed in my product development class, and she let me use her commercial kitchen space to play around with a new formation," Olauson says.

Learning from challenges with





The Local Bar business partners Caitlin Olauson and Julie Gryba

the first product when they tried to increase production, such as the product not binding well when making larger amounts, Olauson developed a recipe she liked and began producing and selling The Local Bar at The Hollows.

"The basic idea was to take a conventional granola bar and swap out the ingredients for ones you can find locally, that have better nutritional profiles," says Olauson, adding all the ingredients are sourced from

Saskatchewan. "The main ingredient in the bar is lentils, followed by quinoa and flax seed."

The bar uses Saskatchewan honey as the primary binder and is available in two flavours, sour cherry and dark chocolate, and Saskatoon berry.

Olauson originally produced and packaged 25 to 50 bars at a time, a process that took an entire day. However, because the bars were so well received, it quickly became too much for her to do

alone. That is when she brought in her business partner, sister Julie Gryba.

"Things really escalated quickly after that," states Olauson. "She took the business to a much more professional level than I could have on my own. Scale up, branding, and marketing followed quickly after."

Olauson now rents space in the Saskatchewan Food Industry Development Centre where she has access to bar making and packaging machines as well as staff to operate them. The company, which operates under the business name of Olauson Food Products, produces 4,500 to 5,000 bars every few months and retails them at 14 businesses in Saskatchewan. Most recently, it has been added to the selections at Local and Fresh, a local food wholesaler, marketer, and retailer offering home delivery of fresh, local food in Regina.

Ramping up production was not the only challenge Olauson had to overcome, although she admits the biggest challenges were logistical.

"There is a lot of red tape around food development and production," Olauson says. "Also the business side of things was very new to me."

Experience gained from the i3 Idea Challenge, an annual business idea competition for students put on by the Brett Wilson Centre at the University of Saskatchewan, helped. Once The Local Bar got off the ground, she and Gryba approached the Women Entrepreneurs Centre and were able to access some valuable mentorship.

As for the future, Olauson is working on more product development to expand their product line and hopes to grow the business. That means getting into more retail space and expanding across Canada (starting with Western Canada), and perhaps even into international markets.

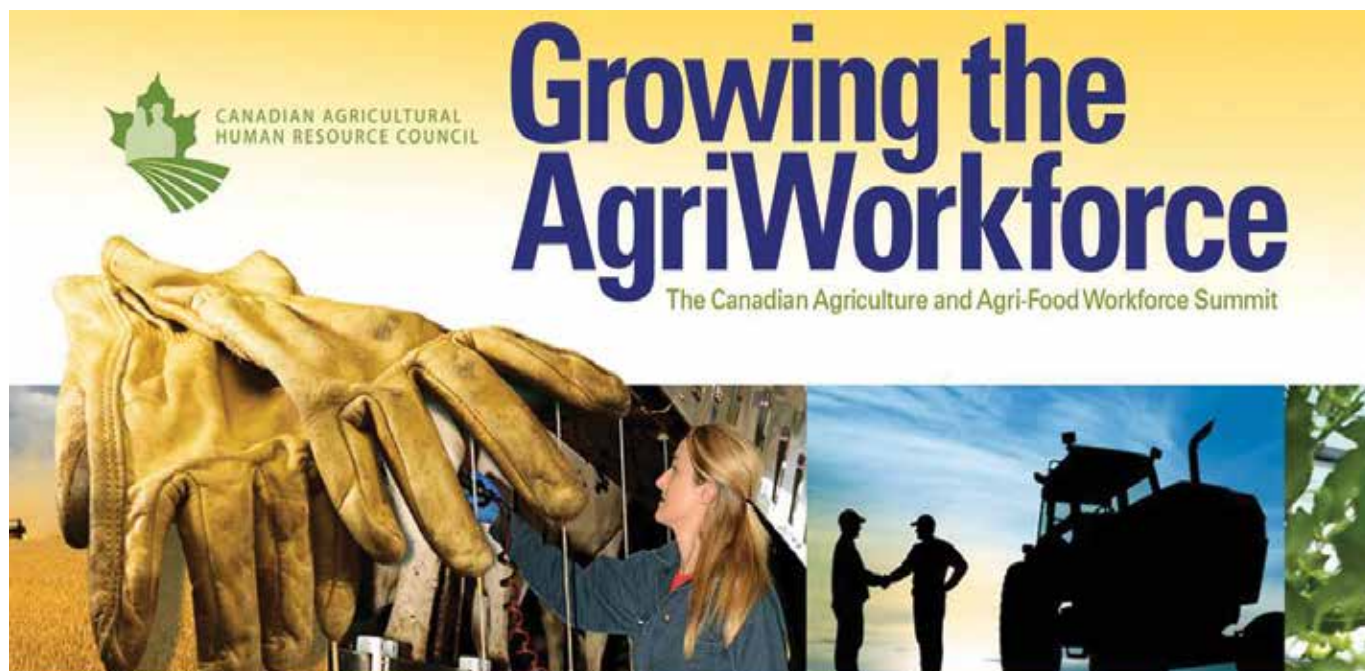


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HELP WANTED

Ag labour shortage requires growers, industry to take action

Delaney Seiferling



The agriculture sector has the potential to solve many food-related problems the world will face in coming years.

But in order to be able to do that, the sector must first address its own challenges, including a significant shortage of manpower.

The Canadian Agricultural Human Resource Council (CAHRC), a non-profit organization focused on addressing human resource issues facing agricultural businesses across Canada, has named labour shortage as one of the biggest business risk management issues for the agriculture industry in Canada.

The repercussions of this national problem can be felt on farms across Saskatchewan, says Davidson-based grower Gerrid Gust.

"It is so hard to find workers in Davidson, and everywhere," says Gust, who is also a Director on Saskatchewan Pulse Growers' Board. "It is already tough finding good people but doubly tough when you cannot offer them full-time, year-round employment."

The rural locations and the seasonal

aspects of the work are indeed two of the major obstacles for growers trying to find employees, but another is the skill required for farm work these days. The "general farm work," which is the category used for grain farmers, is classified by the federal government as "low-skilled" which does not align with the work taking place on modern grain farms today, says Janet Krayden, a Stakeholder Engagement Specialist for CAHRC.

"The technological advances on farms in the past 10 years has been huge," she says. "Agriculture workers today on a grain farm need to understand GPS, computers, and

dependent, seasonal agriculture workers need to be able to do the work for grain growers when the ground thaws so there is not a lot of time for training new incoming entry-level workers. You cannot hire someone off the street for these sorts of jobs."

Compounding all the above issues are the demographics of Canadian growers – statistics show that a large number of them are at or nearing retirement age, threatening to leave an even bigger gap in the agriculture labour market in coming years.

The impact of the ag labour shortage will reach beyond just the

The rural locations and the seasonal aspects of the work are indeed two of the major obstacles for growers trying to find employees, but another is the skill required for farm work these days.

safety protocols, and they are driving machinery worth over half a million dollars. Seeding and harvest are weather

farm industry, Krayden says. "We are losing the value-added processing jobs such as our meat packing plants to the

THE IEC PROGRAM

You can learn more about the IEC at www.cic.gc.ca/english/work/iec/ and about the Temporary Foreign Worker program at www.cic.gc.ca/english/hire/worker.asp.

Growers that have issues finding seasonal workers on their farms are also encouraged to talk to their local government representatives about how federal foreign worker programs could be better designed to benefit growers and the agriculture industry.

United States, where the Ivey School of Business has identified Canadian food processing is increasingly being done. Consumers are paying more in grocery stores due the exchange rate for our food processed in the United States. The agriculture worker shortage is definitely a contributing factor."

In light of these issues the CAHRC created an Agriculture and Agri-Food Workforce Action Plan which highlighted short-, medium-, and long-term solutions to address the critical labour shortages facing the industry. Short-term initiatives include improving grower access to temporary foreign workers through government programs, while longer term the plan aims to improve

information, training, and access in order to nurture and grow a domestic workforce that will fill the gaps in a more permanent way.

Gust is also a member of a CAHRC task force, which comprises industry representatives from all aspects of the value chain, to support the CAHRC workplan.

The CAHRC plans to complete a three-year Labour Market Information project this spring, which has collected detailed information on the current market, forecast labour supply and demand, labour and skill gaps, and opportunities and barriers to participation among population groups. The overall goal of the project is to support more informed labour market decisions by job seekers, agricultural employers, and students. The result of this project will be released at the CAHRC's "Growing the AgriWorkforce" summit March 14-16, 2016.

What Are Farmers Doing to Find Employees?

Currently Gust has worked out an effective way to ensure he has enough seasonal workers on his farm, by affiliating with an agriculture college in Australia to recruit students for seasonal internships. These students are able to come to Canada through International Experience Canada (IEC), a federal exchange program which allows youth from specified countries to obtain permits to travel and work in Canada (and which

has different requirements than the Temporary Foreign Worker program).

Gust made the connection with the ag college through a friend seven years ago and has had good results ever since, he says, receiving several resumes a year, many with at least some work experience and/or ag background. "We have a really good network of Aussies coming," he says.

His employees are eager to come to Canada for the experience, Gust says, which he has taken into account. "We try to make it a real cultural experience for them as well," he says, adding that he will usually take his seasonal employees to farm shows throughout the summer and look for other ways to enhance their experience. And once their work wraps up post-harvest, they are free to do their own adventures.

However, this is not the most cost-effective option. While Gust pays \$19/hour, when he factors in the additional room and board, vehicles, training, and Occupational Health and Safety, it is likely closer to \$25/hour. "That is just what you have to do when you are competing with other industries these days," he says.



Delaney Seiferling is a freelance ag writer. She can be reached at delaney@dseiferling.com



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LENTILS IN SHORTENED ROTATION

With big price gains could come bigger producing risks

Megan Madden



Nodulation in lentils

Over 65 per cent of the world's lentils come from Saskatchewan, making the province the world's largest lentil producer. With lentil prices having more than doubled for some varieties in the last year, producers are starting to weigh the benefits of tightening their lentil rotations. Shannon Chant, Regional Crops Specialist with the Saskatchewan Ministry of Agriculture says she has seen an increase in the number of lentil crops in the last year in the southwest region of the province where she works. "In 2015, Saskatchewan lentil production was about 3.7 million (M) acres, much higher than the 2010 to 2014 average of about 2.8 M acres."

Jeff Bennett's family has been growing lentils on their farm near Dodsland for over 20 years, usually in a three-year rotation. This year, they are moving to a one-in-two rotation with some of their lentil acres to capitalize on the strong market. "We are only growing lentils on land that has only had lentils

once before," Bennett says. "Lentils are so great for the nitrogen in the soil and we always spray vigilantly for disease."

While tighter lentil rotations are great for making nitrogen available to following crops, Chant cautions, "If producers are not adding phosphorus to

the soil when lentils are produced, the amount of phosphorus in the soil can decline and result in a greater need for phosphorus fertilizer to be supplied for crops in future years. A 1,400 pounds per acre (lbs/ac) lentil crop takes up 20 lbs/ac of phosphorus. This is one of the





High lentil prices mean more acres being put into lentils in 2016

"In 2015, Saskatchewan lentil production was about 3.7 million acres, much higher than the 2010 to 2014 average of about 2.8 million acres."

reasons why soil testing is so important."

The primary reason for longer crop rotations is for weed and disease control. Inoculum of fungal disease organisms like *Ascochyta* have spores that can build up in the soil if lentils are planted too often. More spores put producers at a higher disease risk for the next lentil crop. Planting into land that has not previously had lentils, like Bennett, has a far lower risk of disease, as the disease pathogens are crop specific.

These disease risks have kept producer David Kuchner to his four-year rotation on his farm near Kindersley. "We have been growing large green lentils since I took over the farm 16 years ago. The lentils go in every four years alongside durum, mustard, and canaryseed," Kuchner says. He usually

plants his lentils into durum stubble, giving his fields a break from pulses, but recently discovered lentils also do very well after canaryseed, diversifying his rotation options.

"It is the disease risks that have kept me from shortening my cropping sequence. *Aphanomyces* root rot has become the biggest worry since it thrives in tight compaction prone soils like mine."

Chant warns that *Ascochyta*, anthracnose, and sclerotinia levels can all increase in tight lentil rotations. "Sure *Ascochyta* and anthracnose only affect lentil crops but any broadleaf crop can be affected by sclerotinia," says Chant. "Some crops that can get sclerotinia include peas, canola, and mustard. Disease levels in a specific year are

dependent on the weather conditions but tighter lentil rotations means there can be more diseased residue in the field and this increases the risk of getting disease in your crop and how bad the disease can be."

If you are considering putting lentils into a tightened rotation, both Bennett and Kuchner offered similar advice:

- Choose your fields wisely. Lentils can be easily affected by many herbicides for up to four years so ensure fields are free from residue before planning lentils
- Never plant lentils on lentils
- Always roll the field after seeding to push rocks into the ground
- Spray fungicides

Some of the best advice for growers considering putting in lentils this growing season is to contact their local agronomist or their Regional Crops Specialist with the Saskatchewan Ministry of Agriculture before getting started. They will be able to provide as much information as possible to help you achieve success.

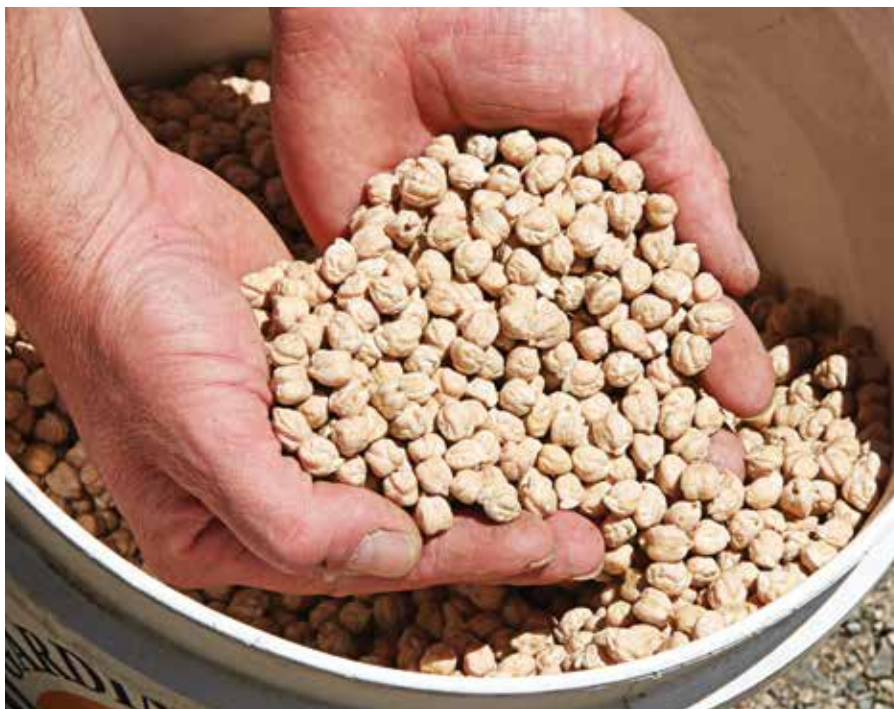


Megan Madden is the owner of southpaw PR inc., a strategic communications consultancy. She can be reached at @southpawMegan or megan@southpawpr.com.

SEED TESTING A WISE INVESTMENT

Use your results to put a better crop in the ground

Delaney Seiferling



Getting your seed tested before seeding is a smart investment

Seed tests will tell you important information about your sample, including germination, vigour, and amount of seed-borne disease, which can help determine whether a seed treatment is recommended or whether the seed should be used at all.

As we head into another seeding season, it can be tempting to worry about all the factors that will be out of your control this growing season – namely the weather.

But now is the time to focus on the factors that you can control. There are things you can do to make sure you are putting the best crop in the ground possible this seeding season. One of the first steps is sending a seed sample off to your local seed lab for testing – something more and more Saskatchewan growers are doing regularly.

Bruce Carriere, President of Saskatoon-based Discovery Seed Labs, says he has seen a significant increase in the amount of growers who get

their seed tested in the past decade. “The value of Saskatchewan crops has increased substantially,” he says. “You simply cannot afford to put a bad crop in the ground anymore because of the economics of it.”

Seed testing runs roughly \$150 per seed sample (although costs can vary depending on tests), which is a minor investment when compared to the average returns of Saskatchewan pulse crops these days.

But getting the test done is not enough, Carriere says. It is also critical to analyze the results of your seed test, ask the right questions to interpret the results, and revise your seeding plans if needed.

Seed tests will tell you important information about your sample, including germination (how many seeds are expected to germinate), vigour (how well the seeds will perform), and amount of seed-borne disease, which can help determine whether a seed treatment is recommended or whether the seed should be used at all (Carriere says the latter happens approximately 10-15 per cent of the time in an average year and 25-30 per cent of the time in a bad year).

Perhaps one of the most important takeaways from your seed test, however, is the thousand kernel weight (TKW), which can be used to calculate seeding rates for pulse crops. See the chart on the next page for the target seeding rate formula for pulse crops as well as target plant populations.

Seed test results can alter growers’ seeding plans, sometimes dramatically,



WHERE TO GET YOUR SEED TESTED?

See below a list of seed testing labs in Saskatchewan.

Ag Seed Lab

PO Box 550
Carrot River SK
S0E 0L0
Phone: 306-768-3335

BDS Laboratories

PO Box 363
Qu'Appelle SK S0G 4A0
Phone: 306-699-2679 or
1-888-BDS-Labs
bds.laboratories@sasktel.net

Crop Production Services

Box 1630
Nipawin, SK S0E 1E0
Phone: 306-862-4757

Discovery Seeds Labs Ltd.

450 Melville Street
Saskatoon SK S7J 4M2
Phone: 306-249-4484

Lendon Seeds Ltd.

147 Hodsman Road
Regina SK S4N 5W5
Phone: 306-585-7333

Parkland Laboratories

143 - 11th Avenue West
Melville SK S0A 2P0
Phone: 306-728-5395

Prairie Diagnostic Seed Lab Inc.

1105 Railway Avenue
Weyburn SK S4H 3H5
Phone: 306-842-7375

Seed Solutions Seed Labs

PO Box 1420
Swift Current SK S9H 3G6
Phone: 306-741-9309

so it is important to ask follow-up questions and seek help from the experts. Discovery Seed Labs encourages growers' questions, says Robin Morrall. "There are a number of us here that have enough knowledge of specialized subjects to answer most farmers' questions." (Morrall was recently inducted into the Saskatchewan Agriculture Hall of Fame for his work on plant diseases).

Growers often have follow-up questions about disease results and whether seed treatments will be an effective treatment, Carriere says. Questions such as these one can also be directed to the Agriculture Knowledge Centre at 1-866-457-2377 or your regional Crop Specialist (to find one in your region, visit www.agriculture.gov.sk.ca).



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CALCULATING SEED RATES FOR PULSES

Plant populations set the stage for the yield potential of a crop. Research has shown that each crop has an optimum plant density that producers should target when seeding their crop. Rates can be adjusted higher or lower depending on the conditions in the field, date of seeding, weed pressure, seed placed fertilizer, and other pressures that may affect emergence or plant stand.

In order to calculate your seeding rate, you must know the seed size and germination rate. Pulses vary tremendously in seed size and not knowing your thousand kernel weights (TKW) could mean seeding too heavy and spending more on seed than you need to, or seeding too light and limiting yield potential. Both TKW and germination rate can be obtained with a seed test or measured at home. Emergence rates are more difficult to estimate as it depends not only on germination but also on environmental factors and other factors that can affect establishment such as damage during handling. For pulses, the emergence rates are typically 5-15 per cent lower than the germination rates.

The following formula will assist you in determining the target seeding rate for pulse crops:

$$\text{Seeding rate kilograms per hectare (kg/ha)} = \frac{(\text{target population per square metre} \times \text{TKW in grams})}{\% \text{ field emergence or survival (in whole number, i.e. 85)}}$$

Target Plant Populations for Pulse Crops

CROP	TARGET PLANT POPULATION PER SQUARE METRE	TARGET PLANT POPULATION PER SQUARE FOOT
Peas	75 to 85	7 to 9
Lentils	130	12
Chickpeas	33 to 44	3 to 4
Faba Beans	45	4
Dry Beans	33 to 44 (dryland) 25 to 30 (irrigated)	3 to 4 (dryland) 2.3 to 2.8 (irrigated)
Soybeans	44 to 57	4 to 5

Source: Saskatchewan Pulse Crops Seeding and Variety Guide 2016, Saskatchewan Pulse Growers

DEEP ROOTED ISSUES

Root rot control, resistance still a work in progress

Delaney Seiferling



Pea seeds treated with ethaboxam, metalaxyl and fludioxonil grown in the same conditions as the control. (Courtesy AAFC)

Aphanomyces root rot is a relatively new disease affecting pulse crops in Saskatchewan, having only been confirmed in the province in 2012, but its impact on pea and lentil crops in the past several years has been significant. Adding to the problem, the pathogen is a tricky one and usually comes in company of other root rot pathogens.

In light of this, the research community has sprung into action to find new ways to manage the disease and develop resistant varieties, but like all agricultural research, this is a work in progress.

"Everything is still in the early phase of research," says Syama Chatterton, a Research Scientist at Agriculture and Agri-Food Canada's Lethbridge Research and Development Centre. Chatterton completed a report last year after conducting a mass survey of root rot in field pea in 2013 and 2014, examining the severity and variation of the disease and its pathogens across different soil zones. Although her research focused primarily on Alberta, general findings indicated

that the disease was intensified by the wet conditions in 2013 and 2014 and the onset slowed by a dry spring in 2015. With the samples gathered by Chatterton and her team, the next phase of research will be in the lab.

"We will be able to develop infection models for all the soil zones and examine how much inoculum it takes in the different soil zones to cause the disease," she says. The next phase of research will also look at how the



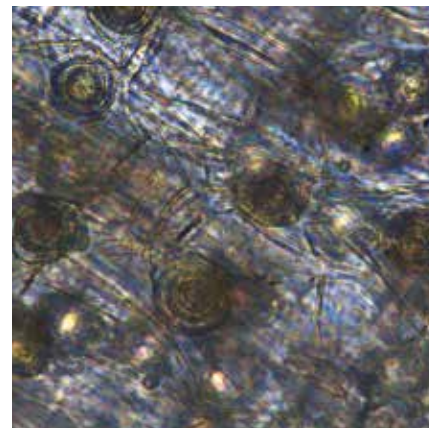
Symptoms of *Aphanomyces* root rot developing in the field after a rainfall in 2015 (Courtesy AAFC)

*Growers are advised to get their soil tested this spring for presence of *Aphanomyces*.*

different species and pathogens interact and how seed treatments affect the disease -- basically aiming to determine the root rot complex of organisms that really cause the most problems, information that will help develop control methods that growers can take back to their fields.

And although there have been some positive results in the greenhouse thus far, Chatterton says there is no new information to share with growers just yet. "We will test the seed treatment combinations in the field in 2016. I am hoping that after 2016, when we have more than two years of data, I will have reliable statistical results to share."

The University of Saskatchewan's (U of S) Crop Development Centre (CDC) has also been working on developing resistant varieties. "We have already sourced some resistant pea germplasm and just started back-crossing. We have the advantage of other scientists having done the groundwork," says Sabine Banniza, a



Oospores of *Aphanomyces* on a pea tap root (Courtesy AAFC)

Plant Pathologist at the CDC and a Professor of Plant Sciences at the U of S, referring to research that has been done in the United States and France. However, it will be at least three years before any new varieties are developed she says, and even longer for lentils.

In the meantime, Banniza and the team at the CDC, along with Chatterton, have been gathering information about pulses' susceptibility and resistance to *Aphanomyces* root rot. "All pea and lentil cultivars are susceptible, despite small variations in the pea; faba bean has good partial resistance; and with dry bean it depends on the variety," Banniza says, adding that chickpeas and soybeans have good partial resistance, too, similar to faba bean. See graphs below to demonstrate more detailed findings.

What Can Growers Do?

Growers are advised to get their soil tested this spring for presence of *Aphanomyces*. If the tests come



A sample from Chatterton's research showing increase in disease severity with increasing *Aphanomyces* inoculum from right (A = oospores/g soil up to H=2000 oospore/g soil). (Courtesy AAFC)

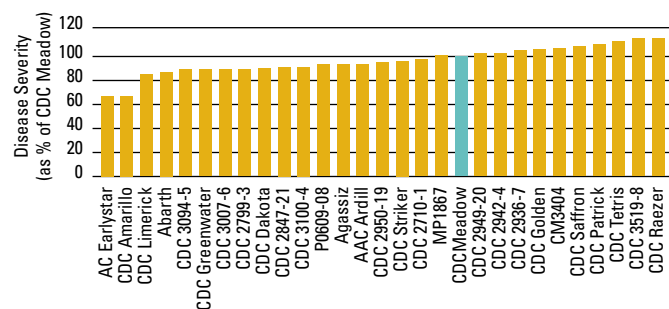
back positive, consider switching to crops other than peas and lentils. Growers are also advised to use their past experiences to guide decisions – if you have had fields infected with *Aphanomyces* in the past, it is probably better to stick to longer rotations (specifically peas and lentils should not be grown for six to eight years, advises

Banniza), and to include pulse crops with good partial resistance such as faba beans, soybeans, chickpeas, and dry beans.

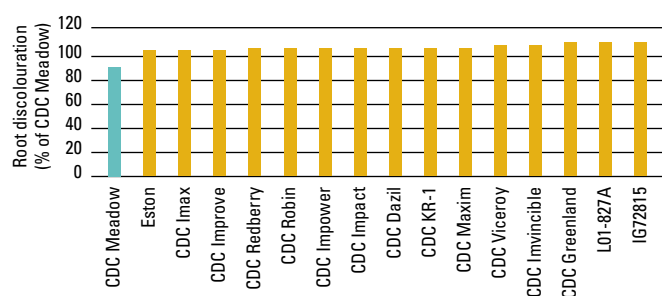


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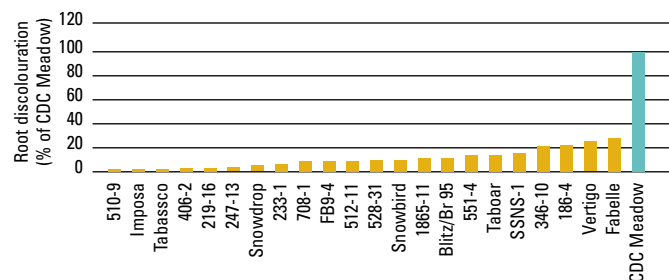
Aphanomyces - Susceptible Crop PEAS



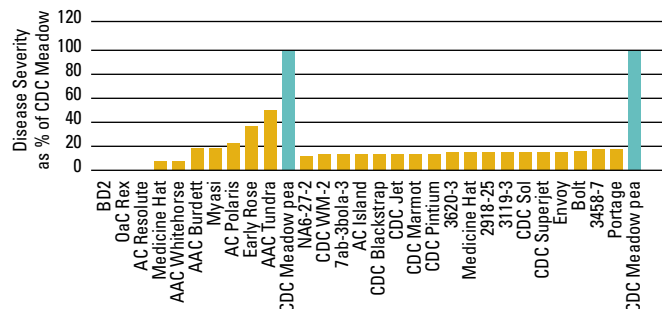
Aphanomyces - Susceptible Crop LENTILS



Aphanomyces - Partially resistant crop FABA BEANS



Aphanomyces - Partially resistant crop DRY BEANS



Source: Crop Development Centre and Agriculture and Agri-Food Canada. Disease severity was measured as root discoloration due to infection. In all graphs CDC Meadow pea is the standard as 100 per cent and discoloration of other cultivars is shown as per cent discoloration compared to CDC Meadow.

An aerial photograph of a vast, green soybean field under a dramatic, cloudy sky at sunset or sunrise. The rows of crops stretch far into the distance. In the foreground, a large, deep, circular crater has been formed in the soil, with a single white egg placed inside it. The crater's rim is uneven and shows signs of being dug out. The overall scene suggests a powerful impact or a significant event.

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WEEDING OUT ASSUMPTIONS ON SEEDING DENSITY

Latest research on lentil seeding rates

Noelle Chorney



Lentil seeding rate field trial

“Fundamentally, having a competitive crop stand will help with weed control,” says Shirtliffe.

Do not plant your lentil seeds too close together because you will waste money on seed, increase disease, and reduce yield. Right? Maybe not after all.

When producers make decisions about seeding, there are multiple factors to consider. What is the price of the seed? What will be the price of the crop in the fall? What will the level of moisture be during the growing season? It is a lot of careful guesswork.

Steve Shirtliffe, Professor of Plant Sciences at the University of Saskatchewan, and grad student Kali Kasper are trying to take some of the guesswork out of these choices. In doing so, they have also been turning some of the old assumptions about seed density on their ear. They are studying whether crop density affects competition against weeds, and ultimately, crop yield.

Traditionally, it was recommended that producers plant lentils at a density of 130 seeds per square metre (m^2). This may still work for the larger-seeded green varieties, but Shirtliffe says, “I would recommend using that as a bare minimum seeding rate. Never go below that level, and do not be afraid to go higher.”

With smaller seeded lentil varieties, like the small red, you may already be seeding at higher density due to seed size alone. Researchers have been seeing higher yields, regardless of wet or dry years, at up to 220 seeds/ m^2 . Narrower row spacing, less than 12 inches, has also shown increases in crop yield.



Lentil seeding rate trial

“Wider than 12 inches shows yield losses every time,” says Shirtliffe.

Disease Not Usually a Factor

Traditionally, producers have avoided planting seeds too close together to prevent the spread of disease. In the research plots, however, while there was a minor increase in disease, such as *Aschochyta* blight, it was never enough of an increase to negatively affect yield.

Shirtliffe explains, “Basically, with any crop, there are two goals you are trying to achieve. During the first half of a crop’s life, you are growing a solar panel. You want the crop to cover the ground as soon as possible. Then in the second half of the crop’s life, you are using that solar panel to maximize yield.”

Particularly in drought years, lower seed density can lead to further crop losses because individual plants do not branch out and the canopy does not fill in. That can lead to further water evaporation from the soil, and higher

ground temperatures, which will stress plants. A dense canopy, on the other hand, means more sunlight is captured and turned into more food—and more food means higher yield.

“Fundamentally, having a competitive crop stand will help with weed control,” says Shirtliffe. “If you combine dense planting with a pre-emergent application of Sencor, for example, you will give the lentils a chance to get ahead of wild mustard. Once the canopy is established, it will out-compete the weeds.”

Producers still have a decision to make regarding the economic payoff of planting at a higher density. The variables are still challenging to navigate. But particularly for small seeded varieties, it may be worth it to rethink your assumptions about crop spacing. It may be less of a disease factor than you think. Higher seeding density may just pay off in a higher yield.



Noelle Chorney is a freelance science writer, interpretive planner, content manager, and owner of Tall Order Communications. She can be reached at tallorder@sasktel.net

(RE)INTRODUCING SOYBEANS

Why this crop shows potential in Saskatchewan rotations

Megan Madden



Adding soybeans to your rotation has benefits

Soy is one of the most diverse products in the world today. From meal to oil to biodiesel, this is an in-demand product that is constantly being processed in new ways. A soybean is about 18 per cent oil and 38 per cent protein, making it useful for both food and industrial products. Their high protein content makes them a significant protein source in animal food, with a smaller percentage being used for human consumption in products like soy milk, flour, or tofu.

Because of the many valuable uses for this crop, demand has increased Canadian soybean acreage from 3.58 million (M) acres in 2009 to 5.4 M in 2015. Specifically in Western Canada, Manitoba acreage has increased from 415,000 acres in 2009 to 1.33 M in 2015, and in Saskatchewan producers

grew 300,000 acres of soybeans in the 2015 season.

Many farmers are adding soybeans into their rotations not only to capitalize on this growing market, but to add another nitrogen fixing crop to their cropping options.

Rob Stone of Davidson began introducing soybeans onto the family farm in 2013. They started with a six acre plot, and then in 2014 expanded to a 90 acre trial with a couple of different varieties. "Because we already put about 30 per cent of our acres into lentils, we did not have to make any equipment or management changes to add soybeans to the rotation," says Stone.

Chris Bauer of Lake Lenore also started growing soybeans looking for an alternative in his crop rotation because peas had been tough to find consistent

success with. "We try to be on three- to four-year rotation across the farm (away from canola) but it is tough when you consider the return on investment and profit possibilities," says Bauer. "This is why we choose soybeans: to get better crop rotation options and better weed control."

Farming 4,000 acres near Broadview, Scott Sefton began soybeans for similar reasons – they needed a nitrogen fixing pulse in their rotation and had not had much luck until introducing soybeans in 2009. "Once established, the soybeans do very well and they tend to stay fairly close to canola for price. One of the best benefits of growing soybeans is that they do not require a lot of inputs, and they are very easy to harvest."

Dr. Jeff Schoenau, Professor and Ministry of Agriculture Strategic Research Chair in the Department



Soybean field trial



Soybeans are a good nitrogen fixing crop to add to rotations

"In our 2014 research in four sites across Saskatchewan, we saw soybean fix more nitrogen than lentils, and nitrogen-fixation amounts equal to peas."

of Soil Science at the University of Saskatchewan says the benefits farmers see is due in part to the significant amount of nitrogen fixed by soybeans. "In our 2014 research in four sites across Saskatchewan, we saw soybean fix more nitrogen than lentils, and nitrogen-fixation amounts equal to peas," he comments.

But new crops, no matter how valuable, are not without their challenges and learning curves. Dr. Schoenau has observed that soybeans have higher phosphorus and potassium requirements than other crops, which can be a challenge as you are limited to how much phosphorus that can be placed in the seed row

before affecting germination.

Each of the farmers mentioned the frustration of waiting to seed soybeans. "The temperature needs to be 10°C at 7 AM before seeding to ensure good germination," says Stone. Sefton offers some of his best management practices to first time growers. "There cannot be too much trash with the stubble and if there is it should be harrowed to blacken the soil to warm it up," he states. "Soybeans must rolled after seeding for easy harvest, and the field should be fairly weed free so the soybeans can establish."

Bauer points out that delayed seeding then leads to late harvest as well. "Our soybeans are always last to harvest, but you cannot seed early because you need to wait for warm soil." The waiting game is worth it in his opinion, "We always see healthy soil for the next couple crops after our soybeans. Our cereals following soybeans always give us an excellent crop with high protein. They are also a very easy crop to grow once seeded and insects or disease has not been an issue."



Megan Madden is the owner of southpaw PR inc., a strategic communications consultancy. She can be reached at @southpawMegan or megan@southpawpr.com.

STACKING THE ODDS IN YOUR FAVOUR

New ways to look at controlling herbicide resistant weeds

Noelle Chorney



Studies investigating the potential of layering pre- and post- herbicides with different modes of action to control resistant weeds in lentil will commence in 2016

Herbicide layering is one way to reduce the risk of developing herbicide resistance in weeds.

"Herbicide resistance is a numbers game," says Provincial Weed Control Specialist Clark Brenzil. "And with the limited herbicide options for pulses to begin with, it is important to do all you can to stay on top of weeds and herbicide resistance before it becomes a problem in your field."

Canada has the dubious distinction of being ranked fourth in the world, behind the United States, Europe, and Australia, for the highest number of weeds with herbicide resistance. Pulse growers, with an already limited palette of weed control options, have to think strategically about their weed control programs—combining cultural practices and herbicide technology.

Researchers at the University of Saskatchewan (U of S) are studying options for more effective weed control in the field, while also reducing the risk of further herbicide resistance. One possible approach is herbicide layering—applying several modes of action or Groups to a field in a single season. This could involve both tank mixing and the application of pre-emergent soil active herbicides to achieve this.

emergent herbicides," says Brenzil. "Then we moved to a 'one herbicide fixes all' approach. With growing glyphosate resistance in weeds, we are now cycling back to that original approach."

Playing the Odds

"The likelihood of a plant mutation that creates resistance to an herbicide is very low," says Brenzil. "This could be one in a million, one in a billion, or one in a trillion depending on the herbicide

"Weeds adapt to consistent annual timelines. Keep them off balance by changing dates for planting and weed control."

"Before the advent of glyphosate resistant crops, it was fairly common to use a combination of pre- and post-

Group in question. For Groups 1 or 2 this number is likely closer to the one in a million rates but something like the



Clomazone symptoms on cleavers. A pre-application of clomazone followed by post-applications of Viper in field pea has shown promising results for controlling Group 2 resistant cleavers in field pea

Group 4 dicamba or fluroxypyr it may be more like one in a trillion. When you combine two herbicides to control the same weed, your risk of selecting for resistance is equal to the risk of resistance to one group multiplied by the risk of resistance to the second group. For example if we assume we have two herbicides from different groups that alone each have one in a million mutation rates in the target sites of the weed, the risk of finding a weed being resistant to both herbicides combined is a million times a million."

Eric Johnson, research assistant in Plant Sciences at the (U of S), concurs. "If you take out 50-60 per cent of the population with the pre-emergent herbicide, there are fewer plants to take out with the post-emergent herbicide."

Johnson has been studying the effectiveness of soil active herbicides, such as clomazone (Group 13), sulfentrazone (Group 14), and pyroxasulfone (Group 15) as a pre-seed application combined with a post-emergence application of Viper (Group 2 and 6) for controlling cleavers in pea crops. These pre-/post-combinations have been effective in soils containing higher organic matter in the northeast.

"We are also looking at the same concept for lentils," he says. "Kochia and wild mustard are often Group 2 resistant. We are looking at pre-applications of flumioxazin (Group 14), pyroxasulfone (Group 15), followed by Solo (Group 2) or Sencor (Group 5) in crop. We are also investigating some post-emergence Group 14 products in combination with Solo or Sencor." Increasing the resistance of lentils to the effects of the herbicides is another challenge that is being tackled at the same time.

Diversify, Diversify, Diversify

Cultural activities that combat resistance are as important as herbicide applications. "Anything that reduces the populations of your weeds before you get in there with a herbicide is going to prolong the life of your limited selection of herbicides in pulses. Use targeted tillage or mowing particularly on weedy patches. It is also important to use as broad a rotation as possible," says Brenzil.

"A lentil-durum rotation is a rotation, but it is not diverse enough to prevent herbicide resistance," Johnson says. "In an 18-year study at Scott, a

common wheat-pulse-canola rotation had a 50 per cent occurrence of Group 1 resistant wild oats at the end of the study." A rotation that included short term alfalfa nearly eliminated Group 1 resistance. Grain crops cut for silage and seeding winter crops can also reduce herbicide selection pressure in wild oats.

Short rotations allow weeds to adapt to the limited number of crops and increase their numbers, increasing the opportunity to find a resistant individual against the low odds. It also encourages the use of the same herbicide technology over and over again which also increases the likelihood of finding and increasing that resistant individual from one plant to millions.

"Weeds like to grow in crops that are like themselves. If you are growing a mix of competitive and non-competitive crops, and changing your management dates and approaches, you are adding diversity and preventing resistance," says Brenzil. "Weeds adapt to consistent annual timelines. Keep them off balance by changing dates for planting and weed control. And treat fields as discreet management units"

Full blown resistance happens when you use the same herbicide technology over and over again. While simplifying management practices may seem more efficient at first, it also sets you up to be prone to resistance.

The more you combine several herbicide groups on high risk weeds and extend crop rotations, and use a combination of both approaches, the better your odds of beating weeds.



Noelle Chorney is a freelance science writer, interpretive planner, content manager, and owner of Tall Order Communications. She can be reached at tallorder@sasktel.net

GROWING SASKATCHEWAN'S CHICKPEA PRODUCTION

Saskatchewan is home to Canada's largest chickpea crop

Jane Caulfield



Chickpea breeder Bunyamin Tar'an

For more than 20 years, Barry Reisner has been farming chickpeas and selling the seed to farmers looking to add the super legume to their crop rotation. For Reisner, growing this particular pulse is a major part of his livelihood.

"I feel they are a crop that is well-suited to my growing conditions here in southern Saskatchewan," says Reisner. "Despite the problems we have had the past few years with wet weather, we plan to continue growing chickpeas."

With a total of 115,000 acres of Saskatchewan land dedicated to two varieties — Kabuli and Desi — many of the world's chickpeas are grown right here in Saskatchewan.

"Chickpea is an important rotation

crop in a cereal based system, especially in the drier area of the province," says Dr. Bunyamin Tar'an, Plant Breeder at the Crop Development Centre (CDC) at the University of Saskatchewan. "The increase of chickpea area and production in Canada is directly dependent on the development of shorter season and more disease resistant varieties."

According to Shannon Chant, Regional Crops Specialist for the Saskatchewan Ministry of Agriculture, chickpeas are well adapted to our hot and dry summer conditions.

"Chickpea is heat-tolerant and thrives under good moisture conditions with daytime temperatures between 21°C and 29°C and night temperatures near 20°C. Chickpeas are relatively

"The chickpea breeding program has been focused on making the chickpea a less risky and easier to grow crop while maintaining its high economic value," says Tar'an.

drought-tolerant due to its long taproot, which allows it to use water from greater depths than other pulse crops," says Chant.

They also have a symbiotic relationship with bacteria found in Saskatchewan soils that allows for nitrogen fixing, a process through which

60-80 per cent of the plant's required nitrogen comes from air in the soil.

For producers, chickpeas may come with a little bit of extra work in regards to fertilization and weed control, but often promise a good profit. Dramatic growth in the United States (U.S.) hummus market between 1997 and 2013 forced an increased demand for the Kabuli chickpeas. In 2014 Saskatchewan farmers exported a total of 18,143 tonnes of chickpeas to the U.S. Canada also exports to countries such as Pakistan and Israel, where the chickpea is part of a daily diet, and some European countries such as the United Kingdom and Italy.

Looking to take advantage of Saskatchewan's already ideal growing conditions, geneticists at the CDC are looking for ways to improve varieties

"I feel they are a crop that is well-suited to my growing conditions here in southern Saskatchewan," says Reisner.

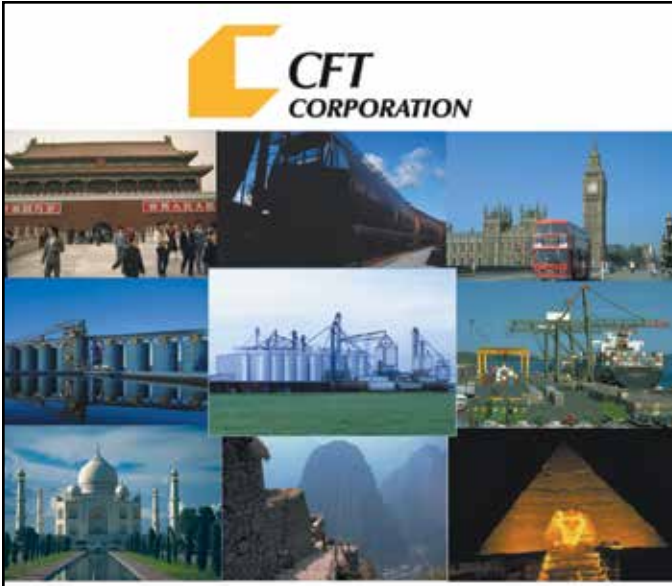
to help boost Canada's position in the world chickpea export market. Aside from exploring a natural resistance to anthracnose, a disease known to decimate some pulse crops, researchers are looking to enhance other traits such as early maturity, herbicide tolerance, physical seed appearance, and processing quality.

"The chickpea breeding program has been focused on making the chickpea a less risky and easier to grow crop while maintaining its high economic value," says Tar'an. "Improving the key agronomic traits including overall yield and quality

of chickpea through breeding will sustain chickpea production in Canada, enhancing the status of Canada as a preferred supplier and help expand market share."



Jane Caulfield is an experienced journalist and writer, and is the owner of Tin Box Digital Content.



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PULSE ACRES INCREASE IN 2016

Price and demand will influence Saskatchewan production

Brian Clancey

Area 1985-2000	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Lentils	180,000	323,000	540,000	335,000	255,000	330,000	588,531	690,000	920,000	985,000	825,000	750,000	813,000	935,000	1,251,000	1,727,000
Peas	184,000	324,700	585,000	670,000	370,000	305,000	490,290	675,000	1,250,000	1,720,000	2,025,000	1,345,000	2,097,000	2,680,000	2,104,000	3,065,000
White Beans	102,000	167,000	183,000	235,000	112,000	137,000	151,313	134,000	124,000	113,672	156,200	105,600	119,000	98,600	196,200	199,800
Colored Beans	0	0	0	0	0	0	71766	48,900	91,900	95,400	109,900	111,200	113,100	143,100	184,800	211,600
Faba Beans				12,370	983	575	17,800	14,000	9,000	7,000	10,000	4,600	6,000	14,000	7,000	15,000
Chickpeas	0				80	100	120	160	480	960	2,500	7,400	25,900	97,700	353,400	730,000

Production 1985-2000	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Lentils	62,400	170,500	286,500	58,600	96,200	213,200	342,800	349,000	348,700	450,400	431,900	402,500	378,800	479,800	723,800	914,100
Peas	168,800	238,900	385,000	319,700	234,100	264,000	409,700	504,800	970,200	1,441,000	1,454,700	1,173,000	1,762,300	2,336,800	2,251,900	2,864,300
White Beans	29,400	99,000	87,400	53,900	43,700	61,000	131,300	54,100	79,800	86,300	119,700	61,500	82,920	73,990	149,340	119,650
Colored Beans	0	0	0	0	0	0	50,700	20,100	53,000	85,900	89,000	75,600	89,000	119,000	144,900	145,100
Faba Beans							18,800	11,200	5,200	6,800	5,800	5,520	4,300	13,700	6,500	15,400
Chickpeas					38	65	75	90	279	603	1,012	3,984	14,500	51,860	187,200	387,500

Area 2001-2016	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Lentils	1,750,000	1,485,000	1,269,000	1,825,000	1,984,000	1,400,000	1,435,000	1,745,000	2,405,000	3,445,000	2,557,775	2,515,000	2,720,000	3,120,000	3,950,000	4,600,000
Peas	3,320,000	3,205,000	2,890,000	3,170,000	3,220,000	3,115,515	3,630,000	3,985,000	3,760,000	3,625,000	2,436,726	3,730,000	3,325,000	3,985,000	3,680,000	4,030,000
White Beans	209,400	287,000	182,000	173,000	193,000	190,119	150,000	135,000	95,000	120,000	60,236	130,000	75,000	90,000	85,000	83,000
Colored Beans	237,400	282,800	232,500	231,800	286,300	268,948	241,100	194,300	206,100	211,100	137,645	175,000	165,000	215,000	175,000	173,000
Faba Beans	13,000	13,000	12,000	15,000	12,000	20,700	10,000	10,000	6,500	4,100	4,300	5,600	15,200	75,000	125,000	148,600
Chickpeas	1,200,000	545,000	155,000	115,000	195,000	318,919	430,000	110,000	105,000	210,000	117,538	200,000	190,500	180,000	123,000	132,000

Production 2001-2016	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Lentils	566,300	328,000	484,600	915,800	1,164,300	692,800	733,900	1,043,200	1,530,200	2,004,800	1,573,500	1,537,900	2,261,700	1,987,000	2,372,900	3,072,000
Peas	2,044,800	1,283,800	1,930,900	3,097,200	2,993,600	2,519,900	2,934,800	3,564,500	3,379,400	3,018,200	2,502,000	3,340,800	3,960,800	3,810,100	3,200,700	3,993,000
White Beans	136,630	210,450	151,750	81,990	119,100	159,700	105,200	108,900	67,200	102,300	46,100	115,600	65,400	77,700	75,000	72,000
Colored Beans	154,900	203,900	201,300	145,400	204,100	222,800	178,500	158,200	157,300	151,300	116,300	158,800	140,700	195,400	168,500	155,000
Faba Beans	10,200	9,100	8,400	15,300	9,800	16,000	10,900	9,500	5,300	4,500	5,700	6,900	22,400	107,500	139,300	195,500
Chickpeas	455,000	166,500	67,600	51,200	103,900	163,200	224,800	67,000	75,500	131,300	85,600	161,400	180,400	129,100	89,900	104,000

NOTE: Area is in acres; production in tonnes

Sources: 2016 forecasts by STAT Communications. Historic data from Statistics Canada and Saskatchewan Crop Insurance Corporation data.

Weighted average prices for pulses registered their strongest performance relative to grains and oilseeds in history every month in 2015. For many farmers that translated into higher than normal gross and net incomes relative to other field crops.

There is widespread optimism pulses could outperform other field crops through the balance of this calendar year. That idea stems from the fact that new crop bids for lentils and peas are unusually strong. Markets also expect strong opening season demand as shippers cover new crop sales that were made as early as November.

Not surprisingly, this combination of factors is pulling land into pulses in Canada and other countries. That is setting the stage for prices to fall into a more normal relationship to grains and

oilseeds in 2017. But, even that could change if India again has problems with its crops, or there are significant weather problems in Canada.

For the second year in a row, events in India have had a profound impact on pea, chickpea, and lentil markets. It suffered through two below normal monsoons in a row. That directly affects summer or kharif pulse production levels in the country. At the same time, monsoon rain is needed to recharge soil moisture reserves for the winter or rabi season crops. Below normal moisture discourages farmers from seeding crops because of the risk of below average yields.

Nearly all of India's lentils, peas, and chickpeas are grown during the rabi season. For the second year in a row, land in rabi season pulses is down

because of the below normal moisture reserves. That leaves farmers looking for timely rainfall events to seed crops. How many pulses are grown during the rabi season has a direct impact on imports of yellow peas and red lentils during the fall shipping period. Problems with the kharif crops are often result in stronger demand for green lentils.

Below normal monsoon rainfall in both 2014 and 2015 contributed to demand for green lentils. In both years, India took over 60,000 tonnes of green lentils between August and November, making it Canada's most important customer.

Red lentil demand is affected more by problems with rabi harvests and last year's failure saw Indian demand jump. By the end of November, shipments had already set a single season record

to India, soaring past 626,000 tonnes. Demand for yellow peas from Canada, and Desi chickpeas from Australia, were also given a boost by last year's small rabi season pulse harvest.

This year's rabi season pulse crop will again be small. Markets think Canada and other pulse exporters should see similar movement between July and November for red lentils, yellow peas, and Desi chickpeas. However, green lentil demand depends in large part on whether this year's monsoon is average or better, allowing summer pulse area to rebound. If that happens, rabi season pulse area would also be expected to jump, putting a damper on imports in 2017.

It cannot be understated how important events in India are to demand, especially in a year which should see production records set for lentils and peas. Any slowdown in demand will translate into lower grower bids.

There is another risk to grower bids in the coming year. Any rebound in the value of the Canadian dollar because of higher oil prices and/or a stronger national economy will cost farmers money. If the Canadian dollar was worth as much this season as it was during the previous marketing year, grower bids could be 11 per cent lower.

Even if prices were 11 per cent lower, Canadian farmers might still plant 4.6 million (M) acres of lentils, including 3.3 M red, 954,000 large green, and 280,000 acres of small green. Globally, farmers are expected to plant a record 12.17 M acres of lentils, up eight per cent from last year. Average yields would see

Estimated Gross Income From Pulses as a Percentage of Other Crops 2015/16

	Large Green Lentil	Medium Green Lentil	Small Green Lentil	Red Lentil	Yellow Pea	Green Pea	Large Kabuli Chickpea	Small Kabuli Chickpea
Wheat	324%	307%	277%	305%	162%	159%	255%	210%
Durum	288%	273%	246%	271%	144%	141%	226%	186%
Barley	227%	215%	194%	214%	113%	111%	179%	147%
Canola	172%	163%	146%	162%	86%	84%	135%	111%

Forecast Gross Income From Pulses as a Percentage of Other Crops 2016/17

	Large Green Lentil	Medium Green Lentil	Small Green Lentil	Red Lentil	Yellow Pea	Green Pea	Large Kabuli Chickpea	Small Kabuli Chickpea
Wheat	189%	177%	165%	201%	137%	169%	181%	138%
Durum	190%	178%	166%	201%	137%	170%	181%	139%
Barley	151%	141%	132%	160%	109%	135%	144%	110%
Canola	106%	99%	92%	112%	76%	94%	101%	77%

Five-Year Average Gross Income From Pulses as a Percentage of Other Crops

	Large Green Lentil	Medium Green Lentil	Small Green Lentil	Red Lentil	Yellow Pea	Green Pea	Large Kabuli Chickpea	Small Kabuli Chickpea
Wheat	142%	137%	130%	155%	124%	166%	222%	139%
Durum	128%	124%	120%	136%	113%	156%	211%	126%
Barley	127%	123%	118%	133%	111%	144%	207%	121%
Canola	80%	77%	74%	86%	71%	94%	129%	79%

NOTE: Lentil income forecasts take into account the percentage of crop in each grade

Source: Food and Agriculture Organization, United Nations

global production of all classes of lentils jump 20 per cent to 5.9 M tonnes.

Export trade volumes for Canada and other origins should be up over this season, reflecting strong demand from India during the fall shipping period. More importantly, inferred consumption should also rise, helping limit the increase in residual supplies. Residual supplies of lentils on a global basis could reach 715,000 tonnes, with Canada holding 615,000.

Pea area is also expected to set a record this year, perhaps pushing past four million acres. Average yields would see production hit 3.99 M tonnes. Yellow peas should account for 3.43 M acres

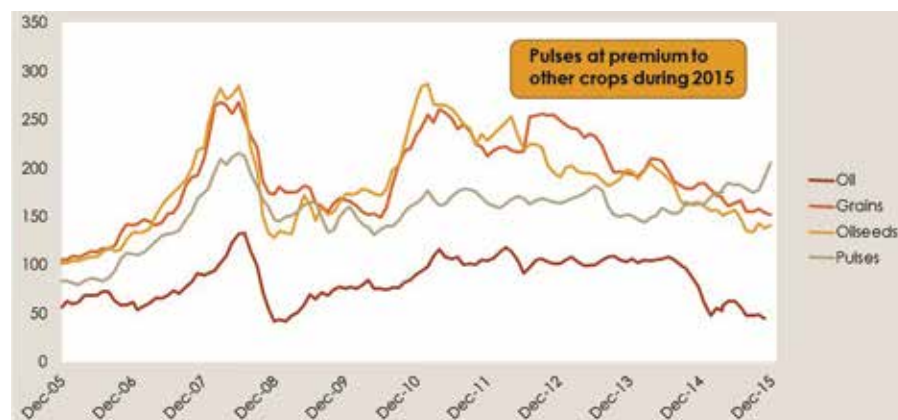
and 3.39 M tonnes of the total, while green pea area may slip under 550,000 acres, and outputs hit 554,200 tonnes. If realized, this means land in yellow peas will be up over last year, but green peas will drop.

Globally, pea area is expected to rise five per cent to 17.4 M acres and production jump 14 per cent to just over 12 M tonnes. Most peas are consumed as food or feed where they are grown, with the result inferred use should raise enough to prevent a worrisome increase in residual supplies.

The coming marketing year should see a global carry-over of 690,000 tonnes, up from 420,000 last summer. Canada's ending stocks could climb from an estimated 289,000 tonnes this summer to a forecasted 494,000.

Clearly, the increases in global production create a bigger risk for prices to drop into a more normal relationship to grains and oilseeds. That makes it more important to take advantage of opportunities to lock in a solid profit. As the adage says: You never go broke taking a profit.

World Price Index Comparison



Source: STAT Communications Ltd.



Brian Clancey is the Editor and Publisher of www.statpub.com market news website and President of STAT Publishing. He can be reached at editor@statpub.com.

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CROPSPHERE 2016

Highlights from the third annual conference

The third annual CropSphere conference took place January 11-13, 2016 at TCU Place in Saskatoon. The conference brought together growers, researchers, and industry, featuring sessions on market outlooks, research and agronomy, and technology and innovation.



Dr. Robert Tyler was recognized as the Pulse Promoter during SPG's annual general meeting on January 11, 2016



Board of Directors Chair Tim Wiens addresses the crowd during SPG's annual general meeting



Keynote Jeff Rubin presents to a packed room at CropSphere.



Honourable Lyle Stewart, Saskatchewan's Minister of Agriculture announces federal and provincial funding during CropSphere



CropSphere attendees listen to Wade Barnes from Farmers Edge present on managing farm data



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REGIONAL MEETINGS 2016

Highlights from the 2016 Regional Pulse Meetings

Saskatchewan Pulse Growers in conjunction with the Saskatchewan Ministry of Agriculture hosted the annual Regional Pulse Meetings February 1-4, 2016. These meetings took place in the communities of North Battleford, Rosetown, Swift Current, and Regina and covered topics such as weed control, new pulse varieties, soil fertility, pulse market outlooks, and a pulse production panel involving local experts.



SPG Executive Director Carl Potts addresses producers at the Regional Pulse Meeting in Regina on February 4, 2016.



Saskatchewan Pulse Growers staff were on hand to help promote the International Year of Pulses at the Regional Pulse Meeting in Swift Current on February 3, 2016.



Chickpea breeder Bunyamin Tar'an from the Crop Development Centre updates producers on the newest pulse varieties during the Regina meeting.



Producers take in the day of presentations during the Regional Pulse Meeting in Regina.



Producers and industry get the opportunity to mix and mingle during the Regional Pulse Meeting in Regina.



A full room of producers getting to know the industry members in the room during the Regional Pulse Meeting held in Rosetown on February 2, 2016.



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PULSE FEAST EVENT HELD IN TORONTO

Events were held around the globe on January 6

Saskatchewan Pulse Growers Staff



Canadian IYP Ambassador Chef Michael Smith addresses attendees of the Pulse Feast in Toronto.

The United Nations' International Year of Pulses (IYP) kicked-off in Canada on January 6 with a Pulse Feast event held in Toronto, Ontario. Over 131 similar Pulse Feast events were held in 36 different countries on January 6, all with the goal of ringing the bell to open the International Year of Pulses around the globe.

"The purpose of the Pulse Feast events were to celebrate the launch of International Year of Pulses around the world," says Allison Ammeter, Chair of the IYP Canada Committee and Chair of Alberta Pulse Growers. "The intent was that no matter where in the world a person was, on social media they would see a celebration in their language, time zone, or country."

With over 21.8 million social media impressions related to the Pulse Feast events, and a globally trending Twitter hashtag, it is easy to see why Ammeter feels like the events were a success.

While events around the world were targeted to vast audiences including government officials and NGO's to culinary students, the event in Toronto focused on food media and food bloggers primarily, along with a few leading edge chefs and dietitians. Chef

Michael Smith served as the celebrity host for the event. Smith, who is also the official Canadian IYP Ambassador, addressing the audience with words of excitement and passion for pulses, and the undeniable momentum that lentils, peas, chickpeas, and beans have in gaining traction in the kitchen as result of the international year and the spotlight it is providing.

The food at the event was prepared by Toronto Chef Ivana Raca, with each dish highlighting the way pulses can

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be used in new and innovative ways including split pea cheddar biscuits, coconut and spinach chickpea flat bread, and lentil risotto.

If there was one thing Ammeter hopes guests took away from the event, it is that the time is now for pulses. "Pulses are a big deal. The Pulse Feast event celebrated that pulses are nutritious, flavorful, flexible, and environmentally sustainable." And the way in which guests were exposed to that messaging at the event was plentiful. "Guests could learn all about pulses by perusing the museum exhibit from the Canadian Agriculture and Food Museum, they could ask questions of pulse trade and farmers, or sample the amazing selection of appetizers." One thing about the event is clear in Ammeter's eyes, "Pulses really were celebrated by all."



Attendees could take home a bag of pulses from the Pulse Feast event.

PULSE PLEDGE GAINS TRACTION

Ten week challenge puts pulse consumers to the test

Saskatchewan Pulse Growers Staff



Chef Michael Smith's International Year of Pulses Tacos

Canadian pulses—beans, peas, lentils, and chickpeas—are stepping into the spotlight in 2016 as the world celebrates International Year of Pulses (IYP). Chef Michael Smith is the first Canadian to pledge to eat more pulses in 2016.

"Many Canadians are familiar with lentils, peas, chickpeas, and beans, even if they do not know the term pulses, which are edible seeds of plants in the legume family," says Chef Michael Smith, Canada's International Year of Pulses (IYP) Ambassador. "Canada can be proud of the pulses we grow here. They are nutritional superstars,

affordable, and easy to prepare, and they are sustainably grown, meaning they are good for the planet, too."

In conjunction with the kick-off of IYP, a Pulse Pledge campaign was launched, aiming to get North Americans eating more homegrown pulses. The Pulse Pledge is a 10-week commitment to eat pulses each week, and over 17,000 people have already signed up.

"I took the Pulse Pledge because it is an easy way to boost nutrition in almost any meal from tacos to burgers to desserts. And, my family loves them," says Chef Michael.

Canadians can take the Pulse Pledge at pulsepledge.com and share their ideas on how they eat pulses through social media (using the hashtags #pulsepledge and #lovepulses).

"We are asking Canadians to make a commitment to eating pulses more frequently because just a half-cup can make a big difference," explains Smith.

Pulses are a low-fat source of protein, fibre, and many vitamins and minerals. They support a healthy diet and can even help in the management of diet-related diseases like diabetes and heart disease.

In celebration of IYP, Chef Michael

Smith created a new signature dish, the Pulse Taco featuring green lentils and chickpeas. “My Pulse Tacos are packed with fibre, protein, nutrients, and flavour. They are a great way for your family to join families around the world in a global celebration of flavour and nutrition.”

Canadians can also help the environment and contribute to the future of sustainable food production simply by eating pulses – they are a low carbon, water-efficient source of protein that enriches the soil where they are grown.

Pulses are a remarkable Canadian success story. Canada’s pulse industry, which only began to see significant growth beginning in the 1970s, is now

contributing over \$3 billion to Canada’s economy. Canada is the world’s largest producer and exporter of dry peas and lentils and a major supplier of pulses to over 150 countries around the world. Canada’s biggest export markets are India, China, and Turkey. Pulses are Canada’s fifth largest crop, after wheat, canola, corn, and barley.

The Food and Agriculture Organization of the United Nations has declared 2016 the International Year of Pulses (IYP) to celebrate pulses’ contribution to health, nutrition, environmental sustainability, and to demonstrate the contribution pulses can make toward global food security

and helping the UN implement its 2030 Agenda for Sustainable Development, which aims to eliminate global poverty and hunger.

How to Take the Pulse Pledge

1. Visit pulsepledge.com and sign up for the pledge.
2. Watch for helpful weekly emails full of tips and recipes ideas.
3. Eat a half cup of lentils, peas, chickpeas, or beans a week for 10 weeks.
4. Share your experience on social media using the hashtags #pulsepledge and/or #lovepulses.

CHEF MICHAEL SMITH'S PULSE TACOS

The year 2016 has been declared the International Year of Pulses by the United Nations to celebrate one of the world’s most important foods: the edible seeds of the legume family. Beans, peas, chickpeas, and lentils are packed with fibre, protein, nutrients, and flavour. Their nutritional intensity, inexpensive accessibility, and ease of cooking have made them indispensable staples to cooks all over the globe.

Wherever we live we all do our best to make healthy choices at home but it is a lot easier when those choices are delicious. These meatless tacos are stuffed with so much sunny southwestern flavour that no one will notice anything missing. What a great way for your family to join families around the world in a global celebration of flavour and nutrition!

Makes 12 tacos, Serves 4 to 6

For the pulse filling:

- 2 tablespoons (30 mL) of canola oil
- 2 onions, thinly sliced
- 6 garlic cloves, thinly sliced
- 1 heaping tablespoon (18 mL) of chili powder
- 1 teaspoon (5 mL) of ground cumin
- 1 cup (250 mL) of green lentils
- A 19-ounce (540 mL) can of your favourite beans or chickpeas, rinsed and drained
- 2 cups (500 mL) of water
- 1/2 teaspoon (2 mL) of salt
- 1/2 teaspoon (2 mL) of your favourite hot sauce

For the taco toppings

- A head of Bibb or iceberg lettuce
- 12 hard taco shells
- A few handfuls of grated cheddar or taco blend cheese
- Your favourite salsa
- A large bunch of fresh cilantro
- 2 limes, cut into wedges

Make the lentil bean filling. Splash the canola oil into a large skillet or sauté pan over medium-high heat. Toss in the onions, garlic, chili powder, and cumin. Sauté until the vegetables soften and the spice flavours brighten, three or four minutes. Stir in the lentils, beans, water, and salt. Bring the works to a slow, steady simmer. Cover tightly and continue slowly cooking until the lentils are tender, 35 minutes or so. Stir in the hot sauce.

Assemble the tacos. Fit a full leaf of lettuce into a hard taco shell. This will hold the fillings in when the hard shell inevitably breaks. Fill each taco with a heaping spoonful of the lentil bean filling. Pack with cheese, salsa, and cilantro. Serve with the lime wedges and share!

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ON POINT



SPG Board of Directors Profile

Trent Richards

Trent joined the SPG board of directors in 2016.

Trent and his

wife Tracy continue to operate a third generation farm in the Assiniboia area located in south central Saskatchewan. Trent currently continuously crops with lentils, peas, and soybeans making up one-third of the acres, and cereals, canola, flax, and spices making up the remaining acres. Trent attended the University of Saskatchewan where he was enrolled in vocational agriculture. After school he operated a custom spraying business where he applied chemical, and sold sprayer parts. Trent served on the Assiniboia curling rink board, and Assiniboia civic improvement board. Trent also serves on the Boards of Soy Canada and Pulse Canada.

Feed Benchmark Reports

Saskatchewan and Alberta Pulse Growers continue to pull together information and estimates for the feeding values of dry pea and faba bean in Western Canada. For the latest feed prices for Saskatchewan, Alberta, and Manitoba visit the Markets section of saskpulse.com.

SR&ED Tax Credit

Growers who contribute pulse levy dollars to Saskatchewan Pulse Growers (SPG) are eligible to earn a federal investment tax credit through the Scientific Research and Experimental Development (SR&ED) program. The tax credit is based on the amount of levy funds spent on research and development (R&D) that meet specific criteria set out by the Canada Revenue Agency (CRA).

For the 2015 tax year, 31 per cent of the Saskatchewan pulse levy qualifies for the federal SR&ED tax credit.

Pulse Promoter Award



Dr. Robert Tyler was honoured during CropSphere 2016, receiving the Pulse Promoter Award from SPG and BASF. Dr. Tyler has been a long-time member on the SPG's Research and Development (R&D) Committee and has provided assistance to SPG in the development of R&D priorities, continually dedicating his time to review and evaluate research project proposals for alignment with organizational goals. He has made huge contributions to the pulse industry through his work in the area of R&D, specializing in pulse ingredient utilization. His research group has undertaken projects on the modification of pea starch, the extrusion of pea protein concentrate from pea flour, and the manufacturing of pasta, snacks, and breakfast foods from pulse flours, amongst others.

Upcoming Events

Western Applied Research Corporation Crop Opportunity Meeting

March 9, 2016 North Battleford

The Western Applied Research Corporation (WARC) facilitates research at the Scott Research Farm with a mandate to transfer new technology on to producers. On March 9, they will be hosting their annual Crop Opportunity and Scott Research Update at the

Dekker Centre in North Battleford, SK. Pre-registration is encouraged, and the agenda for the day can be found at: westernappliedresearch.com.

Undergraduate Scholarships Call for Applications

Saskatchewan Pulse Growers is now accepting applications for 2016 undergraduate scholarships. For application information visit saskpulse.com or email pulse@saskpulse.com.

The deadline for applications is May 6, 2016.

Save the Date! International Year of Pulses Grower Celebration

June 16, 2016 Regina

SPG is hosting an event to recognize the work of Saskatchewan growers in building a successful pulse industry.

On June 16, 2016, Saskatchewan Pulse Growers will be hosting a celebration event for Saskatchewan pulse farmers at Evraz Place during the Farm Progress Show in Regina. The event will bring together all parts of the pulse industry to recognize the dedication and hard work of Saskatchewan growers in developing a successful and profitable Canadian pulse industry.

Pulse and Special Crops Convention

July 6 - 8, 2016 Toronto

The 2016 Pulse and Special Crops Convention will be held in Toronto, July 6-8. Network with industry leaders, make new business connections, and learn more about pulse and special crops markets around the world. Early bird registration opens April 1, 2016.

For more information please visit the Canadian Special Crops Association website at specialcrops.mb.ca.

For recent news on the pulse industry, visit the SPG website at saskpulse.com.



PULSE GROWER PROFILE

In recognition of the International Year of Pulses, SPG will be profiling past board members throughout 2016.

Dan Flynn, Beechy, Saskatchewan

How long were you a board member with Saskatchewan Pulse Growers?

I was a board member from 2009-2011. At the time I was elected to the board, I was the youngest person serving on the board. I wanted to join the board because we had just come off the first big run up of red lentil prices which made a lot of money for guys. I was curious to learn more about Saskatchewan Pulse Growers (SPG) and what they were doing on behalf of pulse growers.

What changes were made during your time with the board?

When I joined the board I was put on the finance committee and I remember it was a position that had a lot of pressure attached to it. We were dealing with a lot of money coming in through the pulse levy and I had to learn a lot, and learn quickly. During my time on the board we continued to form a strong partnership with BASF including their Clearfield commitment for lentils. One of the last things we got to do as a board before I stepped down was to approve more funding for faba bean development.

What have you noticed the most since you left the board?

Nothing is the same as when I served on the board. A lot has changed. The industry has grown a lot; I never thought we would see the potential for five million acres of lentils in Saskatchewan. There has been a lot of change in the grain and grain-handling side of things as well. Now growers are starting to see shipping companies doing more, and SPG is playing a bigger role in the development of new pulse markets. Additionally, the new varieties coming out of the Crop Development Centre are ensuring that Saskatchewan pulse growers will have plenty of choice pulses to add to their rotations.

What do you think the state of the pulse industry will be moving forward?

I think there will be challenges in the future if we produce a sizeable amount of tonnage with the lentil acres expected to be put into production this year.

There is a drive for a non-animal protein in the world and we are getting better at producing it. Saskatchewan pulse producers are the best in the world at growing plant protein and with

the advances made in the research and development of pulse varieties, we will be able to not only grow profitable pulse crops, but address the consumer demand for new forms of protein.

What opportunities are available to Saskatchewan pulse growers?

New pulse varieties have made it much easier and more appealing for Saskatchewan growers to not only include a pulse crop in their rotation, but to also find more pulse crops to grow in their area. We are actually getting really good tonnage per acre from the new varieties, and as the machinery to put acres in and take acres off improves, growers should see their profitability grow. It amazes me to think that growing up, lentils were considered a niche crop and not many farmers grew them. Now everyone seems to have the opportunity to grow them.

What crops do you grow?

When I joined the board my dad and I were farming over 4,000 acres, now we farm 14,000 acres. We primarily grow red lentils but we have also grown chickpeas and yellow peas.

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