Manitoba Pulse Growers Association www.manitobapulse.ca

pulse beat

Fall/Winter • No. 73, 2014

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Manitoba Pulse Growers Association

Fall/Winter • No. 73, 2014

Publisher Manitoba Pulse Growers Association Inc.

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Pulse Beat is the official journal of and published by the Manitoba Pulse Growers Association Inc. This Association is a producer organization funded by sales of pulse (beans, lentils, peas, chickpeas and faba beans) and soybean crops grown in the province of Manitoba. Circulation is approximately 3,700 and is distributed to producers, government, researchers, and industry involved in the special crops field.

Cover photo courtesy of *Kristen Podolsky – Manitoba Pulse Growers Association*

IN THIS ISSUE

Manitoba Pulse Growers Association – 2014 Board of Directors

Elected Producer Directors

Kyle Friesen, President – *Altona*
Jason Voth, Vice President – *Altona*
Andrew Knowles – *St. Andrews*
Ben Martens – *Boissevain*
Frank Prince – *Deloraine*
Joni Sawatzky – *Altona*
Andreas Scheurer – *Dugald*
Ernie Sirski – *Dauphin*
Albert Turski – *La Salle*
Rick Vaags – *Dugald*

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Yvonne Lawley, Department of Plant Science, University of Manitoba

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Please direct your comments or concerns to Sandy Robinson at 204.745.6488 or email sandy@manitobapulse.ca

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Manitoba Pulse Growers Association Inc. Soybeans • Dry Beans • Peas

CNSA

Manitoba Wheat and Barley Growers Association

PRESIDENT'S MESSAGE

Kyle Friesen
President

Harvest in Manitoba is wrapped up for another year and now comes time to reflect and evaluate this past year's crop production, read through research reports from the growing season and begin planning for 2015. Mother Nature threw a lot of curveballs at Manitoba farmers this growing season – from wet conditions delaying spring seeding, excess rain and flooding in July, cool temperatures in August, an early frost in September, followed by beautiful fall weather in October. Western Manitoba was hit with another year of flooding and significant crop losses. Officials are still determining the cost to farmers and the Manitoba economy. Water drainage and infrastructure continue to be issues that affect all growers and is something MPGA is continuing to monitor. In the end, the majority of Manitoba crops have come off with average yields and reasonable quality. Unfortunately, markets have continued to drop with increased production in the US and South America.

Soybean acres in Manitoba have been steadily growing each year and 2014 was no different. With new shorter season varieties available for Manitoba growers, more and more growers are looking at the long-term impact of growing soybeans on their farm. Rotation planning, variety selection and residue management are all components to incorporating soybeans into a crop rotation and farmers are looking to MPGA for the latest information.

MPGA's first annual Field Tour–West, held in Brandon, was well attended by both new and experienced soybean growers as well as industry agronomists – all looking to MPGA for the most recent research findings that can be implemented on their farms. The research showcased at the summer field tours continue to be a priority for MPGA as a way to improve financial returns to all our members.

Strategic partnerships within the industry are the backbone to moving Canadian agriculture forward, both nationally and internationally. MPGA has built strong relationships over the course of 30 years and this summer, MPGA was instrumental in the formation of Soy Canada – the national body representing producers, processors, exporters and seed companies. These diverse groups have come together to drive growth and progress within the soybean industry for all to benefit. MPGA and Manitoba producers are represented by board member, Ernie Sirski, serving as vice-chair and producer, Edgar Scheurer as a director at large. Soy Canada has already begun working on some exciting projects that will ensure a strong and vibrant industry for the future.

continued on page 4

continued from page 3

Another partnership that has been exciting for MPGA is with the North Dakota Soybean Council (NDSC). This summer, MPGA was invited to a Soybean Transportation Round Table hosted by the NDSC. Both organizations agree they face similar challenges and open communication and collaboration would be beneficial. As part of that collaboration, MPGA will co-host with NDSC a *Getting It Right* soybean workshop on January 30, 2015, in Portage la Prairie. These workshops are held annually throughout North Dakota, and in recognizing the value Manitoba soybean farmers contribute to NDSC, they have agreed to co-host one in Manitoba. This exciting event will feature soybean specialists from North Dakota and Manitoba presenting on intensive soybean production. This full-day learning workshop is designed specifically for growers to sharpen their soybean production skills. Registration is now open.

This summer, I had the opportunity to participate in a promotional video for MPGA. In *Working for You*, we speak with Manitoba producer Don Sissons, MPGA's production specialist Kristen Podolsky, and myself on the important work MPGA is doing to help our grower members in research, communications and strategic partnerships. Pulses are having a major impact on the agriculture industry in Manitoba, as well as globally, and MPGA is committed to helping our growers prosper. If you haven't had a chance to check out the video, it can be viewed on our web page *www.manitobapulse.ca*.

As winter sets in, MPGA will be sitting down to create a strategic plan that identifies where we want the organization to go and how we can get there. This important document will help guide us into the future in all focus areas including research, communications, market development and advocacy. As agriculture evolves and changes, so must MPGA and the strategic plan will help us determine a vision for the future.

Notice of
2015 ANNUAL GENERAL MEETING

Manitoba Pulse Growers Association Inc.

Soybeans • Dry Beans • Peas

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Phone **204.745.6488**
www.manitobapulse.ca

NOTICE IS HEREBY GIVEN that a meeting of the members of Manitoba Pulse Growers Association (MPGA) Inc. will be held at the Victoria Inn Hotel and Convention Centre, 1808 Wellington Avenue, Winnipeg, MB during the CropConnect Conference on February 17, 2015.

The agenda for the meeting is as follows:

1. To approve the minutes of the 2014 members meeting
2. To receive the financial statements of MPGA for the current fiscal year
3. To appoint the auditor of MPGA
4. To receive the board and manager's report
5. To elect directors to the MPGA board of directors

Nominations to serve on the board of directors can be made by submitting the candidate's name to the nominating committee or the MPGA office prior to the commencement of the meeting, or by nominating a candidate during the call for nominations at the annual general members meeting.

Call for Director Nominations!

Each year director positions come up for election.

If you are interested in becoming a director on the MPGA Board, now is your opportunity. This year the director terms of Ben Martens, Andy Scheurer and Albert Turski are expiring.

If you are a producer of pulse and/or soybean crops and are in good standing with MPGA (you have not requested a levy refund but have sold a pulse/soybean crop in the past two years), and would like more information in becoming a director, contact…

Nominating Committee

Andrew Knowles – *a.h.farms@qkstream.com*

Frank Prince – *princeagparts@hotmail.com*

Ernie Sirski – *esirski@xplornet.com*

Elections will be held at the MPGA Annual General Meeting February 17, 2015.

François Labelle
Interim Executive Director

Time goes by quickly. As I sit here writing, it's a beautiful fall day – warm, above normal temperature and harvest is wrapping up. When you read this, winter will be here and you will be planning next year's crop.

In the spring, I discussed the change to Growing Forward 2 funding and how funds from the Agri-Food Research Development Initiative (ARDI) flow to MPGA. MPGA receives equal matching funds, and we distribute the research dollars to MPGA-approved researchers, including those from both the University of Manitoba (U of M) and Agriculture and Agri-Food Canada (AAFC). This may sound simple but it has been very time consuming. We have legal agreements with the province, but we also had to put agreements in place with the U of M that took well into fall. Hopefully, we have laid the groundwork for the upcoming years as we will continue to apply for funds under the ARDI program to fund more research with your check-off dollars.

Soy Canada is off and running! The association has been officially formed and MPGA is well represented with MPGA director, Ernie Sirski, serving as vice-chair and Edgar Scheurer, a producer director at large of the new board. Jim Everson has been hired as the executive director and brings a wealth of experience from his previous role with the Canola Council of Canada. His many years of experience will be very beneficial to the soybean industry. We wish him all the best and look forward to working with Soy Canada in the near future.

The transportation file has been very busy! Numerous conference calls, meetings and submissions have all taken time this summer and fall. The collaborative efforts of last winter helped move the grain backlog, but this year's activities will result in meaningful changes to the transport system for the future. See our report on page 17 for more details. The work on the transportation file will continue to be busy through the winter.

2016 has been declared International Year of Pulses by the United Nations. Each year, the UN chooses to highlight a segment of agriculture and it's exciting that pulses have been picked for 2016. With growth in pulse production, increased use in food manufacturing and the numerous health attributes that have been confirmed by sound research, it's an excellent opportunity to showcase our pulse products. Nutritious, healthy and wholesome, pulses are growing in popularity but there is a need to encourage the growing population to use pulses more regularly in their diet. Stay tuned as you will be hearing more about the International Year of Pulses.

I took part in a Pulse Industry Round Table meeting this summer, whose focus area for 2014 was research. Prior to this meeting, lack of collaboration between provincial groups was identified as a serious issue. To address this problem and to ensure the best use of check-off dollars, there was a focused discussion between all the provincial associations. The need to share information on projects being done, as well as results from present and past research, ideally in a database available to all, was discussed at length. The second major problem identified, is the continued decrease in funding to research infrastructure. With a reduction in funding by all levels of government for researchers and scientists, infrastructure and operating budgets are not keeping pace with levels of the past or the needs of the current industry. The net result is a loss in capacity to do research that is needed for the future.

As MPGA continues to invest more dollars in research each year, we have started a review process to ensure we get the best return possible for grower dollars. The need for research funds is greater than in the past and we need to look at how we can address the issue and continue to advance pulse industry research. Stay tuned, as there will be more details on this review in the future.

With the winter season upon us, we hope to see you at the CropConnect Conference in Winnipeg or other meetings. If you have any questions on MPGA activity please give us a call to discuss.

Remember, eat your pulses and soybeans – they are great for your health.

Soybean Scout

Can you identify the problem causing these seed issues at harvest?

A

B

Answers can be found on page 55

Do you have a production question related to pulse or soybean crops that you just can't find the answer to? Maybe you're looking for an opinion or advice? Write to us! Email: **kristen@manitobapulse.ca**

2014 MPGA COMMITTEES AND REPRESENTATIVES

MPGA COMMITTEES – *The first named is chairperson*

Executive – K. Friesen, F. Labelle, E. Sirski, F. Labelle

Finance – J. Voth, A. Scheurer, S. Robinson, F. Labelle

Communications/Member Relations – E. Sirski, R. Vaags, F. Labelle, K. Podolsky, D. Sagin

Edible Beans – J. Voth, B. Martens, J. Sawatzky, D. Lange, F. Labelle, A. Hou, Y. Lawley, B. Conner, K. Podolsky

Peas, Faba Beans, Lentils & Chickpeas – F. Prince, B. Martens, D. Lange. F. Labelle, B. Conner, Y. Lawley, K. Podolsky

Soybeans – A. Turski, F. Prince, R. Vaags, A. Knowles, J. Sawatzky, E. Sirski, A. Scheurer, D. Lange, A. Hou, Y. Lawley, K. Podolsky

MASC – R. Vaags, F. Prince, E. Sirski, D. Lange (adv)

MPGA REPRESENTATIVES

Canadian Grain Commission Pulse Sub-Committee – F. Labelle

Grain Growers of Canada – K. Friesen, R. Vaags (alt), A. Turski (alt)

Keystone Agricultural Producers – R. Vaags, E. Sirski, F. Labelle

- General Council – F. Labelle
- Pulse/Oilseed Sub-Committee – F. Labelle
- Commodity Group – R. Vaags, E. Sirski

MCVET – J. Sawatzky, D. Lange (adv)

OOPSCC – A. Knowles, D. Lange (alt)

PGDC/PRCPSC – J. Sawatzky, B. Martens (alt), D. Lange (adv)

Pulse Canada – R. Vaags, F. Prince (alt), F. Labelle (adv)

Soy Canada – E. Sirski, E. Scheurer, F. Labelle

Western Canadian Pulse Growers Association

- **WGRF** – D. Hilgartner (APG)
- **CGC Western Grain Standards Committee – E. Sirski**

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MPGA–*Working for You!*

Throughout the year the staff and directors of MPGA are hard at work managing the association to bring the most value to our membership. This includes such activities as: supporting and funding research, extending production information, market development, advocating in response to key industry issues and communicating and networking with industry leaders. The following are some of our recent activities that support these objectives:

Research and Production

- Launched *Soybean Growth Staging Guide* – a new resource for growers and agronomists to identify various growth stages of soybean.
- Successfully leveraged $860,000 of research dollars into $1.6 million through the GF2: Agri-Food Research Development Initiative (ARDI).
- K. Podolsky made a number of field visits with growers and agronomists throughout Manitoba, attended field days, and toured MPGA-funded research plots as a means to monitor crop conditions and identify research needs.
- Initiated a soybean disease survey of 17 soybean fields throughout central and eastern Manitoba with the assistance of Greg Bartley, graduate student from the University of Manitoba. The disease survey will be continued on an annual basis to monitor disease levels.
- K. Podolsky attended the Carrington row crop research tour in North Dakota to connect with researchers and learn about their soybean agronomy and disease research.
- Produced 10 Soybean School West videos featuring timely agronomic issues in soybeans as well as a feature video showcasing current research in dry beans from Chris Gillard's research program in Guelph, Ontario.
- Distributed a new dry bean grower survey of production practices to better understand various methods being utilized on farms. Results will be used to direct MPGA's research/market development/policy initiatives on dry beans.
- Prioritized the monitoring of issues surrounding neonicotinoid use in agricultural crops, with emphasis on identifying research needs and best management practices for soybean growers in response to environmental risks.
- Hosted first annual Field Tour–West at the Brandon Research Centre. Over 70 growers and industry representatives were in attendance, to see firsthand how levy dollars are invested into research projects.
- Hosted annual Field Tour–East at the Morden Research Centre. Plot tours included bean breeding, pathology and agronomy information.

Market Development and Sustainability

- K. Friesen and F. Labelle attended the Soybean Transportation Round Table hosted by the North Dakota Soybean Council and delivered a presentation on Manitoba soybean issues.
- Soy Canada – actively participated in establishing the groundwork to form this new national association. E. Sirski participated in the inaugural first meeting of the organization and has been named vice-chair for Soy Canada, Inc. MPGA also nominated Edgar Scheurer as a director at large for the board of Soy Canada.
- R. Lewko helped launch the 25th Anniversary season of *Great Tastes of Manitoba*, which aired on CTV on September 6th, with the episode *More Beans Please.* The segment will re-air on February 7th, and can also be viewed on YouTube.
- F. Labelle attended the Pulse Industry Round Table – reviewed research activities across the country by other pulse grower groups, as well as reviewed activities thus far on the International Year of Pulses.
- Continued working on the Sustainability file with monthly calls to review development of the On-Farm Calculator to measure greenhouse gas emissions, which is being piloted in Alberta this year with a small group of growers.
- Sent out over 450 grain sample envelopes to growers for the Canadian Grain Commission's Harvest Sample Program. The goal is to receive a larger number of soybean samples to more accurately gauge the quality of Manitoba soybeans.
- Working with Pulse Canada on planning activities for the International Year of Pulses, both provincially and nationally.
- Responded to a number of inquiries from both domestic and international customers wanting more information on Manitoba production, looking to add potential market outlets for our products.

Communication

- Launched the *Pulse Report* with Maverick Media – daily reports with pulse recipes, production updates and market reports.
- Produced 10 editions of *The Bean Report* in print and via radio with GoldenWest Radio.
- Launched the MPGA *Working for You!* video showcasing the work MPGA does in four key focus areas to improve grower profitability and industry success.
- D. Sagin participated in Ag In the Classroom Amazing Ag-Venture in Brandon and Winnipeg, teaching Grade 3–5 students about pulses and agriculture.
- Participated on the planning committee for the 2nd annual CropConnect Conference, taking place in Winnipeg on February 17th and 18th. The conference runs for two days and offers a wide range of speakers, access to crop specific information, a tradeshow, and banquet.

For updated information check the website **www.manitobapulse.ca** or call the office at **204 745-6488**.

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NEW FIELD RESEARCH EQUIPMENT ARRIVES

Yvonne Lawley
Department of Plant Science
University of Manitoba

Researchers at the University of Manitoba are very excited about the arrival of a new combine, precision planter and corn header to support soybean and corn research at the Ian N. Morrison Research Farm in Carman. The specialized research plot sized equipment is valued at $462,000 and was acquired using check-off funds from both the Manitoba Pulse Growers Association and the Manitoba Corn Growers Association, which were then matched equally by federal funds from the Western Economic Diversification Program ($242,000). This equipment significantly increases the research capacity for the U of M, especially for soybeans and corn, and also improves our ability to train undergraduate and graduate students for their careers after graduation.

The new Kincaid X-8P combine is equipped with slower cylinder settings for soybean harvesting. The chopping corn header, manufactured by Geringhoff, allows us to move from hand-harvesting corn to mechanical harvesting and improves our ability to manage corn residue at the research farm. In the future, we would like to purchase a soybean-specific header when working with soybeans on 30-inch rows. For now, the traditional two-metre grain header works well for the range of row spacings we are currently using for our soybean experiments.

Kincaid X-8P combine

Geringhoff corn header

THEN AND NOW!

1950s-era canister row crop planter

Haldrop planter

The new Haldrop planter equipped with a mid-row banding unit replaces a 1950s-era canister row crop planter and allows us to work with the same modern row crop planting technology that Manitoba farmers are currently using. The six-row planter has adjustable row spacing from 15 to 30 inches so that we can compare crop management practices using the range of row widths currently used for soybeans in Manitoba. The precision vacuum planting will allow us to easily change and compare a range of plant populations. A liquid and granular fertilizer option on the planter allows us to evaluate starter fertilizers and inoculants in combination with other crop management practices. We are currently exploring options to modify the planter to allow for side-banding fertilizer to increase the range of fertility experiments that are possible with this equipment. Funding for many of these projects is already in place and professors, technicians, and graduate students alike were excited to start working with the equipment this past fall.

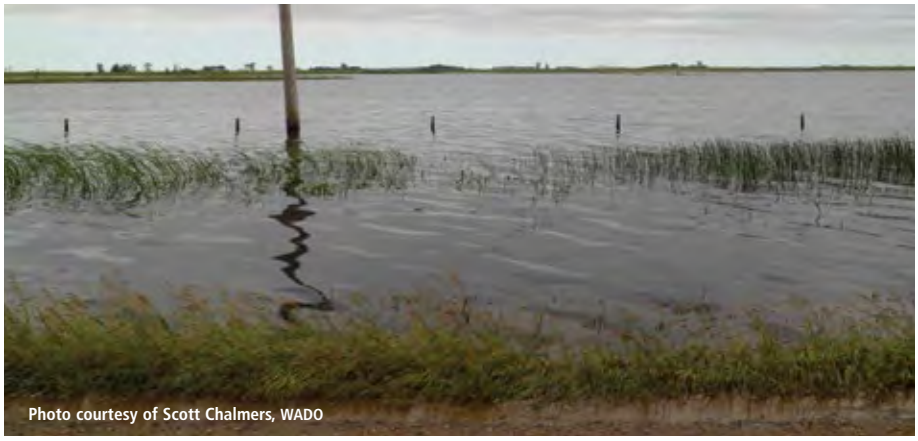
INVESTIGATIONS BY DR. YVONNE LAWLEY'S AGRONOMY RESEARCH GROUP IN 2014

- Residue management strategies for wheat prior to soybeans
- Best crops to plant before soybeans
- Agronomic consequences of planting back-to-back soybeans
- Nitrogen contribution of soybeans to a subsequent crop
- Planting dates of soybeans based on soil temperature
- Multiple plant populations of soybeans
- Effects of preceding crops on soil fungi and nitrogen fixation of soybean

Funding for these projects is provided by Manitoba Pulse Growers Association and Western Grains Research Foundation.

New Drainage Regulations and Water Management Strategy Explained

Doug Chorney, *President*
Keystone Agricultural Producers



Overland flooding north of Melita, July long weekend storm

The Manitoba government recently announced two new plans for water management in the province, and while they won't take effect until a public consultation process occurs, they will be positive for farmers.

In the first document, *Towards Sustainable Drainage*, new drainage regulations are outlined that mean producers will no longer need to complete a lengthy approval, inspection and licensing process for minor drainage projects. They will simply register the drainage work with the Province, and then proceed with work in a timely manner.

KAP was part of the stakeholder group that consulted with the Province on these regulations, and I believe we have done our job well. Since these minor projects account for the majority of the drainage undertaken, this will be a big step forward in getting land into production that may otherwise risk flooding every year.

The second component of the proposed regulations addresses drainage of permanent and semi-permanent wetlands, which only makes up a small portion of the drainage work done by farmers.

Currently, it is challenging to get a license to drain a permanent or semi-permanent wetland, but in the proposed new system a formal process would be established that will strictly define the criteria that a landowner must meet in order to undertake this type of drainage project.

This includes ensuring any downstream effects associated with removing a permanent wetland, including flooding neighbours' land, is mitigated through the reconstruction or retention of wetlands in other areas of the watershed.

As an example, if there is a permanent or semi-permanent wetland in an area of a field that impedes planting and production, the farmer would be able to drain that area and designate another area in the same field – or at another location within the watershed – as a wetland.

I expect that a system will also be developed which will allow farmers to purchase wetland credits from other farmers and landowners to offset drainage on their private lands, rather than undertaking retention and reconstruction projects on their own.

The Province has also proposed an increase in the enforcement of regulations to address illegal drainage projects, and while there have been issues in the past when legal projects have come under unnecessary scrutiny, I anticipate these simplified regulations will provide clarity for both landowners and water resource officers.

KAP is committed to continuing to work with the Department of Conservation and Water Stewardship to ensure that enforcement of these regulations is done fairly and consistently throughout Manitoba.

While we accept these proposed wetland regulations, KAP has always maintained that in any situation where land is taken out of production in the interest of watershed health that will benefit all of society, farmers must be compensated – and we will continue efforts to make this happen.

Another component of the proposed regulations addresses the use of tile drainage. Similar to surface drainage, tile drainage projects that meet basic criteria and do not involve draining permanent or semi-permanent wetlands would be allowed through a simple registration process.

I have heard of some municipalities being concerned about tile drainage projects having negative impacts due to incorrect installation, which is why the issue has been the focus of a government summit on tile drainage that KAP collaborated on (see sidebar).

Following farmers in North Dakota and Minnesota, Manitoba farmers have

continued on page 12

Tile drainage is an important tool, and it should be accessible to all farmers.

continued from page 11

embraced this new technology, and it is encouraging to see the Manitoba government and municipalities attempting to further understand the opportunities and constraints of this type of drainage. This is an important tool, and it should be accessible to all farmers.

The second plan announced by the Province is the *Surface Water Management Strategy* that takes an all-encompassing view of water drainage across Manitoba, including that from agricultural, municipal, industrial and all other sources. KAP has been pressing for a comprehensive water management strategy, and we are pleased that it appears it is finally coming to fruition.

Instead of working with individual drainage issues, the strategy proposes to address entire watersheds and their inter-connectivity.

It includes 50 specific actions that would be completed between now and 2020, and if done correctly will drastically reduce the effects of flooding and drought. They would also mitigate the effects of terminal basins, such as Whitewater Lake and Shoal Lakes, on surrounding landowners.

To help achieve the actions set out in the strategy, the Province will be implementing light detection and radar (LiDAR) digital imagery that produces very accurate data for land elevation. KAP has lobbied for the use of this technology on a large scale because it is an excellent resource in land and water management planning.

From what I have heard, some farmers are concerned about these new developments in provincial water management, but I am convinced they are positive news. In the short term we will see expedited minor drainage projects, and in the long term we will see solutions to perennial flooding and drainage issues.

Conservation and Water Stewardship Minister Mackintosh made it clear during his announcement of the new strategies that farmers need to be able to be productive on their land, and the goal is to have "sustainable drainage" as a tool for all farmers.

The work being done in Manitoba, however, cannot stop at the borders. Our neighbours to the south and to the west are also home to the watersheds that eventually flow into this province, and now they must do their parts to adopt similar measures. Manitoba can no longer be a recipient for unwanted water originating beyond its borders, and a multi-jurisdictional effort can recognize and solve this long-standing problem.

This is something that we will continue to press for, particularly through our involvement in the proposed Assiniboine River Basin Commission. In the meantime, however, I think producers in Manitoba should recognize that drainage regulations will be simplified and that a six-year strategy will be put in place to alleviate many of the drainage issues we experience.

FOCUS ON TILE DRAINAGE

Manitoba Conservation and Water Stewardship, in collaboration with stakeholder groups, including KAP, presented a tile drainage summit in Winkler, July 30 for regulators, local authorities and the industry to discuss issues associated with tile drainage.

Numerous producers attended the meeting, swelling the number of participants to 200 and indicating the enormous interest in this relatively new and sometimes misunderstood technology.

KAP member Bob Bartley, who farms at Roland, gave a producer perspective on tile drainage. As a pioneer of the technology in Manitoba, having tiled some of his fields in the early '90s, he pointed out that tile drainage can both take water from the surface of a field and lower a field's water table, allowing for root growth – an immense benefit to farmers.

Geoff Reimer, the Province's manager of water rights licensing in the Red River region discussed the province's regulatory role in licensing tile drainage, as well as the potential benefits of tile drainage to producers looking to reduce surface water on their fields.

A municipal perspective was provided by the reeves of Portage la Prairie and Dufferin, who discussed the issues present when producers apply for any type of drainage project on their fields, including water management downstream, infrastructure limitations, and onerous application processes.

Summit participants indicated the province has a large role to play in overcoming these challenges and in helping producers implement tile drainage.

Chuck Fritz, director of the International Water Institute explained that municipal concerns about tile drainage shouldn't be about the volume of water, but instead, about the controlled timing of water release. He said it's the appropriate operation of the water control system that can truly impact a field's ability to store water and reduce flooding.

The summit also included a local tile drainage installer who stressed the importance of having expertise in the placement of tiles as paramount to developing an integrated approach to water management.

For further information contact **alanna.gray@kap.mb.ca**

Bryan Rogers
Executive Director,
Grain Growers of Canada

Greetings Manitoba Pulse Growers Association (MPGA) members. I am pleased to have this opportunity to update you on some of the activities the Grain Growers of Canada (GGC) have been up to on your behalf.

The time of transition at our organization continues, as towards the end of October we welcomed a new Manager of Public Affairs. Lindsey Ehman joined us from the Renewable Fuels Association, with a wealth of experience at industry associations here in Ottawa and an expertise in public relations and communications. She is a welcome addition to our team.

As for myself, having arrived at GGC a little wide- (and perhaps a little wild-) eyed back in March, I have grown more confident and comfortable in my role by the day. We had a successful July summer meeting in Alberta, which was hosted by Alberta Pulse, and by the time you read this we will have wrapped-up another fall meeting and AGM, this time right here in Ottawa.

TRANSPORTATION

When I last wrote to you, Bill C-30 (*The Fair Rail for Farmers Act*) was on the verge of becoming law. The legislation passed in June, and the regulations, as well as an extension of the Order in Council (OIC) mandating the railways to move weekly minimum volumes of grain, were announced on August 1st. GGC supported the legislation and the OIC, recognizing them as important short-term solutions to clear last year's grain backlog and to serve as a bridge to the completion of the expedited *Canada Transportation Act* (CTA) review.

However, these measures exposed some deficiencies in existing law that were of concern to pulse growers. Among them is the fact that soybeans and chickpeas are not included on the list of recognized crops (Schedule II) carried by rail under the CTA, meaning that Bill C-30 and the OIC would have no positive impact for those growers. GGC heard these concerns expressed by MPGA and others, and responded by advocating for their inclusion in the Act as part of our submission to the CTA review. We will remain vigilant on this matter, especially as crops such as soybeans continue their western expansion and rail service becomes increasingly important for those growers.

TRADE AND MARKETING

This fall has witnessed important developments on the trade front, with the signing of the Canada-Korea Free Trade Agreement (CKFTA) and the conclusion of negotiations on the Canada-EU agreement (CETA). Together with the North American Free Trade Agreement, CETA will ensure that Canadians enjoy preferential access to the world's two largest economies, while the CKFTA will ensure a level playing field in what has been a shrinking market following deals struck between Korea and our competitors.

On the Trans-Pacific Partnership (TPP) front, GGC has been very active via our membership in the Canadian Agri-food Trade Alliance. In the fall we met with some of Canada's TPP negotiators, using the opportunity to express concerns of pulse members, such as the absence of an effective Low Level Presence bitotech policy (soybeans) and the fact that some of Japan's import quotas fail to differentiate between feed and food, which hurts our exports (feed peas and edible pulses, for example). Negotiations continued, and predictions at the time of this writing were that a deal could be completed as soon as November.

RESEARCH

Over the past year, GGC has focused its work on UPOV '91 and the *Plant Breeders Rights Act*, monitoring and

continued on page 14

Manitoba Wheat and Barley Growers Association

First Annual General Meeting

THE NEW MANITOBA WHEAT AND BARLEY GROWERS ASSOCIATION will be holding their first election for three directors at their AGM on **February 18, 2015** in conjunction with the CropConnect Conference. All producers in attendance who have grown wheat and barley and have not requested a refund will be eligible to vote.

Nominations for the director positions will be received up to and including the day of the AGM. If you are interested, nomination forms are available at *info@mbwheatandbarley.ca.*

For more details on MWBGA activities and strategic plans see website *www.mbwheatandbarley.ca* and/or contact *info@mbwheatandbarley.ca* or telephone 204 750-2656.

Manitoba Wheat and Barley Growers are committed to working collaboratively with other prairie and national cereal organizations to advance the interests of Manitoba wheat and barley producers through leadership and strategic investments in research and market development.

continued from page 13

participating in the government's proposed variety registration reforms and the continuing evolution (or devolution, as the case may be) of the public resources devoted to agriculture research.

GGC supports UPOV '91 as adopted in the federal government's Bill C-18, (*The Agricultural Growth Act*), and were encouraged by the government's efforts to ensure that farmer's privilege/saved seed was guaranteed under the legislation.

SAFETY NETS

The aforementioned Bill C-18 also includes reforms to the *Agricultural Marketing Programs Act* and administration of the Advance Payments Program (APP), allowing administrators to advance on any type of commodity and allowing producers to enter into multi-year repayment agreements with a single administrator. We welcome those changes that reduce the administrative burden on our farmers in obtaining their cash advances for spring seeding.

Overall, the Grain Growers are pleased with the APP program and the proposed changes. That being said, if there was an opportunity to increase the upper limit of the advances from $400,000, we feel this would further enhance the program. Increasing the limits would enable some of the larger grain producers to utilize the program, as the current upper limit is a deterrent. We have expressed this view in our advocacy on Bill C-18.

SUSTAINABILITY AND SOUND SCIENCE

GGC's Sustainability and Sound Science Committee is chaired by Alberta Pulse's Allison Ammeter, and is focusing on issues such as pollinator health (submission to the Pest Management Regulatory Agency consultation, an appearance before a Senate committee hearing on neonics and bee health, and membership on the Bee Health Round Table), Maximum Residue Limits (GGC is committed financially to Pulse Canada's multi-commodity MRL Market Access Project), and the GROU program. The committee will also be contemplating communications action to counteract the growing (and wildly misinformed) anti-biotechnology activism, including push-back on calls for mandatory labelling of products containing GMOs.

I want to wrap up by thanking MPGA for its ongoing support of the Grain Growers of Canada and its activities on your behalf here in Ottawa. The market space for agriculture advocacy groups is crowded, especially on the national level. But what sets GGC apart, and is noticed and appreciated by decision makers here in Ottawa, is that we are a farmer-led and driven organization. Yes, we collaborate with stakeholders across the entire value-chain, as any organization seeking a breadth and depth of perspectives and expertise should. At the end of the day, however, our decisions are made by farmers. We wouldn't have it any other way, and we couldn't accomplish this without you.

SOY CANADA OFFICIALLY FORMED

Representatives from across Canada's soybean industry joined together to form a national voice to drive growth and progress for the sector. Soy Canada will represent the entire value-chain and work collaboratively to promote and advocate for the industry.

To date, 27 organizations and companies have united to form the basis of the organization. Soy Canada will act as a unified voice to address industry challenges and opportunities from a national perspective. Its mandate is to maintain and expand market access, open new markets, increase industry profile, and strengthen relationships among stakeholders.

"The potential for growth in the soybean industry is amazing. The advancements we've seen in the past few years have come without a national voice to speak for it. We're hoping we can take this industry that has been maturing so well and transition it into something that has even more opportunities," says Mark Huston, who is honoured to be the first chair of the organization. The farmer from Chatham-Kent is also a director for Grain Farmers of Ontario.

Joining Huston on the executive for the organization is Ernie Sirski (Manitoba Pulse Growers Association) as vice-chair, and Clint Munro (representing crushers) as secretary-treasurer. Producer directors include: Ramzy Yelda (La Fédération des producteurs cultures commerciales du Québec); John Bennett (Saskatchewan Pulse Growers Association); Barry Senft (director at large); and Edgar Scheurer (director at large). Industry directors include: Sue Robert (representing commodity exporters); Andrew McVittie (representing food-grade exporters); Mike Nailor (representing seed companies); and Martin Harry (director at large).

From left to right: Mark Huston, Mike Nailor, Martin Harry, Barry Senft, Sue Robert, Edgar Scheurer, Ramzy Yelda, Ernie Sirski, Clint Munro, John Bennett. Not present: Andrew McVittie

Canadian soybean production has increased significantly over the past five years and is poised for future growth, but the industry faces challenges both domestically and internationally. With soybean acres at an all-time high, there is an opportunity for even more growth. "By joining together producers, processors, exporters and seed companies, we are creating an organization that can help everyone move forward in a positive way," says, Soy Canada vice-chair, Ernie Sirski, who farms near Dauphin, Manitoba. "The participants in Soy Canada are committed to helping shape the future of Canadian agriculture, particularly in the soybean sector."

Working out of the Ottawa, Ontario office, this collaborative group recently announced the hiring of Jim Everson as its first executive director. "Jim's experience with the grain and oilseed industry and with agricultural trade and market access issues, will be a huge asset to Canada's soybean sector. Soy Canada, with Jim's leadership, will serve all participants in the soybean value-chain and drive growth for the sector," says Huston.

Along with the newly hired executive director, Soy Canada recently launched a new website at *www.soycanada.ca* that highlights the four main focus areas within the soybean industry:

- Improving government relations and market access
- Building the profile of the industry
- Coordinating research and innovation
- Supporting market development

These focus areas will guide the organization, drive growth and improve soybean visibility in the marketplace. Core funding from the member organizations will be collected annually and be targeted towards the identified focus areas. Provincial producer organizations and crushers will pay an annual set per metric tonne rate, based on produced/processed product, while exporters and seed companies will have a tiered fee structure based on sales.

For more information on Soy Canada activities, visit *www.soycanada.ca.*

It's been quite a ride this past year – *maybe longer!*

Manitoba Pulse Growers Association has been working on a number of fronts to represent growers' interests. We would really like to say we have the magic solution to transportation but we do not. It will take time and a lot of effort to get a truly open, transparent, competitive transportation marketplace. Our efforts have been focused on the following areas:

ORDER IN COUNCIL (OIC) AND BILL C-30

This helped to get grain moving and put pressure on the railways to get the job done. Compared to mid-late winter, basis levels have returned to normal and projections for carry-out in August 2015 should be normal. So did this effort work? Somewhat. There have been consequences to this action – for example, for railways to meet their target volumes, they moved what we can call easy grain (large volume, bulk commodities) to the main ports, Vancouver and Thunder Bay. As a result, grain did not move as well south – there was slow movement of edible beans to Mexico, and stuffing facilities were shorted of specialty crops resulting in delivery delays to export customers. It also became apparent to everyone that soybeans were not part of Schedule 2 of the Canadian Transportation Act (CTA) and the OIC mandate was to move Schedule 2. This resulted in a slowdown for soybean movement as well. Now will the OIC continue? Time will tell. But if not, the government has a hammer to use on the railways if needed. This helps but since nothing fundamental has changed in the system, we may see a repeat of this grain slowdown someday.

Working with Pulse Canada, and other industry partners, MPGA makes up the Ag Transportation Coalition. Within this coalition, we are focused on two key areas.

PERFORMANCE MEASURE

Unfortunately in our present system, we have no way of knowing how effective railways are at moving any commodities – grain or otherwise. They are not required to report to the public, only to the Minister of Transportation. The information is confidential and is not available outside of a closed government circle. In the USA, the railways have recently been mandated to make weekly reports to the public regarding their progress moving grain. It's ironic that Canadian railways, operating in the USA, will need to release information that in Canada they will not release unless mandated by law.

Through our group we are collecting data to evaluate how the railways are doing. This is a difficult and costly process but it must be done to ensure we have accurate data to support our position for meaningful changes to the system. We are currently monitoring movement of grain by corridor, destination, as well as performance on car orders, and how quickly cars are moving.

One consequence of last winter's problems, is the railways are making it more difficult to measure their efficiency. They have put in place a system to manage outstanding car orders from grain companies, where total outstanding orders can only reach a maximum of two weeks of plant capacity. To enforce this system, grain companies that do not comply will be penalized by the railway at the rate of $100.00 per car on orders over the allowable maximum. By using this process, we will be unable to determine how far behind the railways are at delivering cars, very similar to last winter and once again, highlighting a serious flaw in the system.

Railways can arbitrarily assess penalties against the shipper, but there is no reciprocating system whereby shippers can recover the cost for a lack of cars or performance

continued on page 18

continued from page 17

from the railways. Performance measures are very important and must be implemented, unless we can effect change whereby the railway is mandated to make information public in a timely manner. This brings us to our next focus.

CANADIAN TRANSPORTATION ACT (CTA) REVIEW

The government has started ahead of schedule to review the CTA. The first area of attention is the grain sector, a good place to start after last winter's problems. The review is complicated and very time consuming, and again, the Coalition is working together with the aim of incorporating meaningful changes to the act. We are working with a wide industry base as well as some legal counsel that is well versed in transportation law. Soybeans must become part of Schedule 2 of the CTA and MPGA will make certain that submission is included. Other key focus areas, such as performance measures, railway obligation, more power for the regulators, and shipper protection will also be part of the final submission.

The process of the CTA review will take months and will be up to the Minister of Transportation and government to decide how to proceed with the recommendations. One point to note is the last time the CTA was reviewed, it took approximately eight years to enact the changes. The CTA is tied to over 300 pieces of legislation, as well as numerous pieces of regulations and OIC, therefore change is slow and will be reviewed by many before it becomes law. Like many areas of our lives, we must try to effect change, otherwise nothing will happen.

The transportation file is complicated with many balls in motion at one time. Manitoba producers need a strong export market and the poor performance of our transportation system or unpredictability of shipments is a major barrier to maintaining and increasing sales. It is important we stay on course and be part of the changes.

An interesting point in a discussion with members of the CTA – this problem is not new, it has been 120 years in the making! Now is the time for action and we all need to work together to ensure change happens. Mention to your government representatives that we want meaningful results to this review so there is no repeat of 2013!

Stay tuned – transportation is very important to the supply chain to get our products to market and it must improve.

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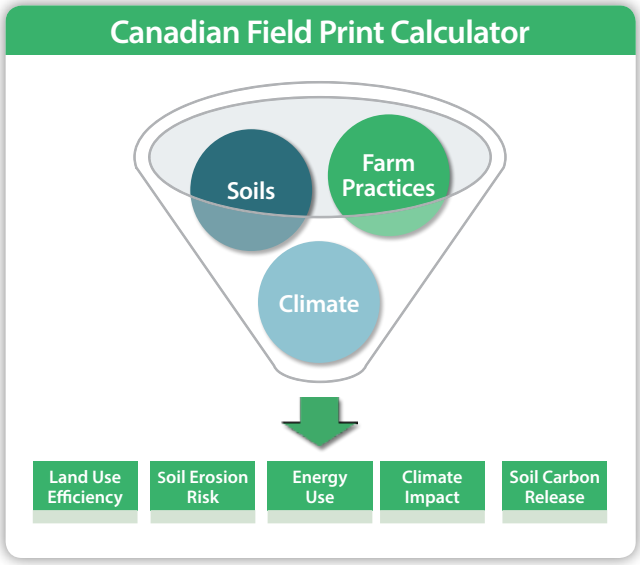
Pulse Canada

Denis Tremorin, *Director of Sustainability at Pulse Canada*

Consumers have an increasing interest in the food they eat. They want to know if a food is healthy, and whether it was produced in a sustainable manner. Food companies and retailers have been responding to this interest. There are now a number of different programs and pilot projects designed to answer three questions: Where was this food produced? How sustainably was this food produced? What was the impact on the environment? These questions have and will continue to provide opportunities for the agriculture industry to collaborate with others along the food supply chain.

Significant effort has been made to assess the sustainability impacts of agriculture. Assessments can be conducted in a qualitative way where questionnaires and checklists verify whether a farmer has adopted best management practices. Assessments can also be done in a quantitative way where the focus is on measuring impacts, regardless of what practice a farmer employs on the farm. For the past four years a group of agricultural associations have been focusing efforts on developing quantitative sustainability metrics. This effort has produced two outcomes. In 2011, a report was released demonstrating how the sustainability of Western Canadian agriculture has improved over 20 years (www.pulsecanada.com/fieldtomarket), and the development of the farmer-facing Canadian Field Print Calculator. Both tools provide an opportunity to market the sustainability of Canadian agriculture, and the Canadian Field Print Calculator allows farmers to tell the story of their farm using their own data.



A group of organizations and companies have developed an informal organization, the Canadian Field Print Initiative (CFPI), to support the development of the Canadian Field Print Calculator. The CFPI members include Pulse Canada, the Canadian Canola Growers Association, Manitoba Pulse Growers Association, Prairie Oat Growers Association, Grain Farmers of Ontario, CropLife Canada, Ducks Unlimited Canada, Canadian Fertilizer Institute, Canadian Association of Agri-Retailers, General Mills Inc., Cargill Ltd., Farmers Edge and AgriTrend. Initially, the development of the Canadian Field Print Calculator had been focused on meeting market demand for information. For example, General Mills has a key interest in the sustainability of Canadian oats.

After piloting the Canadian Field Print Calculator with a few farmers during the winter of 2012–13, a key question caused a shift in the focus of the Initiative. General Mills has an interest in understanding the drivers behind improved efficiency in crop production, and incentivizing innovation on the farm. Given the goals of increased efficiency by the food industry, **can the agriculture industry participate in a way that maximizes value for the farmer?**

HELP ANSWER THE QUESTION!

The Canadian Field Print Initiative believes the answer to this question will be in providing a tool that allows producers to anonymously compare their efficiency to their neighbours. As part of a pilot project for the calculator, the CFPI has collected data from 35 growers in western Canada. These growers have provided data from over 100 fields which have helped to refine the calculator. In addition, participation from AgriTrend and Farmers Edge has quickly increased the amount of grower data going into the calculator. CFPI is also working with AgriTrend and Farmers Edge to integrate the calculator into their software. The immediate goal for this winter is to create regional pilots of 20–30 growers who would like to see how they compare with their neighbours in areas of fertilizer use efficiency and fuel use efficiency, while providing sustainability information to the market related to greenhouse gas emissions, soil erosion, and land use efficiency. Would you like to participate in this innovative project? The Canadian Field Print Calculator and background information can be found at: www.serecon.ca/calculator. You can also contact Denis Tremorin, Director of Sustainability at Pulse Canada (dtremorin@pulsecanada.com) for more information.

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The 2014/15 Cash Advance Program for Special Crops entitles each producer to $100,000.00 interest free and an additional $300,000.00 with an interest charge of Prime –¼%. No producer is allowed to go over the $400,000.00 total at any time – this includes money received from any other administrators such as CCGA.

The federal government has approved the following advance rates for this year:

White Beans	**$ 0.17**	**/pound**
Great Northern Beans	**$ 0.19**	**/pound**
Kidney Beans	**$ 0.24**	**/pound**
Cranberry Beans	**$ 0.25**	**/pound**
Pinto Beans	**$ 0.16**	**/pound**
Other Coloured Beans	**$ 0.17**	**/pound**
Peas	**$ 3.40**	**/bushel**
Soybeans	**$ 6.86**	**/bushel**
Faba Beans	**$ 0.06**	**/pound**
Desi Chickpeas	**$ 0.11**	**/pound**
Kabuli Chickpeas	**$ 0.135**	**/pound**
Lentils	**$ 0.10**	**/pound**
Corn (grain only)	$ 2.15	/bushel
Confectionery Sunflowers	$ 0.15	/pound
Oilseed Sunflowers	$ 0.115	/pound
Alfalfa Seed	$ 0.90	/pound
Annual Rye Grass Seed	$ 0.15	/pound
Perennial Rye Grass Seed	$ 0.25	/pound
Kentucky Blue Grass Seed	$ 0.25	/pound
Hay for Domestic Sales	$ 60.00	/tonne
Honey	$ 0.95	/pound

- Applicants may not have outstanding balances under any other AMPA or APP program, other than what is indicated on the application form and may not be in default under any APCA, PGAPA, or AMPA/APP programs.
- **Each producer, partnership or corporate farm may receive up to $100,000.00 interest-free, and up to $400,000.00 in total. These totals must include any loans received as a partner or shareholder in any other entity, and these totals must include all Cash Advance Programs (i.e. Canola, Livestock, etc.). Loans over $100,000.00 will have an interest rate of Prime –¼% applied to them.**
- In fall if you are intending to use some of your crop for seeding or feeding (on your own farm), **EXCLUDE** that amount from your application.
- **If you sell your crop under a Price Pooling Contract you may not get an advance on that portion of your crop.**
- The Cash Advance for pulses is administered by the Manitoba Corn Growers Association, 38–4th Ave., N.E., Carman, Manitoba.
- Administration fees are **$250.00 for all advances.**
- Credit checks may be made prior to issuing advances and bin checks may be done on your stored grain. If your grain is in storage, you will need to provide storage tickets. If your crop is in **price pooling** it is **ineligible.**
- A Priority Agreement signed by your financial institution is required. If more than one financial institution is used, a separate Priority Agreement must be signed by each one. If any suppliers hold a lien on the crop, each supplier must sign a separate Priority Agreement.

Repayments – Please Read Carefully

- Repayments must be made **directly** to the MCGA and **must be made as the crop is sold** and **on first crop sold**; or on any crop that has been adjusted through Crop Insurance and for which you have received a payment; or on any of the crop which has been disposed of in any other way. The repayments must be made within 30 days of the crop being sold. Repayments, with cheques made out to: **Manitoba Corn Growers Association, Inc.**, must be sent to the address above, along with copies of the sales receipts.
- The Cash Advance must be paid off by the crop year-end: **September 15, 2015**. The advance can't be rolled into the next year's program.
- **IMPORTANT:** *If the crop is not sold* at year-end or if the *advance is paid off without accompanying sales receipts*, interest of Prime –¼% must be paid on the outstanding balance, or on the amount not accompanied by receipts, *right back to the day that you were issued your Advance. The government then treats it as an operating loan and not an advance loan on your crop.*
- Application forms or more information can be obtained on our website or by contacting the MCGA office.

UPDATE FOR 2015/16 – MCGA TO HANDLE MORE CROPS

One of the changes included under Bill C-18 is that *all administrators can choose to offer advances on all crops.* As a result, we plan to offer advances on all major crops grown in Manitoba along with those that we already advance on. This will mean that most producers will be able to have all their advance payment needs met by our association.

FINAL DEADLINE FOR APPLICATIONS IS MARCH 15, 2015

The ultimate team to supercharge your yields

You can never have too much of a good thing, and in the case of Monsanto BioAg's TagTeam® and Optimize® inoculants, you can have two good things working for you at the same time. These two products together are the ultimate team to supercharge your soybean crop for maximum yield potential, especially in new ground. With Optimize applied on-seed, you get the advantage of LCO (lipochitooligosaccharide) technology, which supports your crop's potential by enhancing nutrient availability resulting in improved nodule formation, increased nitrogen fixation and increased nutrient capability supporting root and shoot growth. Add TagTeam, the phosphate and nitrogen inoculant, to the equation and you have the makings for healthy plants and a full, rich soybean crop that will maximize yield potential.

The advantage of using both of these products is the formulations start to work as soon as environmental conditions allow it. Seed-applied inoculants like Optimize tend to form nodules closer to where the seed is located (closer to the primary root), while in-furrow applied granular inoculants such as TagTeam form nodules on the secondary or lateral roots, ultimately allowing for wider distribution of nodules along the whole root system.

Land that has been through less than ideal growing conditions or has not had soybeans for a few years requires special attention when it comes to inoculation. The goal is to supercharge the soil with a heavy load of rhizobia to ensure the best possible nodulation and soybean performance. Land with no history of soybeans, or many years between soybean crops, and land that has been flooded or had longer periods of drought, is not conducive to rhizobia survival. It is these soils that will benefit most from the application of both Optimize and TagTeam.

Optimize® with LCO technology

Combining LCO technology with the bradyrhizobia bacteria in Optimize helps improve plant performance. LCO technology is a molecule involved in the rhizobia legume nodulation process and is a key driver in the communication between plants and rhizobia. When the LCO molecule is present at the time of planting, it allows for the nodulation process to begin, independent of variety, soil and environmental conditions. The benefit of the nodulation initiation is nitrogen availability to the plant, which supports plant growth such as root and shoot development. The result of this early-season activity is better plant performance.

Get more with TagTeam®

TagTeam contains a naturally occurring soil fungus, *Penicillium bilaii* (*P. bilaii*), and a high performing, nitrogen-fixing bacteria. The *P. bilaii* in TagTeam improves phosphate availability, even if starter phosphate fertilizer is used. TagTeam helps the developing primary roots access phosphate in early growth stages, even before the root reaches the starter fertilizer band. As the primary root develops, TagTeam provides greater availability of soil and fertilizer phosphate, allowing the root to better access phosphate nutrition throughout the rooting zone. Add the nitrogen inoculant, and you have two complementary microbial systems providing balanced nutrition, by making more soil- and fertilizer-phosphate available to the plant, and increased nitrogen fixation, resulting in higher yield potential.

To learn how you can maximize your yield potential with TagTeam and Optimize call 1-888-744-5662.

Jarrad and Kristen Toews

Farming south of Winkler, Jarrad Toews has always had a focus on his future when it comes to agriculture in Manitoba. Having graduated from Garden Valley Collegiate with a high school Agriculture Technology Diploma in 2008 followed by a Crop Management Diploma from the University of Manitoba in 2010, farming was always something he wanted to pursue as a career. Working in cooperation with his father and brother, the Toews' family farms approximately 1500 acres each year but are always looking to expand if the opportunity presents itself. "We are always looking to rent more land but right now we are staying busy with custom work," Toews comments. Trading acres with neighbouring potato farms allows Toews to access more edible bean acres. Growing corn, edible beans – light red kidney, cranberry, pink, navy, and pintos as well as a few acres of soybeans, Toews utilizes all his acres to maximize profits. "We try to grow as many acres of edible beans as possible because on average, they have proven their worth as the most profitable crop in our area other than potatoes," says Toews. "Our acres of soybeans are limited as we only use them on heavier soils or on saline areas in a field where edibles don't do well and we want to minimize input costs."

In 2013, Toews, along with his father and brother, bought a Pickett Twin Master bean combine to increase their custom acres, as well as harvest their own beans. "We were booked solid doing custom work with our JD 9770 combine, so purchasing this combine allowed us to increase our custom work as well as improve the quality of our own harvested beans." According to Toews, the new combine has been well worth the investment. The new combine does a great job – almost zero splits and allows very little total dockage into the beans. The biggest positive Toews has seen, is that it gives farmers the option to combine wet beans without smearing in the combine. "In a year like 2014, that had its challenges with wet weather, the ability to combine wet beans definitely makes this new combine worthwhile." The only disadvantages with the new combine are that beans must be windrowed and breakdowns take longer to fix, but overall Toews and his family are very happy with their purchase.

Edible beans do come with extra work compared to other crops but as long as there is opportunity and financial rewards, Toews expects to continue to increase edible bean acres. "The investment that MPGA is putting into research to help growers with disease and production management, is definitely appreciated and helps us increase yields, with better management practises." Looking forward, Toews would like to see MPGA research targeted towards white mould which is becoming a major issue in the area, as well as expanding the specialty bean variety yield trials.

Brian Clancey
Senior Market Analyst and Publisher

Bigger dry edible bean crops in the United States and Canada have pushed available supplies of dry edible beans for the coming season above the recent average for the continent.

In its latest crop report the USDA pegged bean output in the United States at 1.317 million metric tons (MT), while Statistics Canada had pegged Canadian output at 300,500 MT last month. By contrast, dry bean production in Mexico is expected to be down for the coming season, dropping 10% to 1.2 million MT.

Combined production across the North American Free Trade Agreement (NAFTA) region is up 6% over last year at a forecast 2.817 million MT. Carry-in stocks from the previous marketing year are down from last year, with the result the increase in the available supply of beans is only 1% at 2.93 million MT.

Stocks in the region are above the recent five-year average available supply. Even so, supplies are not historically high. Between 1999 and 2004, they averaged between 3.0 and 3.1 million MT per year.

The fact population has increased but production has not kept pace is a troubling tendency in the months leading up to the International Year of Pulses. The industry is hopeful that the attention drawn to the sector in 2016 will help establish a new base for pulse consumption in North American and other markets.

With the harvest just being completed in the United States and Canada, final production estimates for those countries will not be available until December and January. Some market participants in the United States think farmers will not harvest as much of the crop as the USDA expects, which would result in a smaller harvest. They argue that farmers will abandon fields where the potential return from marketing the beans is less than what might be paid by crop insurance.

Whether or not farmers harvest as many acres of beans as the USDA expects, the North American industry is looking at good demand fundamentals. This is reflected in the fact the year's forecast ending stocks remains at insignificant levels relative to overall demand.

None of that changes the fact that prices on world markets are on a downward trend, especially for white beans, because of a rebound in production in Argentina and larger crops in China, Egypt and Africa. Even so, a large proportion of this year's North American harvest was pre-sold before prices started to decline with the result exporters are not compelled to aggressively pursue demand for at least the closing quarter of the 2014 calendar year.

Prospective demand from Mexico for pinto and black beans is the only area of uncertainty. Indications from Mexico are that the country will not need to import as much product as last year. This reflects the timing of harvests and well-stocked wholesale and retail pipelines.

Any relaxation in demand is likely a bigger issue for black than pinto beans. The stocks to use ratio for black beans is currently ranging between 40% and 50%, compared to under 10% for pinto beans. Stocks under 10% are considered essentially sold out.

Significantly, easing world dry bean prices are happening at a time when

continued on page 26

continued from page 25

quality problems with Canada's lentil crop is pushing up asking prices for green and red lentils. Extra No. 2 Canada whole green lentils are trading at higher levels than black beans into South America.

Lower qualities are cheaper, but consumers still balance price with visual appearance, especially in markets where people typically buy whole pulses in clear packaging. Depending on the reason lentils are downgraded, poor quality can work to the advantage of canners who might be able to switch from No. 2 Canada or better to off-grade product.

Some importers think demand for dry beans will increase slightly as some consumers switch from lentils to beans. No one is expected to switch from peas to lentils or beans because they remain the most economical pulse.

It is worth noting the easing value for edible beans are the only reason the world pulse export price index is rising more slowly than would otherwise be the case. That index has averaged 157.85 points so far this marketing year, compared to an average 151.96 across the 2013–14 marketing year and the record average of 170.25 points in 2012–13.

North American Dry Edible Bean Situation

(metric tons)

Area (acres)	2010	2011	2012	2013	2014
Canada	331,100	197,881	305,000	246,000	346,900
United States	1,911,500	1,217,900	1,742,800	1,354,700	1,689,400
Mexico	3,749,000	2,278,000	3,852,000	4,443,000	3,954,000
Total	**5,991,600**	**3,693,781**	**5,899,800**	**6,043,700**	**5,990,300**
Production (MT)					
Canada					
– Coloured	151,300	116,300	158,700	140,700	199,400
– White	102,300	46,100	115,600	65,400	101,100
Cdn Total	**253,600**	**162,400**	**274,300**	**206,100**	**300,500**
United States					
– Pinto	626,600	266,400	613,900	384,900	447,900
– Black	211,400	136,900	169,600	115,400	166,800
– Navy	216,200	147,300	222,500	154,300	191,800
– Great Northern	63,600	54,300	55,400	68,700	114,600
– Other	324,700	297,300	386,700	387,400	395,500
U.S. Total	**1,442,500**	**902,200**	**1,448,100**	**1,110,700**	**1,316,600**
Mexico	963,000	626,000	1,063,000	1,340,000	1,200,000
Total Production	**2,659,100**	**1,690,600**	**2,785,400**	**2,656,800**	**2,817,100**
Opening Stocks	84,000	309,000	102,000	237,000	111,000
Total Supply	2,743,100	1,999,600	2,887,400	2,893,800	2,928,100
Rolling Average	2,696,760	2,729,980	2,523,460	2,574,860	2,613,920

BASED on data from USDA, Statistics Canada and STAT Communications

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GROWING SEASON REVIEW

Kristen Podolsky, MSc
Production Specialist, MPGA

The 2014 growing season was challenging to say the least, with many factors at play for the soybean crop. Overall, we are expecting average to slightly above average yields for Manitoba (five-year average = 32 bu/ac, ten-year average = 29 bu/ac). This article will highlight the top three *in-season* production issues that soybeans faced in 2014, how they affect yield, and data on how to combat them in the future.

POOR NODULATION

Many of us witnessed it and an Ontario soybean expert agrees that 2014 will be known for poor root nodulation and nitrogen fixation. Cool temperatures and saturated soil can be problematic for soil rhizobia to survive and form a symbiotic relationship with soybean roots, which is required for biological nitrogen fixation. When this relationship does not form and soil reserves are used up, soybeans become N-deficient. Yellow soybean fields, lacking sufficient nitrogen, were evident across the province in mid-July. Iron deficiency chlorosis was also exacerbated by cool, wet soils.

Soybean rhizobia (soil bacteria that fix nitrogen) and the nodules themselves are living organisms which require certain soil moisture and temperatures to survive and thrive. Studies have shown that the optimum soil temperature for rhizobia to infect soybean roots is between 25 and 35°C. Below that, there are significant time delays for nodulation to occur. For soil moisture, both excess and deficient can be detrimental due to low availability of oxygen and desiccation.

Some fields "grew out" of the N deficiency period, which can happen when conditions improve. But in some cases sufficient nodulation did not take place and this was not specific to product or field history: simply the cool, wet environment which decreases survivability of the rhizobia and infection rate. In fields that were monitored early and verified by inspection of roots, rescue N applications were attempted.

Soybeans exhibiting nitrogen deficiency (L) will appear pale green/yellow with overall reduced growth. In contrast, iron deficiency chlorosis will show distinct yellowing between veins, which remain prominently green.

Supplemental N applications should be considered when:

1. It is known that inoculant did not get applied and there is no field history of soybeans
2. Nodules are not present at R-1
3. Soybeans appear pale green/yellow
4. There is potential for rainfall to wash applied nutrients to the root zone

Severe leaf burn to soybean foliage from liquid N application in 2014

Various studies have investigated rate (0, 50 and 100 lbs N/ac), fertilizer type (granular urea vs. liquid UAN) and timing (R-1 vs. R-3). The majority of studies have concluded that 50 lbs N/ac applied as urea at early pod fill (R-3) provides the greatest probability of economic return. However, it is important to consider some of the risks. Firstly, applying liquid N has the potential to cause severe damage to the foliage if efforts aren't taken to direct-spray towards the ground through

continued on page 30

continued from page 29

Soybean leaves flipped over, exhibiting moisture stress as a result of dry, windy conditions

weighted hoses or special nozzles. Foliar leaf burn was observed in some cases in 2014. Therefore applying granular urea is a safer choice even though it may be more time consuming. Second of all, when urea is applied to the soil surface under warm, damp and windy conditions, volatilization losses can occur therefore a urease inhibitor should be used. Lastly, if there is dry weather after application, the chance of a yield response is lowered because the N may not get down to the roots in time to benefit the crop.

MOISTURE STRESS

The critical yield determining stage for soybeans is between R-4 and R-5 (full pod stage to early seed fill) which occurs from mid-July to end of August in Manitoba. During this time, soybeans require about 1/4" of water per day and any stress during this stage (moisture, nutrients, temperature) will reduce yield. In 2014, the majority of central and eastern Manitoba received only 21–76% of normal precipitation from July 15–August 15 and many fields were exhibiting moisture stress symptoms. These parts included areas around Gretna, Morden, Elm Creek, Swan River, Morris and Portage. If your winter wheat harvest was interrupted by a good rain shower, it's likely it will be positively reflected in your soybean yield.

It's estimated that 25 mm of rain equates to 2.5 bushels of soybeans. How true is this for Manitoba? Average growing season precipitation (May 1–August 31) ranges from 250–280 mm. This suggests that we produce 25 to 28 bu/ac of soybeans. Ironically, this is pretty close to the long-term provincial average of 29 bu/ac. If we add soil moisture at planting into the equation, we get to between 30 and 35 bu/ac. *Interesting.*

Now, if only the rainfall were spread out. It must be acknowledged that excess moisture in spring led to late planting and poor establishment. For example, northwestern Manitoba received 150–200% of normal precipitation in May. The late start also meant a longer growing season, which raised concerns

continued on page 31

continued from page 30

with immature soybeans and frost. Fortunately, many potential disasters were averted with a very late killing frost for the second year in a row.

WEED CONTROL

Delayed canopy closure and irregular herbicide timing due to weather delays were important factors leading to above normal weed pressure in soybeans in 2014. The most prominent weeds in Manitoba soybean fields prior to harvest in 2014 were lamb's-quarters, redroot pigweed, biennial wormwood and volunteer canola. Pre-harvest weed control occurred on some acres due to high weed pressure and a late killing frost.

In most years, an appropriately timed single post-application can protect yield of glyphosate-resistant soybean in addition to weed control at planting. North Dakota data shows that if initial weed control timing is delayed from at planting to when weeds are 6–8" in height, a 2–3 bushel yield loss can occur. North Dakota recommends using a 2–4" height as a control threshold, especially in dry conditions since yield loss in soybean from weeds is significantly higher under dry conditions.

In addition to weed height, there has been substantial research on the critical period of weed removal in soybeans. The critical period of weed removal identifies the crop staging of soybean that weed removal is required in order to prevent yield loss beyond 3–5%. Of course, this critical timing can vary between row spacing, tillage system, weed spectrum and year, and is not always one specific growth stage but rather a range depending on those factors. For example, a study in Wisconsin found that the critical period of weed removal in narrow rows ranges from V-4 to within two days of R-1 (first flower visible) while in wide rows, the critical period of weed removal can occur earlier, ranging from V-2 to three days prior to R-1. It would be valuable to conduct a similar study in Manitoba to solidify local recommendations.

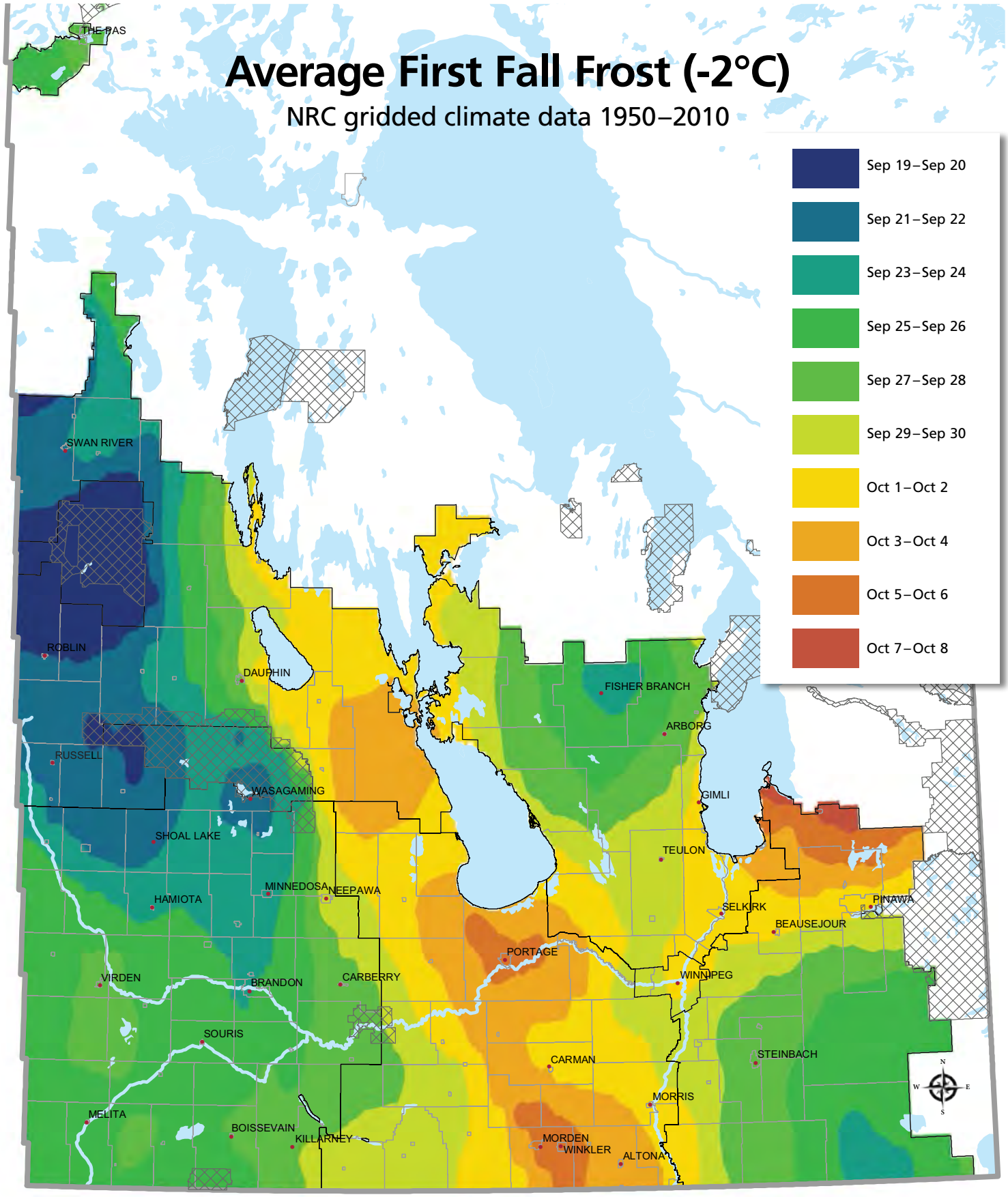
Cocklebur at 1–5 plants/m² can reduce soybean yield 15–41%

Lamb's-quarters (R) and pigweed at 1–5 plants/m² can reduce soybean yields by 12–38%

More optimum weed removal timing will protect yield. In a survey of soybean fields in Wisconsin, it was found that the average height of weeds prior to glyphosate application was 7.5", which is above the 6" threshold that is generally recommended in the Midwest. Further, 22% of those fields received glyphosate application after R-1 which has been shown to potentially reduce yields by 16–64%. If growers in the Midwest are missing their "weed window," chances are a handful of growers in Manitoba are too. Scouting soybeans on a weekly basis beginning at planting is critical to ensure you don't miss that window.

Another secret to optimizing weed control timing is the time of day that herbicide application occurs. The time of day affects air temperature (which affects activity within the plant) and leaf angle (which affects spray coverage). Ontario's Dr. Peter Sikkema has found that spraying between 9 a.m. and 6 p.m. can significantly increase control of some broadleaf weeds and also increase soybean yield by 2–4 bu/ac compared to spraying between 6 p.m. and 6 a.m. Now obviously it can be difficult to be picky when winds are up and there are many acres to cover, but the potential 2–4 bu/ac is quite enticing. You can hear more about Peter Sikkema's weed control studies in soybeans at this year's CropConnect Conference.

In summary, it is important to keep soybeans weed-free for the first 4–6 weeks. This can be achieved with weed control at planting followed by a timely in-crop application. A residual herbicide at planting will allow more flexibility in the post-emergence herbicide window. In years such as 2014, where canopy closure was delayed and non-existent in some fields, a second in-crop application is warranted. Timing for in-crop applications can be determined by monitoring weed height and crop staging, and often occurs earlier in wide rows than narrow rows.



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EFFECTS OF USING FUNGICIDE ON SOYBEAN YIELD AND MATURITY

AN MPGA ON-FARM NETWORK® PROJECT

Ron Tone
Tone Ag Consulting

PURPOSE: TO DETERMINE THE EFFECTS OF FUNGICIDE ON SOYBEAN YIELD AND DAYS TO MATURITY.

In 2014, field scale fungicide soybean trials (Table 1) were set up. These were to determine the effects of fungicide on soybean yield and days to maturity. There were 10 fields that were selected for the soybean on-farm trials across eastern Manitoba and they were seeded between May 18 and May 29. The trials were sprayed at R-2 (full flower) between July 10 and July 17.

Seeding rates ranged from approximately 160,000 seeds/acre to 210,000 seeds/acre with row spacing from seven to 30 inches. There were four planters and six air drills used to plant the soybeans. In the trials, the farmer applied foliar fungicide on six field-length strips (with), alternating with six untreated check strips (W/O). There were seven trials with DuPont's Acapela (Picoxystrobin 250g/L, Group 11) and three trials with BASF's Priaxor (Fluxapyroxad 167g/L and Pyraclostrobin 333g/L, Group 7 and 11) fungicide.

Fungicide strip on left showing delayed maturity compared with the untreated check on right at the Landmark trial (September 3, 2014)

The following is a summary of the results:

1. The trial results (Table 1) showed an average 1.3 bu/acre yield advantage for the strips sprayed with fungicide. **Only one out of ten trials showed a statistical significance in favour of using fungicide at a 95% confidence interval.**
2. Soybean yields ranged from 28 to 63 bu/acre across the trials. The yield difference between the treated and untreated strips ranged from -3.1 to 6.5 bu/acre.

continued on page 35

Table 1. MPGA on-farm soybean fungicide trial – 2014 summary

Location	Variety	Previous Crop	Date Seeded	Fungicide	Delayed Maturity Fungicide Strips (Days)	Row Spacing (inches)	Seeding Rate (K)[2]	Yield (bu/ac) With[3]		W/O	Difference	Economical/ Statistical Significance
Niverville	NSC Coulee	Soybeans	23-May-14	Acapela	2	10	200	63.2	vs	61.5	1.7	No
Aubigny*	DEKALB 24-10	Wheat HRS	18-May-14	Acapela	3	20	175	50.0	vs	49.2	0.8	No
Carman*	S00-T9	Canola	23-May-14	Acapela	1	30	180	46.3	vs	44.7	1.6	No
Rosenort	Thunder 33005	Winter Wheat	26-May-14	Acapela	2	7	180	45.8	vs	44.2	1.6	No
St. Pierre*	DEKALB 24-10	Soybeans	22-May-14	Acapela	0	30	160	44.1	vs	42.2	1.9	No
Petersfield	NSC Reston	Winter Wheat	29-May-14	Priaxor	1	10	170	43.2	vs	42.7	0.5	No
Beausejour-H	DEKALB 24-10	Winter Wheat	24-May-14	Acapela	1	10	200	42.6	vs	42.0	0.6	No
Landmark*	Thunder 32004	Soybeans	23-May-14	Priaxor	1	30	168	34.9	vs	35.3	-0.3	No
Beausejour-O	Chadburn	Wheat HRS	23-May-14	Priaxor	1	10	210	33.2	vs	30.4	2.9	Yes
Morris	Pioneer 900Y61	Soybeans	18-May-14	Acapela	0	15	195	29.9	vs	28.1	1.8	No
				Average	**1.2**		**184**	**43.3**	**vs**	**42.0**	**1.3**	

*Planter [2] K = in 1,000's [3] With = Fungicide Applied W/O = Untreated Check

continued from page 34

3. Disease ratings were done at the R-6 stage. Six out of the 10 trials showed a moderate reduction in the level of septoria brown (leaf) spot in the strips sprayed with fungicide. This did not translate into increased yield, as the differences were similar to the fields with no brown spot present. There was no white mould present in any of the trials.
4. Maturity dates varied across all 10 trials. Maturity ratings were done every two days once the soybeans reached R-7 and the leaves began to turn colour. The fungicide strips at six of the 10 trials matured one day later than the untreated checks (Photo 1). The Niverville and Rosenort trials showed a delay of two days while the Aubigny trial showed a delay of three days for the strips sprayed with fungicide.
5. Soil N levels showed a moderate correlation with yield. Soil P and K levels showed no correlation with yield. There were six fields with a history of manure in this trial. Rainfall, soluble salts and carbonates were high on Beausejour-H and Niverville, which resulted in iron chlorosis throughout the field.
6. Rainfall was collected at each site from the day that was sprayed until harvest. There seemed to be no correlation between yield and rainfall, even when looking at the crucial period of R-4 (pod is .75 inches long at one of four uppermost nodes) to R-6 (seed fills pod at one of four uppermost nodes).
7. Diseases were low to medium this year and consisted of fusarium and phytopthora root rot, alternaria and septoria leaf spot, bacterial blight, and downy mildew. Insects consisted of mainly grasshoppers and damage was low to medium. Soybean aphids arrived in all trial locations after the soybeans had reached R-6.5 so damage was very minimal.
8. At a cost of $20/acre for fungicide and $6/acre for the cost of application, the yield advantage for using fungicide on soybeans is not economically significant with soybeans at $10/bu. This would result in a $13/acre loss. **The trials show that there would be only an economic return of using fungicide 1 out of 10 times** (10%).

Special thanks to MAFRD's plant pathologist, Vikram Bisht, for help with the disease ratings and Dennis Lange, MAFRD's farm production advisor, for help with measuring soybean maturity.
There will be another two years of on-farm research to determine if using fungicide on soybeans provides an economic return.

For more information or if you would like to participate in the trials, please contact Ron Tone at 204-433-7189 or email *rontone@toneag.com*.

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EDITOR'S NOTE

This article is a result of You asked! We listened! With the changing climate in the commodity market, growers have been asking about alternative methods to improve margins. Intercropping has been studied for many years but widespread adoption has not caught on yet. This technique requires slightly more management but has been shown to consistently pay off both in field studies and by those farmers who have adopted it on a commercial scale. The synergies between peas and canola crops make sense – if you're planning on growing canola in 2015, consider throwing some peas in there! Read on…

Canola-pea mixed intercropping

Martin Entz
Department of Plant Science, University of Manitoba

WHAT IS INTERCROPPING?

Intercropping involves growing more than one crop in the same field at the same time. Several different types of intercrops are used in large scale North American agriculture. The most popular is mixed intercropping, where two crops are grown in the same field. An example is growing canola and peas together – but more about this later. Strip intercropping is a production system where different crops are grown in wide strips (usually the width of a seeder) in the same field. Corn and soybeans are sometimes strip intercropped and the advantage occurs along the edges. Soybean gets more edge resources in early spring when corn is just getting established while corn gets more edge resources later in the season when the soybeans are maturing and no longer using water. I observed a corn-soybean strip intercrop along Highway 23 near Roland several years ago – congratulations to this farmer for trying it!

A relatively new form of intercropping involves soybeans and winter wheat. In Iowa, soybeans are seeded

continued on page 38

continued from page 37

Corn-soybean strip intercropping

into winter wheat before the winter wheat is harvested. This is called relay intercropping. Precision farming equipment helps in this practice. In Kansas, farmers have been seeding soybean after winter wheat. The picture below is from near Salina, Kansas, where soybean was no-till seeded immediately after winter wheat harvest. I took this picture on September 28, 2014.

Soybean no-till seeded into harvested winter wheat, Salina, KS, Sept 2014

WHY INTERCROP?

1. **Stability.** Intercropping adds diversity to the cropping system and diversity tends to lead to stability.
2. **Reduced input use.** Intercropping may allow for lower input levels in a cropping system by reducing fertilizer and pesticide requirements. If peas and canola are intercropped, the seed, fertilizer and herbicide cost has the potential to be reduced.
3. **Overyielding.** Overyielding occurs when the yield produced by an intercrop is larger than the yield produced by the component crops grown in monoculture on the same total land area.

Overyielding is calculated using the Land Equivalency Ratio (LER). The LER is a measure of how much land would be required to achieve intercrop yields with crops grown as pure stands.

When the LER is greater than one, overyielding is occurring and the intercrop is more productive than the component crops grown as sole crops. When the LER is less than one, no overyielding is occurring and the sole crops are more productive than the intercrop.

Overyielding occurs for a variety of reasons, including the following: 1) Weed suppression and lower susceptibility to insects and diseases probably help to increase yields of intercrops. 2) Complementary resource use. A mix of different plants will use resources more efficiently than plants that are all of the same type. Plants of varying types may also provide benefits to each other, such as fixed nitrogen from legumes.

INTERCROPPING RESEARCH AT THE UNIVERSITY OF MANITOBA

Pea-canola intercropping research was first conducted in Manitoba by Dr. Elmer Stobbe and his graduate students in the late 1980s. They observed consistent overyielding when these two crops were grown together. The next major pea-canola intercropping research project was conducted by PhD student Tony Szumigalski, working with Rene Van Acker. They tested canola-pea under conventional and reduced herbicide production between 2001 and 2003 at two sites; the Ian N. Morrison Research Farm at Carman and Kelburn Farm south of Winnipeg.

In addition to the canola-pea intercrop, Tony's PhD study also included wheat-canola; wheat-pea; and canola-wheat-pea intercrops. Specific research questions were: Does overyielding occur in these intercrops? Do intercrops suppress weeds better than monocrops? Is grain quality improved in intercrops?

Clearfield wheat and canola varieties were used in the study so that wheat and canola could tolerate the pea herbicide. The seeding rate was 144 plants per square metre (eg., 72 seeds of canola; 72 seeds of pea). Monocrops of pea and canola were both seeded at 72 per square metre. Measurements included land equivalency ratio (LER), frequency of overyielding, weed biomass and wheat protein content.

Results of his work are shown in the table below. The results indicate that the best intercrop combination was canola-pea. Averaged over the six site-years, the canola-pea intercrop resulted in the highest amount of overyielding as measured by the LER. For example, the canola-pea combination yielded 22% more than the two crops grown alone under conventional management and 19% more than the two crops grown alone in the no in-crop herbicide treatment. This amount of overyielding

continued on page 39

	Land Equivalency Ratio (LER)			Frequency of Occurrence of Overyielding		
Intercrops	No in-crop herbicide	Conventional management	Average	No in-crop herbicide	Conventional management	Average
Wheat-Canola	1.13	1.04	1.09	40%	80%	60%
Wheat-Pea	0.87	1.10	0.99	20%	40%	30%
Canola-Pea	1.19	1.22	1.21	67%	100%	84%
Wheat-Canola-Pea	1.16	1.12	1.14	60%	80%	70%

continued from page 38

is similar to results by MSc student Harry Ngoma, working with Dr. Elmer Stobbe in the 1980s.

One impressive outcome of Tony's work was when he measured the frequency of overyielding. Basically, he asked, "how consistent will this overyield benefit occur?" Overyielding occurred 100% of the time under conventional management but only 67% of the time under no in-crop herbicide management.

Intercropping wheat-pea; wheat-canola or wheat-pea-canola did not overyield as much as the canola-pea mixture. Also, the other crop combinations were less consistent in overyielding than the canola-pea mixture.

In summary: 1) The best crop combination tested in this experiment was canola-pea, which overyielded 100% of the time under conventional management. 2) The poorest combination was wheat-pea, which had problems with weeds and lodging. 3) In general, increasing the number of crops grown together resulted in better weed suppression. 4) Including peas in the combination increased grain protein content, resulting in price premiums for wheat.

SEEDING AND FERTILIZING CANOLA-PEA INTERCROPS

In the U of M studies, peas were seeded at 2-inch depth while canola and wheat were seeded at 1-inch depth in two separate passes. It is important to seed crops at their optimum depth – which is different for peas and canola. This is why it is best to seed canola and peas in different runs on the seeder. Airseeders often have this capability.

In the six U of M site-years, soil N was between 60 and 100 lbs/ac and fertilizer was applied to the entire field. In a commercial intercropping situation, it would be best to fertilize only the canola. Research at WADO in Melita, MB has tested systems where double rows of peas and canola were seeded and the fertilizer N was knifed only in between the canola rows. This is also the system now being used by some commercial farmers who intercrop. There appear to be advantages to using such a paired row system since it allows N fertilizer to be directed only at the non-legume crop.

GROWER EXPERIENCE WITH "PEOLA" IN 2014

Scott Beaton is a grower near Rosser, MB that grew a successful peola crop in 2014. He planted Clearfield canola and green peas with a twin row seeder. Peas (2.5 bu/ac) were sent down the centre at a 2-inch depth and canola (3.2 lbs/ac) one inch to the side at a 1-inch depth. A fertilizer blend (16N-35P-10S) was mixed with the canola since it was only a two-compartment tank. Odyssey was used for weed control but the grower comments he likely could have gotten away with only spraying for grasses. At the end of the day, the canola yielded 25 bu/ac and peas went 18 bu/ac. This compares to straight canola in the same field that yielded 32 bu/ac and also required an additional 40 lbs of N and 2 lbs of seed compared to the peola. Scott plans on growing more peola in the future.

HARVESTING INTERCROPS

While the U of M research did not involve testing different harvest techniques for canola-pea intercrops, several farmers have reported on how to do it. One important rule that farmers explained is not to leave the two crops together in the same truck or bin for any length of time. This is because the smaller seed (canola) will absorb water from the much larger pea seed. One popular approach is to use a simple drum cleaner. Dump the grain from the truck into the cleaner and then auger the two crops into two separate bins from the cleaner. One farmer mounted a screen on the truck and separated canola from peas right into the truck.

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C-61-09/14-10253418-E

SUITABILITY OF PINTO AND NAVY BEAN VARIETIES FOR DIRECT HARVEST

AN MPGA ON-FARM NETWORK® PROJECT

Brent VanKoughnet MSc PAg
Agri Skills Inc.

Brent VanKoughnet of Agri Skills Inc. was contracted to explore the effect of two different harvest methods on multiple varieties of pinto and navy beans. Varieties and harvest methods for each project were as follows:

Pinto Bean Project

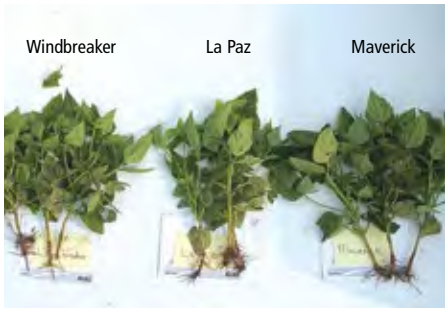
Varieties included:

- Windbreaker – *most common*
- Maverick – *common alternative*
- La Paz – *considered an upright variety*

Harvest methods included:

- Traditional undercutting and windrowing
- John Deere 9870 STS combine with 635F flex header and CWS wind bar

Each variety and harvest method comparison was replicated five times.



Pinto beans – July 17

Growing Season Observations

All pinto varieties emerged within 8–10 days with good vigour and survival rates (82–85% of the 75,000 seeds planted). Throughout the season all pinto varieties looked ideal.

Maverick and Windbreaker matured and were ready for harvest about one week prior to La Paz. In the case of this trial, all pinto varieties were more than mature. Harvest had been delayed by intermittent rain showers.

Table 1. Architecture of pinto bean plant at harvest

Variety	Plant height at harvest (inches)	Estimated % of pods below 2 inches
Windbreaker	12–16	20
La Paz	15–18	15
Maverick	10–14	25

HARVEST

Pinto bean harvest took place October 5. For each pinto variety a 35 ft (14 rows by 30 inches) by 1250 ft strip was undercut, windrowed and picked up versus direct harvested with a flex header. Cutting and windrowing took place in the morning on the same day of harvest. The pintos were harvested by a John Deere 9870 STS with a Sund pickup compared to the same combine with a 35 ft 635F flex header with a CWS wind bar.

continued on page 42

Pinto beans – September 12

continued from page 41

There was considerable yield variability due to normal field variability, random weed patches and steep drains. Over five replicates it is believed that the variability affected each variety and each harvest method equitably and reflects actual field conditions most producers would experience.

Both undercut and flex header samples had very little dirt and foreign material with no significant differences to affect yield comparisons. In previous years excess dirt and foreign material has been significant.

At the time of publication detailed quality analysis on each replicate of each treatment had not yet been completed.

Table 2. Pinto bean yield summary

Variety and harvest method	Average yield of five replicates* (lbs/ac)	Average difference between harvest methods
Windbreaker *cut*	2155 a	500
Windbreaker *flex*	1655 d	
La Paz *cut*	2079 ab	197
La Paz *flex*	1882 c	
Maverick *cut*	1979 bc	412
Maverick *flex*	1567 d	
CV%	13.1	
LSD (P<0.001)	131	

*values followed by the same letter within a column are not significantly different at the 90% confidence interval

Do you know about The Bean Report Scouting Network?

The Bean Report Scouting Network is a representative sample of farmers from across the province that allows MPGA's production specialist to survey their fields throughout the summer, as well as monitor crop conditions and pest pressure.

To join the network for 2015, contact Kristen.

kristen@manitobapulse.ca

Navy Bean Project

Varieties included:

- Envoy – *old standard durable at harvest*
- Vigilant – *new upright variety (North Dakota)*
- Lightning – *upright variety (Ontario)*
- T9905 – *common traditional architecture*

Harvest methods included:

- Traditional undercutting and windrowing
- Case 7230 combine with MacDon FD75-S flex draper

Each variety and harvest method comparison was replicated four times.

Growing Season Observations

Envoy, Vigilant and T9905 emerged within 9–11 days with good vigour and survival rates (81–82% of the 110,000 seeds planted). Lightning took 11–14 days with poorer survival rates (65% of planted).

Throughout the season navy varieties with the exception of Lightning looked ideal and above average. Lightning was thin and in a range of growth stages.

There were some intense patches of green foxtail and barnyard grass that escaped and were believed to have affected each variety and harvest comparison equally.

Envoys were mature 5–6 days before T9905 and Vigilant, and 10 days before Lightning. Harvest took place after waiting for Lightning to mature and a few rain shower delays.

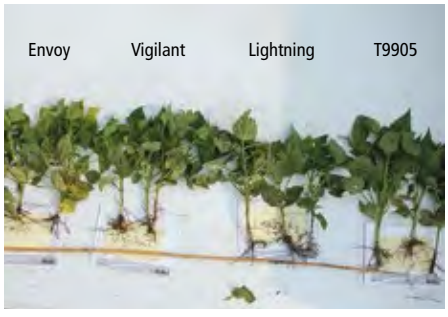
HARVEST

Navy bean harvest took place October 5. For each variety of navy bean a 35 ft (14 rows by 30 inches) by 1250 ft strip was undercut, windrowed and picked up versus direct harvested with a flex header. Cutting and windrowing took place in the morning on the same day of harvest and harvested by a Case 7230 with a Sund pickup compared to the same combine with a 35 ft MacDon FD75-S flex draper header.

The first replicate of Vigilant and Lightning were not cut and windrowed

continued on page 43

Navy beans – July 17



FIELD PREPARATION

Edge was incorporated with light duty cultivation and heavy harrows May 17. All treatments were sown into an ideal seedbed 1.5 inches deep into moisture on May 31.

Pinto varieties were sewn at 75,000 plants/acre and navy varieties at 110,000 plants/acre with a Case IH vacuum planter.

Consideration was given to rolling the field after planting. Due to the very light land, minimal crop residue from the previous year, and a concern for blowing, the field was not rolled.

OTHER FIELD OPERATIONS

Fertility: 50N-40P-15K-15S-1Zn

Herbicide: Viper June 26 and Basagran/Reflex July 7

Fungicide: Considering the challenge of multiple crop staging and timing, as well as very low disease pressure, no fungicide was applied

Pre-harvest: Glyphosate and Heat September 20

Harvest: September 27 and October 5

Table 3. Architecture of navy bean plant at harvest

Variety	Plant height at harvest (inches)	Estimated % of pods below 2 inches
Envoy	11–14	20
Vigilant	13–16	10–15
Lightning	14–18	15
T9905	12–14	15

continued from page 42

as clean as the other varieties and/or the other replicates. A combination of tougher stalks and driving slightly off centre with the cutter, left a number of plants that looked cut but were still anchored to the ground and did not move with windrower or get picked up by the Sund pickup. It is expected that the true yield potential for Vigilant and Lightning could have been higher on the first replicate with more precise cutting.

All four varieties were between 17–18% moisture with few splits. Both undercut and flex header samples had very little dirt and foreign material with no significant differences to affect the yield comparisons.

Although more upright and easier to flex given the good pod height, Vigilant, under these harvest conditions, demonstrated considerably more pod shatter at the knife of the flex header. Many seeds did not make it onto the canvas of the draper header and into the combine. Slightly different harvest conditions may have significantly altered losses.

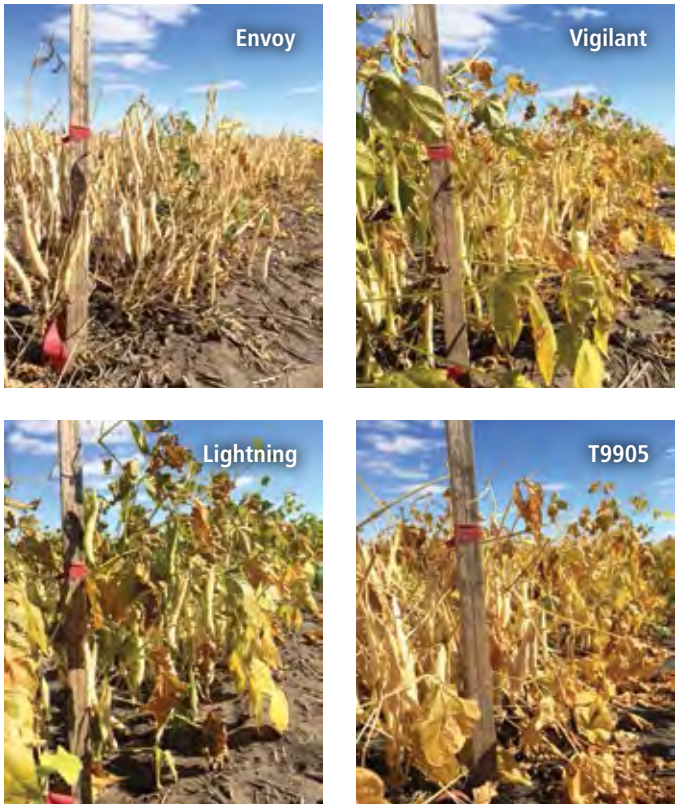
At the time of publication detailed quality analysis on each replicate of each treatment had not yet been completed.

Table 4. Navy bean yield summary

Variety and harvest method	Average yield of four replicates* (lbs/ac)	Average difference between harvest methods
Envoy *cut*	2039 a	180
Envoy *flex*	1859 b	
Vigilant *cut*	1794 bc	300
Vigilant *flex*	1494 d	
Lightning *cut*	1733 c	18
Lightning *flex*	1715 c	
T9905 *cut*	2114 a	215
T9905 *flex*	1899 b	
CV%	11.7	
LSD (P<0.001)	123	

*values followed by the same letter within a column are not significantly different at the 90% confidence interval

Navy beans – September 12



OVERALL OBSERVATIONS FOR PINTOS AND NAVIES

All pinto and navy bean varieties plants were shorter than usual due to the year's growing conditions. Bigger plants, both taller and with more plant material would likely have improved the effectiveness of the flex header treatments on all varieties.

Due to minor delays in harvest, (in this case waiting for the later varieties to mature and then rainfall delays), the plants were more mature than they would have needed to be. Harvesting earlier may have reduced losses for both harvest methods from shatter and plant shrinkage or from laying flat and becoming more difficult to get. Earlier harvest on the other hand increases the likelihood of un-threshed pods getting spit out of the back of the combine and/or affecting the quality of the sample with the odd green seed. Best practices for flexing edible beans would normally suggest taking them a little earlier than we were able to in this trial. Ideally there would be more plant material to help feed into the combine.

Cutting conditions were almost ideal. Light soil with not too much or too little moisture. With exception of the first replicate of Vigilant and Lightning where there were some cutting misses, the remaining flat areas losses were very low. In areas where there were step drains, it is understood that there will be high harvest losses with both methods of harvest. It is a relatively small percentage of the field and if not for the trial design considerations, on commercial farms double-cutting the drains or flexing the length of the drain, could be considered to limit those losses.

Warning – To try to get all of the beans, the flex headers (particularly the MacDon) put many rocks in the rock trap of the combine and many smaller rocks through the combine.

The field was as smooth as you can expect for not having been rolled. It is

continued on page 44

continued from page 43

uncertain to what degree rolling would have reduced harvest losses for cutting or flexing and influenced the difference between the two. It may have also limited the number of rocks picked up.

Although there is understood to be great variability in losses from one spot to another for each treatment, Table 5 provides a summary of beans on the ground at a number of representative sites for each treatment.

On the ground plant counts generally support the weigh wagon numbers with the exception of Lightning. Given the more extreme variability of this variety it was difficult to choose representative areas that account for the variation. It is expected that Lightning had more areas with higher losses in cutting than were captured by the chosen representative sample areas. This supports the need to do actual harvested weight differences to understand the full effect. Counting beans on the ground does not always tell the whole story. See photos of ground counts.

Table 5. Ground harvest losses of pinto and navy beans

Variety and harvest method	Estimated harvest losses (lbs/ac)	Harvest losses flexing minus cutting (lbs/ac)
Windbreaker *cut*	34	
Windbreaker *flex*	564	531
La Paz *cut*	115	
La Paz *flex*	295	181
Maverick *cut*	47	
Maverick *flex*	425	379
Envoy *cut*	102	
Envoy *flex*	293	191
Vigalant *cut*	280	
Vigalant *flex*	506	225
Lightning *cut*	251	
Lightning *flex*	457	206
T9905 *cut*	128	
T9905 *flex*	372	244

GROUND HARVEST LOSSES

La Paz *cut*

La Paz *flex*

T9905 *cut*

T9905 *flex*

CONCLUSIONS

Variety matters. It is clear that varieties with plant architecture designed for direct harvesting show fewer losses than more conventional varieties.

For pintos, there was a significant yield advantage for La Paz over Windbreaker and Maverick with the flex header harvest system (Table 2). With conventional undercutting, all varieties were within 200 lbs/ac of one another. If committed to using a flex header, La Paz clearly outperformed the other varieties by minimizing harvest losses to 200 lbs/ac as compared to 400 and 500 lbs/ac with Windbreaker and Maverick.

In the case of navy beans, Envoy and T9905 had the highest yields and were not statistically different from one another with conventional undercutting (Table 4). These two varieties also had similar losses with the flex header harvest, at 180 and 215 lbs/ac for Envoy and T9905 respectively. Lightning, with the tallest plant height (Table 3), had the lowest harvest losses and yielded similarly in both harvest systems. However, overall Lightning yields were significantly lower compared to Envoy and T9905. This was likely in part due to the poor stand establishment with no obvious explanation for the poor stand. The lower plant populations and extreme stand variability at harvest resulted in yields that likely do not represent the full potential of this variety.

Being upright is not the only important harvest characteristic. The shatter losses observed with Vigilant represent a completely different harvest challenge for direct harvesting that perhaps timing or swathing may resolve.

There remains considerable interest in growing edible beans without the manpower demands of cutting and windrowing even with the current evidence of financially significant losses. Considerations for future trials may be to look at flexing slightly earlier (when there is more plant material), comparing losses with and without rolling, and comparing to swathing (when greener) and picking up.

Acknowledgements

Special thanks to Arie Koster, Warren McCutcheon and Shawn McCutcheon for the use of their specialized equipment and their operating expertise, as well as Rocky Mountain Equipment for the use of the MacDon flex header and to Craig Linde from MAFRD for providing statistical analyses.

SEED TREATMENT AS A MEANS TO OVERCOME THE CHALLENGES OF EXCESS SOIL MOISTURE IN THE PRODUCTION OF PULSE CROPS

Belay T. Ayele, PhD – *Assistant Professor, Department of Plant Science, University of Manitoba*

In addition to their economic value to the producers and processors, pulse crops play an important role in extending and diversifying crop rotations, increasing nitrogen availability and improving soil organic matter. Given these benefits, the acreage of pulse crops in Manitoba is expected to increase in the coming years. However, different weather-related stress factors pose production challenges. Excess soil moisture is recurrent in Manitoba, especially early in the growing season. It induces a decrease in soil oxygen content, thereby reducing oxygen supply to germinating seeds or roots. Under this condition, crop roots and germinating seeds cannot produce enough energy to support their growth and function. In addition, such stress conditions lead to production of molecules called "reactive oxygen species" at excessive levels capable of inducing crop injury. Therefore, the occurrence of excess soil moisture at any particular growth stage significantly affects the field performance and productivity of pulse crops.

There is varying degrees of tolerance to excess soil moisture among pulse crops and their respective cultivars; for example, edible beans are more sensitive to excess field moisture conditions. In general, most of the commercial cultivars of pulse crops do not have physiological and/or anatomical adaptations to withstand the effects of excess soil moisture conditions. Tolerance to excess soil moisture can be incorporated into the elite cultivars of pulse crops through breeding; however, this is a long-term strategy. Therefore, developing economically viable alternatives that can be used in the short term has a paramount significance to Manitoba's pulse crop producers. Plant growth regulators are a group of natural or synthetic substances that can actively regulate the growth, development and productivity of crops growing under uncontrollable and unpredictable environmental conditions. The use of these substances has been considered as a viable short-term alternative in many crop production systems to enhance/repress growth and maturation of a given crop and/or confer tolerance against stress conditions through physiological action.

The occurrence of excess soil moisture early in the growing season often causes late planting dates of pulse crops and excess moisture conditions post-planting negatively affect their field performance. Growers of pulse crops look for seeds with enhanced vigor, germination capacity and subsequent seedling establishment to overcome the effects of delayed planting. Enhancing the seed vigor, germination and subsequent seedling growth of many crops can be achieved by using specific plant growth regulators. Therefore, treatment of seeds with such substances can be used as a means to minimize the negative effects of late planting on the yield and quality of pulse crops.

The effect of excess moisture on growth under the experimental conditions that were set.

Early developmental stages of a given crop in general are more susceptible to stress conditions occurring post-planting. Some plant growth regulators are known to improve the tolerance of crops to different stress conditions,

continued on page 46

continued from page 45

including high or low temperature, salinity and excess soil moisture. The ability of these substances in conferring tolerance against stress has been associated with their role in enhancing the activity of plant produced anti-stress proteins that are involved in the removal of the harmful reactive oxygen species. Therefore, enhancing the capability of pulse crops to withstand the negative effects associated with excess soil moisture at their early stages of development through seed treatment with plant growth regulators has the potential to improve their overall field performance. Exposure of pea seeds to high temperature and high humidity stress conditions before planting implicated the importance of increased production of anti-stress plant proteins for enhanced seed vigor and germination. Indeed, treatment of seeds with some plant growth regulators leads to increased accumulation of precursors required for the synthesis of anti-stress plant proteins during germination and young seedling growth under excess soil moisture conditions.

In a project funded by the Manitoba Pulse Growers Association (MPGA) during the period of 2012–2014, we examined the effects of treating pea seeds of cultivar CDC Meadow with three different plant growth regulators. From this study, seedlings grown from seeds treated with two of the plant growth regulators appeared to have enhanced shoot and root growth both in fresh weight and length as compared to those seedlings grown from untreated seeds, especially when exposed to excess soil moisture conditions. In addition, the treatments increased the accumulation of precursors used for the synthesis of plant produced anti-stress proteins that remove the toxic active oxygen species. Preliminary study with soybean seeds of cultivar 25-10RY also showed similar effects of seed treatment with the two plant growth regulators on the root and shoot growth of young seedlings. Renewal of funding for this study by the MPGA enables us to extend our ongoing seed treatment research on soybean and initiate further study on edible beans. We will also test other candidate plant growth regulators.

Application of seed treatment technology in commercial crop agriculture is aimed at maximizing yield and thereby profitability. Since a seed treatment recipe that is effective and economical for one crop may not be applicable for another one, our goal is focused on identifying appropriate and affordable methods of seed treatment methods to overcome the negative effects of excess soil moisture on the yield of different pulse crops commercially grown in the province. The findings of this research, therefore, will have the potential to provide pulse growers of Manitoba an alternative method to minimize the yield and quality losses associated with excess soil moisture conditions, and thereby improve their farm income.

Dates to Remember

CropSphere – Saskatoon, SK
January 13–14, 2015

Ag Days – Brandon, MB
January 20–22, 2015

FarmTech – Edmonton, AB
January 27–29, 2015

***Getting it Right* – Soybean Workshop – Portage la Prairie**
January 30, 2015

CropConnect Conference
Victoria Inn Hotel and Convention Centre – Winnipeg
February 17–18, 2015
See page 2 for details.

UPDATE ON WHITE MOULD FUNGICIDE IN DRY BEANS

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University of Guelph, Ridgetown Campus

Although Manitoba growers avoided a serious problem with white mould this year, Ontario growers weren't so lucky. So it seems like a perfect time to give you an update on fungicide performance, before it's your turn again.

For this article, we've chosen five products to discuss – Lance (former standard), Allegro (current standard), Propulse (new), Senator (old work horse) and Acapela (new). The application timing was early flowering (each plant had three small pods or pin pods present), followed by a second application 10–14 days later. For Allegro and Propulse, we also compared the performance of a single application at the first application timing.

Each year, two studies were planted at the Huron Research Station about two weeks apart. We hoped to get good white mould pressure in at least one study, but often got good data from both. The studies were regularly watered using an overhead irrigation system, and they were intensively managed to promote disease development. White mould disease severity ranged from moderate to severe (from 50 to 70%+ infected tissue on the average plant).

All of the fungicides were effective against white mould (Table 1), often reducing disease severity by 50% or more, compared to an untreated control. Studies differed, with higher disease severity each year in Study B (late planted) compared to Study A (early planted). Allegro (Treatment #4) was the most consistent product for disease control, followed closely by Propulse (#7), Senator (#9) and Lance (#1). Acapela (#10) had the highest average disease severity of any product tested, with the highest scores in Study B in each year. A single application of Propulse and Allegro was less effective than two applications, averaging 5–15% more disease. The biggest difference occurred in Study A in 2013, where one application had 36–44% more disease than two applications. In that study, the white mould infection started late, about 12 days after the first application timing, which made a second fungicide application critical for success.

Table 1. WHITE MOULD SEVERITY in dry beans to registered white mould fungicides.

				White Mould Severity (as % of Untreated Control)				
				2012		2013		
Trt #	Product	Rate (per ha)	Apps	Study A	Study B	Study A	Study B	Average
1	Lance	0.77	2	47	52	40	60	50
2	Allegro	0.6	2	34	49	50	47	45
3	Allegro	1.0	1	46	50	78	60	59
4	Allegro	1.0	2	45	34	44	54	44
5	Propulse	0.5	2	43	75	46	59	56
6	Propulse	0.75	1	39	70	85	55	52
7	Propulse	0.75	2	32	62	41	51	47
8	Senator	1.73	2	34	63	38	65	50
9	Senator	2.25	2	31	53	16	63	41
10	Acapela	0.88	2	38	84	64	69	64
Mould Severity				Moderate	Moderate	Moderate	High	—

Yield increases were dramatic (Table 2), especially in Study B in 2013, which had high disease pressure and low yield. Allegro (#2, 3, 4) was consistent, with high yields compared

continued on page 48

continued from page 47

to other products. Senator (#9) had similar a yield response, influenced by one site (2013 Study A) where it had the highest yield and the lowest disease severity (Table 1). For Propulse, rate and timing had some impact on yield, with differences found between treatments (#5, 6, 7). The high rate of Propulse applied twice (#7) looks promising to compete with Allegro (#4) and Senator (#9). Acapela (#10) and Lance (#1) had the lowest yield increases, due to lower yields in one or more studies.

The bottom line is this… as a grower, you are asked to invest $40+ per acre for just a single fungicide application to protect your crop from white mould. The key word here is PROTECT… since you make the investment before the disease is visible. Factors like a lush crop, a field history of mould, short crop rotation, and rainy weather forecasts also have to be considered, before you pull the trigger on a fungicide. The goal of this research is to measure the long-term consistency of product performance, to help you guarantee a return on your investment.

Once the 2014 studies are summarized we will look at the economics of these fungicides. This should be available to you before you need to make a decision on white mould in 2015.

Table 2. CROP YIELD RESPONSE in dry beans to registered white mould fungicides.

				Crop Yield (as % of Untreated Control)				
				2012		2013		
Trt #	Product	Rate (per ha)	Apps	Study A	Study B	Study A	Study B	Average
1	Lance	0.77	2	147	156	162	145	153
2	Allegro	0.6	2	143	149	163	243	175
3	Allegro	1.0	1	141	166	163	224	174
4	Allegro	1.0	2	141	184	181	211	179
5	Propulse	0.5	2	128	117	165	147	139
6	Propulse	0.75	1	149	145	130	162	147
7	Propulse	0.75	2	149	136	186	186	164
8	Senator	1.73	2	154	139	193	155	160
9	Senator	2.25	2	161	165	216	161	176
10	Acapela	0.88	2	150	139	126	192	152
Crop Yield				High	Moderate	Moderate	Low	—

SETTING UP RESIDUE MANAGEMENT TRIALS

on-farm network®
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Growing Forward 2

Manitoba Pulse Growers Association is supporting three studies looking at managing crop residue before and after soybeans. The objective of residue management studies is to determine the strategy (or tillage practice) in regards to economics, agronomics and environmental risk. The studies are being managed by Greg Bartley, a graduate student in Plant Science at the University of Manitoba.

1 The soybean residue project was initiated as part of the MPGA On-Farm Network®. Two trials were set up with growers near Altona (along highway 14) and Boissevain (along highway 3), looking at four techniques to manage soybean residue. The implements being investigated are a standard disc or cultivator and a vertical tillage unit using both a standard (zero angle disc) and aggressive (angled disc) form. These tillage treatments are being compared to leaving the soybean residue intact. Each treatment is replicated four times along the length of the field and a corn test crop will be planted in 2015.



Vertical tillage unit being used in soybean residue.

2 The wheat residue project is being done in large research plots at Carman and Melita. The treatments being applied include high and low straw height (zero tillage), strip tillage, burning and cultivation. Soybeans will be the test crop in 2015.



Wheat residue managed with strip tillage, zero tillage and rotary tillage (L–R).

3 The corn residue project was set up on three farms and is comparing standard tillage with a disc or cultivator, standard vertical tillage, aggressive vertical tillage as well as strip tillage.



Strip tillage in corn residue provides soil incorporation on 30-inch rows where the seed will be placed the following year.

Alejandro C. Costamagna and
K. G. Lahiru Ishan Samaranayake
Department of Entomology,
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The soybean aphid is a major invasive pest in North America, causing yield losses that can reach $2.4 billion annually in the north-central region of the United States if left untreated[1]. Since 2000, as a result of this new pest, soybean scouting services increased 40-fold and insecticide applications increased 130-fold[2]. In Canada, soybean aphid was detected first in Ontario in 2001 and there were widespread population outbreaks in 2006 and 2008 in Manitoba[3]. In recent years, only occasionally fields have been treated in Manitoba for this pest.

Despite major advances in our knowledge of this pest in North America, the exact causes of population outbreaks that result in major yield reductions are still unknown, and therefore it is difficult to forecast when insecticide applications may be needed.

Fig. 1. Field test for predation on soybean aphid. Aphids on potted plants are either exposed to (completely open pots marked by steel pipes) or protected from (tomato cage frames covered by white no-see-um net) natural occurring field predators. Potted plants were irrigated using plastic bottles supported by steel pipes. The experiment was replicated in 31 soybean and four alfalfa fields in Manitoba, between 2012 and 2014.

However, our previous studies in the USA Midwest have demonstrated that during most years, soybean aphid populations that have the potential to reach pest levels are effectively controlled by natural enemies, without the need of insecticide applications, and often times going completely unnoticed by producers. Our previous research also suggested that most of these important beneficial predators are coming to soybeans from other habitats and crops, where they also provide pest control services. Since 2012, we conducted studies in Manitoba to test:

1. what are the most common aphid predators present in soybeans in Manitoba
2. whether predators present in soybean are effective at reducing aphids
3. whether predators from alfalfa are effective at suppressing soybean aphid and may move to soybean during outbreaks, and
4. what are the habitats in the agricultural landscapes that are most likely the sources of these beneficial insects.

Knowledge of all these factors will allow us to design better strategies to maximize aphid suppression using these existing natural enemies, and avoid the need to apply insecticides.

We compared soybean aphid suppression between neighbouring alfalfa and soybean fields in eight fields during 2012 (Carman, La Broquerie, and Glenlea), in twelve soybean fields during 2013 (Carman, Emerson, Gimli, La Broquerie, Glenlea and Morris) and fifteen soybean fields during 2014 (Carman, Emerson, Arnes,

continued on page 51

continued from page 50

Gimli, Warren, Altona, Letellier, La Broquerie and Glenlea). Most of these are commercial fields and are located in landscapes that differ in the composition and structure of habitats around them. In each field we infested 10 potted soybean plants with aphids and exposed half of them to natural levels of predators and protected the other half using exclusion cages (Fig. 1). In addition, during both years we monitored the direction of the movement of natural enemies between soybean and neighbouring fields using bi-directional Malaise traps (Fig. 2). To complement this study, we conducted two mark-release-recapture experiments to determine movement direction, travel distance and speed of one of the most important predators present in Manitoba, the seven-spotted ladybeetle (Fig. 3).

Fig. 3. The seven-spotted ladybeetle (Coccinella septempunctata) is one of the most voracious and abundant natural enemies of soybean aphid in Manitoba.

In all the fields and years studied, naturally occurring predators always suppressed aphids below the threshold level of 250 aphids/plant, resulting in 3- to 22-fold reductions in comparison with the predator exclusion controls. By contrast, aphids on plants protected from predators reached threshold levels in two fields (2013) and in all fields (2014) within two weeks. The main predators present in soybean included seven-spotted and multicoloured Asian ladybeetles, minute pirate bugs, damsel bugs, brown and green lacewings, hoverfly larvae, and spiders. In alfalfa, the naturally occurring predators also suppressed soybean aphid populations to similar levels to which they suppressed pea aphid, indicating that these predators have the potential to move to soybean and control aphid populations there as well. We are still processing the data from bi-directional malaise traps, but preliminary analysis indicate a significant movement of hoverflies, ladybeetles, and brown and green lacewings from alfalfa and natural vegetation to soybean, suggesting that these two habitats may act as sources of predators suppressing aphids in soybean.

Fig. 2. Bi-directional Malaise trap used to monitor movement of predators between neighbouring fields. Insects are captured in separate collecting jars in each side of the trap.

For our mark-release-recapture studies we released 654 (2013) and 600 (2014) marked ladybeetles and recaptured around 5.5 % of them during both years. Preliminary results show a trend of ladybeetles moving greater distances in short periods of time from soybean to alfalfa fields, most likely due to the absence of aphids in the soybean fields studied, but also some movement in the opposite direction. Therefore, our results suggest that ladybeetles can move rapidly between both crops, suggesting that alfalfa may act as a source of natural enemies for soybeans when they are infested by soybean aphid.

In summary, our current results suggest that predators naturally occurring in Manitoba are doing an excellent job controlling aphid populations in all the fields studied, despite the potential that aphids have to reach outbreak levels on them. In addition, we started to identify some of the habitats that act as sources of beneficial insects in agricultural landscapes, most notably alfalfa and natural vegetation, and showed that beneficial insects can readily move between them and soybean fields. Our results suggest that producers need to monitor aphid populations carefully in their fields and avoid using insecticides when populations are below threshold levels, in order to allow the natural enemies present to naturally suppress the aphids. This in turn results in more abundant natural enemies present in the landscape, that may move to attack aphids in neighbouring fields once the aphids present in soybean become scarce, but are also ready to re-colonize soybean fields if new winged aphids arrive later in the season.

Suggested further readings:

[1] **Tilmon, K. J., Hodgson, E. W., O'Neal, M. E. & Ragsdale, D. W.** Biology of the Soybean Aphid, Aphis glycines (Hemiptera: Aphididae) in the United States. Journal of Integrated Pest Management 2, A1-A7, doi:10.1603/ipm10016 (2011). http://dx.doi.org/10.1603/IPM11019

[2] **Hodgson, E. W., McCornack, B. P., Tilmon, K. & Knodel, J. J.** Management Recommendations for Soybean Aphid (Hemiptera: Aphididae) in the United States. Journal of Integrated Pest Management 3, E1-E10, doi:10.1603/ipm11019 (2012). http://dx.doi.org/10.1603/IPM10016

[3] **Gavloski, J. & Bisht, V.** Manitoba Insect & Disease Update. (2014). http://www.gov.mb.ca/agriculture/crops/seasonal-reports/insect-report-archive/index.html.

SOYBEAN MULTIPLE SEEDING DATES – FIELD SCALE ENVIRONMENT

AN MPGA ON-FARM NETWORK® PROJECT

Brent VanKoughnet of Agri Skills Inc. was contracted to complete an agronomic evaluation of multiple seeding dates of soybeans in a field scale environment.

The field scale trial was located south and east of Carman Manitoba. Certified Richer soybeans were planted with a John Deere Max-emerge vacuum planter on 30-inch spacing on the dates listed in Table 1 together with the soil temperatures and emergence dates.

Table 1. Planting and emergence dates

Seeding date	Average soil temp	Emergence date	Days to emergence
May 8	7–8°C	May 27	19 days
May 16	9–10°C	May 29	13 days
May 24	14°C	June 1	8 days
June 1	17°C	June 9	8 days

Green soybean stalks at harvest in the June 1 seeding date (L) compared to the rest (R)

Seed was sourced from the same seed lot and was treated with a 2x rate of liquid inoculant. Inoculant extender was used to ensure equivalent effectiveness over the extended period. The field has grown inoculated soybeans one other time in the past four years. The planting rate was 170,000 seeds per acre. Soil conditions were close to ideal over the range of seeding dates. Seed dates were selected based on the first available seeding date, the extended crop insurance deadline and approximately equal intervals between. Although extended coverage in Zone 2 technically would extend to June 3, rainfall was anticipated and field was seeded on June 1.

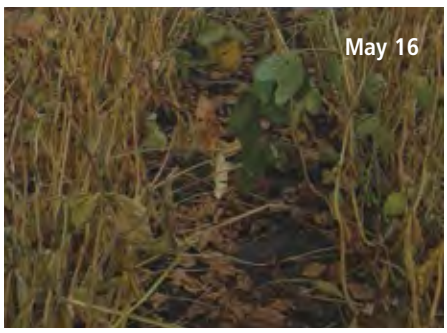
Each seeding date treatment was approximately 700–1200 ft by 30 ft and replicated six times.

In-season photos featured below display how the broad range of seeding dates (24 days difference) compressed into very similar maturity dates (seven days apart).

Soybean harvest took place October 7. All 12 rows or 30 ft were harvested for each treatment. At harvest there were no noticeable differences in pod height by seeding date. The majority of plants had their lowest pods at or above 2.5 inches. Although seed moisture levels were all similar and comfortably

continued on page 53

In-season photos (September 13) display soybean maturity across seeding dates



continued from page 52

below 13.5%, plant stalks on the June 1 treatments were considerably greener and were slightly more difficult to feed through the combine.

In-season evaluation also revealed the plant height, nodes and plant stands as of August 1. See Table 3.

Table 2. Yield summary for 2014 seeding dates

Seeding date	Average yield of six replicates* (bu/ac)
May 8	44.7 a
May 16	45.3 a
May 24	44.6 a
June 1	39.4 b
CV%	6.0
LSD (P<0.001)	0.8

*values followed by the same letter within a column are not significantly different at the 90% confidence interval

Table 3. In-season evaluation – August 1

Seeding date	Plant height (inches)	Plant stands/m²	Number of nodes
May 8	32–34	31–33	12–13
May 16	32–34	31–33	12
May 24	30–32	31–33	11
June 1	28–30	31–33	10

CONCLUSIONS

Yields were statistically the same across the first three seeding dates with a significant yield reduction for the latest date (Table 2). The earliest seeding date, May 8, was the first available date to plant given spring conditions. The air temperatures ranged between a low of 4°C and a high of 14°C with an average soil temperature that day of 7–8°C. It was a surprise that the cool soil did not have a more negative yield effect, given the 19 days required for emergence. The May 8 and May 16 treatments were planted eight days apart but emerged only two days apart. Between May 11 and 20, air temperatures were below average and soil temperatures did not rise significantly until after the May 22nd, and just before, the May 24th seeding date. Effectively not much happens until temperature tells the plant it is time to grow.

This year there was significant yield reduction for the latest planting date. More so than the 3 bu/ac reduction last year and the negligible reduction in 2012 from similar trials (Table 4). The combination of cool growing conditions this year and the full season variety for the area produced a very respectable yield, just not to the full potential of what an earlier seeding date would be. The green stems at harvest on October 7 would also indicate we were close to not fully maturing, even though late harvest weather was better than average.

Seeding date also had only a minor effect on plant height with the later seeding dates not extending as tall and adding as many nodes. There was no clear effect on pod height and no differences in harvest losses as a result. The earliest seeding date, May 8, was effectively equal in yield to all but the latest seeding date. On an average year, May 8 would be considered closer to a normal seeding date as opposed to early. The earliest treatment still took 19 days to emerge and exposed production to additional risk if the cool weather had persisted longer. Although this year, and in previous years, there has not yet been a significant penalty or yield benefit for early seeding, each producer will need to balance the risks of seeding a bit early with the risks of not having another window for opportunity for seeding in what would be considered more ideal timing where plants emerge in 8–10 days.

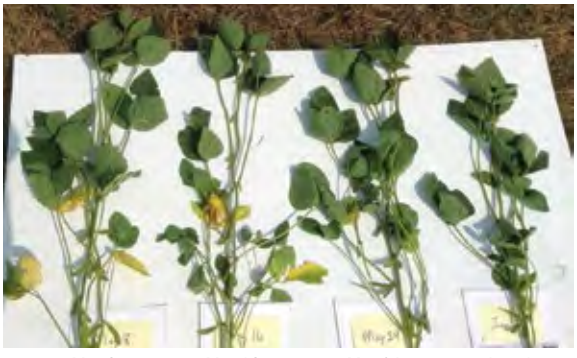
Table 4. Yield Results from 2012 and 2013

2013		
Seeding date	**Days to emerge**	**Harvested yield‡**
May 12	19	38.6
May 17	17	37.7
May 24	14	37.2
June 4	9	34.8

‡estimated 25% hail damage

2012		
Seeding date	**Days to emerge**	**Harvested yield**
April 30	17	41.0
May 9	13	41.9
May 17	10	41.8
May 24	10	42.3
May 30	9	41.8

In-season evaluation of plant heights, nodes and plant stands



May 8 May 16 May 24 June 1

Soybean School

Visit **www.manitobapulse.ca** to view a series of informative production-related videos for producers.

MANITOBA PULSE BUYER LIST – NOVEMBER 2014

COMPANY	EDIBLE BEANS	FABA BEANS	LENTILS	PEAS	SOYBEANS	PHONE	LOCATION	CGC REGISTERED
Agassiz Global Trading	✓				✓	204-745-6655	Homewood, MB	
AgriTel Grain Ltd.				✓	✓	204-268-1415	Beausejour, MB	
AGT Foods	✓		✓	✓	✓	306-525-4490	Regina, SK	✓
• SaskCan Pulse Trading – Parent Division	✓		✓	✓	✓	204-737-2625	St. Joseph, MB	✓
All Commodities			✓	✓		204-339-8001	Winnipeg, MB	✓
B.B.F. Enterprises Ltd.					✓	204-737-2245	Letellier, MB	
B.P. & Sons Grain and Storage Inc.					✓	204-822-4815	Morden, MB	✓
Belle Pulses Ltd.				✓		306-423-5202	Bellevue, SK	✓
Best Cooking Pulses Inc.			✓	✓		204-857-4451	Portage la Prairie, MB	✓
Brett-Young Seeds				✓	✓	204-261-7932	Winnipeg, MB	
CB Constantini				✓		604-669-1212	Vancouver, BC	✓
Cargill Ltd.				✓	✓	204-947-6219	Winnipeg, MB	✓
Delmar Commodities				✓	✓	204-331-3696	Winkler, MB	✓
Farmer Direct Co-operative Ltd.	✓	✓	✓	✓		306-352+2444	Regina, SK	
Global Grain Canada	✓					204-829-3641	Plum Coulee, MB	✓
Hensall District Co-op	✓					204-295-3938	Winnipeg, MB	✓
Horizon Agro					✓	204-746-2026	Morris, MB	✓
JK Milling Canada Ltd.				✓		306-586-6111	Regina, SK	✓
Kalshea Commodities Inc.				✓		204-737-2400	Altona, MB	✓
Kelley Bean Co. Inc.	✓					308-635-6438	Scottsbluff, NE	
Lansing Olam Canada Commodities ULC					✓	877-747-7599	Chatum, ON	✓
Legumex Walker	✓	✓	✓	✓	✓	204-829-2326	Plum Coulee, MB	✓
• Walker Seeds Ltd.				✓		306-873-3777	Tisdale, SK	✓
Linear Grain	✓			✓	✓	204-745-6747	Carman, MB	✓
Monsanto					✓	–	Winnipeg, MB	
Natural Proteins					✓	204-355-5040	Blumenort, MB	✓
Natural Specialty Crops Co. ULC	✓	✓	✓	✓	✓	306-873-4006	Tisdale, SK	
Nebraska Bean	✓					402-887-5335	Clearwater, NE	
Nutri-Pea Ltd.				✓		204-239-5995	Portage la Prairie, MB	
Nu-Vision Commodities	✓					204-758-3401	St. Jean Baptiste, MB	
Parrish & Heimbecker Ltd.					✓	204-987-4320	Winnipeg, MB	✓
Paterson Grain				✓	✓	204-956-2090	Winnipeg, MB	✓
• FeedMax Corp.				✓		204-523-0682	Killarney, MB	✓
Quarry Grain Commodities					✓	204-467-8877	Stonewall, MB	

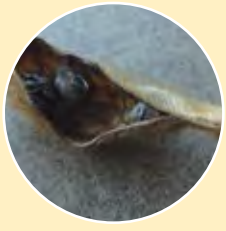
continued on page 55

COMPANY	EDIBLE BEANS	FABA BEANS	LENTILS	PEAS	SOYBEANS	PHONE	LOCATION	CGC REGISTERED
Richardson International				✓		204-934-5627	Winnipeg, MB	✓
• Richardson Pioneer Ltd.				✓	✓	204-934-5627	Winnipeg, MB	✓
• Tri Lake Agri				✓		204-523-5380	Killarney, MB	✓
S.S. Johnson Seeds	✓			✓		204-376-5228	Arborg, MB	✓
Seed-Ex Inc.					✓	204-737-2000	Letellier, MB	✓
Shafer Commodities					✓	204-822-6275	Morden, MB	✓
Simpson Seeds			✓			306-693-2132	Moose Jaw, SK	✓
Southland Pulse				✓		306-634-8008	Estevan, SK	✓
Sunrich LLC					✓	507-446-5642	Hope, MN	
Thompsons Limited	✓		✓	✓		519-676-5411	Blenheim, ON	✓
Vanderveen Commodity Services					✓	204-745-6444	Carman, MB	✓
Viterra Inc.	✓	✓	✓	✓	✓	Contact your local Viterra sales representative		✓
Walhalla Bean Co. (Canada Ltd.)	✓					701-549-3721	Walhalla, ND	✓
• Winkler Receiving	✓					204-325-0767	Winkler, MB	✓
Wilbur Ellis			✓	✓	✓	204-867-8163	Minnedosa, MB	✓
Zeghers Seeds Inc.			✓	✓		204-526-2145	Holland, MB	✓

To be included on our Manitoba Buyers List, companies should contact the MPGA office at 204-745-6488 to register.

NOTE – These companies are authorized to deduct and remit levy to MPGA. This list is provided by MPGA as a convenience to our members. **MPGA accepts no responsibility or liability for the accuracy of the completeness of the information provided.** It is your personal responsibility to satisfy yourself that any company you deal with is financially sound. Questions regarding licensing and security should be directed to the Canadian Grain Commission at 1-800-853-6705 or 1-204-983-2770.

Soybean Scout ANSWERS



A – Pod splitting. This past summer, there was a period during the pod fill stage (early August) where some areas experienced a moisture deficit. During a period of moisture deficit, pod size can be reduced. Then, during the late seed fill stage (early September), there was no shortage of rainfall in some areas which led to rapid seed growth and large seeds that outgrew the pods, causing them to split open. Another reason may be due to sprouted seed. This can occur when seed becomes re-hydrated during maturity (falls below 50% moisture and then rises above). The sprouted seed dries up and at harvest we are left with dark, shrivelled and decayed seed in an open pod.

B – Purple seed stain. *Cercospora kikuchii* is the causal agent of leaf blight and purple seed stain. This pathogen can infect soybean crops during seed fill and the most obvious sign is reddish-purplish foliage that can progress during maturity. When the pods are affected, purplish splotches stain the seed coat, extending from the hilum, but should not penetrate the seed. This fungal pathogen survives in infected residue therefore crop rotation is important. Seed lots with purple staining may be given a special designation or in severe cases may be downgraded.

Recipe Corner

Baked Beans

Makes 8 Servings

2 1/2 cups (500 g) cooked **great northern or navy beans**

1/4 – 1/2 lb (125–250 g) bacon

2 tsp (10 mL) minced garlic (or 2 cloves)

1 cup (250 mL) chopped onion

1/4 cup (50 mL) brown sugar

1/2 tsp (2 mL) dry mustard

1 tsp (5 mL) salt

1/4 cup (50 mL) ketchup

1/4 cup (50 mL) molasses

1/4 cup (50 mL) maple flavoured syrup

1 1/2 cups (375 mL) water

Place bacon, onions and garlic in bottom of 2-quart casserole dish and add drained cooked beans. In medium bowl, stir together brown sugar, salt and dry mustard. Then add ketchup, molasses, syrup and water, and mix together.

Pour over beans. Cover and bake at 300°F (150°C) for 4 hours, stirring occasionally. Remove cover for the last hour to allow beans to brown.

BEST Chocolate Brownies

Makes 16 Servings

2 squares Baker's unsweetened chocolate

1/2 cup (125 mL) butter

1 cup (250 mL) sugar

1/2 cup (125 mL) **BEST whole pinto bean flour**

2 eggs

1 tsp (5 mL) vanilla

Pinch of salt

Melt chocolate and butter on low heat. Remove from heat and add sugar and flour. Beat each egg before adding to mixture. Add vanilla and pinch of salt. Pour into greased 8" x 8" pan. Bake for 25 minutes at 375°F (190°C). This recipe can be doubled, tripled and quadrupled with no ill effects.

Recipes featured on Great Tastes of Manitoba – September 6, 2014

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