NEWS & VIEWS

From the Bean Field

SEPTEMBER 2019

MESSAGE FROM THE CHAIR

The harvest has begun!

The sun had set but I could see a combine in a glowing cloud of dust near Thorndale. As I drove by the earthy smell confirmed my hunch. It was a beaner taking off an early field of crans.

We kid other growers about getting "bean fever" this time of year. I think it's a way of psyching ourselves up for the endurance needed to harvest a crop that can deteriorate quickly. The crop "looks" good in my area but I'm reluctant to say much until it's off the field. A lot can happen to beans between maturity and harvest. All part of the challenge and excitement.

I do want to say a few words about an additional challenge many growers face this year, the loss of glyphosate as a pre-harvest aid. It is unfortunate and there is no scientific consensus to support concerns. However, remember that this is being demanded by the buyers of our beans through our dealers. There is no tolerance for using glyphosate where not permitted. The consequences are not just rejection at the individual grower level but the credibility of the entire Ontario bean industry!

We have good pre-harvest aids and desiccants available. Use them according to your dealers recommendation and let's show the bean buyers and consumers of the world that Ontario beans are the best.

Have a great safe harvest,
Mike

SAVE THE DATE

Ontario Bean Growers Annual General Meeting

February 25, 2020

Arden Park Hotel, Stratford

2019 LICENSE FEES

License Fees for all markets classes of dry bean will remain $6.80 per MT.

BETTER WITH BEANS™

ACREAGE REPORT

Planted acres in Ontario are up significantly this year from 107,107 in 2018 to 130,062. White beans acres increased by 13,884, from 47,633 in 2018 to 61,517 in 2019. Adzukis gained 6,108 acres over 2018. Black beans and Cranberry acres dropped by 1,154 and 604, respectively, over the previous year Kidney Beans and Otebos (Japan/Other) both saw increases.

Manitoba's acres are up by 37,745 to 154,538 in 2019.

In the US, North Dakota continues to lead bean production with 600,000 acres planted this season, down 35,000 acres from 2018. Michigan and Minnesota are the only two states to see an increase in acres this year with 210,000 and 205,000 acres planted. Nebraska, Idaho and Washington trail with 120,000, 65,000 and 20,000 acres. Total US dry bean planted acres for 2018 is 1.834 million, down from 2.092 million in 2017. It should be noted that chickpeas were removed from the dry bean report as of this year and as such, could be the reason for decreased acres. Source – USDA.

Insured Acres	ON	MB	AB
Whites	61,517	43,654	
Blacks	10,566	27,308	8,596
Crans	12,728	7,931	
Kidneys	16,760	12,358	
Japan/Other – ON Great Northern – AB Great Northern/ Pinks - MB	9,046	7,363	29,799
Adzuki	19,445	-	-
Pinto	-	55,924	26,826
Small Red/Yellow	-		9,714
Total	130,062	154,538	74,935

Ontario Data provided by Agricorp Manitoba Data provided by MASC
Alberta Data provided by AFSC

Canadian Agricultural Partnership provides funding for additional OBG projects

Ontario Bean Growers (OBG) successfully obtained funding for two additional projects through the Canadian Agricultural Partnership during the fall 2018 intake.

"Through the Canadian Agricultural Partnership, we are ensuring producers have the tools they need to succeed," said Marie-Claude Bibeau, federal Minister of Agriculture and Agri-Food. "These investments will reduce crop loss, support the sustainability of bean production and will help to grow consumer demand for these high-quality products."

"We are happy to support the Ontario Bean Growers through the Canadian Agriculture Partnership in their work to move their industry forward through innovative research projects being conducted with the University of Guelph," said Ernie Hardeman, Ontario Minister of Agriculture, Food and Rural Affairs.

The objective of the first project, **Bean Breeding Germplasm Screening for Resistance to Emerging Diseases**, led by Dr. Peter K Pauls is to screen the germplasm that might be used by the Bean Breeding and Genetics program at the University of Guelph for resistance to existing and emerging diseases. The information about the disease resistance spectrum of potential materials will be used to make selections from potential parents and will allow us to match resistances in the crossing designs to maximize the diversity of disease resistance in the progeny.

The plan is to screen all the bean lines used as parents in each year for molecular markers linked to genes that provide resistance to bean mosaic virus, anthracnose (caused by race 74) and common bacterial blight. As well, materials will be screened, phenotypically, for resistance to emerging pathogens, including: brown spot caused by Pseudomonas and race 105 of *Colletotrichum lindemuthianum*.

This process ensures that the new varieties that are being developed have the appropriate spectrum of resistance genes to existing and emerging viral, bacterial and fungal pathogens, thus protecting the crop against losses to diseases and reducing the need for applications of chemical controls. The reduced need for chemical controls of diseases, like anthracnose, reduces costs of production and increases the sustainability of crop production practices that are under increasing scrutiny by consumers.

The second project, **Comparative Effectiveness of Bean Promotion Strategies Using Multiphase Optimization: Pilot Study**, is led by Dr. Paula Brauer, also at the University of Guelph. Dried beans are often recommended in guidelines for reducing chronic disease risk, yet Canadians have not traditionally eaten many bean dishes and intake has not been increasing to date. New approaches to promotion are needed.

The goal of this pilot project is to complete a three-week test in 32 people to assess the feasibility of a new study design to directly compare effectiveness of diverse promising bean products and promotional strategies to increase short-term consumption and future intention to consume beans. For example, dietitian counselling will be compared to other marketing approaches such as provision of coupons, You-tube cooking videos, meal-kits, as well as various combinations of approaches.

OBG will be able to use the data collected through this pilot to better hone our promotional strategies, but ultimately, the success of the project will provide the research team with the data they need to secure funding for a full-scale study.

This project was funded in part through the Canadian Agricultural Partnership (the Partnership), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of the Partnership in Ontario.

ONTARIO Bean GROWERS

BETTER WITH BEANS™

Made-in-Ontario Yield Monitor Now Available for Dry Bean Combines

Meghan Moran, Canola & Edible Bean Specialist OMAFRA

In 2014 an Oxford County farm family, the Vollmershausens, were looking around for a yield monitor for their Pickett combine. The Vollmershausens grow kidney and cranberry beans which are harvested by pulling and windrowing, then picked up and threshed by a Pickett combine. Large seeded dry beans are somewhat delicate and must be handled gently so that the final product is visually appealing and free from split and cracked beans. For this reason, bean combines such as the Pickett have bucket elevators to move beans into the bin, and the bin is unloaded by dumping rather than using an auger.

Figure 1. The Vollmershausen's Pickett Twin Master dry bean combine in action.

Most direct-harvest combines, like those used for corn and soybeans, have a mass flow yield monitor. These use a load cell to convert the force applied by grain striking an impact plate into an electrical signal. The amplitude of that signal is used to estimate grain mass or yield through calibration specific to the equipment and the grain type. With mass flow yield monitors the grain strikes the impact plate with a force significant enough to crack large, delicate beans like kidney or cranberry beans, which is why they are not used.

https://upload.wikimedia.org/wikipedia/commons/transcoded/a/a0/GrainMassFlowSensorVideo.webm/GrainMassFlowSensorVideo.webm.480p.vp9.webm

This is old news for Ontario's dry bean producers. What's new is that when the Vollmershausens made inquiries about a yield monitor for their Pickett combine, an Ontario company created one. Greentronics, founded in 1994 and located in Elmira, design and manufacture electronic control products for use in agriculture. Bill Menkveld works in sales and his brother Bert is the technical guy who designs and creates new technology. With the use of the Vollmershausen's equipment as well as drawings of the combine sourced from Pickett, Greentronics created a prototype load cell yield monitor. Three of these yield monitors have now been installed on Pickett combines - one in Manitoba and two in Ontario.

The Menkvelds decided they could measure torque on the hydraulic motor that drives the elevator leg of the Pickett combine. A load cell installed on the motor measures the force or strain on that component, which has a linear relationship with the weight of beans moving in the elevator. The technology is not new, it is just being applied in a slightly different way. The Vollmershausens actually have a Twin Master Pickett combine, so the hydraulic motor on the bucket elevator also drives a cross auger for the second elevator and drives a straw walker shaft that distributes plant material inside the machine. The Menkvelds wondered if varying levels of plant material moving across the straw walker would impact how hard the motor is working, throwing off the yield measurements, but so far they are seeing a good linear relationship and this simple design is working well.

Figure 2. Yield monitor installed on elevator leg of Pickett combine.

The yield monitor data can be viewed on a Trimble or John Deere display,

and maps and statistics can be viewed in real time during harvest. With a John Deere 2630 display (a.k.a. Gen 3 display) it is possible to wirelessly upload the data to your office through the John Deere Operation Center, and data can be overlaid with other information to look for relationships. The yield monitor also collects data on its own memory and tracks additional details that are not viewed on the Operation Center, such as changes to calibration or details on performance of the device. This allows users to see how it is working, or for Greentronics to adjust how the device is performing. The Menkveld's plan to collect some data off the existing yield monitors and ensure they are performing at their best.

Figure 3. Real time yield mapping of cranberry beans.

The two yield monitors installed on combines in Ontario are being used in a research project funded by Ontario Bean Growers and the Canadian Agricultural Partnership. The project objectives include demonstrating the use of this new yield monitor in cranberry beans and measuring yield response to various seeding rates towards improved recommendations for variable rate seeding of dry beans. The three-year project is being conducted on 3 white bean fields and 3 cranberry bean fields and utilizes the Enhanced Learning Block System developed by Premier Cropping Systems. It is a farmer-led project with significant support from Greg Kitching at Premier Equipment. The yield monitors are critical in terms of collecting data on the response of cranberry beans to seeding rates ranging from 40,000 to 82,500 seeds/ac across 100 acre fields. The project is entering its second field season, and results will be available through Ontario Bean Growers events and newsletters.

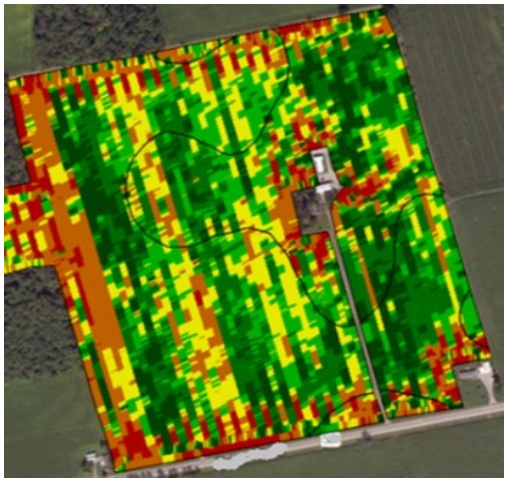

Figure 4. The first cranberry bean yield map produced with the Greentronics Yield Monitor. There are small kinks to work out, specifically the time delay adjustment at the edge of the field as beans move from the combine head to the elevator.

Greentronics have been developing similar technology for other types of combines. They have installed monitors on veggie harvesters, where yield data is collected by a load cell on the support rollers of conveyors within potato harvesters, for example. Bill Menkveld credits Tyler Vollmershausen for being an innovative thinker and prompting them to develop the dry bean yield monitor. The Vollmershausens had the first prototype installed on their combine on a spring day and worked with the Menkvelds to test its performance with buckets of beans in their yard. Bill seems quite pleased that the development is farmer-driven, and Tyler is keen to support this made-in-Ontario technology. Having yield maps for high value, large seeded beans offers a significant advancement in a producers' opportunity to confidently refine their best management practices.

This project was funded in part through the Canadian Agricultural Partnership (the Partnership), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of the Partnership in Ontario.

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