

September 2018

# canola DIGEST

The Source for Canada's  
Canola Growers

## GOLD RUSH

Results from the CGC Harvest  
Sample Program show an  
uptrend in canola oil content.  
Genetics are a big reason. / Page 12

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Stretched too thin?

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## GOLD RUSH: CANOLA OIL CONTENT RISING

The value of canola is based on the percentage of oil in the seed, the quality of that oil and the percentage of protein in a tonne of meal. Through the Canadian Grain Commission Harvest Sample Program, we know that oil content is going up, quality remains well within canola standards and meal protein content is steady.

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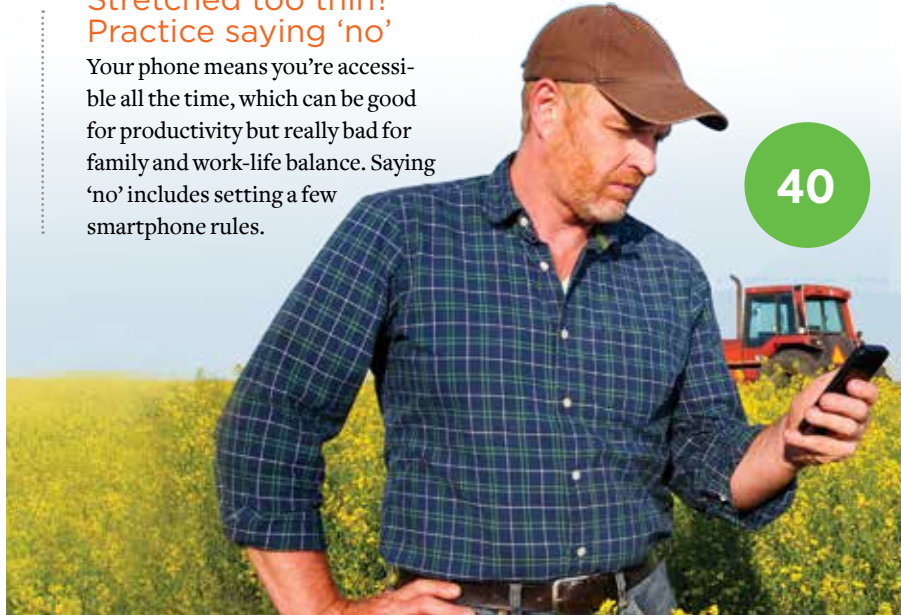
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### CANOLA DISCOVERY FORUM

October 22-23 | Banff, Alberta  
[regonline.com/2018cdf](http://regonline.com/2018cdf)

### ALBERTA CANOLA'S POWERING YOUR PROFITS TOUR

November 13 | Grimshaw & Vermilion  
November 14 | Nampa, Vegreville & Airdrie  
November 15 | Westlock & Grand Prairie  
November 20 | Lacombe & Lethbridge  
November 21 | Medicine Hat & Stony Plain  
November 22 | Camrose  
[albertacanola.com/pyp](http://albertacanola.com/pyp)







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# Event horizon

**N**obody likes to get beat over the head with “you should do this” messages. A large percentage of people don’t like to get told what to do at all or by any means: Beat over the head. Rap on the knuckles. Kid gloves. But how about subtle persuasion? Here is a series of memorable events I experienced over the past six months. They fit a specific theme marked by discovery, concern and then clarity.

**Event 1.** canoLAB in Brandon, Man. in March included a few presentations on other crops, including one by Manitoba Agriculture’s Holly Derksen and AAFC’s Debra McLaren on soybean diseases. In that presentation, I learned about phytophthora root rot: “It is soil-borne and can move from field to field with soil tag on machinery,” the presenters said. Of course I connected the dots to clubroot and a light bulb went on. In canola world, we talk a lot about moving soil, moving clubroot. But moving soil also moves verticillium, aphanomyces (of pea and lentil), phytophthora (of soybeans), weed seeds, nematodes and probably lots more. Every field and possibly every crop is at risk of something that moves in with dirt tag.

**Event 2.** David Lobb, professor in the Department of Soil Science at the University of Manitoba, made a presentation to the Canola Council of Canada agronomy team on April 10. Lobb reminded us that before the grasslands and treed areas of the Prairies were broken for farming, every acre had a layer of “A horizon” topsoil at the top, a lower quality “B horizon” layer below and an unproductive “C horizon” at the bottom. Over time, tillage and erosion removed the A horizon from hill tops. It also removed some B horizon. Good soil that didn’t wash into ditches and rivers or blow to Toronto settled in low areas of the fields. We can all remember seeing those bald hill tops in the days before reduced tillage. The real eye opener for me from Lobb’s presentation – and it seems so obvious now – is that when those exposed knolls

of C horizon erode, where does that awful unproductive stuff go? It also moves to the low spots and buries the B horizon and A horizon soil! Lobb says some farms are digging into their low areas to uncover the good soil and pile it back on the hill tops.

**Event 3.** Ag In Motion is a pretty spectacular outdoor farm show. A small city of farmers and ag industry reps pops up in the middle of the Prairies for three days in July. A big draw this year was the tillage demonstration. Big tractors, big tillage tools, turning over, loosening up and moving all kinds of soil. Tillage can be a solution to wet spots, weeds and excess residue, and companies are rolling out some pretty impressive multi-tools. But farmers of Western Canada have been world leaders over the past few decades in adopting successful farming practices that don’t depend on tillage.

**Event 4.** At the same time in that same temporary farm city in a field northwest of Saskatoon, the Redekop booth was much, much quieter than the tillage demo. I talked with Redekop rep Frank Friesen, who knew my home turf quite well. (Dand, Man.) Redekop makes the hefty MAV straw chopper, an after-market add-on that can boost the chop and spread of crop residue, perhaps eliminating the need for residue-managing tillage. In Canola Watch, we often emphasize the importance of residue management for improved seed placement. We also say residue management begins with the combine. MAV provides a boost where the standard chopper might come up short.

In recounting these events, I am reminded why conferences, farm shows and agronomy events are so important to good business. A person can gather various ideas and perspectives, make valuable contacts and collect evidence to justify a new tech investment. And sometimes you discover again why practices your farm adopted 25 years ago are still the best way to go. Catch that subtle persuasion? 🌻



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# ACTIVATED

## THE CANOLA ROTATION INOCULANT HELPS YOU COUNTER REDUCED YIELD AFTER CANOLA

### Why should you make your soil come alive?

BY MARC BELAND, Biol., M.Sc.

Many agronomists and retailers in Saskatchewan and Manitoba have successfully recommended AGTIV® at the time of seeding into canola stubble. Growers have seen the benefits in the bin, and continue to integrate inoculants with mycorrhizae for proven results. Mycorrhizae are beneficial symbiosis between mycorrhizal fungi and plant roots. They **CONNECT** roots to soil thanks to the development of a secondary root system that **reaches more nutrients and water**. Therefore, get more out of the fertilizer you've already invested into the crop.

It is well known that crops following canola in a rotation generally tend to demonstrate reduced yield, compared to results when seeded after another crop. It can largely be explained by the relationship (or lack of relationship) between canola and mycorrhizae. Furthermore, canola roots exude a toxic compound that reduces populations of beneficial microorganisms in the soil. A study by Gavito and Miller<sup>1</sup> examined the presence of mycorrhizae in a corn crop following canola. They discovered it took 62 days for the mycorrhizae population to return to the same level it was before the canola crop. **AGTIV® gives you an early start** by re-introducing mycorrhizae close to the seed at seeding, bringing the full benefits of increased nutrient and water uptake.

AGTIVate the soil on your farm and maximize your yield potential in field following canola. Learn more on [PTAGTIV.com/canola](http://PTAGTIV.com/canola) and consult the **proven yield results** of third party trials comparing AGTIV®'s dual inoculant (rhizobium & mycorrhizae) to different inoculants on the market for peas, soybeans and lentils.

<sup>1</sup> Gavito, M. E. and M. H. Miller, 1998. Changes in mycorrhizal development in maize induced by crop management practices. Plant Soil. 198: 185-192.

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## Leaders wanted to represent Alberta canola growers



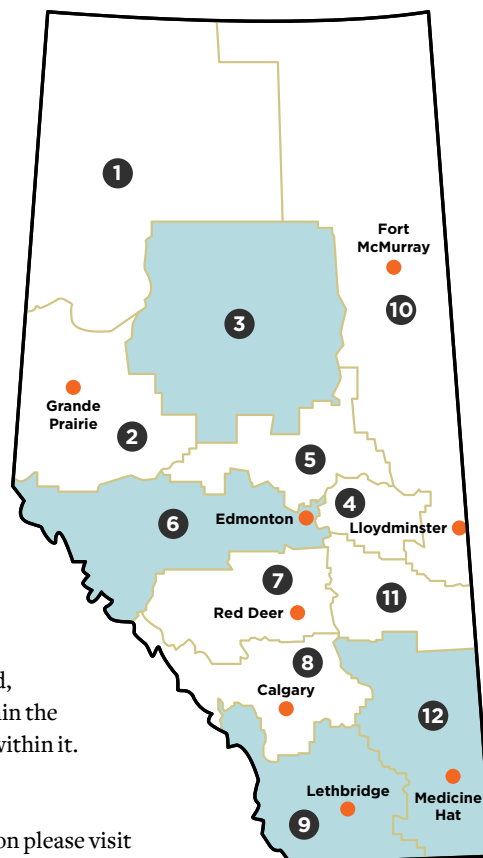
The Alberta Canola Producers Commission is seeking four canola growers to serve as directors on the board of directors for a three-year term. This year, directors are needed in regions 3, 6, 9 and 12.

Alberta Canola divides Alberta into 12 regions, with each region electing a producer director to represent the canola growers within that region. The Board of Directors meets quarterly and is guided in decision making by five committees comprised of board members: Agronomic Research, Governance and Finance, Grower Relations and Extension, Government and Industry Affairs, and Market Development.

### WHO CAN BECOME A DIRECTOR?

Anyone who has paid a service charge on canola to Alberta Canola since August 1, 2016, is an eligible producer and can stand as a director. Eligible producers can be individuals or represent a corporation, partnership or organization. In order to be nominated, eligible producers must grow canola within the defined region but do not have to reside within it.

For detailed descriptions of the regions, more information or to make a nomination please visit [albertacanola.com/elections](http://albertacanola.com/elections) or call the office at 780-454-0844.



## Powering Your Profits tour

Get the knowledge you need to be more successful at one of our 12 Powering Your Profits Tour stops across Alberta this November. Topics will include agronomy, marketing, and business management.

### FIND AN EVENT CLOSEST TO YOU AND SAVE THE DATE.

<b>NOVEMBER 13</b> Grimshaw Vermilion	<b>NOVEMBER 20</b> Lacombe Lethbridge
<b>NOVEMBER 14</b> Airdrie, Nampa & Vegreville	<b>NOVEMBER 21</b> Medicine Hat Stony Plain
<b>NOVEMBER 15</b> Westlock Grand Prairie	<b>NOVEMBER 22</b> Camrose

Get complete details  
at [albertacanola.com/pyp](http://albertacanola.com/pyp).

**Powering Your Profits**   
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## “Is this what all those yellow fields are?”

By Ward Toma, General Manager, Alberta Canola

One of the rewards for driving around Alberta in the beginning of July is the amazing sight of the millions of acres of canola in bloom. The vast prairie landscape becomes a large yellow and green patchwork that stretches to the horizon. In the full sun, some of the larger fields are nearly blinding they're so bright. Not only does it accentuate the size of the place, but importance of the work we do on behalf of the canola farmers in Alberta.

It was with that in mind last week I made my way to Calgary to lend a hand in the Alberta Canola booth at the Calgary Stampede, where nearly every conversation I had began with some version of, “Is this what all those yellow fields are?” The Greatest Outdoor Show on Earth occurs at the same time the canola crop in Alberta is in full bloom and when attendees get a glimpse of the Alberta Canola booth with bright pictures of canola fields, they make a beeline straight to the booth tell us all about how pretty those fields are and ask a thousand questions about farming in Alberta and canola oil and meal and all the different ways they are used. If you can imagine the question, it was asked.



*Tanya Pidsadowski, Alberta Canola's Public Engagement Coordinator, talks about canola at the Calgary Stampede.*

It's the best consumer engagement scenario one could ask for: consumers, some literally running to ask you questions. It really speaks to how far away from farming so many people are. And just as the yellow fields break up the endless prairie view, introducing an urban consumer to a canola farmer that planted those yellow fields has the same impact; the urban-rural divide is not as large anymore.

Read the full post at [albertacanola.com/connects](http://albertacanola.com/connects).

## Melissa Damiani on canolaPALOOZA



*Melissa Damiani, a young farmer and agronomist attended canolaPALOOZA and shares her experience from the 2018 event. Read the full post at [albertacanola.com/connects](http://albertacanola.com/connects).*

I showed up hoping to quickly tour through and ask a few questions before getting back to work. I ended up spending the entire day there asking questions and having great in-depth discussions with the experts that were there! What an awesome event and a wonderful one-on-one learning opportunity for people with all levels of experience.

Not only do you have experts there to answer all your questions, but almost all of the stations have actual plots with live plants/bugs/diseases/equipment, etc. so you can get in, get your hands and boots dirty, and gain first hand physical experience with the topics you are discussing. The staff at the Lacombe Research Centre do an exceptional job of planting these plots for our learning experience.

## canolaPALOOZA 2018



The biggest agronomy event of the summer, canolaPALOOZA, was held on June 27 at the Lacombe Research and Development Centre. This year's event, the fourth annual, had over 600 people come through to visit more than 25 stations. Station topics ranged from stand establishment to integrated pest management to combine optimization & harvest management and everything in between. More than 125 instructors ensured that there was an expert answer for every canola question.

## Call for Nominations: Election for SaskCanola Board of Directors



The Saskatchewan Canola Development Commission (SaskCanola) is now accepting nominations to fill four positions on the Board of Directors starting in January 2019. SaskCanola is looking for board members who have a desire to strengthen and grow the canola industry. The call for nominations opened Aug 1 and closes Friday, Sept 28 at 12:00 PM CST.

The SaskCanola Board is comprised of a total of eight directors. Board members are elected for a four-year term and are eligible to be re-elected for a second four-year term. Nominees for the board must be registered canola producers; a registered producer is any producer who has sold canola and paid levy in either of the previous two crop years.

Registered producers who endeavour to be elected to the Board of Directors should contact SaskCanola via email at [info@saskcanola.com](mailto:info@saskcanola.com) or call 306-975-0262 for a nomination package. All applications must be received no later than 12:00 PM CST on Sept 28, 2018. For further details regarding SaskCanola's election, visit [saskcanola.com/election](http://saskcanola.com/election).

## Joan Heath Inducted into Saskatchewan Agriculture Hall of Fame



It is SaskCanola's distinct honour to congratulate Joan Heath on her induction in the Saskatchewan Agriculture Hall of Fame. Joan, her husband Corey Loessin, and their two children, Audra and Aidan, farm near Radisson with a focus on grains, pulses and oilseeds. Joan is the former Executive Director of the Saskatchewan Canola Growers Association, former SaskCanola

Market Development & Communications Manager, and former SaskCanola Boardmember, Vice-Chair, and Chair. Joan's been a strong advocate for the agricultural community and the canola industry for nearly 30 years. Thank you for your leadership and advocacy Joan. Your canola family is so grateful for and proud of you!

*Joan Heath shakes hands with the Honourable Lyle Stewart as she is inducted into the Saskatchewan Agriculture Hall of Fame.*



## SaskCanola Research Manager Awarded 2018 Outstanding Agrologist of the Year

The SaskCanola team is extremely proud of and would like to congratulate Errin Willenborg, our Research Manager, on being the deserving recipient of the 2018 Outstanding Agrologist of the Year as awarded by the Saskatchewan Institute of Agrologists.

*From L-R: Doyle Wiebe, Ellen Grueter, Errin Willenborg, Tracy Broughton, Regan Udell, and Michelle Voykin.*



# SaskCanola Joins Facebook



In a grower communications survey we conducted this past winter, 93 per cent of growers reported being relatively satisfied with the information and communication they receive from SaskCanola. One gap in communications that was identified by growers was Facebook, so we have addressed it by adding this social media platform to our repertoire. Follow us and like our page on Facebook @SaskCanola.

Other popular ways to stay connected with SaskCanola, as reported by growers, include our monthly e-newsletter (sign up at [saskcanola.com/news/subscribe.php](http://saskcanola.com/news/subscribe.php)) and Twitter. Follow us on Twitter @SaskCanola.



## SaskCanola Awards \$90,000 in Prestigious Scholarships to University of Saskatchewan Graduates

SaskCanola is pleased to announce that we have awarded the prestigious Dr. Roger Rimmer Award for Excellence in Graduate Research to five graduate student researchers for the 2017-18 year. The scholarship program offers \$18,000 per year for a maximum of two years to students entering or continuing studies in a M.Sc. or Ph.D. program at the University of Saskatchewan whose thesis projects deal with an important aspect of either the development or utilization of canola as determined by the SaskCanola Board of Directors.

Five deserving recipients were chosen based on both their thesis projects' suitability to SaskCanola and academic achievement:

- Jennifer Bell *studying the effect of feeding yeast-fermented canola meal on the nutrient digestibility and growth performance of rainbow trout and Nile tilapia.*
- Shanay Williams-Johnson *studying the transcriptome analysis to identify genes for tolerance of abiotic stress in B. napus.*
- Musharaf Hossain *studying the identification and functional characterization of putative effectors of Plasmodiophora brassicae and their role in regulating cell death during infection.*
- Zayda Morales *studying the canola seed microbiome: a new approach towards improving crop productivity in a sustainable way.*
- Yan Ran Tang *studying the development of a canola-based oleogel.*



## Meet Canola Eat Well Ambassador: Chef Ned Bell



### Diving in and Digging Deeper

Canola Eat Well inspires people in the kitchen and connects them to the farm through Canada's oil: canola oil. Canola Eat Well is the market development canola oil outreach and brand in Canada.

#### Why work with food communicators?

It's about cultivating a community of ambassadors to share the farmer's story about canola farming, sustainability and the health of canola oil. It strengthens the farm voice, it amplifies the farm story and it keeps you, the farmer, as a trusted source on how food is grown.

#### Meet Chef Ned Bell.

Father, proud Canadian chef and global sustainability champion.

#### What do love to do?

First and foremost, for me as a chef, I already get to do what I love, which is cook tasty things, and I can't do that without Canadian farmers. I look forward to celebrating what they grow, what they raise, what they ranch and making it as delicious as I can for the people that I love.

#### What do you cook at home that you never cook at the restaurant?

That's pretty simple, my boys love macaroni and cheese!

#### Why do you use canola oil in your kitchen?

I use canola oil in the kitchen because it is versatile, neutral in flavor or course it is grown by Canadian farmers and it makes my food delicious.



#### Who's the most fascinating person you've ever cooked for?

The most fascinating person I've cooked for? That's also easy. Princess Kate! I got to feed her geoduck – which of course is giant clam and she was all about it – it was pretty spectacular.

#### What are you most excited about right now?

The thing I am most excited about right now is just continuing to travel across Canada, learning from Canadian farmers, fisherman, ranchers and artisans, looking for the next delicious thing that is going to find its way onto one of my plates.

Learn more at [canolaeatwell.com](http://canolaeatwell.com) and search "Ned Bell".

Join the #CanolaConnect community online. The city gate has been opened for you. Your voice, your story, your engagement matters. Together, ambassadors and the #CanolaConnect community becomes a united voice for farm families like yours.



#### Definition: Ambassador:

Canola Eat Well ambassadors are dedicated to sharing the knowledge and passion to their audiences about canola farming, canola oil and sustainability.



# High School Scholarship Winners

Manitoba Canola Growers are proud to announce the 2018 high school scholarship winners. Five \$1,000 scholarships have been awarded to the following deserving students from across Manitoba.

## This year's recipients are:



**CURTIS JOHNSTON**  
*Teulon*

He is enrolled at the University of Manitoba in the Agriculture Diploma program.



**ASHLYN KIRK**  
*Hamiota*

She is enrolled at the University of Regina in the Faculty of Science.



**EMILY LINTS**  
*Hamiota*

She is enrolled at the University of Regina in the Faculty of Arts.



**JENNA MILLER**  
*Glenboro*

She is enrolled at Brandon University in the Faculty of Science.



**RUSSELL PAULS**  
*La Riviere*

He is enrolled at Assiniboine Community College in the Agribusiness Program.

The \$1,000 scholarships are available to students who are from a farm that is a member of the Manitoba Canola Growers and are planning to attend post-secondary education in any field within two years of graduating. Students submitted their applications, which were then judged by an independent panel, based on academic

standing, canola connection, references, essay submission and school and community involvement.

Congratulations to this year's winners! We wish you the best of luck as you pursue your chosen careers.

## Pest Surveillance Initiative Lab

Free Blackleg Race Identification Testing for Members.

Pest Surveillance Initiative (PSI) is a project of the Manitoba Canola Growers Association and Manitoba Agriculture, with funding from the Growing Forward 2-Growing Actions program.

The original focus of this initiative was on technologies that allow the detection and mapping of low concentrations of clubroot in Manitoba. Capabilities of the lab have now expanded to include testing and mapping for glyphosate-resistant kochia and most recently testing for blackleg and identification of different blackleg races.

Using this testing, farmers will have the ability to choose their blackleg-resistant canola

varieties based on test results to match the race that they have in field.

"Choosing a canola variety that specifically protects against the races of blackleg in your field is critical to protect your seed investment and make sure the resistance works in your crop," says Ron Krahn, MCGA board member and research committee chair.

As a core funder of the PSI Lab, Manitoba Canola Growers are pleased to offer one free blackleg race identification test (\$200 value) per member for the first 400 members.

To claim your free test, please visit **mbpestlab.ca**.



The value of canola is derived from the percentage of oil in the seed, the quality of that oil and the percentage of protein in a tonne of meal. Through the Canadian Grain Commission Harvest Sample Program, we know that oil content is going up, quality remains well within canola standards and meal protein content is steady.

# GOLD RUSH: CANOLA OIL CONTENT RISING

BY JAY WHETTER

**C**anadian canola growers aren't paid directly for oil content, but higher oil content in general is good for their business. A significant rise in oil content over the past 15 years helps underpin a strong processing industry, which increases marketing opportunities.

To be called "canola" oil, the oil must come from seeds of the genus *Brassica* (*Brassica napus*, *Brassica rapa* or *Brassica juncea*) and contain less than two per cent erucic acid in its fatty-acid-profile. In Canadian canola these past number of years, erucic acid rarely blips much above zero. The bigger factor is overall oil content.

Canadian canola, based on data from the Canadian Grain Commission (CGC) Harvest Sample Program, had 45.0 per cent oil in 2017, up from 44.5 per cent in 2016 and the five-year average of 44.2. For comparison, the five-year average for 2000-04 was under 43.

Oil is the high-value component in canola seed. The canola oil average price for 2016-17 was \$986 per tonne, based on market statistics posted at [canolacouncil.org](http://canolacouncil.org). The canola meal average price for 2016-17 was \$337. If delivered canola seed trends toward more oil and less meal, this has an overall positive effect on the value of canola.

"This rise in oil content is one of the most positive trends," says Veronique Barthet, program manager, oil-seeds research, for the CGC. "For crushers, oil still has more value than anything else."



At the Canadian Grain Commission's Grain Research Laboratory, technician Hayeon Oh uses the gas chromatograph machine to measure the oil profile of canola samples.



Why is oil content going up? Big changes year to year, such as 2001 versus 2002, or region to region are due to weather, Barthet says. Low oil content in Southern Alberta in 2017, for example, was due to hot, dry conditions in the region, she says. But the long-term uptrend is due to genetics. “The longer you leave canola plants standing in the field, the more the seeds mature and the higher the oil content,” says Barthet. “Genetics such as pod-shatter tolerance, which lowers the risk for leaving canola standing longer, has helped.”

CGC also tracks oil quality, including the fatty acid profile, chlorophyll and free-fatty acids. The largest components of the canola oil fatty acid profile are saturated fat, monounsaturated fat (oleic acid) and polyunsaturated fat (alpha-linolenic and linoleic acid). Saturated fat is trending downward. The average was 6.5 per cent in 2017 and the five-year average is 6.7.

“Saturated fat is not only lower, but stable regardless of environment. This is a credit to the breeders,” Barthet says.

Oleic acid is trending upward; the five-year average is 62.9 per cent. Alpha-linolenic acid content is trending downward; the five-year average is 9.4 per cent. Alpha-linolenic acid, the “omega 3” fatty acid, started going down with the switch away from rapa and decreased again when hybrids took over, Barthet says. It is still much higher than soybeans, which is good, she says, because alpha-linolenic acid is another positive that differentiates canola oil from soybean oil.

Chlorophyll is not usually an issue and is entirely weather driven. No.1 canola cannot have more than two per cent “distinctly green” seeds. Processors use something more precise: They want less than 25 milligrams of chlorophyll per kilogram of seed. In 2017, Canadian canola had an average chlorophyll content of 11 mg/kg, down from 12 in 2016 and 13 in 2015. Barthet says low chlorophyll levels recently are the result of extended fall frost-free periods for most regions.

**“The longer you leave canola plants standing in the field, the more the seeds mature and the higher the oil content. Genetics such as pod-shatter tolerance, which lowers the risk for leaving canola standing longer, has helped.”**

—Veronique Barthet



To use the name ‘canola,’ an oilseed plant must meet this internationally regulated standard: “Seeds of the genus *Brassica* (*Brassica napus*, *Brassica rapa* or *Brassica juncea*) from which the oil shall contain less than two per cent erucic acid in its fatty acid profile and the solid component shall contain less than 30 micromoles of any one or any mixture of 3-butenyl glucosinolate, 4-pentenyl glucosinolate, 2-hydroxy-3-butenyl glucosinolate, and 2-hydroxy-4-pentenyl glucosinolate per gram of air-dry, oil-free solid.”



## What causes oil and protein content to vary?

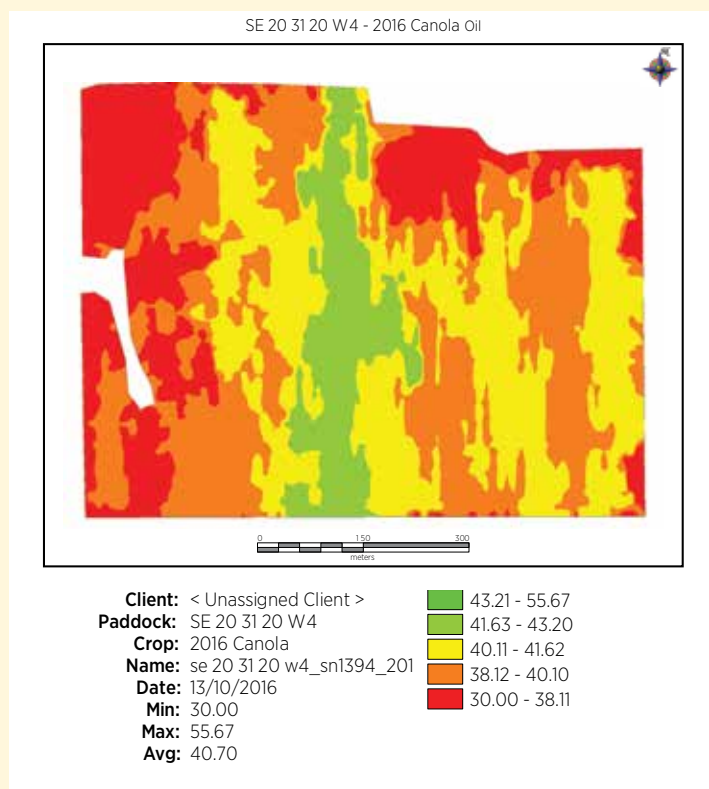
Canola can have a wide range in oil content. As shown in Canadian Grain Commission Harvest Sample Program results, Western Canadian canola had an average of 45 per cent oil in 2017, but the range among samples was 36.9 to 51.2. This is typical.

Reasons are mostly related to growing conditions across a region. Hot and dry conditions will see oil content go down. Variation across a field is also significant, suggesting soil conditions, soil quality and fertility are factors.

Steve Larocque, owner and lead agronomist with Beyond Agronomy, recently mounted a \$28,000 CropScan 3000H on his combine. It uses near infrared (NIR) to measure protein, oil content and moisture every six to seven seconds. He tested it on one field in 2017 on his farm at Morin, Alberta, and the canola oil content ranged from 30 to 56 per cent across the field. The variety was L252 and it was straight cut.

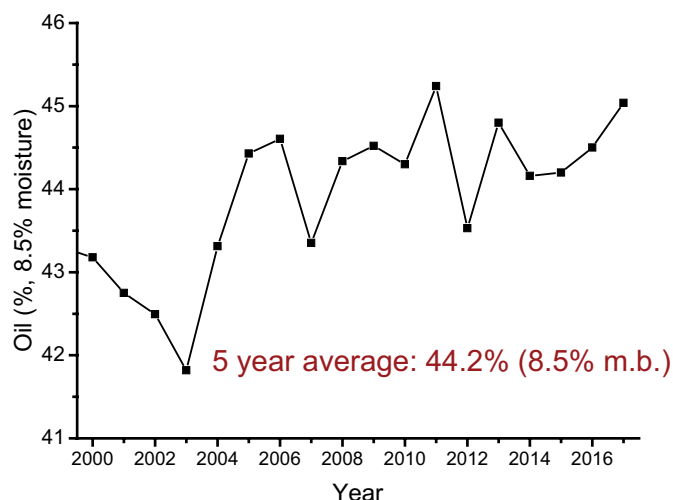
Larocque says driving factors can be nitrogen-to-sulphur ratio, temperature during grain fill and subsoil moisture content, but he doesn’t know yet which are the most important factors for oil content. “I have barely begun to dig into the number of variables that can impact oil content,” he says.

Protein content is wide-ranging as well. Harvest Sample Program results showed an overall canola seed protein content of 20.1 per cent in 2017 (38 per cent protein in the meal itself), but the range was 14.2 to 29.3 per cent. As with oil content, the reasons for variability are not well understood.



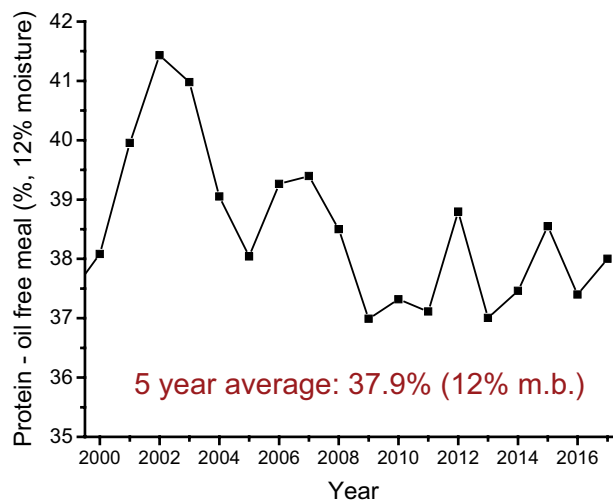
Steve Larocque used a new monitoring tool on his combine to measure canola oil content every six seconds. This map shows how oil content can vary across a field. Red areas were as low as 30 per cent oil and green areas were as high as 56 per cent.

Oil content – Canola No.1 Canada 2000-2017



Results from the Canadian Grain Commission's Harvest Sample Program show an increase in oil content for Canadian canola over the past 17 years.

Meal protein content – Canola No.1 Canada 2000-2017



Percentage of protein in Canadian meal is still above the 37 per cent threshold, according to results from Canadian Grain Commission's Harvest Sample Program, but this is lower than it was a decade ago.

Processors also pay attention to free fatty acids (FFAs) in the oil. These oxidize (go rancid) quickly and affect the smell and taste of oil, so they have to be removed in processing. Processing companies have a cap of 0.5 or 1.0 per cent FFAs on the canola they'll accept without penalty. This is usually easily achieved. Average FFAs content was 0.17 per cent over the past five years. The trend is flat, but some regions have weather-related blips. Manitoba averages were 0.34 and 0.33 per cent in 2016 and 2015, mostly due to hot summers. Canola spring-harvested in Alberta and Saskatchewan in 2017 also had high in FFAs. CGC research on spring-harvested canola in 2017 found it to be less stable, showing a rapid rise in FFAs after just one month in storage. "For that reason, farmers may want to sell spring-harvested canola right away and processors may want to crush it right away," Barthet says.

## PROTEIN CONTENT AND QUALITY

Based on the official canola definition, the only requirement for canola meal is that it contain less than 30 micromoles of glucosinolates per gram of air-dry, oil-free solid. Harvest Sample Program averages are well below that threshold.

The feed market's real concern is protein. They want more of it. They don't care if the seed has less meal and more oil, but they want each tonne of meal to have as much protein as possible. WCC/RRC uses a minimum threshold of 37 per cent meal protein from co-op trial results, which is generally achieved in delivered canola. While feed markets would prefer more protein, there is only so much canola breeders can do.



## Send samples to the Harvest Sample Program

The Canadian Grain Commission (CGC) Harvest Sample Program monitors hundreds of samples each year to make sure quality standards are upheld in delivered grain. Farmers who sign up and submit samples get the following for free:

- dockage assessment on canola,
- unofficial grade,
- oil, protein and chlorophyll content for canola.

The program also provides protein content on barley, beans, chick peas, lentils, oats, peas and wheat; oil and protein content and iodine value for flaxseed; and oil and protein content for mustard seed and soybeans.

For the CGC, the program provides crop quality data it can share with marketers to promote the sale of Canadian grain. For more on the program, go to [grainscanada.gc.ca](http://grainscanada.gc.ca) and look for Harvest Sample Program under the "All Topics" tab.

Lane Stockbrugger, who farms at Englefeld, Saskatchewan and is a director with SaskCanola, participates in the Harvest Sample Program every year. "It helps provide a timely and realistic gauge of the quality and spec of grains, not only canola, coming off across the Prairies," he says. "Our focus is on quality for our buyers worldwide. The CGC and their education, programs and knowledge are another tool in the farmer's toolbox to help meet the needs of our customers worldwide."





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## Minimum quality standards for new varieties

The Western Canadian Canola/Rapeseed Recommending Committee (WCC/RRC) verifies that all new varieties meet the minimum quality parameters. This is essential to maintain consistent quality for the whole canola crop year to year, region to region.

Parameters for *B. napus* canola cultivars are:

- Total saturated fat content must be equal to or less than the mean of the designated unadjusted check(s) in the zone or zones for which the candidate is being considered. (Current checks are 45H33 and L233P).

- Erucic acid in oil of seed submitted must be less than 0.5 per cent of the total fatty acids.
- Seed must either contain no more than 12.0 micromoles total glucosinolates per gram of whole seed at 8.5 per cent moisture content or contain levels of glucosinolate not more than the mean of the designated check(s) for regular *B. napus* plus two micromoles, whichever is higher.
- Oil content must not be lower than the mean of unadjusted designated check(s) minus 0.6 per cent in the zone or zones for which the candidate is being considered.
- Protein content must not be lower than the mean of the designated unadjusted check(s) minus 0.9 per cent in the zone or zones for which the candidate is being considered.

## Canola performance – driving yields with smart input choices

*Too much early-season nitrogen (N) encourages lodging, depletes soil moisture and leaves less N for seed production. ESN technology controls N release, reducing N loss and increasing N efficiency. Additionally, it significantly reduces N loss to the environment.*

### ESN technology and increased yield

When compared with similar N treatments of urea or UAN, using 50-75% of N with ESN technology has shown an average of 8-10% increase in canola yield. This data is derived from a number of independent research studies conducted at various locations in Western Canada.

### Unmatched seed safety

Applied at rates up to three times higher than conventional N fertilizers, ESN won't harm growing seedlings (following safe rate guidelines and recommended percentages of ESN).

### Wider application window

ESN provides a wider application window in both the spring and the fall, allowing you to apply fertilizer on your schedule.

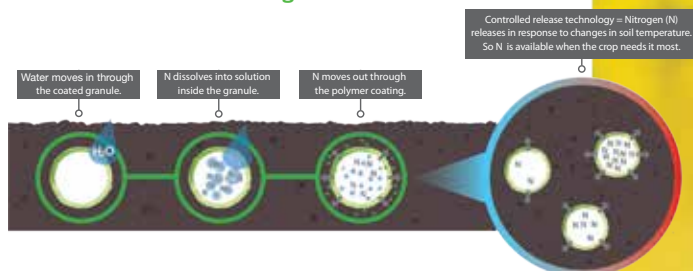
### Convenient to use and apply

ESN is compatible with no-till operations and is easy to blend. It will not set-up in storage and therefore has a longer shelf life.

### Environmentally responsible

ESN significantly reduces N loss, providing substantial benefits to the environment.

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## BREEDER CHALLENGE

Dale Burns is a canola breeder with Monsanto in Lethbridge, Alberta. He relies on the WCC/RRC's canola quality sub-committee to set parameters that meet market needs and industry objectives but are within reason given all the other requirements that farmers have for their canola seed.

"In addition to end-use quality, canola breeders also need to meet our farmer customers' demands for yield potential, disease resistance and now straight-cut harvesting," Burns says. "WCC/RRC finds that balance."

The Canadian system, which sets long-term achievable standards agreed to by all parts of the canola supply chain, is an advantage for canola breeders, he says. It maintains a set standard while also letting some specialty varieties onto the market. Some seed companies are looking at lines with ultra-low saturated fat content or with ultra-high protein, which could be brought to market through an identity-preserved (IP) program that allows these companies to capture the value of these quality traits. But if WCC/RRC extended those parameters to all canola seed, it would mean less progress on farmer-desired traits, Burns says.

"With 24 million acres, canola faces a tremendous amount of pressure from disease, and the industry is looking to rotate resistance genes for blackleg and maybe also clubroot," he says. "Farmers are demanding straight-cut harvest traits. To meet these needs, we wouldn't want to raise quality standards above current levels and reduce focus on grower needs". ✿

—Jay Whetter is the editor of *Canola Digest*.





# Fast Track Your Harvest

Reach speeds of 40 kph during transport

Less than ideal field conditions are a fact of harvest, but with the new John Deere Tracks, you can get your harvest back on track with ease. This suspended system, available on the S700 Combines, provides a smooth ride — even in rough terrain. With a 76- or 91- cm wide footprint, flotation and compaction are improved with no daily maintenance.

Add the new 700FD HydraFlex™ Draper for even more versatility and improved performance — designed to extend belt wear life and remove and install belts easily. Getting into the field sooner and finishing faster? Now that tracks.

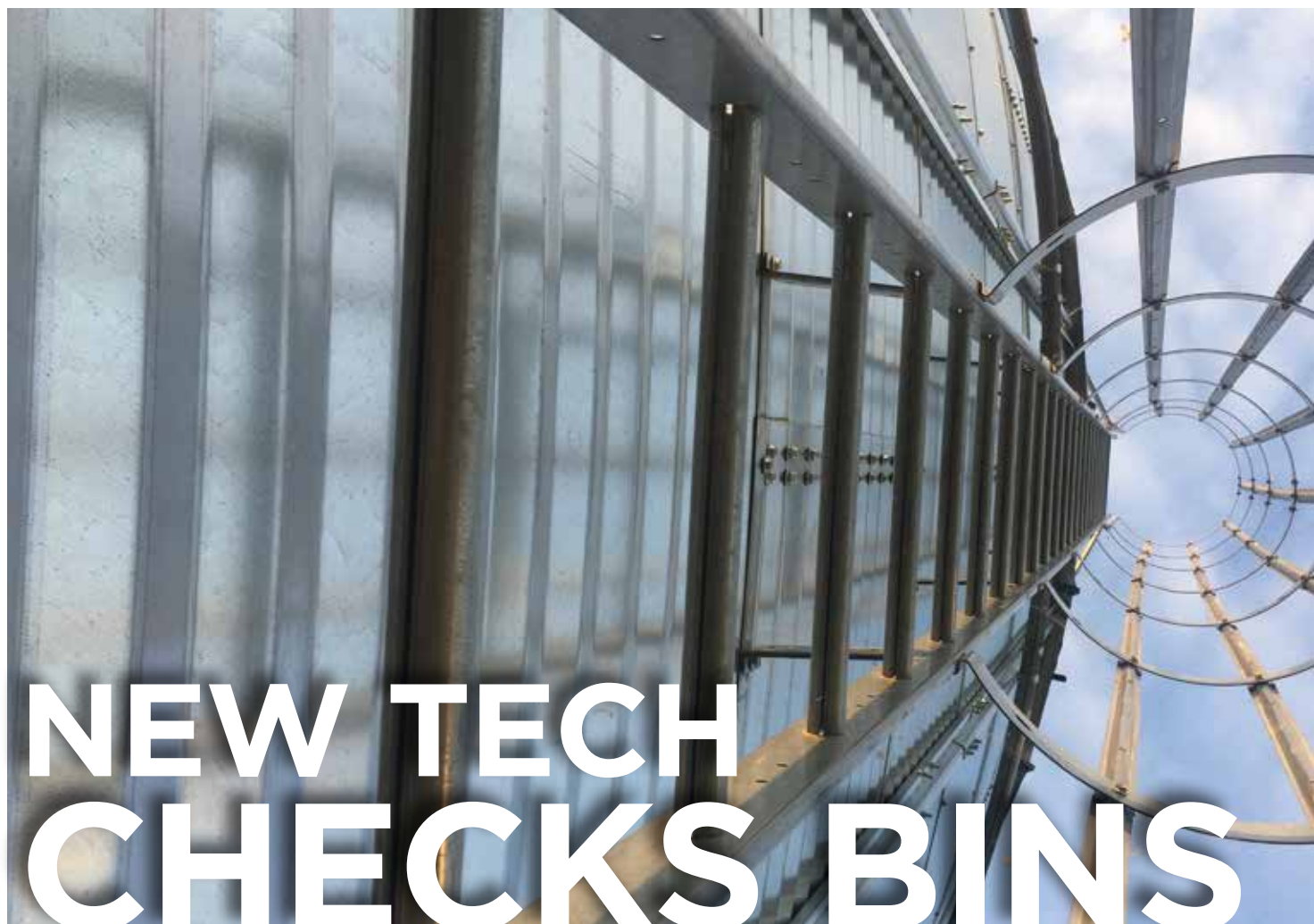
**Nothing runs like a Deere.**



**JOHN DEERE**

[JohnDeere.ca/Combines](http://JohnDeere.ca/Combines)

With \$50,000 or \$100,000 worth of canola in just one big bin and with longer on-farm storage requirements for some contracts, farmers want help to manage these bins for good drying days, potential spoilage and even theft. Wireless bin management systems offer solutions.



# NEW TECH CHECKS BINS

BY BRUCE BARKER

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**B**ig or small. Flat or hopper. Whatever the bin shape may be, canola going into storage requires proper conditioning and follow up monitoring. The first step is to turn on aeration immediately after harvest.

“Conditioning after harvest is the number one priority for canola going into storage. For long-term storage, canola needs to be cool and dry,” says Angela Brackenreed, Canola Council of Canada (CCC) agronomy specialist at Minnedosa, Man.

The CCC recommends that canola seed is dried to eight per cent or less and cooled to less than 15°C. Freshly harvested canola can respire for up to six weeks, creating heat and moisture. Aeration will help to cool the grain. If the crop came off

tough, natural air drying, given the right fall conditions, can be used to bring moisture content down to a safe storage level.

Brackenreed says bins should be monitored closely during the first six weeks after harvest to ensure the moisture and temperature has stabilized throughout the bin. Afterwards, regular monitoring will ensure any hot spots are detected so that mitigation measures can be taken to prevent spoilage and downgrading of the crop.

Monitoring technology has evolved from hand probes, to manual temperature probes, to anchored bin monitoring cables with sensors that measure temperature and moisture. Today, new monitoring technologies keep an eye on your canola whether you’re at the hockey game or halfway around the world.





**“Even with technology, which is a great addition to help ensure safety in storage, I still recommend physically checking the bins. Technology isn’t fool-proof, and there is too much value in the bin to risk losing it.”**

—Angela Brackenreed

### Here’s a look at some new bin monitoring and storage technologies:

#### BINCAST

BINcast is a weather-based advisory for improving grain conditioning in aeration grain storage systems. The online model provides five-day, site-specific forecasts of optimal times for operating fans by predicting equilibrium moisture content (EMC).

With the basic version, producers locate their field on the map, select their grain type, and BINcast provides the forecast for the best upcoming aeration times and days. With the advanced version, producers also enter fan, bin and grain characteristics to optimize the drying schedule according to the target moisture content of the grain. A fully deployed system includes some reference monitoring units in a few of the grain bins. For more information, contact Weather Innovations Consulting in Ontario at 519-352-5334 or [weatherinnovations.com](http://weatherinnovations.com).

#### OPI BLUE

OPI Blue is a wireless system that delivers hourly grain temperature and moisture readings to your mobile or desktop devices and allows you to turn on fans remotely. OPI Blue has weather station integration for ambient temperature and relative humidity conditions and makes equilibrium moisture content (EMC) calculations. This can be used to make fan on-off decisions.

The system provides grain inventory levels and an ability to view all bins at once.

OPI Blue can be incorporated into your current OPI grain management system using existing cabling or purchased as a new system. It works with PC, Apple and Google (Android) platforms, and new features automatically download from the Internet. For more information, contact OPI Systems in Alberta at 800-661-1055 or [advancedgrainmanagement.com](http://advancedgrainmanagement.com).

#### GRAINGUARDIAN REMOTE

With the Guardian Remote System, bin data is read automatically and continuously without the need to visit each bin. The Guardian Remote System can be monitored from anywhere in the world. Guardian’s advanced temperature and moisture sensor technology and straightforward user interface provide everything needed to make accurate storage management decisions. Conditions are read and synced to your account automatically through Wi-Fi or cellular connection. Automated alerts and alarms ensure any potential problems are immediately identified. Multiple users can view up-to-date condition. For more information, contact Ag Growth International (AGI) in Manitoba at 204-489-1855 or [aggrowth.com](http://aggrowth.com).

#### BIN-SENSE LIVE

Bin-Sense Live provides instant access to bin-stored grain anytime, anywhere. Temperature and moisture sensor cables monitor stored grain and provide text and/or email alerts when changes occur. Bin fans can also be controlled with a touch of button when integrated with Bin-Sense Fan Controller.

Features include grain level indicator, which provides theft security for your crop storage; wireless design; solar power with battery backup; and secure data communications. Bin-Sense Live is compatible with existing installed two-wire temperature cables and moisture cables. There are no software, contracts or customer care fees. For more information, contact Intra-Grain Technologies in Saskatchewan at 306-570-7979 or [intragrain.com](http://intragrain.com).

*Bin-Sense Live provides instant access to bin-stored grain anytime, anywhere.*



## GATCO CROSSFLOW AERATION

CrossFlow Aeration uses horizontal air movement to cool grain faster and in less time while using smaller fans than traditional aeration systems. The CrossFlow system forces air through the bin by using columns mounted on the inside walls of the grain bin. The air then moves horizontally to the GrainAir Tube in the centre of the bin where heat and moisture are released.

By moving the air horizontally to the centre of the bin, the distance required for air to travel is drastically reduced. It also reduces static pressure and prevents over-drying the bottom of your bin while soaking the peak.

Once aeration is complete and the fan is shut off, the GrainAir Tube becomes a Powerless Aeration System. Cooling the grain through natural convection, removing any heat build-up automatically. For more information, contact Gatco Manufacturing in Saskatchewan at 306-778-3338 or [gatcomfg.com](http://gatcomfg.com).

## GRAINVIZ

The GrainViz bin monitoring system uses radios mounted inside bin walls, broadcasting and receiving signals that translate into three-dimensional images of moisture conditions and potential problems within a bin. Each bin comes equipped with an onsite weather station and communication platform for data transmission. Growers can access the information through an online platform they can see with an app on a phone, table or directly online. GrainViz will send SMS updates (text alerts) and email notifications.

With GrainViz, farmers can control bin fans from anywhere in the world. It can also alert to insect infestations in real time. Detailed inventory management and reporting can identify the exact weight of the crop in your bin. For more information, contact GrainViz in Manitoba at 1-866-240-6153 or [grainviz.com](http://grainviz.com).



*GrainViz bin monitoring system uses radios mounted inside bin walls, broadcasting and receiving signals that translate into three-dimensional images of moisture conditions and potential problems within a bin.*

## KEEP TABS ON TECH

Brackenreed says that while technology is great, growers should also have a plan to regularly visit and manually check the bin.

“Even with technology, which is a great addition to help ensure safety in storage, I still recommend physically checking the bins,” she says. “Technology isn’t full-proof, and there is too much value in the bin to risk losing it.” ✖

—Bruce Barker is a professional agrologist (P.Ag.) and agriculture writer based in Bragg Creek, Alta.



## Does harvest timing impact safe storage?

In the first year of a multi-year study, researcher Fuji Jian with the Department of Biosystems Engineering at the University of Manitoba is looking at how harvest timing and pre-harvest treatments affect canola respiration and storage. The research is funded by the Prairie Agricultural Machinery Institute (PAMI) at Portage la Prairie, Man. through Growing Forward 2 as part of a larger study on straight-combining canola.

In 2017, Jian obtained canola samples from PAMI. The canola was harvested by:

- swathing.
- straight combining.
- straight combining with application of Heat LQ and glyphosate.
- straight combining with application of glyphosate.
- straight combining with application of Reglone.

The canola was conditioned to 11 per cent moisture content (wet basis). Canola respiration was determined



*Flasks were kept inside environmental chambers which were set at constant temperatures.*

Credit: Fuji Jian, U of M.

by measuring carbon dioxide in sealed flasks kept at temperatures of 20, 25, 30 and 35 degrees Celsius (°C) over a period of 70 days.

Preliminary results from the first year found that swathing might have a slightly higher respiration rate at temperatures higher than 30°C when storage was longer than 30 days. Conversely, straight combining might have a slightly higher respiration rate at temperatures higher than 35°C when storage time is less than 30 days.

Jian says at least two more years of research is necessary to confirm the results, and what the implications of harvest management practices would be for canola storage.





## Fan limitations in large bins

Take 25,000 bushels of canola and multiply by \$10 per bushel and that equals a lot of risk sitting in the bin. Recent research by Lorne Grieger at the Prairie Agricultural Machinery Institute (PAMI) looked at fan and airflow information for a 25,000-bushel bin.

“With a standard, single phase 10-hp centrifugal fan, we weren’t able to fill the bin completely before the static pressure maxed out,” says Grieger. “Once we hit 17,000 bushels, the fan could no longer push air through the grain.”

The trial started off using two, 10-hp fans while filling the bins. However, the two fans reached maximum static pressure (seven inches water gauge) at around 10,000 bushels. Grieger says that two fans provide more overall airflow but do not add additional force. As a result, two fans actually increase the static pressure and result in reduced capacity.

At 10,000 bushels, one fan was turned off and the researchers continued to fill the bin. The single fan maxed out static pressure around 17,000 bushels, when they stopped filling the bin. “The financial risk was too high for us to fill the bin without being able to condition it, so we stopped at 17,000 bushels,” says Grieger.

The study also looked at how a grain spreader that flattened the cone of grain in the bin affected airflow. The spreader

treatment with a flatter surface actually had a higher static pressure than the bin with a cone. Theoretically, a flat surface should have a consistent airflow pattern inside the grain mass because with a peaked surface, the air can short-circuit around the outside of the bin due to the lower resistance to airflow. An inconsistent airflow pattern can cause some grain to not be conditioned as quickly or at all.

Research is ongoing to determine the airflow patterns in the bin. Grieger says the implication of the initial finding is that there is a limit to how big the grain bins can go with single-phase-power aeration fans. A 10-hp fan is the maximum size that growers can use on the farm with single-phase power. To use a bigger fan, they would have to upgrade to a three-phase electrical system or consider a PTO-powered fan.



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## NEW TOOL HELPS WITH COMBINE SETTINGS



The new Combine Optimization Tool at [canolacalculator.ca](http://canolacalculator.ca) walks users through a series of questions to help them identify the issues with grain loss, grain sample quality or productivity. For example, if there are too many “free grain” losses coming out the back of the combine, which would be determined with a drop pan, the tool provides a number of setting adjustments to try. Adjustments should be done one at a time, with drop pan samples taken after each adjustment. Adjustments to increase cleaning capacity:

- Open upper sieve in 3 mm increments.
- Open pre sieve in 3 mm increments (if available).
- Open rear section of upper sieve in 3 mm increments (if available).
- Loss may be due to “sluffing” or “blowing.” Try increasing and/or decreasing fan speed by 100 rpm.
- Open lower sieve as much as possible while maintaining an acceptable grain sample.

Try the tool yourself at [canolacalculator.ca](http://canolacalculator.ca). For more on how to use a drop pan and how to calculate losses, read, “How to reduce costly harvest losses” at [canolawatch.org](http://canolawatch.org).



## VIDEO ON HOW TO MEASURE HARVEST LOSS

Watch the Canola Council of Canada (CCC) video, “Harvest management and mitigating loss” for tips on how to take a sample and measure the loss. Find the video at the CCC channel at [youtube.com/canolacouncil](https://youtube.com/canolacouncil).



**Moisture.** Canola at eight per cent moisture is considered safe for long-term storage. High-moisture canola stored cool or cold may last longer without spoilage, but this bin will become very unstable with any stretch of warm weather. It helps to have a drying, storage or marketing plan before taking high-moisture canola off the field.

**Hot grain.** Canola binned hot, even if it has low moisture, low dockage and low green, should still be put on aeration. This will even out the temperature throughout the bin and help remove moisture from respiring seed. Warm seed and any moisture create a favourable environment for the microbes that lead to heating. Canola should be cooled to 15°C or less as soon as possible.

**Green seed.** Green canola seeds can increase the storage risk, even if canola is dry and cool. Monitor closely. Small shrivelled canola seed, which often occurs in combination with high-green seed, can mean smaller air pockets between seeds in the bin. This can increase the resistance to air flow.

**Dockage.** Weed seeds and green weed material tend to contain more moisture than canola seeds. This high-moisture dockage may not be enough to elevate overall grain moisture tests, but if it concentrates in pockets in the bin, it can create localized hot spot for spoilage to begin. Chaff tends to concentrate closer to the walls of the bin and fines closer to the centre of the bin. This distribution exaggerates airflow problems because air tends to take the path of least resistance.

**Bin size.** The bigger issue with large bins is airflow due to increased grain depth. Can the aeration system get air to all areas and can it push through to the top? Being a small seed, canola has a higher resistance to airflow than most other crops stored on the Prairies. With more depth, the compaction and resistance to airflow increases. The other risk with large bins of the canola is the high value within a single bin if something does go wrong.

**Fan size.** A bin of canola generates a high static pressure (or resistance to airflow) which results in a lower airflow rate from the fan. For conditioning (cooling), you need 0.1 to 0.2 cfm/bu. of airflow. If adding supplemental heat to dry canola, airflow of at least 0.75 cubic feet per minute per bushel is recommended. If fan size is insufficient for the job, fill the bins part way to improve airflow.

**Bags.** Grain storage bags don’t have airflow and grain temperatures inside bags fluctuates more with changes in outside temperature, and they are often not as accessible in winter if something goes wrong. Bags are still generally considered a short-term storage solution for canola.



## NO MALATHION IN CANOLA BINS

Canada exports 90 per cent of the canola we produce, and shipments containing even the smallest amount of unacceptable residues or de-registered varieties can be rejected, causing millions of dollars in losses and placing future business at risk. One risk is malathion.

Never use malathion to prepare canola for storage or to treat bins used to store canola. Its residue can linger for up to six months, so choose your canola storage bin carefully. Other storage requirements to “Keep It Clean” are:

- Make sure your storage bins are free of treated seed and animal protein like blood meal and bone meal.
- Clean bins thoroughly prior to storing your crop.
- Only use approved bin treatments (e.g. diatomaceous earth on cereals).
- Condition crops to moisture and temperature levels safe for long-term storage.
- Keep bins cool, dry, well-ventilated and check their condition regularly.

Find more tips at [keepingitclean.ca](http://keepingitclean.ca).



## MOVING SOIL, MOVING CLUBROOT

With dry conditions last fall in combination with an apparent uptick in tillage, CCC agronomy specialists noticed more dust in the air than we’ve become accustomed to over the past few decades. This means a direct loss of precious topsoil. It also means a biosecurity risk.

Tillage moves a lot of soil, either on the equipment itself or with the increase in wind and water erosion that results. Moving soil means moving clubroot. Moving soil also means moving verticillium, aphanomyces (pea and lentil disease), phytophthora (soybean disease), weed seeds and nematodes.



## CANOLA WATCH HAS YOUR BACK

The CCC agronomy team has weekly conference calls through the growing season to discuss insect, disease and other canola crop management issues that pop up. The team then works with research and extension specialists to convert that discussion into timely tips shared through the weekly Canola Watch email. Canola Watch provides useful agronomy back up for farmers, agronomists and retail staff. Sign up for the emails at [canolawatch.org](http://canolawatch.org). You can also follow @canolawatch on Twitter.

## CANOLA DISCOVERY FORUM

OCTOBER 22-23

Canola Discovery Forum 2018 in Banff, Alta., kicks off Monday afternoon, October 22, with a two-hour discussion on CCC agronomy messaging for 2018-19. After that is a panel on, “How can we manage prospective loss of key agronomy tools?” Tuesday is a full day digging into canola stand establishment, with discussions on recommendations for plant populations, new seeding technology, seed-placed fertilizer, insect management, herbicide-resistant weeds and more. Register online at [canolacouncil.org](http://canolacouncil.org). Go to the Events page under the “What We Do” banner.

## GET TO KNOW YOUR

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Find the whole team at  
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Protein Industries Canada, one of five research superclusters chosen for federal government funding, will improve Canada's ability to take a lead role in the rising global trade in plant-based protein. Register for PIC's Thought Leaders Summit in Winnipeg, Man. in October.

# CANADA SEEKS PLACE IN GLOBAL MARKET FOR PLANT PROTEIN

**G**lobal demand for animal, fish and plant protein keeps growing, driven by rising populations and rising affluence in developing countries. Meat animals require plant-based protein feeds. Aquaculture will account for all growth in fish consumption, with plant-based protein an essential feed source. And humans will turn to plant-based proteins to account for more of their protein intake. This means global agriculture will have to produce more protein on the same (or shrinking) land base and with more efficient use of input resources.

It spells opportunity for Canadian farmers and the Canadian value-added economy.

This is why the federal government chose Protein Industries Canada (PIC) as one of five groups to get funding through a research superclusters program announced in February 2018. The \$150 million in federal government money labeled for PIC spurred commitments of over \$200 million from private sector companies and \$150 million from venture capital.

PIC will identify and develop opportunities for Canadian crops, especially peas and canola, to increase their shares in a global plant-based protein market currently dominated by soy.

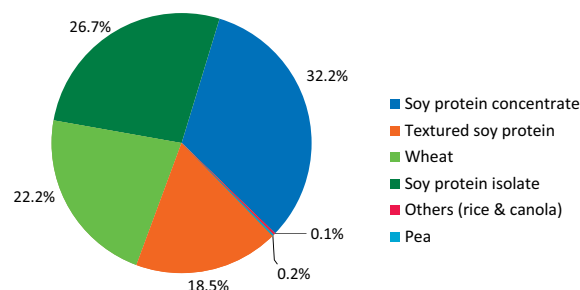
At [proteinindustriescanada.ca](http://proteinindustriescanada.ca), under the Goals & Strategy heading, it says plant-based protein is a \$13 billion market opportunity.

"Outcomes from this cluster will be a new range of plant-derived foods, ingredients and feedstuffs of superior quality, commanding market premiums," the site continues. "As such, the initial focus will be on value-added canola and pulse crop derived products developed by the value chain, including germplasm innovation, crop management technologies, through to advanced processing technologies yielding novel products and further enhancing value through quality, traceability and brand identity."

Curtis Rempel, vice president of crop production and innovation for the Canola Council of Canada, says private investment is directed to projects using big data, algorithms and robotics to improve sustainable, reliable production of high-quality canola protein, and into block chain technology for more secure and immediate transactions in the supply chain. "Companies like Farmers Edge and the EMILI Consortium have already initiated projects that advance this tech space for canola production," Rempel says.

"Protein Industries Canada is an industry-led private-public partnership that will bring together genomics, big data and robotics,

PLANT PROTEIN INGREDIENTS MARKET % OF REVENUE BY CATEGORY, GLOBAL, 2013



Source: Frost & Sullivan

novel processing and product development to enable Canada to meet the rising global demand for sustainably-produced high-quality plant protein for human, companion animal and aquaculture markets," Rempel says.

Protein Industries Canada will host its Thought Leaders Summit on October 3-4, 2018 at the Fairmont Winnipeg. This will serve as the official launch of the supercluster. The conference will inform PIC members, supporters and contributors on policies and processes that will be used for program funding, and set out the future priorities for PIC projects.

For more, go to [proteinindustriescanada.ca](http://proteinindustriescanada.ca). ✖



## What can growers do to increase protein quality?

Ultimate Canola Challenge, a Canola Council of Canada agronomy research program to

promote on-farm trials, will monitor protein content and quality at a few sites, starting in 2019. The goal is to see how genetics and environment and soil fertility influence protein factors, and then take steps to manage those factors to boost the value of protein per acre of canola. For more on the program, go to [ultimatecanolachallenge.ca](http://ultimatecanolachallenge.ca).



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Drop pans, combine kill stalls and slower ground speeds are tools these farmers use in their quest to lower canola losses out the combine.

BY JAY WHETTER



**RYAN VREELING**  
HAWK HILLS, ALTA.

**V**reeling Farms uses kill stalls and drop pans a few times throughout harvest to keep canola harvest losses low.

“We try to be pretty anal about checking the combines,” Ryan Vreeling says.

He describes how to do a kill stall: “In order to perform a kill stall, you have to be combining crop at a normal load and speed. Once you feel like you are operating at a normal pace, pull the hydrostatic joystick back to neutral, stomp on the brakes as hard as you can and then throttle down. If you do these three steps all at once it will force the combine to stall. The reason we perform this is so that we can get a snapshot of our combine’s separating system when under load. The main thing you look for when you do this test is an even bed of chaff/seed across the sieves. If the material is piled up on one side of the sieves it’s a good indicator that your rotor speed is either too slow or too high (depending which side the material is piled up on). Another thing that would tip you off would be if your sieves were too clean. That more than likely means your fan is set too high and is blowing all the chaff/seed out the back of your combine.”

The Vreelings do kill stalls a couple of times per year per combine. “To make improvements, we’ll make one adjustment at a time so we know which ones are making a difference – otherwise we’re chasing our tails,” he says.

Their drop pan is the electro-magnetic ScherGain model, which they bought online after seeing an advertisement on Twitter for a Regina farm show. After clicking the

sensor to drop the pan, they pour canola from the drop pan into the ScherGain calibrated measuring container to check the losses. “We’re trying for one bu./ac. loss but we haven’t been able to quite get there,” Vreeling says.

The Vreelings straight-combine canola using MacDon draper headers with pea augers at the top to improve canola flow into the feederhouse. Vreeling thinks the draper header probably reduces loss versus an auger header, but he’s not sure whether the pea auger at the top and the standard hoop dividers on the side help or hinder losses. “I have heard of some people using vertical cutters instead of the standard hoop dividers but I don’t think the price justifies the amount of canola it saves you. Any losses at the header wouldn’t show up in the drop pan so it is also hard to catch such losses,” he says.

Vreelings combine canola at around 4.5 mph, a speed that balances harvest efficiency and keeps losses close to their one bu./ac. target.



**DAN HOLMAN**  
LUSELAND, SASK.

**A** few years ago the Holman farm had a grad student come out to check canola fields for losses. The student was doing a thesis on canola losses and vacuumed up random areas of the fields

after harvest. A few of their fields that fall had losses of less than one bu./ac. The highest was close to four. Dan Holman says some of those losses were from swaths shelling in the wind, but combine losses, which vary by year, variety, field and time of day, can be a major contributor.

“To make improvements, we’ll make one adjustment at a time so we know which ones are making a difference – otherwise we’re chasing our tails.”

—Ryan Vreeling



Do you have feedback on the farmer panel? Do you want to participate in a future farmer panel? If yes, please email the editor, Jay Whetter, at [whetterj@canolacouncil.org](mailto:whetterj@canolacouncil.org).



The Holmans solicit opinions and try to attend a combine clinic every year to learn how to be better. “We used to always use a little yellow pan that the Canola Council sold to measure losses. I would wait for the combine to go past and then chuck it underneath and then weigh the sample. It worked OK, but was dirty,” he says. So, last year they bought one of Trevor Scherman’s ScherGain magnetic drop pans. “It was easier to use and caught a wider area of the combine,” Holman says.

Based on drop-pan measurements and kill stalls, Holman knows their combine will over-thresh in dry conditions. “When this happens, a large amount of the straw ends up on the top sieve and then the combine really chucks the canola out the back because the sieves are overloaded,” he says. “We keep an eye on that and when it starts to happen, we slow the rotors, open the concave and slow the ground speed.”

He says it’s tempting to try to clean up the sample by closing the bottom sieve. “But if you get too much canola in the returns, it overloads the top sieve too much and chucks it out the back. As a result, we live with a bit more chaff in the sample.”

From his monitoring, Holman also knows that when straight cutting canola, it can be easy to under-thresh canola and throw pods through the chopper that are still attached to the plant.

“It’s hard to always get the combines perfect, but ideally we want losses to be less than a bushel per acre,” he says. With the price for new combines, he thinks losses should be zero.

“I think it is very disappointing how as combines advance in price they don’t advance in canola loss performance,” he says. “To me, something that costs north of \$500,000 should not be losing over \$300 of canola per hour.”

“It’s tempting to try to clean up the sample by closing the bottom sieve. But if you get too much canola in the returns, it overloads the top sieve too much and chucks it out the back. As a result, we live with a bit more chaff in the sample.”

—Dan Holman

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## COLIN PENNER ELM CREEK, MAN.

**C**olin Penner doesn't like having to run behind the combine to check for losses. So he built his own drop pan. It connects to the underside of the combine with electro-magnets and has a

remote trigger to disengage the magnets and drop the pan. He will use it for the first time this harvest.

Unlike with a pan on a stick, with this pan he'll be out of the dust and away from the combine operator when sifting through the discharge sample. "It's not fair to the operator to have people running around the combine," he says.

Penner doesn't think they're losing that much out the back of the combine, but what is the real number? How does it change by conditions? And how much is too much? The drop pan will help him answer those questions. "I'd prefer to see nothing come out the back, but that's not a reality," he says.

**"The biggest thing in eliminating losses is to just slow down, even if we don't touch any other settings on the combine."**

—Colin Penner

"The biggest thing in eliminating losses is to just slow down, even if we don't touch any other settings on the combine," Penner says. One challenge is getting his mom, who drives one of his two combines, to throttle back. "My mom keeps the trucks rolling and everyone else on task during harvest. In the combine, she likes to put the hammer down and go, which means she'll be at six to eight mph when, in canola, I'd like her to be going four mph."

Some evidence from the drop pan might help him convince her.

A question for Penner is: Why build a pan when he could just buy one? Lots of people are making electro-magnetic drop pans just like his.

His answer: "I can spend \$1,500 to \$2,500 for a similar system that is calibrated and works, and I know it would pay for itself quite easily. It just takes 1.5 bu./ac. saved on one quarter of canola," he says. "But I knew I could build one myself, and I like tinkering. It's fun to have that know-how and by working through the calibration process, I learn a lot about losses. That's good for me and my farm."



## ROBERT PAULOW HAFFORD, SASK.

**U**p until a couple of years ago, Robert Paulow used what was a fairly common technique to check canola losses: He blew on the ground to remove chaff cover and tried to count the tiny black seeds scattered over the black earth.

"It was a crap shoot. How many seeds are really there? How many is too many? It was like combining with my eyes closed," Paulow says.

So he starting applying the Prairie Agriculture Machinery Institute (PAMI) and Canola Council of Canada (CCC) methods, using a drop pan and digital scale to quantify the loss. One important discovery was how much his losses varied throughout the day. When swaths were tougher in the morning and in the evening, losses tended to be higher—even up to five bu./ac. in places, he says. Mid-day when swaths were dry, losses could be down in the one bu./ac. range.

Paulow also used kill stalls to see what was really happening in the combine. When combining along in a decent swath, he quickly shifted the throttle to neutral and shut everything down before the combine had a chance to process it. Then he looked in the back to see how material looked over the sieves. With the kill stall, he learned that leaving the same settings all day long meant he was over-threshing in the middle of the day. Sieves were overloaded with small pieces and he could see canola seed riding along on top.

"You just know that canola is going over the back," he says.

These tests got him into a rhythm. In the morning and evening, he uses a tighter concave setting and higher rotor speed. As the day warms and the dew dries, he'll open the concaves and reduce rotor speed. He also knows now that on really hot, dry harvest days when canola has cured to five to six per cent moisture, "we see a bit more losses because the seed is lighter."

Paulow likes to combine canola at four mph. "At that speed, our two combines can still cover a decent amount of acres and keep losses at a level where I'm happy," he says. "We could go faster and finish three days earlier, but would it be worth all the lost crop?"

Paulow talked with PAMI harvest researcher Nathan Gregg at canolaPALOOZA in Saskatoon in June. One thing they talked about was lifting the chopper/spreader to get a more accurate reading. Paulow hadn't been doing that because it took more time, but Gregg explained how a drop pan reading in this situation might be skewed by an inconsistent spread pattern. So this year Paulow will disengage the choppers twice a day to take his drop-pan measurements.

"It will take a bit more time, but will be worth it if it improves the return for canola," he says. More accurate loss measurements taken a couple times per day throughout each harvest will also help him calibrate what the combine loss monitors are telling him.

Paulow knows he has more to learn about combine settings and monitoring to reduce harvest losses, but he says, "I'm doing 10 times more now to prevent loss than I was three years ago." 🌻

**"At (four mph), our two combines can still cover a decent amount of acres and keep losses at a level where I'm happy. We could go faster and finish three days earlier, but would it be worth all the lost crop?"**

—Robert Paulow



## Try the Combine Optimization Tool

PAMI and the CCC introduce the new Combine Optimization Tool at [canolacalculator.ca](http://canolacalculator.ca). It walks users through a series of questions to help identify the issues with grain loss, grain sample quality or productivity. For example, if there are too many "free grain" losses coming out the back of the combine, which would be determined with a drop pan, the tool provides a number of setting adjustments to try. Adjustments should be done one at a time, with drop pan samples taken after each adjustment. Give it a try today.



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Seed crushers added to the back end of combines and modification to chaff-spread patterns are two options for integrated weed management at harvest. These practices can help manage herbicide-resistant weeds and protect working herbicides from losing their effectiveness.

# MANAGE WEEDS WITH THE COMBINE

BY TREENA HEIN

**H**arvest can offer an excellent opportunity to manage weeds for next year, including some new integrated weed management options for fields at higher risk of herbicide-resistant weeds.

Let's first check in with Breanne Tidemann, a field agronomy scientist at Agriculture and Agri-Food Canada in Lacombe, Alta. who has been studying machines designed to destroy weed seeds at harvest. Alberta Canola, Alberta Wheat Commission, Saskatchewan Wheat Development Commission and the Western Grains Research Foundation are funding the research, which started last year.

In 2017, Tidemann and her team began testing the Harrington Seed Destructor (HSD) from Australia. The combine tows the HSD, which has a cage mill to crush the chaff and all seeds within. In that first year, Tidemann found it important to have the chaff moving fast enough. She also says HSD works better when green or tough material is dried down. This may require desiccation for green weeds.

The tow-behind HSD was difficult to maneuver in the hilly fields of Western Canada, she says, but that model has actually been phased out. The new Integrated

Harrington Seed Destructor (iHSD) is mounted directly on the combine, as is a competitor called the Seed Terminator. "Australian research has shown equivalent control between the HSD and the iHSD," says Tidemann, "so our results will still be relevant." Published research on the efficacy of the Seed Terminator is not yet available.

Canola Council of Canada agronomy specialist Ian Epp says prices have fallen for the iHSD. It currently costs about \$150,000. The Seed Terminator is about \$100,000.

While these seed smashers work for weeds such as cleavers and volunteer canola, others such as wild oats (which drop seed to the ground before harvest) won't be affected. Tidemann has also seen issues with tumbleweeds, which can roll off the combine header rather than going in. It shows, in her view, that there is no silver bullet, and that keeping diversity in our management systems will be key to our continued ability to manage weeds. Her testing this year and in years to come will provide a more complete picture of the impacts of harvest weed seed control and the HSD specifically.

Epp agrees that seed destructors represent a practical integrated weed management option. "I also think adoption should occur now, or as soon as possible, before



glyphosate resistance is widespread," he says. "We already have kochia with glyphosate resistance in all three Prairie provinces. Green foxtail, wild oats and cleavers are likely next."

## CHAFF LINES

Chaff lines are another harvest-time weed management technique that could be easier to adopt. "Instead of taking the chaff, which can be full of weed seeds, and spreading it across the field evenly, you drop the chaff in a tight little band that offers better control





restricted to the chaff lines. Producers could then spray only the chaff lines – if weeds are well restricted to those lines. The chaff line can also limit germination of weeds due to poor seed to soil contact, a compost effect or allelopathy, Tidemann adds.

In terms of chaff rows presenting issues for residue management and seeding next spring, Epp says there is a potential issue with seed placement in those areas.

### OTHER FALL WEED MANAGEMENT OPTIONS

Another fall weed management option is using cover crops, which can provide weed competition in a long fall after winter wheat or pulses. The cover crop chosen would depend on the goal and conditions, Epp says. Pulse cover crops can improve soil fertility, while oilseed radish can reduce soil compaction. Cereals can provide erosion control and winter grazing. But if the primary goal is to outcompete an established weed, a competitive crop like oats would be better, Epp says. He adds that cover crops can also present potential issues from a disease and insect standpoint by creating a green bridge all the way until freeze up.

A final integrated weed management practice for the fall is to harrow after harvest. This might trigger germination of annual weeds, like volunteer canola, which will get killed off over winter. ✖

—Treena Hein is an award-winning science writer based in Eastern Ontario.

**“Instead of taking the chaff, which can be full of weed seeds, and spreading it across the field evenly, you drop the chaff in a tight little band that offers better control options.”**

—Ian Epp

*Below: Kochia with glyphosate resistance has been found in all three Prairie provinces, making integrated weed management all the more important.*

Credit: Ian Epp



options,” he explains. Epp notes that farmers themselves may be able to modify their combine’s pan to funnel material into a row.

Farmers could burn the chaff line. If choosing that option, straw and chaff should be dropped together. “Otherwise there isn’t enough air for a hot enough or sustained enough burn to actually kill the weed seeds,” Tidemann says.

Another option is spread the straw and drop only the chaff. With weed seeds concentrated in the chaff line, heavy competition is

*Above: Agriculture and Agri-Food Canada in Lacombe, Alberta is testing the Harrington Seed Destructor (HSD), Australian technology that crushes chaff and all seeds within as it comes out of the combine.*

Credit: Neil Harker

The 2018 Blackleg Summit reviewed new tools to help farmers identify the blackleg races in a field and choose varieties with blackleg resistance that best protects against those races.

# BLACKLEG SUMMIT SHARES NEW MANAGEMENT APPROACHES

JUSTINE CORNELSEN

**W**hat are the key new research discoveries on blackleg? Blackleg management can get lost among the 50 other important decisions that need to be made to grow just one canola crop, but with the Growing Forward 2 SaskCanola Agri-Science Project: 'Canola Disease Management Tools for the Prairies – Blackleg and Sclerotinia' coming to an end, this is a great time to share key findings with producers, agronomists and industry members. The Blackleg Summit held in Saskatoon earlier this year provided an opportunity to review the Agri-Science Project research and help ag extension staff get this information into the hands of farmers.

## KEY MESSAGES PRESENTED AT THE BLACKLEG SUMMIT

### 1. Rapid field test of canola stubble helps with variety

**selection.** Hossein Borhan's lab at Agriculture and Agri-Food Canada (AAFC) Saskatoon worked to develop a rapid field diagnostics test for blackleg disease. The test identifies blackleg races present on the canola stubble. Genetic biomarkers developed as part of this project were shared with public and private pathology labs across western Canada. Four labs now have the markers for commercial evaluation. When growers detect significant amounts of blackleg in their field, they can now send stubble samples to diagnostic labs for genetic testing. This enables canola growers to make informed decisions about choosing the appropriate blackleg resistance in their canola variety that best matches the profile of the blackleg strain in the field.

### 2. Survey shows blackleg pathogen population across the

**Prairies.** A collaborative effort was taken across the Prairies to survey and identify the blackleg pathogen population. This effort, led by the labs of Dilantha Fernando (University of Manitoba), Gary Peng (AAFC Saskatoon) and Ralph Lange (Alberta Innovates), will help determine where to deploy specific genetics to match the population, increasing the durability of resistance genes and better managing the pathogen.

### 3. Researchers find new sources and genes for blackleg

**resistance.** More than 1,100 *B. napus* and *B. rapa* accessions were characterized for the profile of known R genes (resistance to blackleg). Several novel blackleg resistance genes were identified, which seed companies can use to improve their genetic base. 58 lines with quantitative (adult plant) resistance to blackleg disease were identified and the presence of adult plant resistance (APR) was confirmed. APR is a durable form of resistance and protects canola against the blackleg infection.



**4. Canadian canola industry adopts resistance-gene labels.** Producers can now choose varieties with 'R' genes that are durable to the specific blackleg races in their fields. This will play a significant role in reducing blackleg in the field in Canada.

*Blackleg scouting at harvest is a good way to check for incidence and severity of the disease on the farm. If the disease is causing yield loss, farms will want to revisit their management strategy.*

## PERSPECTIVE ON BLACKLEG FROM AUSTRALIA

Australian researchers Angela Van de Wouw and Steve Marcroft participated in the Summit to share their knowledge and experience from working with blackleg in the canola growing regions of Australia. Van de Wouw and Marcroft are part of an approach called 'Genome to Paddock' to monitor pathogen populations, field disease pressure and fungicide resistance. They also aided in the formation of blackleg resistance groups captured in Australia's extensive Blackleg Management Guide.

Marcroft presented new work on upper canopy infection, which damages pods and results in the most yield loss for Australian canola growers. Later blackleg infection can be minimized with effective R genes and by a fungicide application during reproductive growth stages. Extended crop rotation is still the best practice to minimize the amount of infected stubble within the field. In Australia, they found that with inter-row sowing, horizontal stubble produces spores later in the growing season. Information like this will help in the development of new cultural practices to manage blackleg disease pressure.

The Blackleg Summit created the opportunity to learn about research from both Canada and Australia. This information transfer will help in further development of a holistic approach to managing blackleg.

## IN SUMMARY

New information discussed at the summit will help us adopt more effective and more sustainable practices for an integrated pest management approach. With new genetic technology, the advances we have been making on understanding the resistance tools and the pathogens within the field have been vast. It's amazing to see how this type of information can help farmers make decisions back on the farm. 🌻

—Justine Cornelsen is a Canola Council of Canada agronomy specialist and chair of the Blackleg Steering Group. She loves her role in agriculture and will continue sharing science and research with those who need it.





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Harvesting two crops in one calendar year is something for warmer climates. Not Canada, right? AAFC researcher Eric Page is challenging this notion with winter canola and soybeans.

# ONTARIO RESEARCHER TESTS DOUBLE-CROP CANOLA AND SOYBEANS

BY MEGHAN MORAN

Ontario producers are showing a renewed interest in winter canola production as a fit with late-planted soybeans in a double crop. Eric Page, research scientist with Agriculture and Agri-Food Canada (AAFC), leads a planting date trial with winter canola and soybeans to provide these interested producers with some background data.

Winter canola is harvested in July, then Page plants soybeans for harvest in October. Harvesting that late isn't a problem in his southern area of the province. The rotation would then switch to a different crop the following spring or, if possible, winter wheat planted in early October.

Page hosted a field event June 21 at AAFC Harrow Research and Development Centre in southernmost Ontario to view research plots and discuss the opportunity to double-crop soybeans after winter canola.

Page, a researcher focused on weed ecology, has been studying novel crop rotations as a way to manage hard-to-control weeds. Producers in southern Ontario tend to have short crop rotations and rely heavily on glyphosate-tolerant genetics. But glyphosate-resistant Canada fleabane can be found throughout Ontario and populations of glyphosate-resistant common ragweed, giant ragweed and waterhemp are emerging. A competitive canola crop has weed control advantages, and the double-crop system allows producers to manage the fall-emerged cohort of fleabane plants mid-summer, prior to planting the double-crop soybeans.



AAFC research scientist Eric Page (left) talks with Elliott Armstrong from Clarke's Agri Service at the field event June 21.

Credit: Carrie James

Early-maturing winter canola hybrids would be ideal so that producers can plant double-crop soybeans by mid-July.

Table. Percent stand loss over winter for three winter canola hybrids and five planting dates in 2016-17.

Variety	2016 Planting Date				
	01-Sept	13-Sept	22-Sept	06-Oct	17-Oct
Stand Loss Over Winter (%)					
Mercedes	30	34	12	10	47
Inspiration	36	15	16	22	60
CC17070	51	18	13	12	47
Mean	39	22	14	15	51
	2017 Planting Date				
	01-Sept	11-Sept	26-Sept	10-Oct	20-Oct
Stand Loss Over Winter (%)					
Mercedes	8	11	32	100	100
Inspiration	5	11	23	66	100
CC17070	21	28	12	87	98
Sitro	13	9	14	82	99
Mean	12	15	20	84	99



Ontario is also pushing producers to keep soil covered year round. Tillage is common in Ontario, and cover crops can mitigate soil loss caused by erosion and help maintain soil organic matter. Producers are using red clover, cereal rye and other cover crops to build and protect soil health, but growing a profitable fall-planted crop may be a more desirable solution to keeping soil covered.

## A SECOND TRY FOR WINTER CANOLA

Many spring canola growers in Ontario have tried winter canola, but winter survival was typically poor. The crop would die during harsh winter months or more often heave out of the ground during frost and thaw cycles in March. Page believes new genetics will improve overwintering results, and also speculates the winter crop should be grown in regions south of where spring canola is typically grown. Essentially all spring canola production in Ontario occurs between the 49th parallel (Cochrane) and Guelph, and attempts at growing spring canola further south results in significant flower and pod abortion during the hot summer months. Winter canola flowers in the cooler month of May.

Page worked with seed dealers in Kentucky to select varieties that would be suitable for Ontario. For the past two seasons he has tested the performance of three U.S. varieties over five planting dates in Harrow. Variety and planting date recommendations will be key in successful production, and his work has already supported the interim registration of the variety Mercedes. Other than Mercedes, which is now carried by C&M Seeds, winter varieties registered in Canada are older genetics that are almost impossible for growers to source.

Planting date will likely have to be studied across the southern growing regions, but trials at Harrow indicate early to mid-September planting results in the lowest levels of overwintering losses. (See the table.) Early-maturing winter canola hybrids would be ideal so that producers can plant double-crop soybeans by mid-July.

One winter canola grower had success in 2016 with double-crop soybeans planted at the end of July, but was unable to plant soybeans in 2017 after a late winter-canola harvest. This year Page and producers are on track to harvest their winter canola in early July.

Research is ongoing to verify appropriate planting dates and gather more data on U.S.



*Sydney Meloche is a research technician with AAFC Harrow. She manages the winter canola and double-cropping plots.*

Credit: Carrie James



AAFC's Eric Page believes new genetics will improve overwintering results, and also speculates the winter crop should be grown in regions south of where spring canola is typically grown.

varieties. Fortunately, the early timing of winter canola bolting means it will not be at risk of swede midge damage, which has significantly hindered spring canola production in Ontario. Further studies on crop rotations, fertility, tillage and slug damage in the fall are also necessary to improve success with winter canola production in Ontario. ❁

—Meghan Moran is the Canola & Edible Bean Specialist for the Ontario Ministry of Agriculture, Food and Rural Affairs.

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From climbing bins to cleaning out bridged grain to moving augers around power lines, the job of handling grain has many potential hazards. It helps to recognize risk scenarios and take measures to get the job done safely.

# BEGRAINSAFE: TIPS FOR SAFE GRAIN HANDLING

BY RICHARD KAMCHEN

**W**hen Gerry Hertz was 23, his father was killed instantly when an auger he and Hertz's brother-in-law were pulling across the yard made contact with an electrical line. The brother-in-law survived, but still lives with the repercussions.

"Probably every farmer out there has a story that could have turned out differently," says Hertz, a Saskatchewan farmer and SaskCanola board director.

Although accidents can still happen even when you take steps to mitigate them, Hertz believes many accidents occur because of inattentiveness or a lack of planning.

The Canadian Agricultural Safety Association (CASA) helps with safety planning to make agriculture a safe and healthy environment to work and live. CASA launched its grain safety program, BeGrainSafe, with awareness-raising displays and demonstrations at farm shows, firefighter training and producer education.

"The BeGrainSafe Program is the first of its kind in Canada," says Robert Gobeil, CASA's agricultural health and safety specialist. "With large yields, increased grain handling capacity and the reports of deaths and injuries due to grain, CASA and its partners recognized the need for a program to help with education and awareness."

CASA works with leaders in the ag industry, including Canadian Canola Growers Association, SaskCanola, Alberta Canola and Manitoba Canola Growers. "These sponsors and partners have been vital in getting the BeGrainSafe message and education to firefighters, farmers and the general public," says Gobeil.



*Below: The BeGrainSafe exhibit shows the apparatus to rescue someone trapped in grain. The force required to pull someone out of grain is too much for the people pulling and the person being pulled. So rescuers have to use this tube and auger grain out of the way before extracting the person.*

*The BeGrainSafe exhibit shows the apparatus to rescue someone trapped in grain. The force required to pull someone out of grain is too much for the people pulling and the person being pulled. So rescuers have to use this tube and auger grain out of the way before extracting the person.*

## TRAPPED IN GRAIN PREVENTION AND RESCUE

Standing atop flowing grain can quickly turn to tragedy. The grain can act like quicksand, pulling its victim down and burying a person in only seconds. While people can usually avoid standing in the backs of trucks or bins as they're being filled or unloaded, moving grain that has spoiled and bridged can create a dangerous scenario.

Preventing a scenario that could lead to entrapment by an avalanche of spoiled grain or collapse of a grain bridge may be as easy as maintaining good grain condition.

"Keeping grain in good condition is the very first step in preventing grain entrapment," says Gobeil. "Develop storage strategies, monitor moisture and temperature, try to maintain adequate aeration and follow recommendations for storage times."





The area Hertz lives in allows him to normally harvest his crop dry, but he's cognizant of not putting wet grain in a bin and he uses aeration to condition grain as needed for safe storage.

### SAFETY IN AND ON BINS

Falls are the third leading cause of agriculture-related injuries, and it only takes two seconds to fall 64 feet, CASA reports.

The most obvious culprit is using a ladder improperly. Besides choosing the right ladder for the right job, CASA urges farmers to safeguard against dirty and wet rungs, and defects like broken rungs, loose bolts and split rails. And before flying up those rungs, first place the ladder on solid and level ground and, if necessary, use boards under the ladder's feet to make it stable and level.

Even better would be to avoid climbing bins in the first place, especially during the rush of harvest. Keep bin hatch ropes in good working order and use bin-full sensors on the bins or the auger. If farmers can arrange for their tasks to be performed from the ground or using a scissor lift or cherry picker, so much the better.

### FIRES IN THE FIELD

Fires only need oxygen, a heat source and material to ignite. Dry harvest fields have lots of material that can burn. It just takes a heat source to ignite that material.

Something as simple as arranging for a parking spot can stop a fire from breaking out. "When parking a truck with a low muffler in a field, get the combine operator to cut the crop three inches high for 50 to 100 feet so there's a place you can park and not create a fire," says Hertz.

CASA also urges farmers take measures to avoid fires during refuelling. Before gas-ing up, CASA recommends turning off the engine and letting the machine cool down for five minutes.

When fuelling, avoid using electronic devices like mobile phones or MP3 players as a spark could cause ignition, CASA adds.

And before starting back up, clean up minor spills and allow any spilled fuel on the engine to evaporate first. And of course ensure a fire extinguisher is present.

### COMBINE FIRES

Anybody owning a Lamborghini would take care to make sure nothing ever happened to their baby, yet every year we see combines –

many of them worth more than a Lamborghini – engulfed in flames. Taking time to clean away chaff and dust can prevent some of these combine fires.

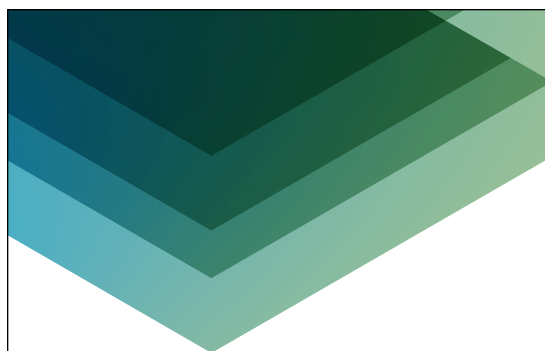
Some crops are more prone to excess buildup on a combine, making it necessary for inspections and cleaning to occur more often.

A few key areas to inspect and clean include batteries, feeder area, engine compartment, rotor covers, ground drive transmission, chopper area, tailings

housing, frame ledges and wire harness. Using a leaf blower or compressed air in a fire-safe area (including fields) can make cleaning much easier.

"Safety is an investment of time, says Gobeil. "Simply taking the time to clean key areas of the combine can prevent a costly fire." ✖

—Richard Kamchen is a freelance agriculture writer based in Winnipeg, Man.



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# Stretched too thin? Practice saying 'no'

Your phone means you're accessible all the time, which can be good for productivity but really bad for family and work-life balance. Saying 'no' includes setting a few smartphone rules.

BY JAY WHETTER

**L**inda Duxbury is a leading researcher in work-life balance and her surveys show that new technology – especially the all-access, all-the-time smartphone – might not be helping that much.

The smart phone improves productivity. No question. While waiting in line at the elevator or with the combine on autosteer, you can make grain sales, shop for machinery, deal with human resources issues and catch up on calls with your mother. But Duxbury, a professor at the Sprott School of Business at Carleton

University in Ottawa, has surveyed Canadians and found that while 65 per cent of respondents say this technology has increased their productivity, 70 per cent say it has increased their stress levels and 70 per cent say it has increased their workload.

Technology means you can get more done during down times, but maybe those down times are important for stress management. Technology also means you're accessible all the time, which can be good for productivity but really bad for family and work-life balance.



**Do More Ag** is a not-for-profit organization focusing on mental health in agriculture across Canada. Find out more at [domore.ag](http://domore.ag).





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## DUXBURY'S RESEARCH IDENTIFIES FOUR MAIN TYPES OF WORK-LIFE CONFLICT

- 1. Role overload.** We have our regular job, or jobs, as well as care for dependents (children and parents), volunteer work and management of the household. "It seems we have more jobs added to the bottom of the list than come off the top," Duxbury says.
- 2. Work interferes with family.** Work hours are long and getting longer and expectations are increased, which forces work to take priority over family. "This is the number one predictor of family breakup," she says.
- 3. Family interferes with work.** The flip-side to conflict 2 is when family responsibilities, such as staying home with a sick kid, taking kids to hockey tournaments, helping with homework or making meals, get in the way of the pile of work that has to get done. You have to set up work so that it can keep going while you're away or that it can stop so you can tend to these family needs. "You have to put family over work," Duxbury says. "If you haven't figured out how to do that, it will cause strain when issues come along."
- 4. Caregiver strain.** If taking care of aging parents isn't something you're prepared for, it can be unexpectedly stressful for work-life balance when that time of life comes along. Duxbury suggests that elder care is actually more stressful than child care because parents don't want to be treated like children and, unlike children, parents don't become more independent over time. "In rural areas, the difficulty in looking after elderly parents can be catastrophic," she says.

Duxbury underlines the conundrum for these conflicts: "Finding work-life balance on the farm is difficult, but the costs of not dealing with it are substantial." Help comes through behaviour change, she says, providing these 10 tips to achieve a healthier, lower-stress, more satisfying balance.

## DUXBURY'S 10 TIPS TO FIND BALANCE

- 1. Do only what ONLY you can do.** Did you capture the meaning in those two 'only's? What jobs can you do and nobody else because only you have the expertise? Do those jobs and only those jobs. Delegate the rest. If you don't have staff or family members to take on these jobs, then consider custom operators or temporary workers to do them.
- 2. When you do delegate, don't micromanage.** The purpose of delegating is to reduce your workload. If you're constantly watching over the person doing the job, that isn't helping you. Let it go.
- 3. Schedule brief breaks throughout the day.** Ten minutes every two hours does help.
- 4. Create a "to do" list each day. Use this to set priorities.** Be realistic. Don't just put work things on that list. If something different comes along, add that to the list and then scratch it off when finished. Duxbury recommends that when someone asks you "How long will that job take?", estimate the time then double it and double it again. "That will take the time strain off that job and allow you to fit it in among all the other jobs," she says. "It is far better to overestimate the time required so you can deal with unexpected."
- 5. Manage your smartphone.** "The more time people spend on their phone or tablet, the less able they are to interact socially," she says. Set some smartphone rules: Shut it off and put it away outside normal work hours. Do not check it during family time. Schedule a time for email. Do not take the phone with you on holidays.
- 6. Ask for help when you are busy or sick.** Asking for help is often hard to do, but Duxbury says it often helps to turn the situation around: Would you help others if they asked for it? You can expect them to do the same for you.
- 7. Prioritize family tasks.** Duxbury's quick tips for family tasks: Do the most important jobs. Do not be afraid to delegate. Learn to live with messiness. Take shortcuts.
- 8. Don't confuse being busy with being productive.** Focus on the jobs that truly add to the business's bottom line. Drop all other jobs or push them back, and use the saved time for family or for yourself.







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**9. Pick your battles.** Still thinking through that argument? Still fuming about that mistake you made? Let it go. Don't ruminate.

**10. Learn to say no.** There's the old expression, "You want something done? Ask a busy person." If you're the busy person everyone asks to do stuff, this tip is for you: "Just say 'no'. Don't feel guilty. Don't give a reason," Duxbury says.

In summary, Duxbury says improved work-life balance is your responsibility. You have to take charge of these behaviour changes. "No one is going to do this for you." ✖

—Jay Whetter is the editor of *Canola Digest*. This article is based on Linda Duxbury's presentation at FarmTech 2018 in Edmonton.

"You have to take charge of these behaviour changes. No one is going to do this for you."

—Linda Duxbury



## Call for help

Canola Digest asked Janet Smith about common stressors on the farm. Smith is the manager of counselling services (farm, rural and northern) and the suicide prevention coordinator with Klinik Community Health in Manitoba. She says finances, weather, work-life balance and family issues inspire many people to call in. These factors are often related. Family stress can occur because the farmer struggles to find work-life balance during busy times of year. Marriage breakups sometimes result, which adds to the stress.

Call farm stress lines to talk about these issues or anything else causing stress. Some websites also offer chat services and printable options.

- **British Columbia:**  
**CRISIS Centre BC**  
24-hour support – Phone 310-6789  
[crisiscentre.bc.ca](http://crisiscentre.bc.ca)
- **Alberta:**  
**Mental Health Hotline**  
24-hour support. – Phone 1-877-303-2642
- **Saskatchewan:**  
**Farm Stress Line**  
Phone 1-800-667-4442  
[mobilecrisis.ca/farm-stress-line](http://mobilecrisis.ca/farm-stress-line)
- **Manitoba:**  
**Manitoba Farm, Rural Support & Northern Support Services**  
M-F 10 a.m. to 9 pm – Phone 1-866-367-3276  
After hours - 1-888-322-3019  
[supportline.ca](http://supportline.ca)
- **Ontario:**  
**Mental Health Help Line**  
Phone 1-866-531-2600  
[connexontario.ca](http://connexontario.ca)

Smith suggests people check out a free app and website called Calm in the Storm [calminthestormapp.com](http://calminthestormapp.com). It rates your personal stress levels, and offers various tools and techniques to manage stress. "It is not specifically for farmers, but we think there are some excellent resources there for anyone to use," Smith says.

## A FEW SPECIFIC QUESTIONS AND CONVERSATIONS TO THE STRESS LINE RECENTLY HAVE BEEN:

- As a farmer and a woman, I have to manage multiple responsibilities. I feel like I'm burning out sometimes. Help!
- My husband is struggling with what looks like depression and anxiety, but he won't talk about it or go for help. It happens at the same time every year, but he just doesn't see it.
- Our relationship is in trouble. All our energies go into the farm, but I desperately want to save our marriage too.
- I can't sleep, I'm angry all the time and I just can't get motivated. Sometimes it feels like I'm going crazy. I either retreat into silence or take it out on my family and friends. What can I do?
- I don't have the cattle anymore to get me going in the mornings. I feel like I'm losing my sense of purpose.
- My kids don't want to take over the farm. We have farmed this land for generations, so it kind of feels like a death in the family. ✖





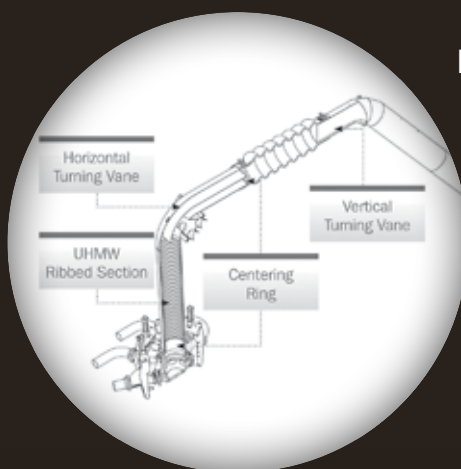


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