ALBERTA CANOLA
SaskCanola
Manitoba Canola Growers
canolacouncil OF CANADA

November 2022

# canola DIGEST

The Source for Canada's Canola Growers

# MARKET SIGNALS

**Our farmer panelists, including Fiona Jochum from St. Francois Xavier, Manitoba, share the people, fundamentals and strategies they follow when selling canola.**

INSIDE:

**Strategies to build trade in the Indo-Pacific** /pg 12

Squeezing oil from seeds /pg 20

THE ROI FOR 4R /pg 28


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**6** SaskCanola

SaskCanola co-funds the Prairie Pest Monitoring Network, which provides subscribers with free weekly updates during the growing season. Visit prairiepest.ca to subscribe. The voting period (if necessary) for SaskCanola directors opens November 14. Visit canolavote.com to cast your vote before December 1, 2022.

**8** Manitoba Canola Growers

Manitoba Canola Growers celebrates 40 years with a refreshed mission statement to reflect the same values of the past while remaining focused on the future. Research priorities for 2023 funding include flea beetle management, optimizing fertilizer, improving yield stability in environmental extremes and improving soil health.


# CALENDAR

**ALBERTA CANOLA GROWER ENGAGEMENT MEETINGS**
November 29 – Olds
December 1 – Fort Saskatchewan
December 13 – online
December 15 – Grande Prairie
albertacanola.com/GEM

**CANOLA WEEK (INCLUDING CANOLA DISCOVERY FORUM)**
December 6-8
Saskatoon, Saskatchewan and online
canolacouncil.org/event/canola-week

**CROP PRODUCTION SHOW**
January 9-12, 2023
Saskatoon, Saskatchewan
cropproductiononline.com

**SASKCANOLA AGM**
January 10, 2023
Saskatoon, Saskatchewan
saskcrops.com

**ALBERTA CANOLA AGM AND CONFERENCE**
January 17-18, 2023
Lethbridge, Alberta
albertacanola.com/agm

**CROPCONNECT CONFERENCE**
February 15-16, 2023
Winnipeg, Manitoba
cropconnectconference.ca

**MANITOBA CANOLA GROWERS AGM**
February 16, 2023 (during CropConnect)
Winnipeg, Manitoba
cropconnectconference.ca

**CANADIAN CROPS CONVENTION**
March 7-9, 2023
Ottawa, Ontario
canadiancrops.ca

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# Poppin' Aussies

BY JAY WHETTER

Australia achieved an enviable increase in canola production over the past three years.

After paltry crops of 2.3 million tonnes in 2018 and 2019, Australian canola output jumped to 4.8 million in 2020 and 6.8 million in 2021, according to USDA Foreign Agriculture Service data posted at PSD Online. The PSD Online forecast for 2022 is about the same, at 6.7 million. That means Australian canola production almost tripled from 2019 to 2021 and then stayed at that high level for 2022. That is the threshold leap we've been hoping for in Canada.

Yet in Canada, canola production peaked at 21.5 million tonnes in 2017 and hasn't returned. Statistics Canada September outlook pegs the 2022 crop at 19.1 million. These are big numbers compared to Australia but Australia's are going up, not down.

The reasons: more canola and more rain.

Australian farmers planted a lot more canola in response to higher prices. The country harvested around five million acres of canola in 2018 and again in 2019. That increased to 6.5 million in 2020, 7.9 million in 2021 and 8.9 million in 2022, according to PSD Online data.

Katrina and David Goodear farm between the towns Merriwa and Cassilis in New South Wales, about 300 km north of Sydney. They raise cattle and sheep and grow canola, wheat, barley and fodder oats.

"In our experience, the main reason for the massive growth in Australian canola production in the last two years is pricing," they wrote in an email. "That is to say the dollars per hectare we yield make canola a more profitable crop."

In the years before 2021, the Goodears would plant around 250 acres of canola. They planted 350 acres in 2021 and 670 in 2022.

As a bonus, Australia – generally drier than Canada – got the rain to support yields. Yields in 2018 and 2019 were around 20 bu./ac., below the decade average of 23 bu./ac. Yields zoomed to 32.5 bu./ac. in 2020 and kept zooming to 37.5 bu./ac. in 2021. As the USDA Foreign Agriculture Service reported, "Unusually, despite the diverse area in which canola is grown in Australia, nearly all regions had particularly good growing conditions throughout the season, which supported an extraordinary high average yield."

While Australians obviously hope the weather trend continues, Nick Goddard, executive officer of the Australian Oilseeds Federation, expects canola seeded area to drop back down "as wheat, barley and canola prices return to more typical relatives" and while input costs, like nitrogen, remain high. "The gross margin for growers is not as attractive as before," Goddard says, adding, "We have also pushed canola rotations pretty much to the limit so it would also be prudent for growers to wind back their canola rotations a bit."

The Goodears agree: "We do not expect to add more canola hectares in the future."

Interestingly, the USDA Foreign Agriculture Service expected the drop in canola area in Australia to occur in 2022. "Although soil moisture conditions in the canola growing regions are generally good and prices are very high in the lead up to sowing, there is an expectation that there will be a reduction in planted area," its staff wrote in an April 2022 report. "This is due to farmers having less suitable area available in their crop rotations for canola after the previous two years of big planted area."

Yet Australian farmers responded the following month with an unexpected increase in acres. (Australians grow most of their cash crops in the winter, which overlaps with Canada's growing season.) Could Australia be setting a new threshold in canola acres and production? Market demand for oilseeds would certain support this. That is why Canada's canola industry set the 26-million-tonne target.

So how does Canada make its production pop so we can keep up with demand?

Agronomy can reduce input costs per bushel and set the table for better yields, but the big factor is weather. There is no secret formula. Australian farmers achieved best-ever canola yields the past three years because of good growing conditions across its canola belt. Canada has the genetics, the agronomy and the farmer knowledge for better yields. With a Prairies-wide improvement in the weather cycle, Canada could finally experience the pop we've been expecting.

# Alberta Canola Grower Engagement Meetings 2022

Alberta Canola is hosting four Grower Engagement Meetings across Alberta during November and December 2022.

This year's meetings will include a deep dive into the federal government's proposed 30 per cent reduction in fertilizer emissions and the efforts of Alberta Canola and its collective partners to mitigate the impact of any new regulations that would impact the success of farmers in Alberta.

These meetings will also provide growers with an important opportunity to gain insight into the activities of Alberta Canola and to provide feedback directly to their elected farmer directors. Alberta Canola will also discuss proposed regulatory changes meant to align with the provincial government's efforts to reduce red tape.

Three of the meetings are scheduled to be in-person with an option for a virtual event.

**OLDS - POMEROY HOTEL**
TUESDAY, NOV. 29

**FORT SASKATCHEWAN – DOW CENTRE**
THURSDAY, DEC. 13

**VIRTUAL MEETING**
TUESDAY, DEC. 13

**GRANDE PRAIRIE – POMEROY HOTEL**
THURSDAY, DEC. 15

For more information and to register visit **albertacanola.com/GEM**


## Register to vote at the AGM

In order to ensure the integrity of the voting procedure, growers joining us online will need to register to vote.

Growers attending the AGM in-person or online are encouraged to **register to vote by January 10** to ensure voting platform access.

To register, please visit **albertacanola.com/vote**

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ALBERTA CANOLA

# Alberta Canola Conference and 33rd Annual General Meeting

Join the Alberta Canola Producers Commission for the 33rd Annual General Meeting (AGM) in Lethbridge on Tuesday, January 17 as part of the new two-day Alberta Canola Conference being held on January 17 and 18, 2023.

After hosting the AGM in Edmonton for the last 20 years, the Board of Directors has initiated a new plan that will see Alberta Canola's AGM move to different regions of the province each year. Canola is grown across Alberta and understanding the needs of growers in all regions is key to having the board make the best decisions to guide the organization.

The two-day conference will offer attendees an expanded version of the Grower Engagement Meetings with additional guest speakers and the AGM on the afternoon of the first day.

Growers from across Alberta will be able to join the AGM online and vote on motions and resolutions.

Resolutions to be presented at Alberta Canola's AGM must be received no less than 10 business days prior (January 3, 2023) to the AGM to allow for background to be collected and resolutions to be prepared for presentation at the meeting.

Join us in the afternoon on January 18 to learn about our funding priorities, the future threats of canola production and for an inside look of the research projects we are currently working on.

Visit albertacanola.com/events to learn more.

**Alberta Canola Conference**

**SANDMAN SIGNATURE LODGE IN LETHBRIDGE**

JANUARY 17 & 18, 2023

# Alberta Canola welcomes *Bijon Brown* as the new *Sr. Policy Analyst*

The Alberta Canola Producers Commission is pleased to announce that Bijon Brown has joined our team as the new senior policy analyst.

Bijon will be the staff lead for our Government and Industry Affairs (GIA) Committee, which is responsible for working on issues and key policy files important to canola farmers and advising governments on matters concerning the canola industry. In the last couple of years, Alberta Canola has strategically moved towards improving grower engagement in the areas of policy development and research, and Bijon's skills are a great addition to continue building momentum down this path. He will also work collaboratively on various initiatives and government consultations with our national and provincial canola organizations, and with our provincial partners as Team Alberta Crops.

Bijon has a PhD in Agricultural Economics from the University of Alberta and two Master of Science degrees in Agricultural Economics (2013 University of Saskatchewan) and Economics (2008 University of the West Indies Mona). His 14 plus years of experience in applied economics research, quantitative analysis, economic analysis in agriculture, policy analysis and advocacy for a producer organization will be great assets to our Commission.

He comes to us from Alberta Pork where he worked as a production economist since 2019; and before this he was an economist with the Government of Alberta in Treasury Board and Finance. He lives in Leduc with his wife and two children.

Bijon can be reached at:
**bijon@albertacanola.com**
**(780) 243-0862**

# Prairie Pest Monitoring Network collaborates on insect surveillance

*Entomologist Meghan Vankosky, co-lead of the Prairie Pest Monitoring Network, says farmer volunteers are key to the program. "Volunteers get real-time information about risk in their fields and provide data that contributes to maps communicating regional risk for the benefit of their neighbours."*

Since the mid-1990s, the Prairie Pest Monitoring Network (PPMN) has developed protocols and conducted insect population monitoring for field crop pests in Alberta, Saskatchewan, Manitoba and the Peace River region of British Columbia.

SaskCanola currently co-funds the PPMN with Agriculture and Agri-Food Canada (AAFC) and other commodity organizations in the Prairie provinces as part of the Western Grains Research Foundation-led Integrated Crop Agronomy Cluster.

The PPMN provides its subscribers with free weekly updates by email during the growing season (including an all-important weather synopsis). In this way, timely data gets to stakeholders when insect pests pose the biggest threat to crop yield. Non-subscribers can find the same information online at prairiepest.ca.

Entomologist Meghan Vankosky is co-lead of the PPMN with Jennifer Otani and she is based in Saskatoon. Otani works out of the AAFC Beaverlodge Research Farm in northern Alberta.

Users of the pest monitoring information and risk maps include farmers, agronomists, industry members and policymakers. "Our audience is every stakeholder in the agricultural value chain and goes way beyond other entomologists and academics," says Vankosky.

In terms of canola crop pests, the PPMN focuses on monitoring cabbage seedpod weevil (an invasive species), diamondback moth, Bertha armyworm and grasshoppers. Diamondback moth are notable for their pesticide-resistance and migratory patterns.

The pluses of a collaborative monitoring program for farmers, agronomists and others involved in pest management include detecting invasive insects that may become a problem and providing other resources. This includes scouting protocols that farmers can use to make pest management decisions.

Overall, the PPMN emphasizes the importance of data collection and monitoring to understand trends that will help direct future research, as well as ensuring farmers are able to manage those trends in their fields.

The PPMN collects annual data and compiles it into distribution maps, and in some cases, forecast maps for the next growing season. Maps are available for canola pests including Bertha armyworm, cabbage seedpod weevil, diamondback moth and grasshoppers. Scouting guides and monitoring protocols are also available for these insects.

Established monitoring protocols include pheromone traps (a type of insect trap that uses pheromones to lure specific species of insects) for Bertha armyworm moth and diamondback moth. "We count on volunteers to host the pheromone traps and report weekly trap catch. Volunteers get real-time information about risk in their fields and provide data that contributes to maps communicating regional risk for the benefit of their neighbours. Volunteers help us to provide timely identification of emerging insect threats across the Prairies," says Vankosky.

The PPMN provides all necessary supplies at no cost to volunteers. All pest monitoring activities are conducted following provincial biosecurity guidelines.

The PPMN relies on volunteers to grant access to private property for insect sampling. In Saskatchewan, landowners can visit the Saskatchewan Ministry of Agriculture website to sign up to participate in insect, weed and plant pathogen monitoring. More information can be found under Pest Monitoring at www.saskatchewan.ca.

Another aim of the PPMN is to highlight the importance of natural enemies of crop pests. Concludes Vankosky, "the PPMN is highly collaborative on the federal, provincial and academic levels. We hope the information that we provide helps growers make the best possible decisions for their crops. It's a bit of a cliché, but knowledge is power for making in-season and between season decisions."

To find out more about the PPMN, and become a subscriber, go to **prairiepest.ca**

**BE IN THE KNOW!** For the latest canola news and information, subscribe to SaskCanola's e-newsletter at **saskcanola.com**.

SaskCanola

# Mark your calendars for SaskCanola's AGM

SaskCanola's Annual General Meeting (AGM) is scheduled for Tuesday, January 10, 2023 at 1:30 PM at Prairieland Park in Saskatoon, in conjunction with other crop commissions in the province.

The purpose of the AGM is to review audited financials and activities from the previous year, including research investments, policy and advocacy initiatives, and grower programs. To help growers plan for the 2023 growing season, market analyst Chuck Penner will present his insights on the state of commodity markets.

Registered canola producers are eligible to vote on motions and resolutions. Registered canola producers are those who have grown and sold canola in Saskatchewan in the last two years and have not requested a refund in the previous year.

Anyone interested in bringing forward a resolution to the AGM is encouraged to reach out to the SaskCanola office by phone at 306-975-0262 or by email at info@saskcanola.com.

Find out more AGM information at **www.saskcrops.com**

*Chuck Penner*


**Vote**

Visit **canolavote.com** to cast your vote before December 1, 2022.

# SaskCanola's Board Election – *What's next*

2022 is an election year for SaskCanola and the nomination process is well underway to fill four positions on our Board of Directors. SaskCanola is governed by eight farmer directors who are elected by levy payers to guide the Commission and help grow producer prosperity.

All levy-paying producers of Saskatchewan-grown canola are eligible to vote in SaskCanola's board election. If an election is taking place, producers will receive a letter in November that includes a unique voter number. Biographies for each candidate will also be made available at saskcanola.com.

Visit canolavote.com to cast your vote before December 1, 2022. Or, if you wish, you can request a paper ballot and vote by mail.

New directors will begin their four-year terms at SaskCanola's Annual General Meeting on January 10, 2023. SaskCanola is governed by canola farmers so make sure your voice is heard and vote!

**Here are the key dates and actions taking place over the next few months:**

**CALL FOR NOMINATIONS CLOSES**
FRIDAY, OCT. 14 AT NOON
If there are five or more nominees, there will be an election.

**VOTING PERIOD OPENS**
MONDAY, NOV. 14, 2022

**VOTING PERIOD CLOSES**
THURSDAY, DEC. 1, 2022 AT NOON

**ELECTION RESULTS ANNOUNCED**
FRIDAY, DEC. 2, 2022

**ANNUAL GENERAL MEETING**
TUESDAY, JAN. 10, 2023

# MANITOBA BULLETIN

# Celebrating 40 Years!

Manitoba Canola Growers
Farmer Focused for 40 Years

The story of canola production in Canada is an exciting journey of innovation and growth that has long been supported by people committed to seeing the crop, and the farmers who grow it, prosper.

Even before the days when Baldur Stefansson and Keith Downey collaborated with other scientists, chemists, nutritionists and plant breeders to create a new crop called canola, people recognized the need for an association to manage communication between scientists, farmers, merchants, processors and consumers.

The Rapeseed Association of Canada (RAC) is where it all began, with the first annual meeting held in Winnipeg in March 1968. With a broad, industry-wide and national focus established, it wasn't long before people realized that there was also need for a regional, farmer-focused organization to continue expanding the innovation and growth down to the grassroots level.

"It was fascinating to see the exchange of ideas, and problems being discussed by the different segments of the industry. It became evident to me that there was a role for organized grower groups to be involved," says Ken Edie, initial president, Manitoba Canola Growers Association (MCGA).

Just two years later, in March 1970, the first meeting of the Manitoba Rapeseed Growers Association was held in Swan River. As the introduction of canola evolved farmers away from traditional rapeseed and interest in this exciting new crop soared, the Manitoba Canola Growers Association (MCGA) was incorporated on July 8, 1982.

Celebrating 40 years of supporting canola farmers, Manitoba Canola Growers has refreshed their mission statement to reflect the same values of the past while remaining focused on the future.

MCGA's mandate is to represent the approximately 7,500 farmers who grow canola in the province, and through a new strategic plan the association will serve members in three key ways over the coming three to five years:

1. **DELIVER MEANINGFUL COMMUNICATION AND ENGAGEMENT**
2. **FOCUS ON FARM SUCCESS**
3. **ELEVATE FARMERS AS BOLD LEADERS AND EXPERTS**

The ability to celebrate 40 years of serving farmers comes from the hard work and dedication of past and present MCGA board members and staff. MCGA recognizes them for their commitment to decisions, policies and adaptability that have and will continue to support a progressive and forward-thinking canola association. Their actions have built the foundation on which MCGA will continue to grow and achieve its vision to deliver bold action for canola farmers.

**Mission Statement**

**FARMER FUNDED, FARMER FOCUSED.**

**Driving success for Manitoba canola farmers through research, market development, advocacy and outreach.**

**STAY CONNECTED.**
Sign up for our Canola Crush Newsletter today! **Visit www.CanolaGrowers.com**

Manitoba Canola Growers

# Canola Research Priorities

Manitoba Canola Growers (MCGA) research program focuses on funding and investing in projects and programs that match farm priorities to improve the sustainability of Manitoba canola farms through:

**PROFITS** – working towards improved and stable profits from Manitoba canola acres

**PEOPLE** – providing safe and manageable farm production options

**PLANET** – increasing the longevity of Manitoba farmland by improving soil quality and cropland biodiversity, while reducing negative environmental impacts of canola production

## OVERALL RESEARCH PRIORITIES

1. Increase canola yield potential and stability in Manitoba conditions through genetic and agronomic solutions.
2. Protect canola yields from current and emerging pests.
3. Improve canola nutrient use efficiency through 4R management practices.
4. Reduce or improve the environmental impact of canola production.
5. Reduce harvest and storage losses through genetic and management solutions, as well as equipment optimization.
6. Ensure supply of high-quality canola to meet current and future end-use demands.

The majority of MCGA research funding is directed towards canola-specific research. However, MCGA additionally reviews Manitoba whole-farm focused research proposals in collaboration with other funding organizations.

## 2022-23 RESEARCH FUNDING TARGETS

To fill gaps in current funding, MCGA is actively seeking new projects that are focused on:

- Flea beetle management strategies
- Optimizing fertility management in canola
- Improving yield stability in environmental extremes
- Managing acres to improve soil health

To learn more about MCGA funded research visit **CanolaGrowers.com**

# MARKET SIGNALS

**Our farmer panelists share their approaches to canola marketing:** What signals and fundamentals do they watch for, how do they get market information, and whose advice do they follow?

BY JAY WHETTER

## MELISSA DAMIANI
## BLUFFTON, ALBERTA

Melissa Damiani is honest about her marketing skills: "I have my strengths and passions when it comes to farming, but marketing is not one of them," she says. "Why struggle through something you dislike or aren't good at?"

Her advice to self: Don't be afraid to ask for help. Marketing advisors can reduce some pressure and help with decisions. "If you can find someone you trust that understands your business, your challenges and your goals, that is worth something," she says.

Various factors feed into their marketing plan. Crop rotation is one. "I would like to grow more oats but we just don't have the bin space." They don't do a lot of pre-selling because results are so unpredictable in their area. "It seems like early frost, snowstorms, late hail or other weather difficulties are regular occurrences. I have to be careful not to over-commit on sales or contracts," she says. "We are fortunate to live in a big feed market where silage and green-feed are definitely options. This can be especially useful on a hail year."

**"I have my strengths and passions when it comes to farming, but marketing is not one of them. Why struggle through something you dislike or aren't good at?"**

–Melissa Damiani

They set target selling prices based on fixed and variable costs of production, and make decisions based on cashflow and logistics.

"We know what bills we have coming due, and sometimes have to factor our sales into those timeframes so we can keep those commitments," she says. And because they both work off-farm jobs and the bin yard "isn't exactly what we would like," timing and labour are factors for hauling grain. "We have to make sure we don't need a winch truck to haul grain in and out of the yard if the ground is soft."

## FIONA JOCHUM
## ST. FRANCOIS XAVIER, MANITOBA

Fiona Jochum sells based on two math-based thresholds. Threshold one: the price covers their cost of production. This requires accurate calculation of all costs. Threshold two: the price improves on the previous crop year. This requires accurate record-keeping of historic sales. If selling prices don't exceed threshold two, they should at least meet threshold one.

"Ideally, we want to get five per cent better every year – within reason," Jochum says. Sometimes market situations make it impossible to get a better price. Sometimes the five per cent increase doesn't require any marketing skill or strategy at all. "In 2020, a five per cent increase over 2019 wasn't good enough," she says. The same would be true for 2021 versus 2020. Statistics Canada's database shows average canola selling prices of $510.86 for the 2019-20 crop year, $640.73 for the 2020-21 crop year, and $912.80 for the 2021-22 crop year.

**"Ideally, we want to get five per cent better every year – within reason. ... In 2020, a five per cent increase over 2019 wasn't good enough."**

–Fiona Jochum

With their goals in mind, Jochum and her father, who farm together, have daily discussions over morning coffee to talk through the market situation. The basic strategy is to sell incrementally throughout the year – "a few truckloads at a time when prices meet our goals," she says.

Incremental selling means they don't have to guess market highs for the year. "There is so much information and yet no one really knows where the market is going," Jochum says. "Even when global weather suggests that markets should go up, they don't always go up." The Jochums subscribe to two marketing newsletters, DePutter and GrainFox, that provide strategies for incremental selling.

"We don't sell on a rigid schedule," Jochum says. Each day they talk about market fundamentals, news, market updates from grain buyers, and advice from DePutter and GrainFox. They check how the price of the day lines up with their targets, and decide whether to sell. They also forward-sell 15 to 20 per cent of their anticipated yield each year, taking advantage of good pricing opportunities through the previous winter and spring.

## JOSH HEIDT
## KERROBERT, SASKATCHEWAN

Josh Heidt uses marketing trends to his advantage. He aims to sell more grain in the spring and summer when demand can start to exceed supply and prices often increase. "So many try to move grain off the combine for reasons of limited storage capacity, storage risk and bill payments," he says. "We want to hold off until later when shorter supplies create opportunities. It means more risk but higher upside."

Increased risk with this strategy often comes down to storage,

particularly for canola, a crop that can spoil and burn if grain is too moist, too hot, too green or has higher levels of dockage. "We lost 10,000 bushels of canola five years ago," Heidt says. "There is nothing worse that losing grain in storage, especially when you've gone through all the trouble to get it there."

**The Heidts invested $60,000 to $70,000 in BinSense a couple years after losing 10,000 bushels. "Now we don't have to physically check bins."**

–Josh Heidt

So how does he mesh this storage disaster with a marketing strategy that depends on safe long-term storage? With a BinSense system. The system includes cables to measure grain temperatures in all bins and, more importantly, continuous automatic monitoring through a central hub. The system alerts Heidt through his phone when it detects unexpected temperatures. Stopping spoilage early can save the bin from grade loss. The Heidts invested $60,000 to $70,000 in BinSense a couple years after losing the 10,000 bushels. "Now we don't have to physically check bins," he says. Checking canola bins every month isn't good enough to save a bin if it starts to heat, and cables without the automatic monitoring system need to be read one at a time with a hand-held monitor. BinSense provides regular monitoring and automatic alerts. "What's easier than that?" he says.

For market information, Heidt tries to focus on fundamentals, including weather-influenced production around the world, that can change the global supply and demand situation. "We want to block out the noise of daily jumps and falls," he says. They subscribe to FarmLink's marketing newsletter for fundamentals-based advice. "This information helps us base decisions on actual numbers, not gut feel."

## MURRAY LEWIS
## CLEARDALE, ALBERTA

**Before harvest 2022 even began, Murray Lewis had already sold some 2023 canola. "When prices are good, I want to be selling some."**

–Murray Lewis

Murray Lewis often starts selling a year in advance of harvest. Before harvest 2022 even began, he had already sold some 2023 canola. He did the same for this year's crop, pre-selling part of his anticipated yield over a year ago. "When prices are good, I want to be selling some," he says.

His primary source of marketing advice is MarketSense from Cargill. "I don't want marketing to be my job, so I enrolled in MarketSense to keep me up to speed on daily events," he says. "I'm paying them to do the leg work."

Risk management is a critical part of his marketing plan. How do fundamentals to supply and demand relate to his risk. Local and global weather, whether good or bad, influences supply. War can reduce supply. Inflation can reduce demand. Lewis follows hedge fund activity on the futures markets. Big investors can influence market prices and volatility for all crops, even if their activity is focused on corn and soybeans. MarketSense helps him evaluate his exposure to risk, identifying situations where he may want to sell more and situations where he may want to cut his losses – like when prices are poor and heading lower.

MarketSense does not bind Lewis to Cargill. He has a few options locally, including Viterra at Grimshaw north of the deep Peace River valley, and Cargill, Parrish and Heimbecker, Richardson and a new G3 at Rycroft south of the valley. "That big valley makes the trucks snort," he says.

**"Marketing seems like such a gamble. I feel like I'm at Vegas."**

–Bryce Moore

## BREANN AND BRYCE MOORE
## LEROY, SASKATCHEWAN

The Moores like to look for major global weather events – frost, extreme rain, drought – that can trigger a panicked rally in the market. Bryce will go on Twitter and check as many opinions as possible. If market experts seem to think the supply effect won't be as bad as the news suggests, they'll make a quick sale to take advantage of the spike – because it won't last. If it really is a major event, they'll often wait because the rally could be long.

They also look for trade news, like when China quit buying Canadian canola or when Indonesia banned palm oil exports, that could trigger dramatic falls or spikes in local prices. Political unrest, like the war in Ukraine, also creates marketing opportunities. Bryce sees market specials from local grain buyers as indicators of a rally. "They're trying to secure supply before the price goes up," Bryce says, so he'll often wait when he gets one of those notes.

To set expectations for the year, the Moores check on weather reports from Drew Lerner, the annual grain outlook from Brad Magnusson, and market outlook sessions at various conferences. Finally, their off-farm jobs – Breann is a retail agronomist at Midway Co-op in LeRoy and Bryce is a professional agronomy consultant with Western Ag – result in many conversations with other farmers. "I'll come home and tell Bryce that farmers are selling for this and that reason," Breann says.

"Marketing seems like such a gamble," Bryce says. "I feel like I'm at Vegas." To reduce some of that risk, they calculate cost of production to set a break-even price, and sell incrementally when prices are profitable. "We rarely sell more than 30 per cent at a time," he says. They will also pre-sell if they can lock in a profit, but never more than 40 per cent of expected production.

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

Photo credit: pexels/sascha-duser

The federal government's priority to further build relations in the Indo-Pacific represents a significant opportunity for Canada to diversify exports of canola. This article outlines the strategic steps value chain organizations recommend to strengthen Canada's presence in this promising region.

# STRATEGY TO BUILD TRADE IN THE INDO-PACIFIC

BY WHITNEY DENCKLAU

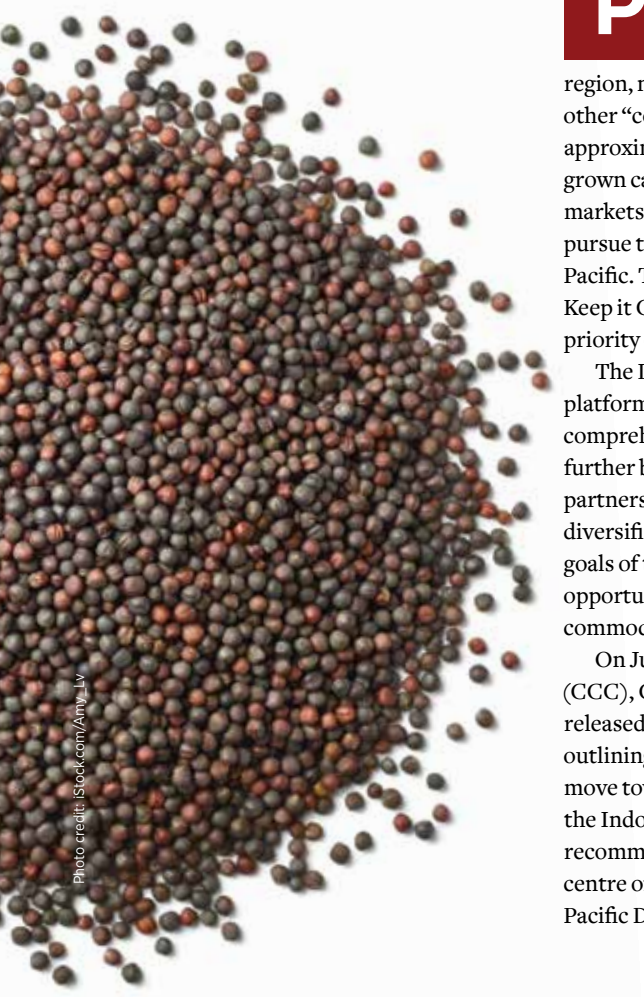


Photo credit: iStock.com/Anyv_Lv

Positive demographic and income growth trends in the Indo-Pacific have significantly increased market interest in the region, not just for Canada, but for many other "competitor" countries. As approximately 90 per cent of Canadian grown canola is consumed in export markets, Canada's canola industry wants to pursue trade opportunities in the Indo-Pacific. The Canola Council of Canada's Keep it Coming 2025 strategic plan puts a priority on strong trade relations.

The Liberal government's re-election platform included a promise to launch a new, comprehensive Indo-Pacific strategy to further build diplomatic and economic partnerships in the region. Having trade diversification listed among the primary goals of this strategy presents an opportunity for canola and other commodities.

On June 1, the Canola Council of Canada (CCC), Cereals Canada and Pulse Canada released a jointly commissioned report outlining steps the government can take to move toward agricultural export growth in the Indo-Pacific. The report's key recommendation is to establish an in-region centre of excellence: a Canadian Indo-Pacific Diversification Office.

## THE RIGHT REGION AT THE RIGHT TIME

Currently, more than 40 per cent of Canada's canola seed, oil and meal exports are bound for the Indo-Pacific. The region includes top canola markets China and Japan as well as Pakistan, India and the Southeast Asia countries. Market access issues in the form of non-tariff barriers (NTBs) are becoming more prevalent and hinder Canada's ability to grow our footprint in the region. Matters causing NTBs are complex and diverse, so there isn't a one-size-fits-all approach or one type of expert who can address them.

Having a trade office in the Indo-Pacific will not only support a timely response to market access issues, but will also give Canada a competitive advantage over other countries vying for business in the Indo-Pacific. It signals Canada's commitment to these key markets and positions Canada as a trusted knowledge partner to help foster greater relationships with government officials and regulators in the region while also engaging in capacity building activities.

Staffing the office with the right people is also a cornerstone to the success of this approach. Having experts from various facets, including technical personnel, like plant scientists and pathologists to advise on sanitary and phytosanitary issues, along with regulatory and trade policy

professionals, is key. This helps ensure that no matter the type of issue, there are boots-on-the-ground experts to take proactive measures and address NTBs quickly. These highly technical experts will complement current resources in the region such as Trade Commissioners, embassy officials and provincial trade representatives.

## NEXT STEPS

The same day as the release of the report, representatives from the three organizations appeared before the House of Commons Standing Committee on International Trade to discuss this recommendation and the business case behind it.

Following that appearance, on June 9, 2022, Ottawa announced that the Honourable Mélanie Joly, Minister of Foreign Affairs, had organized an expert Indo-Pacific Advisory committee to give independent insights and guidance to inform government's promised strategy. Further announcements from the federal government are expected later this year and could include the release of their highly anticipated Indo-Pacific strategy.

The value chain organizations' report and recommendations are clear: expanding Canada's exports to the Indo-Pacific will help build Canada's resiliency and establishing an in-region trade diversification office is a major milestone to get there. The CCC and its value chain partners will continue advocacy on this issue over the coming months.

Visit growindopacific.ca for more about this initiative and to read the executive summary of the report.

*—Whitney Dencklau is a communications manager with the Canola Council of Canada.*


**The Canola Council of Canada (CCC), Cereals Canada and Pulse Canada released a jointly commissioned report with a key recommendation to establish a Canadian Indo-Pacific Diversification Office.**

Southeast Asia, which includes Indonesia, Philippines, Thailand and Vietnam, has a growing population and increasing demand for imports. The region is of strategic importance for Canadian trade, including for canola meal.

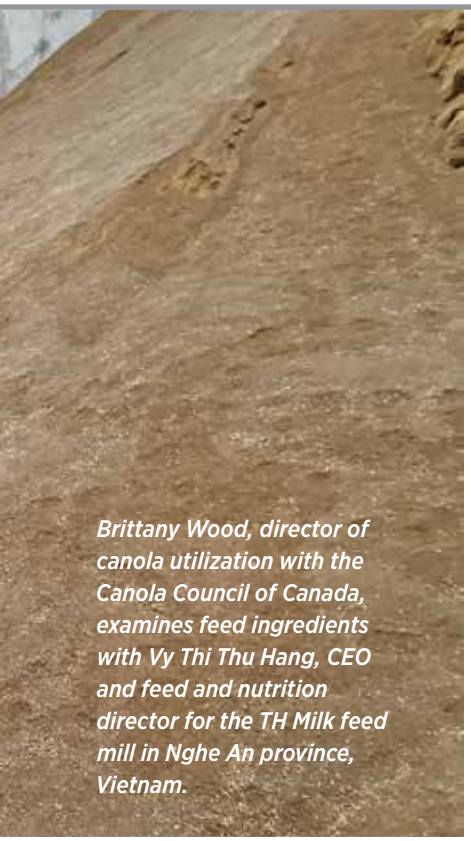
# CANOLA MEAL FUELS TRUE HAPPINESS IN SOUTHEAST ASIA

BY BRITTANY WOOD

Canadian canola processing capacity is set to expand by up to 50 per cent in the next few years as new facilities and expansions come on stream in Saskatchewan. This is exciting news for Canada's canola industry, with expansion largely driven by high demand for canola oil as both a high quality, nutritious oil and a low carbon feedstock in biofuels. This demand-driven increase in oil production also means increased meal production. While demand for high quality protein ingredients in livestock and aquaculture globally is also increasing, we may have to work a bit harder to ensure Canadian canola meal is properly valued.

Canola meal is a highly valued protein ingredient for dairy cattle rations in the U.S., with the U.S. market taking 60 per cent, on average, of canola meal produced in Canada. China also values Canadian canola meal, primarily as a feed in aquaculture diets. But with Canada set to produce close to an additional three million metric tonnes of canola meal in the coming years, up from five to six million tonnes currently, we need more of these high-value markets. We don't expect growth in the U.S. dairy market but see definite growth potential in China. Canada's domestic market is the third biggest for canola meal, with over half a million tonnes staying here for a diversified use, but the forecast is for only modest growth. That means we need ready access to new markets primed to value canola meal accordingly. Enter Southeast Asia.

Southeast Asia is a growing region. From 2011-20, the region exceeded China and India in imports, both in total dollars and annual growth, according to UN Comtrade and ITC. The Canadian government is developing an Indo-Pacific strategy with the stated goals of advancing Canadian interests in a number of areas including trade diversification. And Southeast Asia, which includes Indonesia, Philippines, Thailand and Vietnam, is expected to lead all of Asia in import growth. Livestock industries in Southeast Asia are modernizing and opportunity exists for Canadian canola meal to be highlighted as a high quality protein ingredient.



*Brittany Wood, director of canola utilization with the Canola Council of Canada, examines feed ingredients with Vy Thi Thu Hang, CEO and feed and nutrition director for the TH Milk feed mill in Nghe An province, Vietnam.*

*Charles Qin, the CCC canola meal representative in Asia, presents canola meal feeding trial results to the Vinamilk nutrition team in Ho Chi Minh, Vietnam.*

Photo credit: CCC

In late August, I had the opportunity to visit Vietnam as part of a broader mission to build market opportunities for canola meal in Southeast Asia. Since my visit to Vietnam back in 2019, it's obvious that the feed industry has expanded and the need for high-quality protein ingredients for livestock and aquaculture is apparent. And what a difference visiting in person makes! While virtual meetings have allowed us to continue to engage with people from outside of our country over the last few years, I was reminded of the value gained by meeting people in their element.

A mission highlight for me was the visit to TH Milk, just a few hours south of Vinh City in the northern half of Vietnam. This fully integrated dairy company that began from grassroots in 2008, now owns over 70,000 dairy cows spread across 10 farms. The company is owned and managed largely by women who seek, from what I could tell, attention to detail and efficiencies in all management areas. This was clearly evident in their feedmill, where ingredients are closely selected and monitored to ensure they provide high quality nutrients to the cows. With a limited land base to grow feed crops, many feed ingredients need to be imported, including protein ingredients such as canola meal. TH Milk imports 20,000 tonnes of canola meal each year and has keen interest to work with Canadian suppliers and the Canola Council of Canada (CCC) to expand their usage. If you're curious, TH stands for True Happiness.

**Since my visit to Vietnam back in 2019, it's obvious that the feed industry has expanded and the need for high-quality protein ingredients for livestock and aquaculture is apparent.**

While I participated in only the Vietnam visit, the CCC meal mission began in the Philippines, moved to Indonesia, and then Vietnam. The mission included the Philippines Livestock Expo in Manila, Faculty of Animal Science at IPB University in Bogor, Indonesia, and Vinamilk in Ho Chi Minh City, Vietnam. Plans are also underway to visit Thailand in the coming months. Charles Qin, the CCC canola meal representative in Asia, completed the full mission. In planning the mission, we engaged with Canada's trade commissioner service in each country.

While we may not see exports of canola meal to these countries in the short term, the utilization program at the CCC is designed to build value and opportunity over the long term to support exports of canola products. We'll continue to build relationships and share information with our established contacts.

*—Brittany Wood is director of canola utilization with the Canola Council of Canada.*


*Charles Qin, the CCC canola meal representative in Asia, visits the Faculty of Animal Science at IPB University in Bogor Indonesia. Charles Qin is third from the left. The two people in the middle are William Kendall, agriculture counsellor at the Embassy of Canada in Indonesia, and Idat Galih Permana, dean of Faculty of Animal Science. Qin says the fist pose indicates a "wish to do a better job!"*

Farmers in India, Australia, Russia and Ukraine produced 10 million tonnes more canola and rapeseed in 2022 than they did in 2018. By comparison, tonnage from the big three – Canada, the EU and China – is flat.

# CANOLA MARKET SNAPSHOT – RISE OF THE OTHERS

BY JAY WHETTER

Canada's canola crop rebounded to a more normal level of production in 2022 after the drought-reduced 2021 output. Statistics Canada, in its September report, estimated 2022 canola production at 19.1 million tonnes, up from 13.8 million in 2021 but below output from the previous four years. The biggest Canadian crop on record was 21.5 million tonnes in 2017. (See Table 1.)

Hot, dry conditions, especially in the last half of the season, reduced yields in Alberta, and southern and western Saskatchewan. The Peace region had a wet spring that delayed and reduced seeded acres, then experienced a drier-than-normal summer. Late seeding due to excess rainfall through Manitoba and eastern Saskatchewan meant many canola crops missed the prime growing month of May. This reduced yield potential, even though a longer frost-free period allowed late crops to reach maturity.

Statistics Canada, in September, forecast production and yield for Saskatchewan at 9.7 million tonnes and 37.8 bu./ac., for Alberta at 6.1 million tonnes and 41.7 bu./ac., and for Manitoba at 3.1 million tonnes and 42.5 bu./ac.

While the CCC goal of 52 bu./ac. average yield by 2025 is possible based on genetic potential of the crop, it will require better than average growing conditions from seeding to harvest – something farmers haven't experienced in recent years.

## RISE OF THE "OTHER" COUNTRIES

Canada, the European Union and China continue to lead the world in canola and rapeseed production, but production from those three sources has been basically flat over the past five years. Global supply, estimated at 83.1 million tonnes in *Oilseeds: World Markets and Trade* for September 2022, a report from the United States Department of Agriculture's Foreign Agricultural Service (FAS), has risen of late on the back of strong and steady growth in "other" markets – specifically India, Australia, Russia and Ukraine. Those four countries increased production by 10 million tonnes over the past five years, with an FAS forecast of 24.8 million tonnes for 2022. (See Table 2.)

## BIG REBOUND IN GLOBAL OILSEED SUPPLY

Ukraine, normally the world's largest sunflower producer, will have a much smaller crop this year. The country produced 17.5 million tonnes of oilseed sunflowers in 2021, two million tonnes ahead of Russia, according to the FAS *Oilseeds: World Markets and Trade* report for September 2022. However, FAS puts Ukraine's production at 10.5 million tonnes for 2022 – a huge drop for obvious reasons. Ukrainian farmers are working in a war zone.

While this drop is significant for Ukraine, it has little bearing on world oilseed production. FAS, as of September, put oilseed output at 644.8 million tonnes for 2022, up from 602.2 million in 2021. Soybean accounts for most of the gain, up 36 million tonnes year over year.

World vegetable oil production, which includes palm oil, is at 219.1 million tonnes, up from 211.3 million last year, according to FAS.

*Canola Digest*, wondering how production can increase despite global reports of drought and heat, posed three questions to USDA market analysts.

1. We heard a lot about sweltering summer heat in Europe. Yet FAS forecasts EU rapeseed production at 18.2 million tonnes, up from 17.2 million in 2021. Why did summer heat not affect rapeseed production?

Bob Tetrault, FAS analyst: "Europe's rapeseed crop was mostly harvested before the onset of the excessive heat and drought. Prior to the heat wave, the yield looked very good. But heat diminished yield to close to the five-year average."

2. Chinese rapeseed production forecasts are flat year over year, based on your September estimate. Soybean production is up. Why did drought along the Yangtze region in China not affect rapeseed or soybean production forecasts?

Tetrault: "Drought in southern China along the Yangtze was very severe, however, the majority of soybean production is in

northern China. For rapeseed, southern China along the Yangtze is an important growing region, but most of the crop had been harvested."

3. Why did drought in the U.S. not affect soybean production? (The question was asked based on August estimates, which had U.S. soybean production at 123.3 million for 2022, up from 120.7 million in 2021. The September estimate was revised lower, to 119.2 million.)

Keith Menzie, senior oilseeds economist with the World Agricultural Outlook Board of the USDA: "Although the drought is mostly west of the main soybean producing region, the impact can be seen in the September Crop Production report. Kansas, Nebraska and Iowa yields are currently forecast at 8, 11, and 3 bu./ac., respectively, below 2021 yields. Furthermore, Kansas, Nebraska and Illinois yields in September are below the August forecast, reflecting the impact of drought. At the national level, yields are not too far below trend levels as many areas of the country are doing well."

*Table 1. Acres, production and yield comparison for Canadian canola*

| | 2022* | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|---|---|---|---|---|---|
| Seeded area (million acres) | 21.4 | 22.3 | 20.8 | 21.2 | 22.8 | 23.0 |
| Production (million tonnes) | 19.1 | 13.8 | 19.5 | 19.9 | 20.7 | 21.5 |
| Yield (bu./ac.) | 39.7 | 27.4 | 41.8 | 41.9 | 40.6 | 41.3 |

Source: Statistics Canada. *Model-based estimate from August, posted in September

*Table 2. Canola and rapeseed production by country*

| | 2022* | 2021 | 2020 | 2019 | 2018 |
|---|---|---|---|---|---|
| **Country** | **(million tonnes)** | | | | |
| Canada | 20.0 | 13.8 | 19.5 | 19.9 | 20.7 |
| European Union | 18.2 | 17.2 | 16.7 | 15.3 | 18.0 |
| China | 14.7 | 14.7 | 14.0 | 13.5 | 13.3 |
| India | 11.0 | 11.0 | 8.5 | 7.4 | 7.5 |
| Australia | 6.7 | 6.8 | 4.8 | 2.3 | 2.4 |
| Russia | 3.9 | 2.8 | 2.6 | 2.0 | 2.0 |
| Ukraine | 3.2 | 3.0 | 2.8 | 3.5 | 2.9 |
| United States | 1.6 | 1.2 | 1.6 | 1.6 | 1.6 |

Source: USDA Foreign Agriculture Service. *September 2022 estimate

**"Drought in southern China along the Yangtze was very severe, however, the majority of soybean production is in northern China. For rapeseed, southern China along the Yangtze is an important growing region, but most of the crop had been harvested."**

–Bob Tetrault

## ANOTHER WAY TO LOOK AT CANOLA PRICES

Farmers know the prices they receive for grain delivered. Farmers can track their marketing performance with a comparison to futures prices, a transparent system of price discovery. But how do changing farm-gate prices trickle down to end users? Statistics Canada's Consumer Price Index tracks about 60 foods and food categories, and from August 2021 to August 2022, the price of edible fats and oils rose higher than any other food product. It was up 27.7 per cent year over year, compared to 23.5 per cent for flour, 13.2 per cent for fresh fruit, 7.1 per cent for beef and and 9.8 per cent for food in general.

Edible fats and oils includes margarine, extra virgin olive oil, and cooking and salad oils (including canola oil), but it does not track these products individually. When asked about canola price tracking, a StatCan spokesperson identified two other programs with price movements pertaining to canola and canola oil. The Raw Materials Price Index measures prices Canadian manufacturers pay for raw material inputs. Using the index reference point of January 2020, which is "100", canola prices were 109.0 per cent of the reference point in September 2020, 192.5 in September 2021 and peaked at 249.5 in April 2022 before sliding back down to 180.0 in August. At 249.5, prices were 2.5 times higher than in January 2020. The Industrial Product Price Index, which measures prices manufacturers receive for goods produced in Canada, shows a similar trend line. To find these tables, go to www150.statcan.gc.ca and enter the index names in the search.

## NOTABLE DEMAND DRIVERS FOR CANADIAN CANOLA

The Canola Council of Canada announced three major demand drivers through the first half of 2022.

In April, the U.S. Environmental Protection Agency (EPA) declared that canola oil-derived renewable diesel, jet fuel and other biofuels qualify as "advanced biofuels" under the Renewable Fuel Standard (RFS) program. This put canola on a level playing field with other oilseed crops for access to the U.S. renewable diesel and sustainable aviation fuel markets.

In May, China reinstated access for canola exporters Richardson and Viterra. China first implemented market access restrictions for canola seed from these two companies in March 2019. Canadian seed exports to China were worth $2.8 billion in 2018, the year before the restrictions. That fell to $800 million in 2019, then increased to $1.4 billion in 2020 and $1.8 billion in 2021.

In June, Canada's Clean Fuel Regulations (CFR) recognized canola's potential as a low-carbon feedstock for biofuels. The CFR mandates that fuel suppliers in Canada lower the carbon intensity of fossil fuels by 15 per cent by 2030. Using biofuels is one way to achieve compliance. CFR is scheduled for implementation on July 1, 2023. Find more information on all three announcements at canolacouncil.org.

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

# THIS SEED **BELONGS HERE**

Our seed is made for your acres. With the widest seed portfolio in Western Canada built on local trial data, we know our seed will be at home on your soil.

Find your seed at: **ProvenSeed.ca/seed-selector**

ProVen® SEED

Exclusively at Nutrien Ag Solutions®

## Rotate crops, rotate herbicides, rotate traits – canola can do it all

When selecting hybrids for your operation, it's important to consider the yield potential, herbicide tolerance and agronomics of the hybrids as part of a multi-year management strategy. Consider local trial data when selecting the right variety for your farm and always use registered tank mixes with additional active ingredients, when possible, to reduce selection pressure for herbicide resistance on your fields.

Canola hybrids utilizing glufosinate (LibertyLink® or LL), glyphosate (Roundup Ready® or RR), and Clearfield® (CL) herbicide tolerance systems can be an agronomic fit depending on your operation and the weeds present in your fields. Choosing the correct herbicide and agronomic traits in your canola hybrid is very important in maximizing the effectiveness of canola as a rotational crop.

Glyphosate tolerant canola, especially the TruFlex™ canola hybrids, are a great tool for growers who traditionally have significant late flushing weeds or grassy weed populations. TruFlex canola hybrids can have glyphosate applied through a wider window of crop growth, from cotyledon up to first flower, and are registered for higher rates of glyphosate for tough to kill weeds (dandelions, buckwheat).

For fields with significant grassy weed and wild oat pressure, glyphosate-tolerant varieties are an excellent agronomic fit.

Varieties tolerant to glufosinate are a rotation favorite across Western Canada, especially in areas where the previous or subsequent crops tend to be Roundup Ready. For optimal control, glufosinate should be sprayed during the warmer part of day with increased water volumes. Glufosinate is a herbicide that works by contact, and adequate coverage is important. Spraying at below recommended water volumes can limit coverage and could require a follow up application to control missed weeds, reducing yield and an added cost for an extra pass.

Clearfield-tolerant hybrids are often used as a rotational break for fields with significant volunteer RR or LL canola populations. These hybrids also may fit into various non-GMO oil contract premiums that can be priced into your operation.

## Proven® Seed has a fit - everywhere

Backed by a Canadian breeding program and numerous local field trials, Proven Seed's canola lineup is complete and extensive from both a herbicide system standpoint as well as an agronomic trait position. These varieties can be an excellent fit on any acre.

### TruFlex canola for the tricky acre

TruFlex canola provides enhanced flexibility in spray rates and timing to deliver the next-level weed control. Built on Roundup Ready technology, it offers the flexibility to manage more weed species to help exceed yield expectations.

Proven Seed has a solid offering of TruFlex hybrids all bred and selected from the Western Canadian breeding program. PV 781 TCM is the newest to the lineup with superior yield potential, clubroot protection and harvest management attributes that make it suitable for straight cutting.

### LibertyLink hybrids for the herbicide rotation

Proven Seed has your acres covered with LibertyLink options. All 2023 hybrids come with industry-leading clubroot protection and select hybrids in the assortment provide harvest management options for harvest timing flexibility. For farmers who want to save their glyphosate application for pre-seed or post-harvest or have recently rotated out of a glyphosate tolerant crop, Proven Seed's LibertyLink hybrids are great options.

### Clearfield canola opens up possibilities

Specialty oil contracts are a great way to enhance the profitability of an acre, especially when the yield potential is outstanding. Proven Seed's Clearfield portfolio holds the highest-yielding canola hybrid in the assortment for 2023 – PV 280 CLC, Proven Seed's first Clearfield hybrid with multigenic clubroot resistance. Couple that with the herbicide tolerance to manage acres that need a rotation from glyphosate or glufosinate, Proven's Clearfield option is a great decision for profitability and rotation management.

Proven® SEED

# Squeezing oil from seeds

Canola seeds, soybeans, palm fruit, sunflower seeds and olives produce the common vegetable oils used in kitchens around the world. Each has its own processing method based on seed characteristics and customer preference.

BY JAY WHETTER

How do we get canola oil from canola seeds? Most companies that crush canola seeds in Canada also crush canola and many other oilseeds in processing facilities all around the world. These companies use the most efficient ways to process each crop to produce consumer-ready oils.

"Canola and rapeseed are considered 'soft seeds' and are actually processed the same way around the world," says Jeff Pleskach, trading director for Cargill's Canadian crush business, which has facilities in Clavet, Saskatchewan, Camrose, Alberta and just broke ground for a new facility at Regina, Saskatchewan.

Canola is a brassica crop, mostly *Brassica napus* species, which Canadian breeders, through standard techniques in the 1970s, developed with low erucic acid and low gluconsinates. This improved crop was called canola. The U.S. and Australia also grow canola. Other countries, including France, Germany and the U.K., grow basically the same double-low *Brassica napus* crop, but in English, the name is oilseed rapeseed. The Food and Agriculture Organization of the United Nations, in its statistical analysis, combines all of these crops under the rapeseed name. Whether canola or rapeseed, processors cook and flake the seeds to prepare them for oil extraction, which is a two-step process. First is mechanical pressing, using screw presses to squeeze out about 80 per cent of the oil. Second is solvent extraction, which washes remaining oil from the "cake." The cake or meal left over after the two extraction processes contains less than two per cent oil. (The article on page 22 describes all steps in more detail.)

> "Canola and rapeseed are considered 'soft seeds' and are actually processed the same way around the world."
>
> –Jeff Pleskach

Some specialized processors will use a second pass through mechanical processing instead of the solvent extraction, and some also skip the heating step. This canola oil has a stronger colour and taste, more like extra virgin olive oil, and is suitable for salad dressing and other limited uses where stronger flavour is the goal.

Amit Bhatt, plant manager at Louis Dreyfus Company's (LDC) canola processing facility at Yorkton, Saskatchewan, started his career in India and says Indian mustard, a brassica plant similar to canola, is also processed using a slow mechanical-only method.

Bhatt worked with Adani Wilmar, a major Indian oilseed processor of various vegetable oil crops, before joining LDC in 2008. He worked at LDC's facility in India where they refined and packaged soybean and palm oil, then a palm oil processing facility in Indonesia before moving to Canada in 2017 to process canola.

Palm is "very different" from canola, Bhatt says. Palm trees produce clusters of high-oil fruits, which are red-orange and about the size of a plum tomato. They are harvested on a regular basis

throughout the year and go straight to processing. "Processing happens within a few hours of harvest, otherwise quality goes down," he says.

Oil extraction from palm fruits is a one-step process: Add heat, then mechanical pressing.

"Because fruit from the palm tree has the highest-yielding fat content, the oil is extracted using only mechanical pressing," Pleskach says.

Ninety to 95 per cent of palm comes from Indonesia and Malaysia, and those countries produce a lot of oil: Palm is the number one vegetable oil in the world in terms of volume. Soybeans are second. Soybean oil extraction is also only a one-step process, but in this case the step is solvent extraction. Soybeans are cleaned, de-hulled then heated and flaked to prepare for oil extraction.

"Soybeans are also processed the same way around the world," Pleskach says. "Soybeans are first conditioned and then go through solvent extraction. There is no mechanical pre-pressing step." The U.S., Brazil, Argentina and China are the main soybean-producing countries in the world.

Canola and rapeseed is the third most common vegetable oil produced. Fourth is sunflowers, a major oilseed crop of Ukraine and Russia and a few other European countries. North Dakota also grows oilseed sunflowers. "Sunflowers are the closest to canola in terms of processing," Bhatt says. Shells are removed then seeds go through the two-step process of mechanical and solvent extraction.

"Sunflower processing happens the same way regardless of where it is grown," Pleskach says.

Two differences between sunflower and canola processing are removal of the shells before flaking and removal of wax from the oil. Canola seed coats remain on through processing and become part of the meal which, like meal from most oil processing, is sold as livestock feed. With hull removal, sunflower meal has lower fibre and higher protein content, on a percentage basis, than canola meal.

Sunflower seeds have a waxy coating, and this wax is removed in the refining steps that follow extraction. One removal method is to gradually cool the oil to crystallize the wax, then filter the wax from the oil. Canola oil also goes through refining steps after oil extraction to remove gums, free fatty acids and fine meal particles, and to produce a clear oil with mild flavour.

The world processes many other vegetable oils, including olive oil. (See the top 10 oils by volume.) Olive oil has a wide range of grades, from extra virgin to pomace oil. The International Olive Council, based in Spain, the largest olive oil producing country, has detailed standards for processing and quality. Virgin olive oils are extracted using mechanical means only. After mechanical extraction the olive meal, or pomace, goes through solvent extraction to remove the remaining oil. Olive oil removed through this method must be labeled "olive pomace oil." Blends of olive pomace oil and virgin olive oil are available in some supermarkets.

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

## Volumes for top 10 vegetable oils

FAOSTAT, the agriculture statistics service of the Food and Agriculture Organization of the United Nations, tracks vegetable oil production around the world. Here are global production totals for 2019, the latest year for which olive oil stats are available.

| Oil | Volume (million tonnes) |
|---|---|
| Palm | 74.6 |
| Soybean | 59.9 |
| **Canola/rapeseed** | **24.4** |
| Sunflower | 20.1 |
| Palm kernel | 8.2 |
| Cottonseed | 4.4 |
| Peanut | 4.2 |
| Corn | 3.5 |
| Coconut | 3.2 |
| Olive | 3.1 |

After farmers deliver their canola seeds to a processing facility, here are the steps to remove the oil from those seeds.

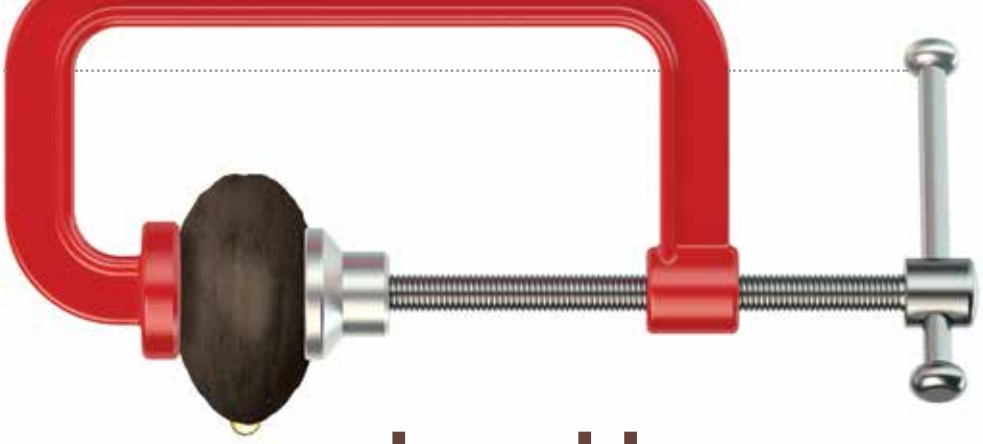


Photo credit: iStock.com/AlexLMX/ claudiodivizia

# Have you ever wondered how we get canola oil from the seeds?

BY JENNIFER DYCK

## It starts with a seed (or a few billion)

Canola seed arrives fresh from the farm to the crushing facility.

## Sift it clean

The canola seed is sifted to remove any plant bits or weed seeds that came along for the ride.

## Heat them up, roll them out

The seed is heated just enough to soften and machine-roll with precision, aka flaked, into just the right thickness to crush open the seed coat and make it easier to access the oil.

## Turn up the heat

The flaked canola enters a series of cookers. This additional heat opens up more of the raw seed cell structure and optimizes the canola for the big squeeze.

## Squeeeeeze

The cooked canola flakes enter a series of presses to remove as much of the oil as possible. The remaining mash is called presscake. Each seed is approximately 44 per cent oil and we want as much as we can get!

## Every last drop

To remove as much oil as possible from the presscake, one final extraction is often used. This step maximizes the total amount of oil harvested. In this method, a solvent percolates through the presscake to release even more oil from the squeezed seeds. After filtration, the mixture spins through a centrifuge to separate the oil, solvent and solids, and ends with steam distillation. Like oil and water, the liquids' differing densities creates a clear separation and allows for capture of the last quantity of canola oil. Science is cool.

## Nature-made filter at its finest

The canola oil we love to use is clear to light yellow, neutral in aroma and taste and it's thanks to filters like diatomaceous Earth and steam. Yup, that's right, a natural filtration clay and steam helps to remove any sediment or plant fragrance from the final product. At this point the canola oil is ready for packaging.

## Nothing wasted

Now that we have bottled up all that canola oil goodness, nothing goes to waste. The remaining product is canola meal, a protein source used in animal feed. The meal is toasted, cooled, dried and granulated. It's sold as either pellets or as a mash. DYK: dairy farmers love canola meal. It has been proven to increase milk production by 1L per cow per day. That's canola-Mazing!

## Canadian canola oil is quality

Canola oil processing is carefully monitored at every step to ensure quality. Global customers continue to purchase from Canada because we are known for the best quality product from farm through packaging.

## Choose your own finish

Customers like to have choice and a small part of Canadian canola takes a slightly different processing path.

**Double press or expeller press:** the seed is pressed a second time to extract oil.

**Cold press:** the seed is not heated and only pressed. It's done slowly to limit friction and avoid elevating temperatures.

Both options produce canola oil with a brighter colour, bolder taste and distinct aroma. The resulting canola meal has higher oil content which equals more energy.

*—Jennifer Dyck is market development director and Canola Eat Well lead with Manitoba Canola Growers.*

Reference: https://www.canolacouncil.org/about-canola/processing



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| BY 6207TF | 104% | | CLUBROOT DEFENDR |
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# A four-point plan to keep trains moving

The Canadian Canola Growers Association and Canola Council of Canada have policy and government leads representing farmers and the industry in Ottawa. Here are advocacy updates on rail transportation, CGC's grade dispute process and the International Oilseed Producers Dialogue.

BY TENESHA LAWSON AND TROY SHERMAN

As Canadian canola farmers complete harvest for what is arguably the most important crop in a generation, CCC and CCGA are working with industry partners to highlight the importance of the major railways in getting crop to market. The Canada's Ready campaign highlights how Canadian farmers and the value chain are ready to do their part to support food security and that we have a plan to do so.

After a significant decrease in production last year due to the drought and heat dome over the Prairies, production is forecasted to be close to the five-year average for canola. Given the many challenges farmers faced last year with rail service during an unusually low crop year, it is imperative that rail lines and government prepare for a return to normal and put in place measures now that will set up canola, and the broader grains and oilseeds industry, for success over the long-term.

To that end, the Canada's Ready campaign has a four-point plan to help keep Canadian agricultural products moving:

1. Have CP and CN provide detailed and transparent plans on how they will be moving grain based on a template provided by the Ag Transport Coalition.
2. Create an Industry/Government Labour Council to track progress of collective bargaining negotiations.
3. Have CP and CN provide monthly updates on their plans and latest forecasts.
4. Support the increased utilization of comprehensive performance measurement programs to measure how service providers are meeting their plans and outline improvements for the future.

**Learn more** about the Canada's Ready campaign, visit **canadasready.ca**

CCC and CCGA will continue to engage government and the major rail lines on this important issue. To learn more about the Canada's Ready campaign, visit **canadasready.ca**.

## INTERNATIONAL OILSEED FARMER ASSOCIATIONS ALIGN ON ISSUES

The International Oilseed Producers Dialogue (IOPD) held its XXIV meeting this August in Des Moines,

Iowa. During the meeting, the 15 IOPD members, including CCGA and other oilseed farmer associations from around the world, discussed increasing global oilseed production including ensuring farmers remain resilient and innovative in a world marked by geopolitical conflict, food insecurity and climate change.

In his presentation, Mike Ammeter, CCGA's Chair, highlighted issues impacting Canada's canola farmers, including the need for predictable market access and clear rules of trade, for science-based decision-making in domestic regulations, and for environmental programming that builds on farmers' sustainability practices and recognizes their contributions to global climate change goals.

"By coming together as oilseed farmer associations from around the world, we can better understand the issues we have in common, and together take actions to move those issues forward in our own countries and internationally," says Ammeter.

In addition to addressing supply chain disruptions of food and key inputs, like fertilizer, IOPD members advance these four policy priorities:

1. Science and innovation play a central role in meeting global food and energy needs.
2. Input availability is a serious threat to food production.
3. Comprehensive trade liberalization is required to meet global food and renewable energy demand.
4. No one solution will address climate or production challenges.

To learn more about the IOPD meeting and the final resolution, visit **ccga.ca/hub/Pages/default.aspx**

*Mike Ammeter, CCGA chair, presented at the International Oilseed Producers Dialogue in Iowa in August.*

## GRAIN COMMISSION GIVES FARMERS SEVEN DAYS TO DISPUTE GRADE

The Canadian Grain Commission (CGC) has made important changes to their grain grading dispute resolution process, which is now called Final Quality Determination. Now, farmers have up to seven calendar days after receiving a primary elevator receipt to request a second opinion from the CGC.

This producer protection, formally referred to as Subject to Inspector's Grade and Dockage, was previously only available to farmers at time of delivery. To request a second opinion, farmers should ask the elevator operator to send a representative sample to the CGC for a Final Quality Determination. A CGC inspector then inspects the sample and issues a final, binding determination upon which payment is based. To assist with decision-making, farmers also have the right to watch canola sampling, grading and dockage processes at primary elevators.

The change stems from recommendations provided during the 2021 Canada Grain Act review. CCGA has long advocated for modernization of the grain grading dispute resolution function to better align with today's delivery practices and the canola marketing environment. While today farmers can only request a CGC Final Quality Determination from primary elevators, extending the right to process facilities remains a CCGA priority. For more information, visit **KnowYourGrade.ca**.

*—Tenesha Lawson is manager of stakeholder communications for the Canadian Canola Growers Association. Troy Sherman is director of government relations for the Canola Council of Canada.*

# Take 4R to the next level

The canola industry has a goal to see 4R Nutrient Stewardship practices used on 90 per cent of canola acres by 2025. Farmers following 4R use the right source of fertilizer at the right rate, right time and right place to get more from each tonne of fertilizer. This nutrient use efficiency improves economics and reduces nutrient loss to the air and water.

Many farmers follow 4R practices – perhaps unknowingly – because of the inherent benefits associated with proper nutrient management. This case study describes the 4R practices for one Saskatchewan farmer who knowingly follows 4R. At the end, CCC agronomy specialists comment on this farmer's practices and how all farmers can take 4R to the next level.

**NAME: CHANTAL BAUCHE**
**LOCATION: REDVERS AND RADVILLE, SASKATCHEWAN**

Chantal Bauche is an active part of two farms in Saskatchewan – she helps on her family farm at Redvers and with her partner and his family at Radville. Bauche is also a senior precision agronomist with Croptimistic. For 2023, the Redvers farm will take a major step forward in its 4R practices, moving to zone-based soil sampling and variable rate (VR) fertilizer application. Bauche soil tests some fields every year, but she ramped up soil testing this fall to prepare for their first VR fertilizer application next spring.

Bauche will use Croptimistic SWAT maps for each field, which are based on soil properties, water modelling and topography. It divides fields into 10 zones, from eroded knolls with low organic matter (zone 1) to depressions with high organic matter, high nutrient content and high salinity (zone 10). Both of these areas can result in lower yields but for completely different reasons, which is why fertilizer rates for each zone should not be the same. Cropimistic combines zones 1 and 2, 3 and 4, and so on, to create five soil sampling management zones for each field.

This fall, Bauche will capture 0-8" samples from five zones in each field. Each sample will be a composite based on numerous sample sites from each zone that get GPS located and returned to each year afterwards. Cost for analysis of the five samples will be $150 to $250 per field. This doesn't include the sampling service for farms that don't collect their own samples.

"The benefit is huge," Bauche says.

Saline areas often have higher nutrient carryover and moisture, but salinity keeps a lid on yield. These areas don't need much, if any, fertilizer. Hilltops will need some fertilizer to support yield, and possibly higher rates of sulphur, because these areas have low organic matter and lower nutrient reserves, generally.

Annual soil tests also indicate year-to-year fluctuations in soil nutrient reserves. "After the drought of 2021, soil nutrient reserves were high for many of my Croptimistic clients, and we had a lot of fields where we didn't recommend any fertilizer in 2022," Bauche says. The same was not true for her family's Redvers farm. "We had good yields in 2021," she says, "and soil samples in the fall of 2021 showed that fertilizer was needed."

**By applying fertilizer at the time of seeding, Chantal Bauche doesn't see an economic reason to use enhanced efficiency fertilizer products. For more on EEFs, read "When do enhanced efficiency fertilizers make sense?" at canoladigest.ca.**

Read the chapter on 4R Nutrient Stewardship practices in the Nutrient Management section at **canolaencyclopedia.ca.**

To put VR prescription maps to use, the farm upgraded to a new Väderstad drill with four tanks and sectional VR control. They will use it for the first time in 2023. "Our old drill was our Achilles heel keeping us from adopting variable rate fertilizer application," Bauche says. With four tanks, the new drill does not require any pre-blending of fertilizer. It has separate tanks for urea, phosphate, potash and seed. "Without pre-blending, it is much easier to tailor variable rates," Bauche says. With sectional control, the drill can also adjust rates section by section across its width. "When crossing over two zones, the drill will compensate," she says.

The drill, which applies nitrogen, phosphorus and potash (when required), into the ground at the time of seeding achieves three principles of 4R in one pass – right rate, right place and right time. For these reasons, Bauche doesn't use enhanced efficiency products. The only fertilizer they apply in the fall is ammonium sulphate.

## CCC ANALYSIS OF THIS PRACTICE

### What do we like about Bauche's 4R Nutrient Management plan?

**Jason Casselman, CCC agronomy specialist, Cleardale, Alberta:** I like that Chantel Bauche is building a database of information for each of her fields. She can use that database not only for variable-rate fertility but also to map out and highlight areas like the saline patches for tile drainage.

**Keith Gabert, CCC agronomy specialist, Innisfail, Alberta:** By using zone mapping and management on her own family farm operations, Chantal Bauche builds on her ability to offer these services to her customers.

### How can Bauche and other farmers use this case study to take 4R to the next level?

**Casselman:** Tile drainage on saline areas may fix a problem that continually affects yield. Those zones could become more productive than ever before, and make it possible for Bauche to farm fields with fewer management zones.

I encourage other farmers to dig a little deeper into some of the causes of variability on their land and evaluate long-term solutions to a problem that will improve profitability. For other growers who aren't ready to trade in the drill to be able to do variable rate, look for other options. For example, farmers can use a sprayer with rate control to top-dress liquid fertilizer in season at variable rates.

**Gabert:** Growers tend to appreciate simplicity. A new drill with separate tanks for each nutrient sounds like a logistical challenge. To improve 4R, a farm might simply split some nitrogen out of the primary fertilizer blend to allow an additional top up of nitrogen on fields or zones were soil tests indicate it is required. While 10 zones managed as five is a really valuable level of precision, for growers that aren't using VR yet, they can achieve significant improvement in nitrogen management across the farm by choosing which acres receive additional nitrogen, rather than a single blend.

*November can be a great time to soil test if soils are not frozen. Cool soils reduce the microbial activity that can mobilize nutrients, and soil samples collected after this activity slows down will more closely reflect spring nitrate ($NO_3^-$) contents. Read "The right time for soil sampling" at* **canolawatch.org/fundamentals.**

Photo credit: Agvise Labs

Photo credit: iStock.com/Singkham

Fertilizer Canada, in its 2021 survey of farmers, found that 4R Nutrient Management practices are utilized on just over 50 per cent of canola acres. For farmers who do not yet follow 4R, a discussion on economics – return on investment – may help.

# THE ROI FOR 4R

BY WARREN WARD

Farms have a key goal: To be profitable. When it comes to fertilizer management, the Canadian canola industry also has a goal: To see canola growers utilize 4R nutrient stewardship practices on 90 per cent of canola acres by 2025. The two goals can go hand in hand.

Fertilizer Canada, in its 2021 survey of farmers, found that 4R practices are utilized on just over 50 per cent of canola acres. For farmers who have not adopted 4R practices, recent economic analysis may provide some incentive. The Canola Council of Canada (CCC) partnered with Fertilizer Canada on a study, "The Economics of 4R BMP Implementation and Emissions Reductions from Fertilizer," with results released in early September. (Read the full report at fertilizercanada.ca.) While the study focused a lot on nitrous oxide emissions, the CCC objective was to also show scenarios where 4R practices can improve farm profitability.

For the Prairies, the study compared three regions – dry Prairies, wet Prairies east, wet Prairies west – and used modelling to show economic and emissions reduction results for 4R practices under different yield and adoption rate scenarios. Farms can improve production and nutrient use efficiency without implementing every 4R practice. For that reason, farms will want to choose the practices that provide the greatest benefit.

Here are a few of the most common 4R best management practices (BMPs):

**Soil testing (Right rate)**

Soil analysis provides fertilizer recommendations in line with soil residual nutrients and expected yield. Soil testing is an added cost, and the knowledge provided may not provide a return on investment for every field tested – especially if test results confirm that a farm is using the right rate to meet its yield target. However, soil test analysis may encourage a farm to use higher nitrogen rates to match yield goals or, in the case of high nutrient reserves, use lower rates to meet yield targets. In both cases, profitability can go up because of soil tests. Farms that want to try soil testing for the first time can apply for funding through the new *Canola 4R Advantage* program described in the sidebar.

**For information** on soil test timing, techniques and cost, read "The right time for soil sampling" in the Fertility section at **canolawatch.org/fundamentals**

**Spring application of nitrogen (Right time)**

The ideal time to apply nitrogen fertilizer is just before the crop needs it. Small applications through the growing season are not practical for canola, but shifts to spring application instead of fall, and split applications with one in-crop application can

provide some 4R advantages. Spring application tends to reduce losses and increase yields compared to fall application in general, based on Prairie research. And, while 4R recommends late-fall banding over fall broadcasting, any fall application is subject to higher losses when soils are wet in the spring.

Economic disadvantages of spring application can include cost of fertilizer, slower spring seeding operation because of fill times, and required investment in machinery that can apply seed and fertilizer in one pass with spatial separation between seed and fertilizer. The report makes special reference to clay soils in the wet Prairies: "Fine textured soils tend to saturate for extended periods in the spring, triggering denitrification."

**Split applications (Right time)**

Split applications, with some nitrogen applied at seeding and some while the crop is growing, have timing advantages and allow growers to match nitrogen rates to growing conditions. However, economic gains tend to occur only when the in-crop application is not needed. For example, drought has limited crop yield and the crop will not require any extra fertilizer. In this way, the split application – which allows for a lower initial nitrogen investment – provides risk protection . As the report says, split application provides growers with a nitrogen saving option when stored soil moisture is low at seeding, and conditions don't improve.

The report adds that in normal moisture years, the split application provides "little or no yield advantage relative to all nitrogen at seeding."

## ADVANCED 4R

Advanced 4R includes enhanced efficiency fertilizers (EEFs), used where appropriate to reduce losses, and variable rate application.

**Enhanced Efficiency Fertilizers (Right product)**

EEFs protect nitrogen from loss so more of the applied nitrogen fertilizer ends up in plants, not the atmosphere. EEFs come in three main forms: urease inhibitors, nitrification inhibitors and controlled-release nitrogen.

EEFs provide the biggest benefit when soils have excess moisture. They also reduce nitrogen losses from broadcast and early fall nitrogen applications, which increase loss risk due to exposure and time.

Nitrification inhibitors are the most effective for reducing nitrous oxide emissions. The CCC and Fertilizer Canada report says nitrification inhibitors typically lower nitrous oxide emissions by 25-49 per cent. Urease inhibitors slow the conversion of urea to ammonium and reduce volatilization losses, and in certain circumstances will have more value from an overall profitability perspective. Polymer-coated nitrogen slows the release of urea so it more closely matches crop uptake. Farmers can expect to pay $5 to $10 per acre for urease inhibitors or nitrification inhibitors and $10 to $15 per acre for combination products and polymer-coated urea. As the report says, "A yield response will only occur if crops are nitrogen limited and the EEF results in more nitrogen available to the crop compared to a conventional nitrogen product. Replacing conventional nitrogen with an EEF on a pound of nitrogen for pound of nitrogen basis will increase costs without an increase in revenue if the conventional product rate was sufficient. If nitrogen rates using conventional nitrogen products have been optimized, switching to an EEF should allow a modest reduction in rate without yield loss." Farms will want to review how each EEF fits best within their systems. Often a urease inhibitor or nitrification inhibitor used individually is the right balance for profitability and nitrogen loss management, however the report focuses on combination products that include both treatments. Farms that want to try EEFs for the first time can apply for funding through the new *Canola 4R Advantage* program described in the sidebar.

**For more information** on sectional control, read the Canola Research Hub article on **page 36** in this issue of *Canola Digest.*

**Variable Rate (Right rate)**

Applying nitrogen at variable rates based on productivity zones within fields may not reduce overall nitrogen rates, but it applies nitrogen in a way that can increase overall yield and nitrogen use efficiency. Costs include zone-based soil testing, seeding tools that can apply variable rate fertilizer and variable rate maps. Soil tests and prescription mapping are relatively low costs compared to seeding tools, but many new seeding tools are variable-rate capable.

*Spring fertilizer application, as in this one-pass operation that applies seed and fertilizer at the same time, tends to reduce losses and increase yields compared to fall application in general, based on Prairie research.*

Photo credit: Scott Gillies

**Sectional control (Right rate)**

Many of the seeding tools set up for variable rate application also have sectional control, an important tool to reduce overlap. Sectional control maintains yield while reducing costs (less seed and nitrogen applied) and emissions.

Overlap areas that receive two times the fertilizer will have lower - likely negative - profitability because those areas do not have two times the yield. In many cases, the original rate is the most economical for yield. Overlap areas will also have higher nitrogen losses from unused nitrogen. From the report: "Overlap may range from as low as two per cent in square fields with no obstacles seeded with a 40-foot drill up to 25 per cent in a field with large obstacles seeded with a 100-foot drill."

For the dry Prairies, the report concluded that use of variable-rate fertilizer application and sectional control tended to increase contribution margins relative to the baseline when urea was used as the primary nitrogen source, fertilizer rates were reduced and yield held constant.

## EVERY FIELD IS DIFFERENT

The economic outcomes varied depending on the scenario modelled and parameters used in the study. In the no yield increase scenario, some 4R practices reduced profits compared to standard practices, while the yield increase scenario substantially slowed the erosion in contribution margin and supported farm profitability. For example, increased canola yield increased the contribution margin by $160 per acre or 118 per cent in 2030 compared to the no yield increase scenario. It is important to note that these scenarios are all based on general assumptions. Crop price, fertilizer price and yield all impact profitability, and they vary from farm to farm and over time. A logical next step is to make this analysis available to individual farms where they can use their own variables to determine specific outcomes.

The report notes, "We did not model all possible BMPs and using different BMP combinations and different assumptions concerning crop prices, fertilizer prices, operational costs, and fixed costs would undoubtedly result in somewhat different numbers."

As one final plug for 4R, one report recommendation is that Canadian agriculture "scale up 4R adoption", noting: "4R BMPs are scientifically proven to optimize N fertilizer and reduce GHG emissions when used effectively and many farmers are already using these practices. This is the most effective approach we have available. These practices should be integrated into programs, policies, and international climate diplomacy."

There is no 'one size fits all' approach when it comes to 4R. For those practices that have lower economic returns but have strong environmental benefits, farmers may need financial incentives to enhance uptake.

*—Warren Ward is an agronomy specialist and crop nutrients lead for the Canola Council of Canada.*

Read the chapter on 4R Nutrient Stewardship in the Nutrient Management section at **canolaencyclopedia.ca**.

# Canola 4R Advantage gives incentives for 4R

*Canola 4R Advantage* is a voluntary program that supports farmers in initiating or advancing 4R Nutrient Stewardship practices to make the most efficient use of fertilizers in canola production. Through *Canola 4R Advantage*, canola farmers can apply for funding to help pay for these best management practices (BMPs) focused on nitrogen management:

1. **Soil testing.** Soil lab analysis helps growers optimize nutrient applications based on soil needs and yield potential.
2. **Enhanced efficiency fertilizer (EEF)**. EEFs influence the availability of nitrogen over a longer period of time so more nutrients can be taken up by plants, and less nitrogen is lost to the atmosphere.
3. **Preferred application.** This covers a portion of fertilizer costs for growers switching from fall nitrogen application to methods that band nitrogen into soil near seeding time or apply nutrients while canola crops are growing.
4. **Field zone mapping.** Consulting services help growers pinpoint areas where applying more or less nitrogen can provide the best returns, based on past management practices, yield potential, terrain and a host of other factors.

Growers can seek funding for up to two of these BMPs per year. Up to 85 per cent of eligible costs can be reimbursed – up to $12,000 per farm each year. To be eligible for these incentives, a grower must have a 4R Nutrient Stewardship plan that has been verified by a Certified Crop Adviser or Professional Agrologist who has earned the 4R designation from Fertilizer Canada.

For the 2022 application intake, BMPs are eligible if:

- Eligible expenses are fully paid by the grower between February 7, 2022 and March 31, 2023, and
- BMP activities are completed and canola is planted on the identified fields no later than June 30, 2023.

For program guidelines and to apply using the digital platform, visit **canolacouncil.org/4r-advantage**.


*Funding for Canola4R Advantage has been provided by Agriculture and Agri-Food Canada through the Agricultural Climate Solutions – On-Farm Climate Action Fund (OFCAF).*

With over 20 million acres of canola, a warming climate and practices that increase selection pressure, new pests are inevitable. Canola growers, pest specialists and agronomists are on the watch for swede midge, pollen beetle, verticillium stripe and group-9-resistant wild oats.

# WATCH FOR THESE POTENTIAL NEW PESTS

BY JAY WHETTER

Canola acres on the Canadian Prairies exceeded 20 million in 2012 and have stayed above that threshold ever since. More acres attracts more pests. Milder winters and longer growing seasons also make the Prairies more hospitable to pests that may not have thrived before. Finally, farm practices can increase selection pressure for existing pests that are more more difficult to manage – glyphosate-resistant wild oats, for example. Because all of these pressure factors are in play – lots of canola acres, warmer climate and selection pressure – canola growers, pest specialists and agronomists are on the watch for new threats.

Here are a few of greatest concern.

**Swede midge** (*Contarinia nasturtii*) has been very damaging to canola in some areas of Ontario, especially the spring canola region of Temiskaming. Canola growers in that region often require multiple insecticide applications, and use crop rotation and distancing from previous infestations to assist in population control. Swede midge, if introduced in an area of the Prairies with the right moisture and heat, could thrive. The whitish yellow maggots (up to 3mm) feed within the growing point, and enzymes from their saliva impede proper growth and can cause deformities. The tiny brown swede midge fly looks like other closely related midges, including canola flower midge (*Contarinia brassicola*), which was officially identified on the Prairies in 2019. While widely distributed, canola flower midge has not yet caused economic concern. Find more on swede midge and canola flower midge in the Insect section at **canolaencyclopedia.ca.**

**Pollen beetles.** Two species (*Brassicogethes aeneus* and *Brassicogethes viridescens*) are part of the pollen beetle complex. They cause considerable damage to rapeseed crops in Europe, and could do the same to canola if the invasive species arrives on the Prairies. Bronzed blossom beetle (*Brassicogethes viridescens*) is established in Eastern Quebec and the Maritimes and has a reasonable adaptation to the Prairies. While not confirmed on the Prairies, be on the look out: they look like flea beetles and will be found inside flowers. Yield loss from pollen beetle complex is as high as 80 per cent in Europe. Adults feed on pollen, which in itself will reduce fertilization of flowers. Adults lay eggs in buds, and hatching larvae feed on buds. Feeding from adults and larvae will result in pod abortion.

*Below: Pollen beetles cause considerable damage to rapeseed crops in Europe, and could do the same on Prairies if the invasive species arrives and takes hold. This image was taken in the United Kingdom.*

Photo credit: Gregory Sekulic

**Verticillium stripe** (*Verticillium longisporum*) was first identified on the Prairies in 2014 and is already causing yield loss on some farms, especially in 2022. Warmer soil temperatures accelerates spread of this disease to stem vascular tissue and characteristic striping. Research continues to better understand the spread and severity of verticillium stripe within Canada, along with how to best manage the disease. Find more on verticillium in the Diseases section at **canolaencyclopedia.ca**.

**Group-9-resistant weeds.** In Western Canada, glyphosate herbicide is a highly effective tool for producers who practice conservation tillage. While minimum tillage and

*Each tray contains seeds gathered from different populations of suspicious kochia found in Alberta in 2021. Each tray was treated with glyphosate at the field rate. The photo was taken three weeks after treatment. Populations will have different percentages of resistant plants and the level of resistance within individual plants will vary. Charles Geddes, the Agriculture and Agri-Food scientist leading the screening, says kochia becomes resistant to higher and higher rates of glyphosate depending on the number of "EPSPS" gene copies present in individual plants.*

Photo credit: Charles Geddes, AAFC

no-tillage benefit soil health, conserve soil moisture and improve yield, farmers who use this practice depend on Group-9 glyphosate to provide weed control. Group-9-resistant kochia is widespread on the Prairies, and Group-9-resistant downy brome was confirmed in 2021. Hugh Beckie, formerly of Agriculture and Agri-Food Canada, ranked wild oat (*Avena fatua*) as the most economically important weed in Western Canada, accounting for more crop yield losses and herbicide expenditures in Western Canada than any other weed.

Back in 2011, Beckie forecast that wild oat, green foxtail (*Setaria viridis*) and cleavers (*Galium aparin*) were high risk to develop glyphosate resistance. Any one of those could cause severe yield loss in canola and other crops. The challenge moving forward is to find suitable herbicide alternatives so farmers can reduce their reliance on herbicides to control unwanted weed species. Read the article on integrated weed management in the Weeds section at canolawatch.org/fundamentals.

## WHAT TO DO?

Changes are expected. New pests are inevitable. Higher temperatures and exceedingly variable precipitation anticipated with climate change will favour some canola diseases, make the Prairies hospitable to more insects, and may alter the distribution and abundance of weed species. Watch for changes in pest behaviour, look for unusual species and report different-looking damage to CCC agronomy specialists.

Proactive pest monitoring and surveillance identifies the extent of pest damage, advances in pest range and severity, and new pests. Unified surveillance efforts, led by government with cooperation from growers, must continue.

Changes in behaviour for existing pests and introduction of new pests will require adaptations in management. Effective action plans will require research and on-farm trial and error. Time required to improve practices is shortened when we all communicate effective and non-effective practices.

Ultimately, a flexible, evolving integrated pest management (IPM) approach is recommended. There is no single solution.

Management steps include crop rotation, use of protection products with different modes of action, cultivar resistance or tolerance, and strategic deployment of technology. For example, seed- and crop-applied insecticides can be effective control mechanisms, yet because of natural selection and species evolution, no single product or mode of action is effective over the long-term. Same with cultivar resistance. Disease resistance has maintained yield and reduced infection, however, this can be overcome by selection pressure. Research into genetic resistance and strategic deployment of resistance sources is required to reduce the risk of crop damage and future disease infections.

Finally, changes to national and foreign policy have the potential to limit control measures – such as pesticides and genetic tools – available to farmers. Research into the environmental and economic sustainability of canola production in the Canadian Prairies must continue to ensure a climate resilient crop.

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

**Watch for changes** in pest behaviour, look for unusual species and report different-looking damage to CCC agronomy specialists.

# Domination over inflation

Canada's farmers say that unpredictability of the sector is their number one cause of stress. The good news is, there are ways to reduce this uncertainty, even when it seems like everything is outside of one's control.

BY MATHIEU LIPARI

Farmers in business for a while will remember – and young farmers may have heard stories of – trying times in the 1980s. Interest rates rose to astonishing heights, reaching upwards of 20 per cent, while commodity markets bottomed out, leaving many farmers struggling.

While today's rising costs may seem all too much, we have been here before. Canada's farmers have the ability and tenacity to persevere!

How?

The best way to get through difficult times is to first understand where you are. Canada's farmers have told us that unpredictability of the sector is their number one cause of stress (Farm Management Canada report *Healthy Minds, Healthy Farms, 2020*). The good news is, there are ways to reduce this uncertainty, even when it seems like everything is outside of one's control. Here are seven financial management strategies and techniques farmers can use to gain control, and peace of mind, no matter what the world throws at them.

## UP-TO-DATE, ACCURATE FINANCIAL INFORMATION

Financial management starts with a good financial record-keeping system and access to accurate, up-to-date information. Even better? A system that allows for various financial scenarios to be explored. For example, what happens when the cost of fertilizer goes up, or interest rates rise? Will the farm be OK?

Using accrual-based accounting provides a more accurate picture of your financial situation as sales and purchases often happen outside of the current production year.

## FINANCIAL LITERACY

Financial literacy is the capacity to understand financials and financial reports – to be able to read, understand and interpret the business's balance sheet, income statement, cash flow and financial ratios to understand its financial position and options. Of course, accountants, lenders and financial advisors can help interpret financial information for decision-making, but farmers need to have an understanding of their financial information as well.

## BUDGETING AND PLANNING

Budgeting and creating a financial plan are key to tracking financial performance. Without a budget and plan, how does a farm know if it's moving towards its financial goals? Farms may want to create budgets for each product or enterprise. Going beyond whole farm analysis can show which business ventures are making or, potentially, losing money.

Take a look at year-over-year trends for the farm and compare performance to industry standards to identify areas

for improvement and greater efficiency. Farmers may ask themselves, how come I'm getting less for my products? Or, how come my input costs are so much higher?

Farmers who plan ahead not only experience greater peace of mind (*Healthy Minds, Healthy Farms 2020*), but also, increased profitability (Farm Management Canada report *Dollars and Sense, 2015*).

When planning, farmers are encouraged to use contingency planning to plan for best, worst and most-likely scenarios on the farm. The most-likely scenario typically becomes the plan they choose to follow, but if circumstances change they already have a plan in place to guide them through the unexpected.

**Search for the reports** *Healthy Minds, Healthy Farms* and *Dollars and Sense* at the Farm Management Canada website, **fmc-gac.com.**

Review farm plans with farm business experts (accountants, lawyers, financial planners, tax planners) to help ensure the plan is realistic and hasn't missed any crucial information that may impact success. Outside experts can also help farms take full advantage of government programs and maximize tax benefits. They can also track financial performance and make adjustments when necessary.

## CASH FLOW

"Cash is king" is a phrase often heard in business. Creating a cash flow budget will help farms monitor cash coming in and going out of the business and ensure the farm has sufficient cash to make payments throughout the production year. A cash flow budget can also ensure enough liquidity (access to cash) to deal with unexpected risks or opportunities as they arise. Can your farm survive if your market shuts down for a while? Can you afford that new parcel of land that unexpectedly came up for sale? Perhaps by restructuring purchasing and payment contracts, farms can re-balance to optimize cash flow.

## ACCESS TO CAPITAL

Access to capital is crucial for every farm. Buildings, machinery and inputs are not cheap and there is often a significant delay between production and getting paid. It's important to establish a positive relationship with lender(s) to build trust and capacity to repay debt. Meet regularly with lender(s) to help them understand the nature of the business and build their tolerance for risk. They can also help farms structure debt so that it works for the business. And don't be afraid to shop around for best options. Prepare a business plan, budget and financial plan and bring them to meetings with lender(s). This can give lenders confidence in the business and enhance long-term viability.

**Review farm plans with farm business experts (accountants, lawyers, financial planners, tax planners) to help ensure the plan is realistic and hasn't missed any crucial information that may impact success.**

## CAPACITY TO SERVICE DEBT

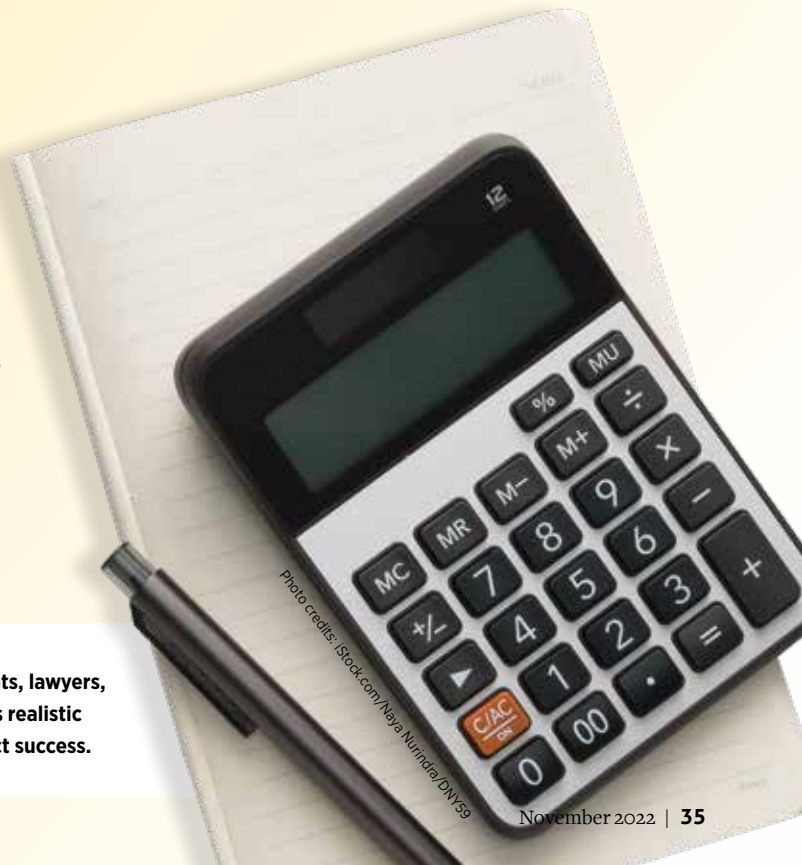
Knowing how much debt a farm can service in both the short- and long-term is a crucial component of financial management. Consider options when making purchase and leasing decisions and don't be afraid to shop around for the best rates and service from lenders. Stay informed of potential changes to interest rates or other policies that could affect debt servicing and restrict the farm's debt level, bearing in mind our previous discussion on cash flow. Farms may also want to think about consolidating debts to ease payments and reduce interest rates.

## INSURANCE

Obtaining adequate farm insurance coverage on assets and production can also help build the farm's capacity to service debt and manage cash flow when faced with production and/or price challenges. Look at AgriInsurance and AgriStability under the government's Business Risk Management (BRM) suite of programs. There are also private insurance options.

Farm Management Canada and MNP have joined forces to offer a Farm Financial Fluency training program for producers across Canada. Producers will learn how their financial information can be organized for timely analysis and interpretation and how to use basic financial tools to calculate their financial position, options and explore what-if scenarios. Training sessions are scheduled from October to March. Please visit our program webpage at fmc-gac.com/fff for more information.

*—Mathieu Lipari is a program manager with Farm Management Canada. Find out more about FMC at fmc-gac.com.*



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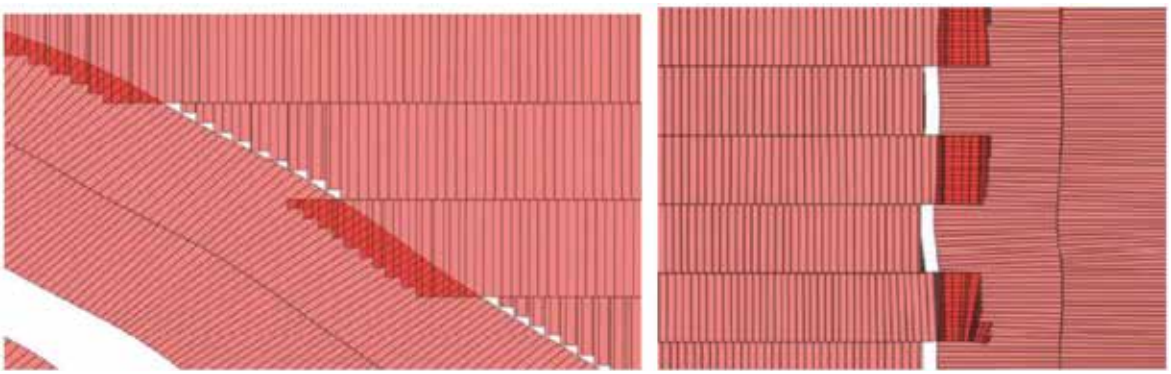
# Where sectional control shines

Seeding tools with sections that shut off automatically when passing over already-seeded areas will reduce input costs for seed and fertilizer. It proves particularly profitable in fields with odd shapes and obstacles.



*Images collected for the study show overlap examples around a curve (left) and at headlands (right).*

BY TARYN DICKSON

With the ability to reduce input costs and reduce economic losses and environmental impacts by preventing overlaps, sectional control can potentially make operations more productive and sustainable. Results from phase one and phase two of the "Evaluation of emission reductions and cost saving in sectional control air seeders, drills and sowing equipment across the Canadian Prairies," project funded through Agriculture and Agri-Food Canada's Canadian Agricultural Partnership, are featured on the Canola Research Hub at **canolaresearch.ca**. Here are some highlights:

- The most precise automatic sectional-control technology currently on the market is individual opener control, which allows for shutting off and/or varying the product (seed, fertilizer, etc.) and raising individual openers out of the ground over previously seeded areas.

- Though it is difficult to measure precise savings due to field complexity (a perfectly square field will show less of a benefit than a misshapen field with many obstacles), the common result was that well-managed sectional control can result in cost savings.

- Reducing excessive plant densities at the overlap reduces the risk of lodging, potentially improves stand and maturity uniformity, and makes spray and harvest timing decisions more straightforward. This could produce a higher-yielding and more profitable crop. Section control also limits negative environmental impacts that could result from over-application of products at overlaps.

The study tested three types of air seeder equipment in-field to determine actual product overlap on both a pea and canola crop. In most cases the monitor indicated a substantially lower overlap amount when compared to what is actually measured in the field. So, while this displayed data is helpful, it may not be entirely accurate when referring to actual in-field product overlap measurements. Farms that want accurate measurements will need to ground truth values.

Detailed conclusions include:

- Depending on field size, shape and obstacles, overlap ranges from 1.3 to 2.5 per cent.

- Overlap was greater in canola (a small seed crop example) than in peas (a large seed crop example), though the results varied between the headland and obstacle measurements.

- Irregular fields with more obstacles have an increased risk of overlaps. The greater the implement size and/or obstacle diameter also resulted in a greater overlap.

- Draft force measurements differ greatly with equipment type, size, and speed as well as soil properties, field topography, and many other variables. Decreased draft load can be related to fuel and emission savings.

- Decreased overlap can reduce total input costs. According to calculations in the Saskatchewan 2020 Crop Planning Guide, a two per cent overlap in a 160-acre field growing canola can cost growers $578, $599 and $637 in the Brown, Dark Brown and Black soil zones, respectively.

*—Taryn Dickson is resource manager for Crop Production and Innovation with the Canola Council of Canada. Taryn also coordinates the Canola Research Hub.*

Photo Credit: istock.com/georgeclerk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