ALBERTA CANOLA | SaskCanola | Manitoba Canola Growers | canolacouncil OF CANADA

CANOLA DIGEST

Temperature rising

A CCC survey asked agronomy providers about production-related concerns over the next five years. Top answer: Temperature stress.

10

Inside

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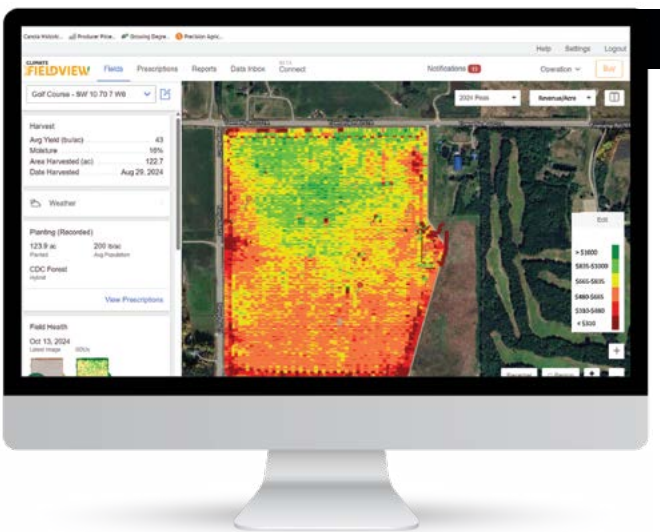
10 Agronomists rank temperature as top risk factor

The Canola Council of Canada, in its 2024 survey of agronomy providers, asked what canola agronomy risk factors will be big concerns over the next five years. Temperature stress was the top answer. Herbicide-resistant weeds, top answer in the previous survey, was second.



Provincial Bulletins

Departments

Calendar

SaskOilseeds AGM
January 15 - *Saskatoon, SK*
saskcanola.com/upcoming-events

Saskatchewan Crops Forum
January 14-15 - *Saskatoon, SK*
saskcanola.com/upcoming-events/sask-crops-forum

Alberta Canola AGM
January 22 - *Red Deer/online*
albertacanola.com/events

Alberta Canola Conference and Research Symposium
January 22-23 - *Red Deer*
albertacanola.com/events

CrossRoads – Alberta's Crop Conference
January 28-29 - *Edmonton*
crossroadscropconference.ca

Top Notch Farming Extension Meetings
February 4 – *Hudson Bay*
February 5 – *Melfort*
February 11 - *Weyburn*
February 12 – *Moosomin*
saskcanola.com/upcoming-events

Manitoba Canola Growers AGSM
February 11 - *Winnipeg*
canolagrowers.com/upcoming-events

CropConnect
February 12-13 - *Winnipeg*
cropconnectconference.ca

Canadian Crops Convention
March 4-6 - *Edmonton*
canadiancrops.ca

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Optimum rate

BY JAY WHETTER

Variable rate (VR), as a phrase, is thoroughly uninspiring. Boring. People want to hear about VR about as much as they want to hear about the 50-year-old wool suit I bought at Value Village for $22. I see that now. But optimum rate! That inspires.

In October, I wrote a LinkedIn post about a breakfast conversation I had with Blake Weiseth, who runs Discovery Farm at the Ag In Motion site west of Saskatoon.

"Variable rate is sexy, but it's not the next logical step for a lot of farmers," Weiseth said at breakfast. "For many farmers, using a fertilizer blend and rate appropriate for each field is their next step to more precise nutrient management. With field-to-field variability sorted, then let's tackle in-field variability."

I shared this quote on LinkedIn and asked, should precision ag advancement follow a step by step path? Or can farms skip from (a) one fertilizer blend and rate for all canola or wheat or pea fields to (c) precise management of zones within each field? This would leap past the middle step of (b) a fertilizer blend and rate appropriate for each field.

The responses were varied and insightful, founded largely on farm and agronomy experience.

Wes Anderson, vice president of agronomy at Croptimistic Technology, wrote that we tend to see a lot more variability within fields versus between fields. His point, and I'm paraphrasing, is that a composite sample from one field might be similar to a composite from the next field on the same farm, so those fields would get the same blend at the same rate. But he says this covers up fairly large differences within fields that could be managed more effectively.

To that Weiseth responded: "Good point regarding the relatively small difference in field to field variability when two fields are close together and managed similarly. I'm thinking of field-to-field at a fairly macro-level, where on a single farm, there could be fields of different ag capability class, parent material, management history, etc."

Anderson replied, "Your comments aren't wrong. Measuring and treating each field could be a step in the right direction for some farms. But I feel as industry professionals, we need to strive for more advanced levels of 4R. If we don't raise the bar for management level, who will?"

Merle Massie, executive director for the Do More Ag Foundation, added that pressures of seeding don't always allow for all of this variation. "The time needed to change up fertilizer blends for each field or within each field is often sacrificed for time and efficiency reasons," Massie wrote. "This aspect of seeding limitations deserves more understanding."

Nevin Rosaasen, sustainability and government relations lead with Alberta Pulse Growers, echoed that thought: "Whether it is the first step to soil sampling, or running full VR, every farm business manager needs to balance the agronomics, economics and logistics for their farm. There is not a single solution," he wrote. "Any farmer who tells you 'my way is the right way' has perhaps solved the equation for their field or farm, but it may not be the correct solution for their neighbour."

This is all from one LinkedIn thread. Agronomy gold. And it kept going.

To the point about the overwhelming and logistically near-impossible problem of a blend for each field, Rob Saik jumped in with the solution: don't buy blends.

Saik, the well-known agronomist and entrepreneur, CEO of T1 Technology Corporation, noted that air tanks with four or more compartments will do the blending for you. A tank with four compartments could have a starter blend that included the phosphate, then run nitrogen, potassium and seed in the other three tanks. Sulphur could go on in a separate pass. "As farmers adopt more and more variable rate technology, they move more and more straight product," Saik added in a follow up text.

In the farmer panel in this issue, Andrea De Roo talks about doing just that. Her farm bought a bigger air drill tank to carry urea, potash, monoammonium phosphate and seed in separate compartments. No more blends. The farm applies sulphur in a separate pass as BioSul or elemental.

The last word goes to Wes Anderson. "We need to stop looking at VR as just varying rates, and start looking at it as an investment of knowledge in fully understanding the breadth of nutrient response probability," Anderson wrote in the LinkedIn thread.

"The goal isn't varying rates, the goal is optimum rates – in every part of the field. If we never map and measure that, we won't see the progress we could have and frankly need to achieve for future social license."

Alberta Canola Conference

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DAY ONE - CONFERENCE SPEAKERS

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PRESIDENT AND CEO
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Cheryl Mayer
VICE PRESIDENT, POLICY DEVELOPMENT
CCGA

Jonathon Driedger
VICE PRESIDENT,
LEFTFIELD COMMODITY RESEARCH

Ebony Verbonac
PARTNER, TAX, PRIVATE ENTERPRISE
KPMG

Joel Bokenfohr
BUSINESS ADVISOR
FARM CREDIT CANADA

Dianne Finstad
EVENT HOST

DAY TWO - RESEARCH SYMPOSIUM SPEAKERS

Paul Galpern
ASSOCIATE PROFESSOR, DEPARTMENT OF BIOLOGICAL SCIENCES
UNIVERSITY OF CALGARY

Boyd Mori
ASSISTANT PROFESSOR, FACULTY OF AGRICULTURAL, LIFE AND ENVIRONMENTAL SCIENCES
UNIVERSITY OF ALBERTA

Nate Ort
CROP PHYSIOLOGIST AND PHD CANDIDATE
UNIVERSITY OF SASKATCHEWAN

Edel Pérez-López
ASSOCIATE PROFESSOR FACULTY OF AGRICULTURAL AND FOOD SCIENCES
LAVAL UNIVERSITY

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Jay Whetter
EDITOR OF CANOLA DIGEST AND COMMUNICATIONS MANAGER
CANOLA COUNCIL OF CANADA

Ian Epp
AGRONOMY SPECIALIST
CANOLA COUNCIL OF CANADA

Alberta Canola hosts 35th AGM

Wednesday, January 22 — in person and online

Join the Alberta Canola Producers Commission for the 35th Annual General Meeting (AGM) on Wednesday, January 22, during the Alberta Canola Conference in Red Deer.

Growers from across Alberta will have the option to attend in-person or join the AGM online and vote on motions and resolutions.

Resolutions to be presented at the AGM must be received at the Alberta Canola office no fewer than 10 business days prior (by January 8, 2025) to allow time to collect background and prepare resolutions for presentation at the meeting.

REGISTERING TO VOTE at the AGM

Growers in Alberta that have paid a service charge to Alberta Canola on canola sold since August 1, 2022, are eligible producers and can register to vote at Alberta Canola's Annual General Meeting.

Eligible producers can:

- Be individuals or represent a corporation, partnership, or organization.
- Attend the AGM either in-person or online to vote on resolutions and procedural motions during the meeting.

We encourage growers to pre-register for the AGM by January 10 to verify eligibility and ensure they receive voter links in advance of the meeting.

Voter registration closes January 10. For more details and to register, please visit **albertacanola.com/events**.

Alberta Canola Director Nomination Results

The call for nominations for growers to serve on the Board of Directors of the Alberta Canola Producers Commission in Regions 3, 6, 9 and 12 closed on October 31, 2024, at 4:00 p.m. This election cycle resulted in three growers being acclaimed in Regions 3, 9 and 12. There were no nominations received for Region 6.

The three canola growers re-elected are Charles Simoneau from Guy for Region 3, Christine McKee from Stirling for Region 9, and Alan Hampton from Rowley for Region 12. Simoneau, McKee and Hampton will begin their second terms immediately following the Alberta Canola Annual General Meeting on January 22 in Red Deer.

There will be a call for nominations and an election for the Region 6 director at the Annual General Meeting.

Directors of Alberta Canola may serve up to three consecutive terms, provided they continue to meet eligibility requirements. Each term is subject to the same nomination process.

A full list of the Board of Directors and Alberta Canola's regions are on **albertacanola.com/regions**.

CHARLES SIMONEAU
Guy, AB
Region 3

CHRISTINE MCKEE
Stirling, AB
Region 9

ALAN HAMPTON
Rowley, AB
Region 12

Alberta Canola: Farmer Funded, Farmer Focused

Crop commissions play an essential role in supporting Canadian farmers, particularly in Alberta, where over 12,000 canola producers rely on Alberta Canola's advocacy and initiatives. As we approach the upcoming Alberta Canola Annual General Meeting in January, there are important discussions on the horizon, including a proposal for a modest increase in the refundable canola service charge from $1 per tonne to $1.75 per tonne. This request follows a thorough analysis of our financial needs, considering rising costs and the ongoing challenges faced by farmers.

Supporting Research and Innovation

Alberta Canola prioritizes research to enhance crop productivity and sustainability. In the 2023-24 fiscal year, the commission invested over $640,000 in new research initiatives, helping farmers address immediate challenges and foster long-term innovation. This engagement ensures that the commission's activities align with growers' needs.

Strong Advocacy Efforts

Advocacy remains a cornerstone of Alberta Canola's mission. Recent efforts have strengthened relationships with lawmakers, including initiatives like the Alberta Canola Advocacy Day and the MLA Family Farm Tour, which educate decision-makers about farming realities. Our organization has achieved critical policy advancements, such as advocating for a farmer endorsement for Class 1 truck licensing and promoting the preservation of prime agricultural land.

Engaging and Educating the Community

Public engagement is vital. Consumer disconnection from food production grows and Alberta Canola has made strides to increase awareness through initiatives like our booth at the Calgary Stampede and advocating for the inclusion of agriculture in the curriculum. Furthermore, the commission engages in public education to combat misinformation and raise awareness about agriculture's role in society, and initiatives like the "Hello Canola" campaign help highlight the importance of canola and its economic impact.

Financial Sustainability for the Future

The proposed increase in the service charge is essential for maintaining Alberta Canola's operations, especially since it has not raised this charge since 2003. Rising costs in the agricultural sector and declining public research funding have led to financial deficits. This modest increase will help rebalance the budget and restore financial reserves, allowing for sustainable long-term growth and enhanced initiatives that support canola farmers.

Feedback from growers about our finances has been overwhelmingly positive, emphasizing the need for us to continue delivering on our mandate on their behalf. The Alberta Canola Board unanimously believes this increase is a fiscally responsible step toward ensuring the organization's viability.

Alberta Canola fosters a resilient agricultural landscape by investing in research, advocating for farmers, and ensuring financial sustainability. We are committed to the success of canola producers in Alberta. Your support is crucial as we work to shape the future of farming in the province.

Have your say at the upcoming Annual General Meeting on January 22, 2025, where the service charge proposal will come to a vote. Register to vote in-person or online at **albertacanola.com/events**.

Top Notch Farming extension meetings in February

Our Top Notch Farming extension meetings are back this February, offering an exciting opportunity for Saskatchewan farmers to connect, learn and gain valuable insights from industry experts. Organized by SaskOilseeds in partnership with SaskBarley, this year's events will feature a lineup of speakers focused on the latest research, market trends and agronomic strategies.

The program kicks off with SaskOilseeds' agronomy extension specialist, who will present results from the 2024 on-farm research trials conducted with cooperators across Saskatchewan. This will highlight practical data from the four protocols studied. SaskBarley's research and extension manager will lead a session on barley agronomy, sharing insights from recent barley research.

SaskOilseeds' flax and research extension specialist will further the agronomic focus by discussing the latest developments in flax breeding research. This presentation will highlight promising new flax varieties that could improve both productivity and the flax growing experience for farmers.

In addition to agronomic advancements, the meeting will dive into economic insights. Marlene Boersch from Mercantile Consulting Ventures will present a comprehensive market outlook, covering projections and emerging trends in the global market that directly impact Saskatchewan farmers. Phillip Harder from Croptimistic Technology Inc. will turn the spotlight to weather trends and forecasting, providing a detailed outlook and discussing how farmers can leverage this data to make informed decisions in their operations.

Agri-ARM researchers will present on the ADOPT (Agriculture Demonstration of Practices and Technologies) research program. This program emphasizes applied research projects designed to improve farming practices in Saskatchewan, helping to identify and implement innovations that lead to more productive and sustainable farms.

The Top Notch Farming extension meetings aim to equip Saskatchewan farmers with practical knowledge and tools to enhance productivity and navigate through industry challenges and shifts.

In November, SaskOilseeds held an election to fill four positions on their Board of Directors.

Congratulations to Patricia Lung (newly elected) and returning board members Dean Roberts, Codie Nagy and Dave Altrogge.

Visit saskcanola.com for more information.

Seeking cooperators to join *2025 On-Farm Research Trials*

SaskOilseeds continues to address farmer questions and challenges with Top Notch Farming research trials, a program to cultivate collaboration between farmers, agronomists and research specialists. The goal is to develop practical, on-farm research that addresses real-world questions while generating data that helps inform future farming decisions.

The 2025 on-farm research program will expand to offer six protocols. These protocols include seeding rates, enhanced efficiency nitrogen fertilizers, split nitrogen/top up nitrogen applications, early seeding dates and flea beetles, boron on canola and fungicide on canola. Cooperators can select which protocols they would like to implement on their farms.

Top Notch Farming research trials are designed with collaboration in mind. Each trial is replicated and randomized to account for field variability, ensuring reliable, statistically sound results.

Benefits of participation

Joining a network of growers and agronomists interested in field-scale research offers numerous benefits for farmers looking to enhance their practices and make informed decisions. By participating, you'll conduct trials using your own equipment and under your unique farm conditions and management practices, ensuring that the results are directly applicable to your operation. Throughout the research process, a dedicated research specialist or agronomist will support you every step of the way, assisting with trial setup and data collection throughout the growing season. Additionally, you'll gain primary access to the results of other on-farm, field-scale trials conducted in Saskatchewan, providing valuable insights and knowledge to help you optimize your farming strategies.

SaskOilseeds will present the 2024 research trial results in February at the Top Notch Farming extension meetings. In the meantime, farmers and agronomists are encouraged to submit ideas for future protocols and sign up to be a cooperator for 2025. Visit SaskOilseeds' website for more information on how to submit an application.

i

Scan the QR code to view Research Trial Results

NEW!

The Extensionists Podcast

SaskOilseeds is proud to sponsor *The Extensionists - Conversations with Great Thinkers in Agriculture,* a brand new podcast hosted by the charismatic ag journalism duo of Toban Dyck and Jay Whetter. Join the hosts as they dive behind the scenes with researchers, innovators, and farmers, bringing a fresh perspective to agricultural extension.

"SaskOilseeds is excited to sponsor this brand-new initiative to facilitate engaging dialogue to pull the curtain back on the thought leadership and innovation behind ag extension," says SaskOilseeds Executive Director Tracy Broughton. "And to help translate the valuable technical findings on the research side into tangible, on-farm benefits that growers can implement to enhance production."

Through this partnership, SaskOilseeds aims to amplify important conversations about agricultural advancement and offer growers actionable insights to support their operations. The Extensionists podcast streams every other week, promising listeners a regular dose of agricultural expertise and inspiration. To learn more and tune in, visit **theextensionists.com**.

Research targets verticillium stripe in canola

Verticillium longisporum, the fungal pathogen that causes verticillium stripe, is emerging as a serious threat to canola production in Manitoba and across Canada. Manitoba's climate provides favourable conditions for it to thrive, infecting plants early in the season and leading to premature plant death and yield loss of 10 to 50 per cent.

With no resistant canola varieties available, research is essential to develop effective management strategies, including crop rotation, potential fungicide options and agronomic practices to mitigate infection risk. Manitoba Canola Growers Association (MCGA) is dedicated to funding this type of research.

Ahmed Abdelmagid, research scientist at Agriculture and Agri-Food Canada, leads a project to set up a verticillium stripe nursery at Morden to evaluate cultivar resistance and disease treatments.

"Research will help develop better diagnostic tools to allow early pathogen detection, enabling timely interventions to reduce disease spread," says Ahmed Abdelmagid, research scientist at Agriculture and Agri-Food Canada who leads a project focused on verticillium stripe.

Funded under the Canola Agronomic Research Program (CARP), this research (launched in 2024) aims to deepen our understanding of the pathogen's impact on canola, with two main goals:

1. **Field Survey:** Researchers are surveying fields across Manitoba to determine the presence and impact of verticillium stripe on canola yields.
2. **Disease Nursery:** A dedicated site in Morden allows researchers to study the disease under controlled conditions, facilitating the search for disease-resistant varieties and effective treatments.

Early findings indicate moderate disease levels in all surveyed fields (35 across Manitoba), with some cultivars demonstrating greater tolerance to the disease. The new nursery successfully inoculated the soil and was showing visible symptoms by early September.

"Farmers who were affected by verticillium stripe last season should avoid planting canola in the same field this year and consider rotating with non-host crops (wheat, corn or soybean) to help break the disease cycle," says Abdelmagid.

Advancing detection with qPCR-based screening

Another project launched in 2024 funded through Agriculture Development Fund, led by Harmeet Singh Chawla, assistant professor in Plant Science at University of Manitoba, focuses on developing molecular markers and qPCR-based testing to identify verticillium stripe in canola.

"We are working to streamline detection so breeders can select resistant sources faster for future canola varieties," Chawla says. The project aims to develop molecular markers that breeders can use in the lab, helping estimate resistance levels without extensive field testing.

This research is investigating the use of qPCR, the same test employed during the COVID-19 pandemic, to detect verticillium in plants. "It is like testing for the virus in humans, but we are working to adapt the method for large-scale testing for canola plants without the high costs."

Harmeet Singh Chawla, assistant professor in Plant Science at University of Manitoba, leads a project on testing to identify verticillium stripe in canola.

Practical control measures for farmers

Until resistant varieties are available, farmers are encouraged to manage verticillium stripe using control practices similar to those for other soil-borne pathogens, including equipment decontamination, tire washing and soil testing. "Provincial surveys indicate more fields in Manitoba and eastern Saskatchewan are testing positive, so it's important for farmers to be cautious," says Chawla.

MCGA members can send samples for free verticillium stripe identification through the Canola Disease Testing Program.

"Farmers have questions about verticillium stripe, but more research is needed to be able to answer them," says Amy Delaquis, MCGA's Research Manager. "It's promising to see passionate local researchers actively working to learn more."

Manitoba Canola Growers

CANOLA MORNING

TUESDAY, JANUARY 21, 2025
FCC THEATRE

Manitoba AGDAYS .com

9:30 am

CANOLA UNDER SIEGE

Tyler Wist
Research Scientist, Field Crop Entomology, AAFC Saskatoon

10:20 am

THE BALANCING ACT OF CANOLA VARIETY SELECTION: AN AGRONOMIST PANEL

MODERATOR:
Sonia Wilson
Oilseeds Specialist, Manitoba Agriculture

PANELISTS:

Brunel Sabourin
Agronomist, CCA, Tech. Ag., Antara Agronomy Services Ltd

Breanna Miller Friesen
Agronomy Specialist, Canola Council of Canada

Karen Fatteicher
Agronomist, 360 Ag Consulting

11:15 am

PRICE OUTLOOK FOR OILS & FATS AND IMPLICATIONS FOR CANADIAN CANOLA

David Mielke
Analyst, Oil World – ISTA Mielke GmbH

SAVE THE DATE

Manitoba Canola Growers

ANNUAL GENERAL & SPECIAL MEETING (AGSM)

TUESDAY, FEBRUARY 11, 2025
4:00 to 6:00 pm
Victoria Inn Hotel & Convention Centre in Winnipeg, MB

New time, join us for our AGSM the afternoon before CropConnect.

Agronomists rank temperature as top risk factor

BY JAY WHETTER

The Canola Council of Canada, in its 2024 survey of agronomy providers, asked what canola agronomy risk factors will be big concerns over the next five years. Temperature stress was the top answer. Herbicide-resistant weeds, top answer in the previous survey, was second.

Crystal ball time. The top three canola agronomic risk factors for the next five years will be temperature stress, herbicide-resistant weeds and drought. That's according to responses to the latest Canola Council of Canada (CCC) survey of agronomy providers. In the previous survey, done in 2022, agronomy provides put herbicide-resistant weeds, insects and drought as one-two-three when asked to look ahead at the biggest risks.

The CCC surveyed 299 agronomists, agrologists, certified crop advisers and retail staff from across the Prairies in August and September 2024 to check on canola yield challenges and canola agronomy practices. Responses came from a broad cross section of the industry, including independents and staff from large and small companies.

For the five-year-outlook question, there were, as usual, regional differences. The top two in Alberta were temperature stress and drought. One-two in Saskatchewan were herbicide-resistant weeds and temperature stress. Manitoba had increased disease pressure and herbicide-resistant weeds.

Recommendations to manage temperature stress are limited. Hot weather at flowering is particularly damaging to yield, and research is underway on cultivars with improved heat tolerance. Balanced and adequate crop nutrition can often help with stress tolerance in general. Short season cultivars planted early could avoid the hottest summer days at flowering, but that is not a guarantee.

Set a target yield

The survey asked agronomy providers, what do you use to help farmer customers set a target yield for canola? The top three responses, in order, were soil test data and recommendations, the farm's historical average canola yield and available moisture.

The CCC encourages farmers to set yield targets based on current potential. Ian Epp, CCC agronomy specialist, says there is a risk in using historic yield. "Setting a target yield based on the farm's historical average canola yield may be flawed if the more profitable yield target is higher than that," Epp says. "It essentially means a yield plateau."

For more on setting a yield target, please see the article on page 18.

Improve nutrient management

The survey asked, what agronomy practices are farmers with low canola yield most likely to get wrong, as compared to those farmers in your area who usually produce higher yields? The top answer was low fertilizer rates. Unbalanced fertilizer was second.

In a related follow up, the survey asked, what is one change farmers can adopt to make the biggest improvement in their canola yield? The overall top response was better nutrient management, especially in Saskatchewan – where it was way out front. The other answers combined didn't add up to the votes for nutrient management. Alberta was more divided, with diversified crop rotation as a close second. Manitoba went the other way around: diversified crop rotation first, nutrient management second.

Improved nutrient management can start with an understanding of the 4Rs – the right source of fertilizer used at the right rate, at the right time and in the right place.

The survey showed a big jump in agronomy providers with a 4R designation, with 56 per cent answering yes in 2024, up from 44 per cent in 2022. By province, Saskatchewan agronomy providers are much more likely to have a designation at 69 per cent, compared to 54 per cent in Manitoba and 46 per cent in Alberta.

"Setting a target yield based on the farm's historical average canola yield may be flawed if the more profitable yield target is higher than that."

— Ian Epp

Nutrient management tools scored high when the survey asked agronomy providers, which new technologies do you recommend for your farmers or farmer customers? The top three overall were precision soil sampling, variable rate fertilizer and fertilizer with nitrification or urease inhibitors. Regionally, precision soil sampling was the top answer in Alberta, variable rate fertilizer was the top answer in Saskatchewan and fertilizer with nitrification or urease inhibitors was the top answer in Manitoba.

Manage low-producing areas

It seems the Prairies have a lot of acres with productivity problems. When asked what percentage of the crop land in their area is lower producing (to the point where seeding that land to annual crops is likely not profitable), a quarter of all respondents put the total at 10 per cent or more.

Follow up questions asked why these acres are lower yielding and how the agronomy providers recommend farmers manage these areas.

For agronomy providers in Saskatchewan, salinity is the top reason for low-producing and non-profitable acres. And for those who chose salinity, their top three management recommendations were reduce seeding rates on those acres, reduce fertilizer applications on those acres and install tile drainage or surface drainage.

In Alberta, the top reason for low-producing acres was sandy or dry soils. The top three management recommendations were to manage those acres the same as other acres, reduce seeding rates and plant them to perennial crops.

In Manitoba, the top reason for lower yields was drainage. Those acres are too wet most of the time. Not surprising, the top management tip, by far, was install tile or surface drainage. The next two tips were to reduce fertilizer applications on those acres and farm around them.

"It seemed like insect pressure was low to moderate in my territory this year, certainly not the bug-pocalypse we have had in the last few years."

— Marissa Robitaille Balog

—Jay Whetter is the editor of Canola Digest.

Extra survey highlights

Lots of tank mixing for pre-seed burnoff. When asked what products agronomy providers recommend for pre-seed burnoff, 86 per cent said glyphosate. Of those, four out of five also recommended other products in a tank mix. Bromoxynil (Group 6) and carfentrazone (Group 14) were the top two most common tank mix partners.

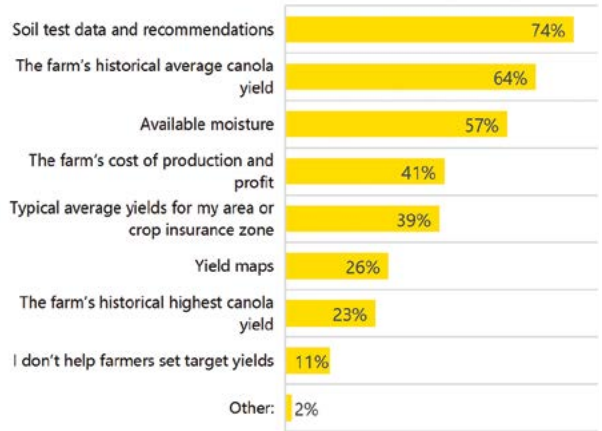
Alberta sprayed less for insects. The survey asked what canola insect pests did your farmers, or farmers in your area, spray for in 2024? In Alberta, 31 per cent chose "none." That answer garnered only seven per cent of responses in Saskatchewan and four per cent in Manitoba. "It seemed like insect pressure was low to moderate in my territory this year, certainly not the bug-pocalypse we have had in the last few years," says CCC agronomy specialist Marissa Robitaille Balog, who covers the southern Alberta region.

Pod-shatter resistance is the most recommended seed trait. When asked to name the top three canola seed traits they recommend, Saskatchewan and Manitoba agronomy providers put pod-shatter resistance on top. The top trait in Alberta: maturity to match the local season or farm system. Yield was second in all three provinces. Clubroot resistance scored much higher in Alberta than in the other provinces. Blackleg resistance scored much higher in Manitoba.

Disease in Manitoba. Throughout the survey, disease-related answers often scored much higher in Manitoba than in Saskatchewan and Alberta. Manitobans were more likely to choose disease, especially verticillium stripe, as a key agronomic threat. And when asked what agronomy practices farmers are more likely to get wrong, "not selecting appropriate genetic disease resistance" was a much more common answer in Manitoba.

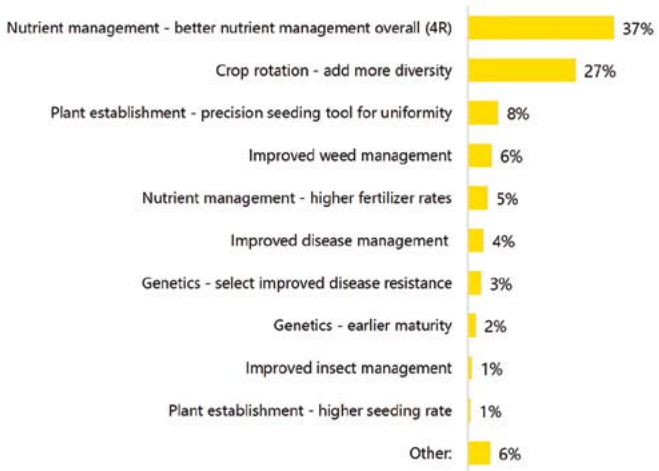
Set target yield

"What do you use to help farmer customers set a target yield for canola?"



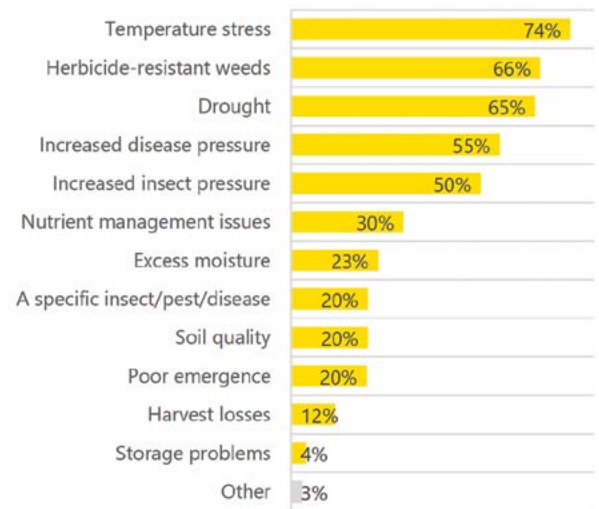
How to increase yields

"What is one change farmers can adopt to make the biggest improvement in their canola yield?" Respondents had to pick one.



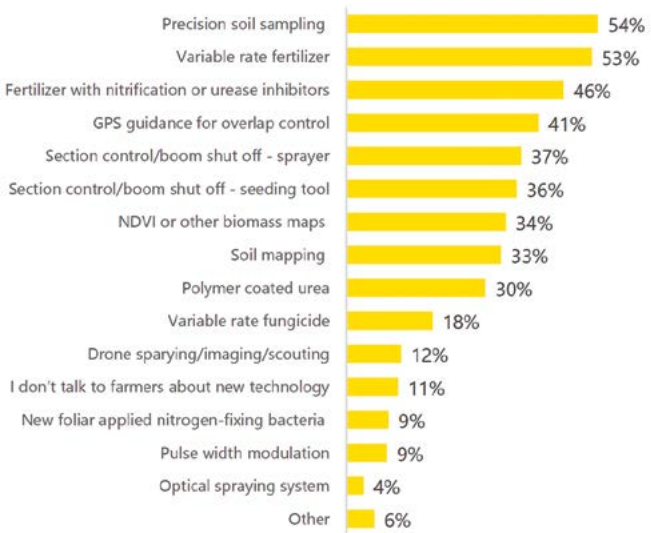
Agronomy risk factors

"What canola agronomic risk factors are likely to be the greatest concerns for your farmer customers over the coming five years?"



New tech

"Which new technologies do you recommend for your farmers or farmer customers?"



Reasons for low yields

"What agronomy practices are farmers with low canola yield most likely to get wrong (as compared to those farmers in your area who usually produce higher yields)?"

Respondents could pick all answers that apply, which is why totals add up to more than 100 per cent, unless otherwise specified.

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Shopping for an agronomist

You decide your farm could benefit from outside advice on crop rotation and fertilizer rates, or on scouting and pest management. You want to hire an agronomist. Here are some questions to ask so you find the right person.

What are your qualifications?

The Canola Council of Canada 2024 survey of agronomy providers included agronomists, retails, territory reps and government extension staff. Of the people who checked the "agronomist" box, 32 per cent had both Professional Agrologist (P.Ag.) and Certified Crop Adviser (CCA) accreditation. Another 19 per cent were P.Ag only and 19 per cent were CCA only.

The survey also asked how many had their 4R designations. Forty-six per cent of all respondents (not just the self-declared agronomists) have the Fertilizer Canada designation and 10 per cent had the CCA designation.

In asking about qualifications, you might also ask how many years of experience they have and ask for references. What other farmers have they've worked with in the area? If an agronomist is less experienced, ask if they have a network within their company to support them.

You might also ask about their independence. Are they tied to a particular product line?

Agronomists who offer one-time field visits might charge $200 to $300 per hour. Full package agronomy could be $8 to $10 per acre.

What are your areas of expertise?

Think about what you want from an agronomist. If you want someone to guide you through a transition to optimal-rate or variable-rate fertilizer, look for agronomist with expertise in that practice. If you want someone to scout crops and advise on pest management, look for an agronomist who knows how to scout, what thresholds to follow, and has the confidence to say "spray" or "don't spray." You also want someone with expertise in the crops you grow, or want to grow.

How will you help me increase profits? What is my ROI in hiring you?

An agronomist can make advanced fertilizer recommendations, help you interpret soil test results and make complete nutrition management recommendations that match your farm needs and appetite for risk. They can also scout when you don't have the time, and make recommendations to spray or not spray. They also know products, rates and timing to get the most out of a spray.

One way to evaluate an agronomist could be to hire them for a field visit and join them. That will give you an idea of the time, tools and expertise required, and the value provided.

How often will you check my fields?

Proper scouting can require one or two hours every week in each canola field to keep tabs on all the possible threats. This is time well spent if it means stopping an insect that has reached economic levels of damage, or recognizing conditions where a fungicide spray is needed. If finding the time to do a proper job is almost impossible, an agronomist can do this. They also know what threats are showing up in the area.

How much do I pay you?

The answer depends on what you want done. Be clear about expectations.

Agronomists who offer one-time field visits might charge $200 to $300 per hour. For regular second opinions, some agronomists offer a personal text, email or phone service for a flat amount per year plus an extra fee for any field visits. Full package agronomy could be $8 to $10 per acre. If you just want crop scouting and pest management recommendations, that would be $4 to $7 per acre. Setting up a variable-rate fertilizer program, including initial soil testing and regular prescription maps, is $4 to $7 per acre for set up plus about the same for the ongoing annual work.

Keep in mind that an agronomist has other clients and a full schedule. They manage their time and billing the same way a lawyer or accountant does.

How will you and I communicate? And how often will we connect?

The answer relates to the payment scheme. Sharing results from a one-off field visit could be by text or one quick phone call. At the other end of the spectrum, a full package deal could mean multiple texts per day, weekly in-person visits, regular phone calls and written reports.

Will you make me do things I don't want to do?

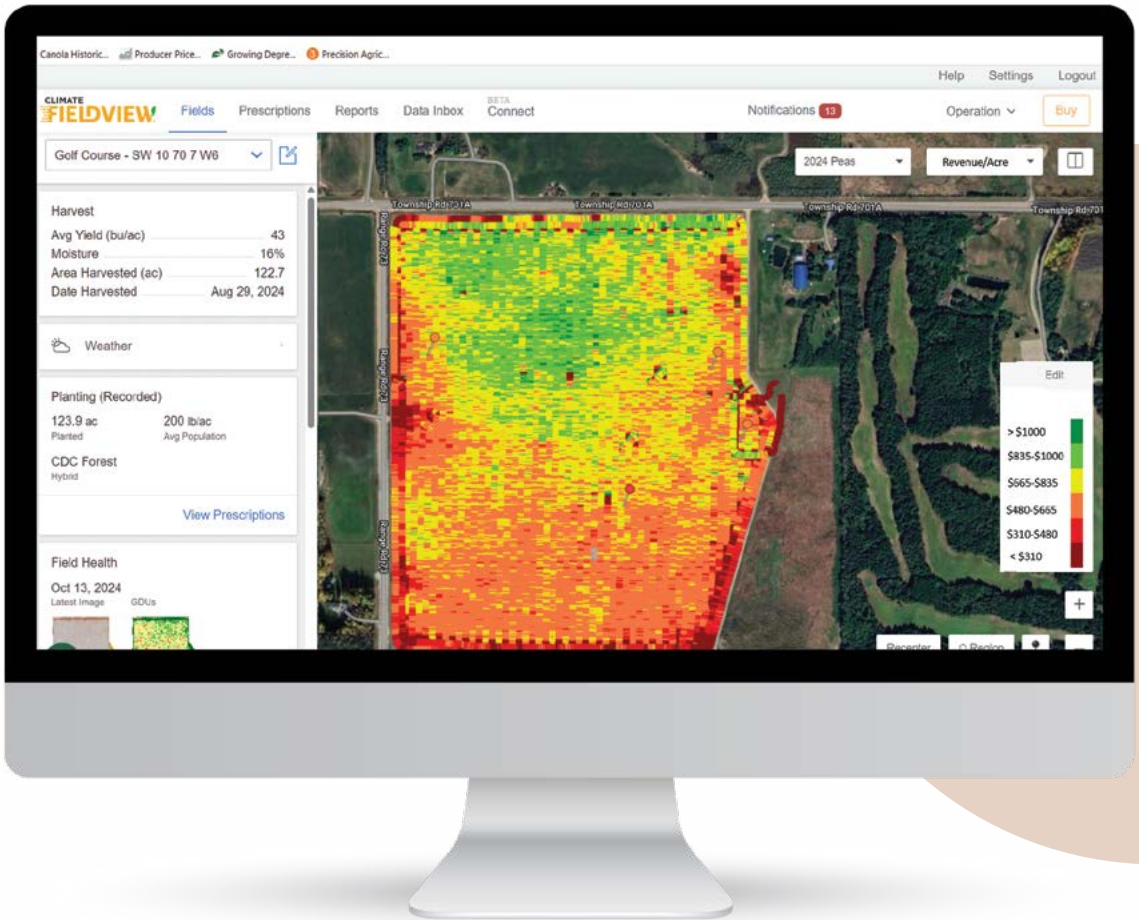
This relates to expectations. Talk to the agronomist about your targets and risk tolerance. Make sure the agronomist understands what you consider important. In some cases, you will want an agronomist who pushes back on your objectives if they see a different approach that could provide a better outcome. Agronomists may know that yield potential for a field far exceeds what you've been achieving. They may know how to unlock higher profitability.

Ultimately you want a relationship built on trust and understanding. Agronomists often want the same from you. They want to work with farmers who appreciate their talent, their personality and will happily pay for their expertise. A conversation ahead of time can help sort these perspectives.

This is a personal relationship. So hire the agronomist, not their company.

In some cases, you will want an agronomist who pushes back on your objectives if they see a different approach that could provide a better outcome.

How to create a *field profit map*



← This is the 2024 revenue map for Jason Casselman's field of CDC Forest green peas. The field ranges from revenue of less than $300 per acre (dark red) to a revenue of over $1,000 per acre (dark green). The whole north half of the field is far more profitable than the south half. Without going through this exercise, farmers may not realize this significant variability.

BY JASON CASSELMAN

The new Prairie Precision Sustainability Network has a pilot program to help farmers map the historic profitability of zones within fields. It flags areas that are perpetually unprofitable. Farmers can then decide what areas may benefit from different management practices.

Bragging rights are based on bushels per acre but what really matters is profit. Farmers have a new tool to convert yield maps into profit maps, providing an essential next step toward precision management.

Paul Galpern, researcher at the University of Calgary, is one of the project leaders with the Prairie Precision Sustainability Network (PPSN). He answered some of my questions about identifying profitability differences within a field, and the tools, time and cost required.

The PPSN is a collaboration of research teams from University of Saskatchewan and the University of Calgary looking at yield maps and satellite imagery to build a predictive model for individual fields. They are working with about 70 growers across Western Canada and since 2022 have collected data on over 700,000 acres.

We know the whole field is getting the same amount of rain and sunshine during the growing season. So what sets those good areas apart from the rest of the field? This is something we need to figure out.

Four years of combine yield data and satellite imagery provide enough information to show consistent patterns of yield variability, Galpern says. These patterns identify which acres are consistently underperforming and not profitable in an annual cropping system and which acres have characteristics that contribute to reliably higher yields.

PPSN developed the Field Profitability and Marginality Tool to give participants in the project the ability to enter crop price and input costs for a field, overlay that with yield history and satellite imagery, and determine profit potential on each acre.

When I watched Galpern demonstrate the tool, he showed how it can flag unprofitable acres as well as the most productive areas. This is an excellent opportunity to dig into what is going on in these areas and find out what soil quality factors contribute to consistently higher yields.

We know the whole field is getting the same amount of rain and sunshine during the growing season. So what sets those good areas apart from the rest of the field? This is something we need to figure out. It might be less compaction, improved soil aeration, ideal soil pH, better balanced fertility, deeper topsoil, less salinity or something else that can be measured.

The Field Profitability and Marginality Tool shows the acres that have low chance of return in an annual cropping system. And it highlights the importance of a change in management on those acres to tip the scales from losing money to providing an economic return.

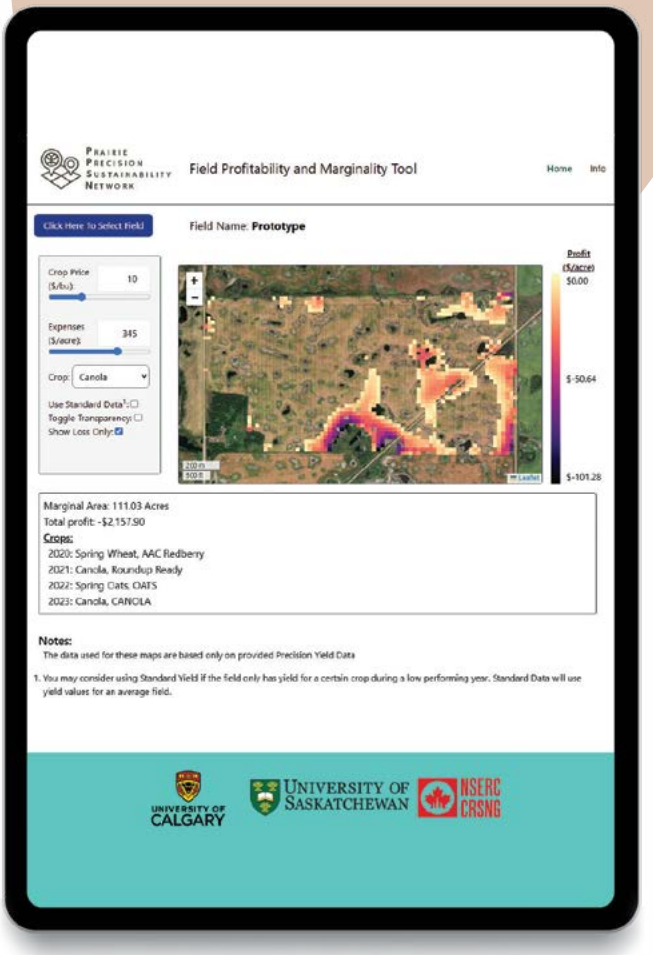
The ideal approach is not to abandon those acres that are less suited to annual cropping, but to use a different strategy to improve the return from those acres. One idea is seeding these areas to perennial forage, which provides an opportunity to harvest an alternative cash crop as hay and while creating additional biodiversity in the landscape. Local markets and other financial incentive programs can help determine what level of management is required on these acres. The goal is to not create additional problems by letting weeds and unwanted vegetation take over. Growers must figure out the best strategy for them.

The PPSN is looking for more growers across Western Canada. Participants provide yield data and crop plans in return for access to the Field Profitability and Marginality Tool. Researchers involved can also provide them with options and recommendations to improve profitability in marginal areas.

Even if growers don't participate in the PPSN pilot program, they can start evaluating their own harvest maps based on revenue per acre, not just yield. This was a real game changer for me. Seeing how parts of a field were consistently carrying the load has encouraged me to do more targeted soil sampling and compare more profitable acres to the rest of the field. Through this closer examination, I can see the inherent quality factors contributing to increased profitability. I can then adjust my fertility levels in those low-profit acres to get them more productive.

—Jason Casselman is an agronomy specialist with the Canola Council of Canada.

This is an actual sample map from a participant in the Prairie Precision Sustainability Network pilot program. Coloured areas show parts of the field that are not profitable over the long term.



For more on the Prairie Precision Sustainability Network, visit prairiepsn.ca. The network is looking for more farmer participants.

Calculate an appropriate yield target

Farms can set a new and updated canola yield target each year based on yield potential for the area, soil moisture outlook and profit calculations.

A farm's most profitable canola yield target for 2025 will not be the same as 2024, and certainly not the same as five or 10 years ago. Farmers and their agronomists can set appropriate yield targets for the year based on some or all of the following factors.

The farm's cost of production and profit

Calculate the input costs to produce canola and observe how those costs and profits change based on different target yields.

Canola Council of Canada agronomy specialist Jason Casselman ran a few sample scenarios using the Saskatchewan 2024 Crop Planner Calculator. A fertilizer blend of 80-30-20-10, enough for a target 40 bu./ac. canola crop, is around $85 per acre. Doubling the fertilizer rate will double the cost to $170 per acre. This is not a huge increase, relative to the total canola cost of production, and could significantly increase yield potential.

Using the calculator, Casselman shows total cost for a 40 bu./ac. crop at $14.09 per bushel, or $563.88 per acre. For the sake of demonstration, if the doubled fertilizer rate can double yields, the cost for an 80 bu./ac. crop rises to $618.49 per acre but only $7.73 per bushel. Revenue per acre at $13 per bushel is $520 per acre for the 40-bushel crop and $1,040 per acre for the 80-bushel crops.

"Even if the result is only 60 bu./ac. with double the fertilizer, profits still increase considerably from the 40 bu./ac. target," Casselman says. "And farms don't have a chance for 60 if they fertilize for 40."

This 40-60 scenario will be too high for a lot of farms. The point is to run the numbers on different scenarios suitable to your region. If yields in the end don't match fertilizer rates, those fertilizer inputs will be available the following year (except perhaps for nitrogen in particularly wet areas of a field). A soil test can help identify soil nutrient carryover.

Soil test data and recommendations

Soil test data can indicate yield potential for a particular field. Results often include fertilizer rate guidelines or recommendations, and these are often based on soil test results cross referenced with your own yield target. For this reason, consider choosing a higher target yield, not just your historical average.

Another approach is to share the actual soil nutrient levels with an agronomist and discuss an appropriate yield target with them. Agronomists will consider your soil type, your appetite for risk and local potential to advise on a yield target that could increase profitability.

Yield data from the whole region will help a farm evaluate its own yield performance and indicate capacity for growth.

For a more detailed version of this article, read Calculate a yield target based on profit at canolawatch.org. Look in the Plant Establishment section of the Fundamentals articles.

Typical average yields for the broader area

Yield data from the whole region will help a farm evaluate its own yield performance and indicate capacity for growth.

In addition to conversations with agronomists, farmers can find other yield data here:

- **Statistics Canada.** StatCan has yield by data region. Go to **statcan.gc.ca** and search for data table "32-10-0002-01".
- **Crop insurance.** Provincial crop insurance providers have historical yield data by risk zone and by crop and cultivar.

Yield is, of course, not the only indicator of success. Higher yields do not always mean higher profits. However, if the farm is below local yield thresholds, it will prompt some discussion as to why.

The farm's historic canola yield

Look at yield records for each field, or areas within each field, and compare them to other fields on the farm. Look at the range from worst to best as well as the average. Classify each field.

Keep in mind that setting a target yield based only on the farm's historical average canola yield may be flawed. More profitable yield targets are often higher than historical yields, especially if new genetics, improved pest management products and 4R nutrient management can elevate yield potential. Targets based on historic yields essentially mean the farm is locking in a yield plateau. More profits could be available if farms have upgraded genetics but not updated fertilizer rates to match the higher genetic yield potential.

Available moisture

A measure of soil moisture reserves heading into the growing season can significantly influence yield. Large soil moisture reserves helped canola growers in the Eastern Prairies achieve higher than expected canola yields in 2023. In-season moisture was far too low for the yields achieved.

Farms can use in-field electronic moisture sensors or mechanical soil moisture probes (like the Brown soil probe). Provincial weather data can also give an indication of local soil moisture levels. For example, Alberta weather station data at acis.alberta.ca offers soil moisture measurement at depths up to one metre, but perhaps not for all locations.

New network provides Prairie weed strategy

The Prairie Weed Monitoring Network aims to implement a comprehensive weed biovigilance strategy for the Prairies, including weed monitoring, risk assessment and forecasting.

BY TARYN DICKSON

The new Prairie Weed Monitoring Network (PWMN) provides information required to manage weeds effectively, anticipate new weed threats and mitigate selection pressure for herbicide resistant weeds. The Prairie-wide effort, following the model of the Prairie Pest Monitoring Network and Prairie Crop Disease Monitoring Network, is a collaboration of research and extension efforts across Manitoba, Saskatchewan and Alberta. It is a Sustainable Canadian Agricultural Partnership project with many commodity funders.

The network website, at PrairieWeeds.com, states that Canada has the third largest number of unique herbicide-resistant weed biotypes, with about two new herbicide-resistant weed biotypes discovered each year since the 1990s. The 2014-2017 data suggests 59 per cent of Canadian Prairie fields contain at least one herbicide-resistant weed biotype, and that herbicide resistance costs farmers on the Prairies an estimated $530 million annually in reduced crop yield and crop quality, and in increased weed control.

The PWMN explains that herbicide resistance is the inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide normally lethal to the wild type. Herbicide tolerance is the inherent ability of a species to naturally survive and reproduce after herbicide treatment (with no selection or genetic manipulation to make the plant tolerant).

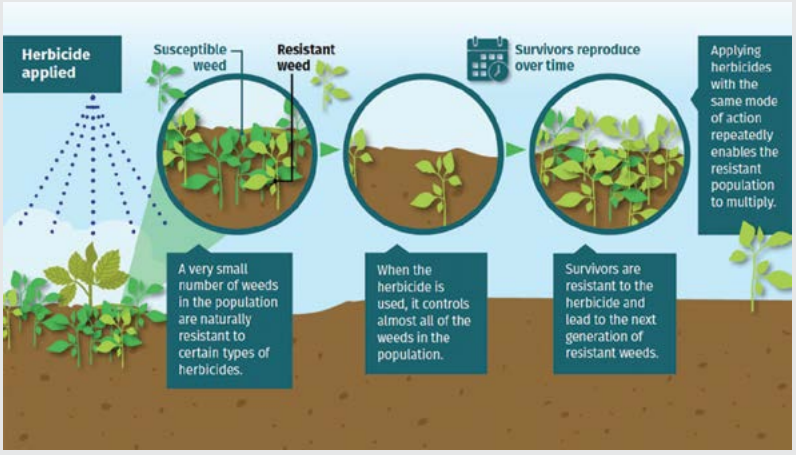
Past provincial weed survey results

The PWMN website features Weed Abundance and Herbicide Resistance survey results. Here are a few highlights from the reports:

- The 2014-15 Saskatchewan results concluded that: Relative abundance of annual grass has decreased since the 1970s, while relative abundance of perennials and facultative winter annuals has increased since 2003. Weed densities were higher in 2014-15 than in 2003, likely due to the wet conditions in 2014.

- The 2016 Manitoba results, when compared to surveys in 2002, 1997, 1986 and 1978-1981, had the lowest relative abundance of annual grasses but the highest relative abundances of perennials and facultative winter annuals (which can emerge in both spring and fall). For the 2016 survey, densities of annual grass and annual broadleaved weeds were the lowest ever recorded.

- The 2017 Alberta results reported that total weed densities in 2010 and 2017 were the lowest recorded. Foxtail barley abundance was also found to have increased the most since the 1970s and 2017 marked the first time that it was among the top 25 weeds.



↑ The 'How does herbicide resistance develop' infographic from the Manage Resistance Now initiative.

Researchers noted that pre-emergence herbicides can reduce weed population recruitment and abundance in-crop, thereby potentially reducing in-crop herbicide selection pressure for resistance.

Integrated weed management

The ongoing weed abundance and herbicide-resistance challenges highlight the need for additional management strategies to control weeds, in addition to chemical options.

Integrated weed management (IWM) includes a combination of cultural, physical, or biological control strategies in addition to herbicide-based management options.

The recent 'Effective integrated weed management starts early and varies by species' blog on the Canola Research Hub examines outcomes of recent IWM studies, including:

- A five-year 'Mitigating herbicide resistance – investigating novel integrated weed management systems' project and its related 'Using integrated weed management systems to manage herbicide-resistant weeds in the Canadian Prairies' publication.
- The 'Harrington seed destructor evaluation at field scale in Alberta' project and related 'Field testing of a physical impact mill in the Canadian Prairies' publication.

For more options, check out the Canola Watch Fundamentals article called "Integrated weed management: Best practices," which includes reference to the 'Top 10 Herbicide Resistant weed Management Practices' by research scientists Neil Harker and Hugh Beckie.

Read the full summary and report on the Canola Research Hub at CanolaResearch.ca.

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

Canola contributes $43.7 billion to the Canadian economy

A new report from GlobalData Plc calculated the economic impact based on average results for 2021-22, 2022-23 and 2023-24. The impact includes 206,000 jobs and over $16 billion in wages.

The value of canola to the Canadian economy has more than doubled in the past decade, and now contributes an average of $43.7 billion per year.

These numbers come from the GlobalData Plc report, "The Economic Impact of Canola on the Canadian Economy: 2024 Update," commissioned by the Canola Council of Canada (CCC). The $43.7 billion is an average of the three years: 2021-22, 2022-23 and 2023-24.

About $38 billion of the economic impact happens on the Prairies, with almost $20 billion in Saskatchewan alone. The canola sector supports 206,000 Canadian jobs, including farmers, farm family members and employees in all stages of the value chain from seed development to end uses in food and biofuel production. Of that number, 194,000 live and work on the Prairies.

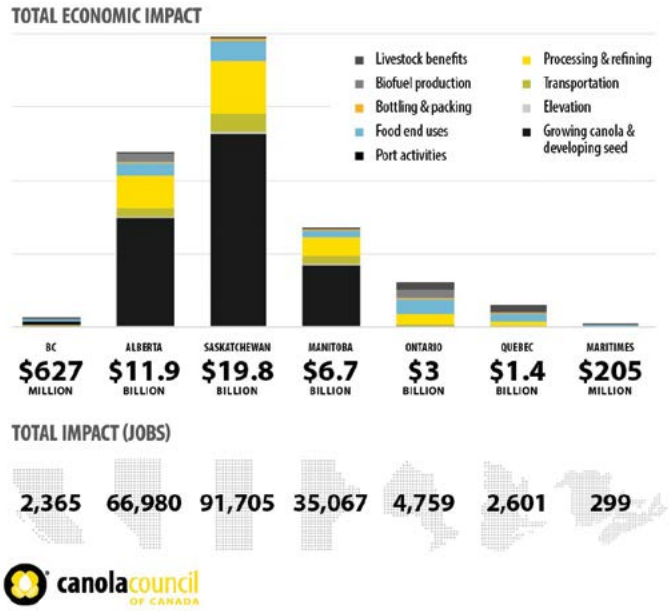
Canola crop production contributes $25 billion of the total economic impact of canola. This includes canola hybrid seed development as well as farm gate revenues and farm employee wages. Farm gate revenues (not just profit) allow the study to capture the economic impact of the inputs involved in canola production.

Canola contributes another $18.7 billion to the economy through grain handling, transportation, processing, port activities and end uses beyond the farm gate.

Canola processing and refining continues to become a bigger part of canola's economic contribution in Canada, generating more than six times the economic impact in 2022-23 compared to 2012-13. The impact of canola-based biofuel production has also seen growth over the last decade, rising from $70 million in 2012-13 to $1.1 billion in 2022-23.

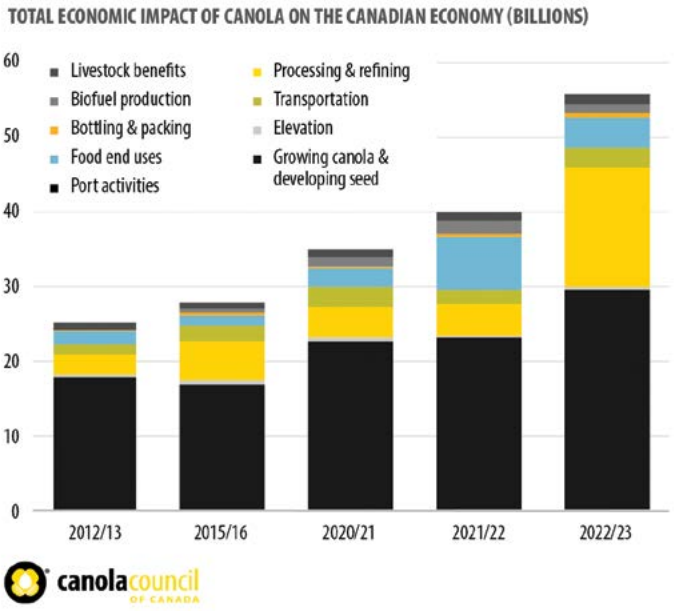
For more on the economic impact study, including the full report, go to canolacouncil.org and click on "Economic impact" under the About Canola tab.

Economic benefits across the country



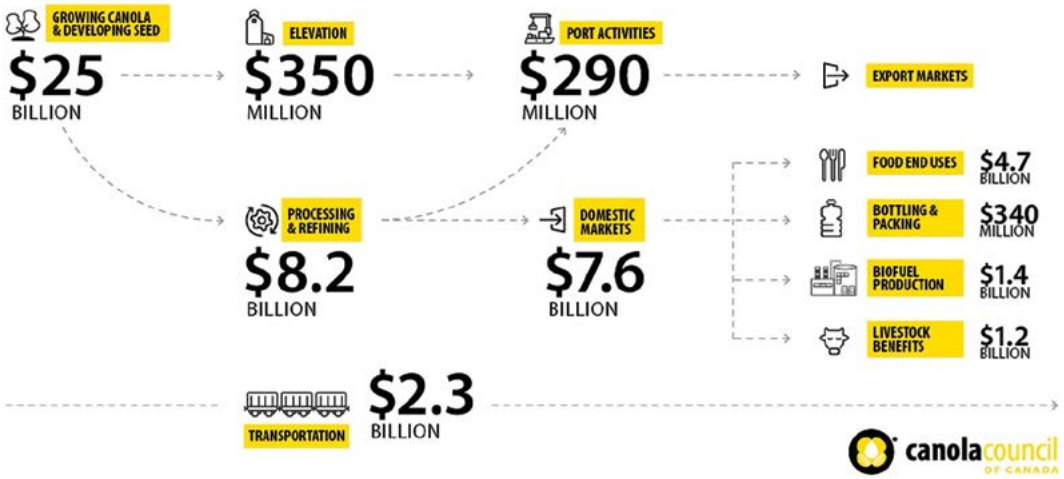
↑ Of the $43.7 billion total economic impact, the Prairies generate $38.4 billion.

Growth over the last decade



↑ Since 2012/13, total economic impact has more than doubled, increasing by $30.5 billion.

Creating economic impact at every stage



← This graphic breaks down the $43.7 billion by sector. The $25 billion for growing canola and developing seed captures the impact of seed development and all other farm inputs at this stage in the value chain.

Canola, united on the Hill

BY TENESHA LAWSON AND TROY SHERMAN

At Lobby Day 2024, CCGA and the CCC met with parliamentarians to ask for support on key trade issues, rail interswitching and Bill C-234.

On November 5, 2024, Canadian Canola Growers Association (CCGA) and the Canola Council of Canada (CCC) went to Parliament Hill and met with nearly 40 parliamentarians and senior staff to advocate on behalf of Canada's nearly 40,000 canola farmers and the entire canola value chain.

Lobby Day is one of several approaches and activities both CCGA and CCC use to engage with policymakers, and this year, it was a collaborative approach.

"This year's joint lobby day allowed us to have representation across the entire canola value chain at all of our meetings, highlighting how policy impacts the entire sector," says Roger Chevraux, CCGA chair and farmer from Alberta. "Lobby day puts a face to this multi-billion-dollar Canadian industry and connects policymakers with those who may not have an understanding or experience with agriculture or the farm."

"For the canola industry, it is more important than ever to have our collective voice in Ottawa heard," says Chris Davison, CCC president and CEO. "International trade, reliable supply chains and a competitive business and operating environment are essential for the industry's ongoing success. Engaging with federal decision-makers to advance these and other issues is a core part of the mandate for both CCC and CCGA."

In a typical meeting, you get 20 minutes to address specific policy issues and ask for actions toward solutions. Consistency and clarity are key.

CCGA and CCC discussed the following:

Market access and international trade. Current geopolitical and market headwinds underline the need for ambitious and commercially viable trade agreements, as well as the importance of a strong domestic market to help de-risk the industry and hedge against potential future market disruptions.

Our asks: Support the Canadian canola industry as it navigates the impact of China's anti-dumping investigation, support a domestic biofuels market, and reject Bill C-282, an Act to amend the Department of Foreign Affairs, Trade and Development Act (supply management).

Reliable rail transportation. Farmers, shippers and the wider canola industry rely on efficient, predictable and timely rail service to ship canola to ports. Budget 2023 authorized an 18-month "extended interswitching" pilot in the Prairie provinces that expires in March 2025. Extended interswitching gives captive shippers the ability to seek competing service from the next closest railway if they are located within the 160 km radius.

Our asks: Extend Budget 2023's rail interswitching pilot by 30 months and oppose Bill S-287, which aims to repeal extended interswitching.

Bill C-234. Currently, farmers have no viable fuel alternatives to replace natural gas and propane used on farms and, therefore, should be exempt from carbon pricing. Bill C-234 seeks to amend the Greenhouse Gas Pollution Pricing Act to extend the exemption for qualifying farming fuel to marketable natural gas and propane. With the price of carbon going up, the tax alone from grain drying can cost canola farmers thousands of dollars every year.

Our ask: Pass Bill C-234.

The day ended with a joint reception attended by parliamentarians, senior civil servants, political staff and industry representatives.

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

ADVOCACY PRIORITIES

CCGA speaks for canola farmers at the national level. Visit the Current Issues page on the new CCGA website to learn more.

The CCC speaks for the industry on issues affecting the entire canola value chain. Visit the CCC website to learn more about the current advocacy priorities.

← At Lobby Day, Lawrence MacAulay (second from right), Canada's Minister of Agriculture and Agri-Food, with Canadian Canola Growers Association president and CEO Rick White (left), CCGA board chair and Alberta farmer Roger Chevraux (second from left) and Canola Council of Canada president and CEO Chris Davison (right).

Agriculture piggybacks on *RNA biomedical research*

BY CHRIS MANCHUR

Ribonucleic acid (RNA) is like the workhorse of genetics, taking code from deoxyribonucleic acid (DNA) and using that code to construct proteins – the building blocks of life. RNA activity is a hot topic in science, including for human health and agriculture.

To manipulate or interfere with ribonucleic acid (RNA) pathways will bring major advancements in human health and in agriculture. For one example, the precise coding of RNA can provide pest management tools that work only on the target pest – harming no other organisms.

I participated in an agriculture panel at the inaugural RNA Canada conference in Ottawa from September 30 to October 4, 2024. The conference brought together Canadian organizations, institutions, industry and government to discuss new developments in RNA research, and help chart the course for RNA-based innovations.

Groups called RiboClub, RiboWest and the Toronto RNA Club organized the conference. While a majority of the conference was focused on biomedicine, a component discussed the impacts of RNA in agriculture. Presenters and attendees discussed how RNA developments can help us better understand plant pathogens and insect pests, and identify novel ways to protect our crops.

Organizers invited me to be a panelist alongside RNA-focused researchers, industry professionals and government regulators to discuss the role of RNA research in agriculture. I represented the farm-based need for new and innovative ways to address current challenges, and demonstrated the value of connecting research in RNA to the agricultural world. With molecular biology and RNA innovations, we are gathering puzzle pieces. When we find new ways to fit these pieces together, something magical can happen. The COVID vaccines were RNA-based innovations. A co-funder of Moderna, Derek Rossi, is a Canadian and presented a keynote address at the conference.

One thing mentioned over and over at the conference was funding. When it comes to the biomedical sector, there are plenty of brilliant minds and ideas, but our current funding model can't support it all. To reduce the research cost of this technology in agriculture, I see an opportunity to build upon, not repeat, the work done on the medical side. We can take these ideas and see how they might work in barns and fields.

RNA already has a presence in Canadian crops research. University of Manitoba researchers Mark Belmonte and Steve Whyard have uncovered new ways to protect canola from flea beetles and sclerotinia stem rot through RNA interference (RNAi). Steve Robinson and Hossein Borhan, research scientists at Agriculture and Agri-Food Canada in Saskatoon, are using the same methods for fusarium head blight, blackleg and verticillium stripe. It is only a matter of time before these precisely-targeted genes and products come to our fields. The United States already has commercial products available. One called Calantha controls the Colorado potato beetle.

Beyond RNAi, many researchers use new methods involving RNA to help understand plant responses, screen new genes, and most importantly, accelerate discoveries that could have never been possible 20 years ago. When scientists first sequenced the complete human genome 21 years ago, the cost was at least $500 million. Now we can sequence a genome for about $600. The acceleration of such developments has direct impact across all of molecular biology, and we're likely to see more of this as time progresses.

—Chris Manchur is an agronomy specialist with the Canola Council of Canada. He is the agronomy team's research lead. His MSc thesis involved studying next generation fungicides using RNAi. Email manchurc@canolacouncil.org.

↑ University of Manitoba researcher Mark Belmonte spoke at the conference. He and his U of M colleague Steve Whyard have uncovered new ways to protect canola from flea beetles and sclerotinia stem rot through RNA interference (RNAi).

It is only a matter of time before these precisely-targeted genes and products come to our fields.

Considerations when engaging with renewable energy production

BY WILL HOLOWAYCHUK

Who is responsible to clean up energy projects on farm land? Alberta missed setting solid policy for oil and gas wells. We need a plan for farmland reclamation once wind turbines and solar farms reach their end of life.

Ever since Leduc No.1 started pumping oil in 1948, the energy industry has transformed the Prairie landscape and created unintended consequences impacting agriculture. Renewable energy projects such as wind turbines and solar farms present a similar set of challenges. While leasing land to renewable energy companies can provide supplemental income, farms entering into land supply agreements will want to carefully consider what protections should be in place before signing on the dotted line.

Clean up

One of the largest unintended consequences from the first energy boom in the Prairies are the thousands of orphaned and abandoned fossil fuel wells littering the countryside. Through boom and bust cycles, companies forced to shut their doors left behind their well-site infrastructure, forcing landowners to operate around these physical obstacles.

In Alberta alone there are 7,395 orphaned wells. These wells do not have an entity legally or financially liable for their reclamation. The Orphan Well Association is now responsible for them. Regulators, policy makers, landowners, and energy companies must learn from these mistakes to manage the environmental impact of industrial renewable energy facilities.

First and foremost, farms leasing land to these companies should have a reclamation agreement to remove solar panels and wind turbines at their end of life. All parties must understand the expected standards and their role in returning agricultural land back to its former glory. This includes agreement on who will pay reclamation costs, which will be far higher than they are today, and how they will pay. Financial bonds or trust holdings are possible mechanisms.

Property tax

Land use changes can have a substantial impact on property tax rates. The transition from agricultural usage to industrial usage will certainly cause changes to property taxes associated with a title of land. A lease agreement should also describe who will be responsible for property tax increases and any necessary compensation.

Local bylaws should also allow for quick rezoning back to agriculture land so future agricultural practices are not stuck paying industrial rates of property tax.

Pest management

The initial agreement could include pest management mitigation strategies. These include movement of contaminated soil during construction, or annual weed control programs in and around renewable energy infrastructure. Moving soil can move clubroot. And unmanaged weeds can increase populations of glyphosate-resistant kochia.

Neighbours

Energy projects may also impact neighbours, if it means utility lines, noise, increased traffic and a changed landscape from their picture window. Co-existence is necessary for those directly engaged in producing renewable energy as well as those living in the surrounding area.

Farming around solar panels

Practices of co-existence like agrivoltaics, the concept of dual land usage between agricultural production and solar energy production, have been proposed in other jurisdictions. How feasible would it be on the Prairies to have strips of solar panels running through fields? Creating gaps that match sprayer, drill and combine widths may be easier said than done in Western Canada.

Jurisdictions across the Prairies do not have standard procedures for negotiations or contracts relating to renewable energy facilities, so careful due diligence is critically important throughout the process. Should an issue arise at any point from construction, production or reclamation, the establishment of binding arbitration or third-party mediation can limit the recourse a landowner could take.

We need energy. We also need food. When we take away agriculture land to produce energy, the final consideration is the opportunity cost of losing our food production capacity.

Consider all of these points before signing farmland leases for renewable energy projects. Short term benefits may provide a nice boost in income, but make sure the farm is not stuck with unexpected bills throughout the life and death of the project.

—Will Holowaychuk is a policy analyst with Alberta Canola.

Strong allies speak for canola

We love it when @vancouverfoodie Emma Choo talks about canola oil on Instagram. When you want to amplify a message, it helps to have allies.

For year two of the Hello Canola campaign, the National Canola Marketing Program again teams up with four strong social media voices. These brilliant communicators have dedicated followings and can engage with their audiences on topics that really matter for canola.

In addition to Emma Choo, the program has Abbey Sharp (@abbeyskitchen) educating Canadians on the health benefits of canola and debunking nutrition myths. And beauty influencer Abeena Meera (@abeena.meera) can speak to canola's uses in beauty products and benefits in skincare and haircare. The program will also have a new farmer influencer for 2025, providing a perspective on the Canadians responsible for growing this wonder crop.

According to the annual Edelman trust barometer, 63 per cent of people trust influencers more than what brands themselves have to say. The Hello Canola core audience – millennial women – rely heavily on social media influencers and online experts for product discovery and recommendations. They aren't as inclined to rely on brand accounts for this type of information.

"We weren't surprised after year one of the Hello Canola campaign that the reach of our influencer content exceeded our initial campaign benchmarks," says Lynn Weaver, market development manager with SaskOilseeds. Social media influencer partners were a key awareness driver, aiding in a 13 per cent increase in overall awareness of canola and 25 per cent increase in positive opinion of canola, based on results from the 2024 Leger survey of Canadians.

> ***"It was clear we needed to keep external voices on board in year two to support us in telling the canola story."***
>
> —Lynn Weaver

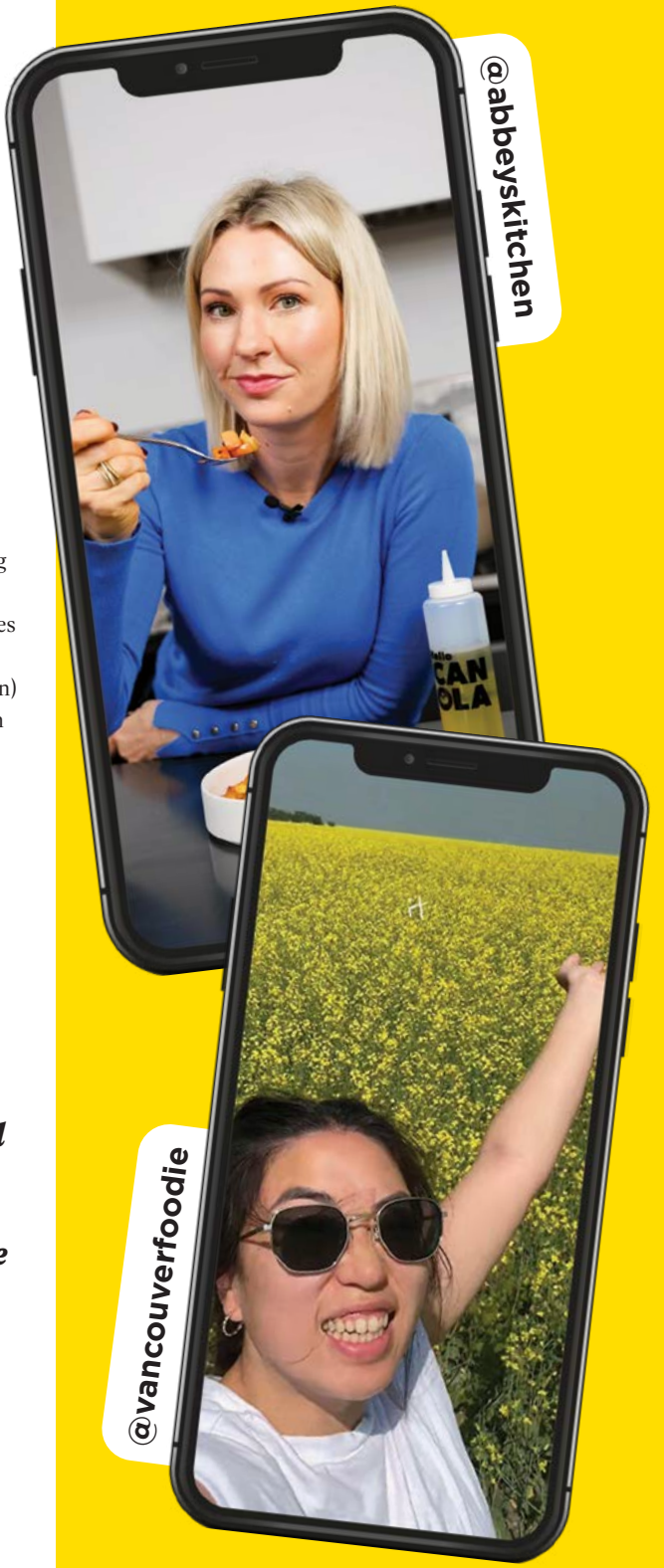
"It was clear we needed to keep external voices on board in year two to support us in telling the canola story," Weaver says.

The Hello Canola campaign will also partner with key publications across Canada. "Our core customers trust national consumer publications," Weaver says. "To be strategic in our partnerships, we want to go where our customers are already actively engaging on a daily basis."

This includes The Kit, an online publication that reaches Canadian millennial women interested in all things lifestyle and beauty. "We want to introduce The Kit readers to canola, and also show them how canola is already part of their daily lives," Weaver says.

Please follow our expert allies on Instagram, and tell your non-farming family and friends about them. You can also follow @HelloCanola on Pinterest and @Hello_Canola on Facebook and Instagram.

The National Canola Marketing Program (NCMP), which includes the Hello Canola campaign, is a partnership of SaskOilseeds, Alberta Canola and Manitoba Canola Growers.

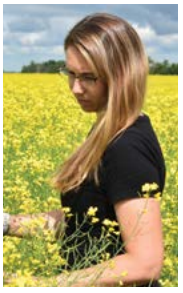


Millennial women, the primary target for Hello Canola messages, rely heavily on credible experts, not brand advertising, for product discovery and information. Meet our expert allies for 2025.

Efficiency boosters

Our panelists share tools and practices – "innovations" – they added recently to improve efficiency, logistics, human resources or profitability. The best ideas tackle more than one of these. As the responses show, innovation is a broad term.

BY JAY WHETTER



Andrea De Roo

Fairlight, Saskatchewan

Andrea De Roo's farm bought a bigger air drill tank to carry urea, potash, monoammonium phosphate and seed in separate compartments. They don't use blends anymore. A variable rate system using blends is possible, but it does not allow for optimal rates for each specific nutrients. Also, for logistical reasons, it is almost impossible to have a blend specific to the need of each field. A drill and fertilizer fill system that handles nutrients separately allows for maximum flexibility. The farm applies sulphur in a separate pass as BioSul or elemental.

De Roo hires Croptimistic to create prescription maps for variable rate. The system uses composite samples for each zone within a field. Croptimistic divides each field into 10 production zones, then pairs them up to create five management zones. De Roo bases her prescriptions on a composite sample for each zone. She doesn't actually sample the high salinity zone because, for them, the fertilizer rate for that zone is zero. On the theme of adopting existing innovation, they are looking into tile drainage for those saline areas. They applied to the Water Security Agency for permits.

De Roo, who also worked until recently as an agronomist, encourages farmers wondering about variable rate to start with soil sampling as a relatively simple first step. When thinking about the complexity of variable rate, De Roo says, "it is so easy to get overwhelmed and not do anything at all."

The common approach to soil nutrient analysis is one composite sample based on a collection of soil cores from mid slope or average-yielding positions throughout a field. Another approach is to pick one benchmark location for each field and go back to that same acre each time you sample.

"These soil samples show what the field offers in terms of a foundation to build the crop on," she says. "For example, if a field is very low in phosphorus, consider how much phosphorus fertilizer you can afford and set a realistic canola yield based on that amount."

When thinking about the complexity of variable rate, "it is so easy to get overwhelmed and not do anything at all."

—Andrea De Roo

"Why put sulphur on acres that don't need it? Sulphur may be a small cost relative to nitrogen, but that savings alone pays for all of my prescriptions for the year."

—Owen Orsak

Owen Orsak

Binscarth, Manitoba

Owen Orsak expects continued uptake of variable rate applications. "I'm a huge proponent," he says. He started in 2018 and took a few years to get into it. His land is highly variable, hilly with up to 200 feet of elevation change across the farm. And while the soil is primarily clay loam, he does have areas with a low of gravel or shale or sandy loam. In one more extreme field, organic matter varies from two per cent on hill tops to 14 per cent in bottoms.

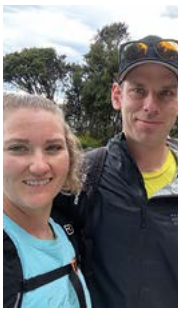
Orsak applies all of his fertilizer and some seed by variable rate, and he makes it work, logistically, by spreading out application timing and using a combination of liquid and dry at the time of seeding.

He applies variable elemental sulphur by floater in spring on wheat acres so it has a year to breakdown before canola, the crop with high sulphur demand. In some cases, only 15 per cent of a field needs sulphur. In other fields, he may apply across whole area but at different rates. "Why put sulphur on acres that don't need it?," he says. "Sulphur may be a small cost relative to nitrogen, but that savings alone pays for all of my prescriptions for the year."

Orsak applies liquid nitrogen (UAN 28-0-0) at the time of seeding. He also applies dry phosphorus at seeding, split between seed row and band.

As for innovations he'd like to adopt in the near term, Orsak likes the idea of unmanned spraying but says it doesn't have to be an aerial drone. "We don't have to take the big step of going to a drone right away when an unmanned 'ground drone' can carry a 1,200-gallon tank," he says.

Orsak mentions the Global Unmanned Spray System (GUSS) sprayers that vineyards currently use to spray grapes. He could see a field version spraying on its own, solving labour shortages while he and his dad are seeding, for example.



Amanda and Curt Hazlett

Red Deer, Alberta

The Hazletts adopted a few innovations "to be as efficient as possible with grain handling," Amanda says. This is important, she says, because they used to have three drivers with a Class 1 licence, now they have two: Curt and his dad. One strategy is to move as much grain as possible – based on contracts, elevator space and market risk – off the combine so they don't have to handle it twice. The other strategies are related to gear. Here they are:

- **Hoppers for flat bottom bins.** "No one likes to shovel in a flat bottomed bin," Amanda says. And grain vacs are high maintenance and somewhat scary. "We have a high capacity vac, and if you get your arm stuck in there, you won't get it out," Curt says. He's had a foot go in, and has had a phone and gloves go through. "For safety, we need to have two people around when running the vac," Amanda says. Hoppers are a lot safer and easier.
- **Rodono telescoping swing augers on bin-loading augers.** This helps with unloading efficiency because one person can park the truck then position the swing auger. For harvest, they keep one person in the yard unloading trucks and another person shuttling trucks to the field and back. With the Rodono swing augers, unloading is truly a one-person job.
- **Gasoline-powered fan to keep the auger operator space cool and dust-free.** The Hazletts bought the fan from a neighbouring farmer who used it to inflate hot air balloons. He doesn't balloon anymore, so the fan was available. They're similar to fans fire departments use to suck smoke out of buildings, Curt says. "As farmers, we don't need additional dust filling our lungs," Amanda says.
- **Big auger engines.** The Hazletts want their 13" by 90' bin-loading auger and 12" by 40' truck-loading auger working at max capacity, so they powered up with Wisconsin four-cylinder 175-cubic-inch engines.

"As farmers, we don't need additional dust filling our lungs."
—Amanda Hazlett

Jonah McGrath

Leroy, Saskatchewan

Jonah McGrath used a guidance system called Ditch Assist to accurately cut a 1.5-mile channel to drain a large slough. Instead of only 240 productive acres across the half section, the field now has 310.

"The middle of the field was basically a big hole where water pooled," McGrath says. "At $5,000 an acre, we can't afford to let any acres sit idle."

The kit includes a harness, module and iPad-based program to guide the ditch depth. It also has a calibration system built in that matches with any unit to guarantee accuracy, McGrath says. He operated the Ditch Assist-equipped scraper to manage the cutting depth. The primary machine was a pull-type hydraulic 18-yard scraper. They used "pulldozers" for finishing.

The new swale has just enough slope – 0.1 per cent grade – to move water slowly to a reservoir on their own land. "It is a long, smooth channel we can drive the combine or sprayer through," he says. At one point along the 1.5 miles, they did need to cut through a six- to eight-foot hill.

Another innovation the McGraths adopted is a deep ripper to shatter hardpan compaction that is "slowly getting thicker," he says. The deep ripper cuts to 16" depth and has shanks on 30" row spacing. "This gets air into the soil, and lets the roots penetrate," McGrath says. "It does move around a lot of ground, so you need to go over the field with harrows afterward."

"The middle of the field was basically a big hole where water pooled. At $5,000 an acre, we can't afford to let any acres sit idle."

—Jonah McGrath

"You can get these trailers with all kinds of configurations, and they don't have to be so industrial looking. But ours is."

—Jennie Parsonage

Jennie Parsonage

Baldur, Manitoba

Jennie Parsonage and her husband's family adopted a farm management innovation that she wished they would have done 10 years ago – an ATCO trailer for the farm office.

The office had been in their house, which has some benefit with little kids. Parsonage could work while they played, or jump into the office for a quick hour after they went to bed. However, it was also where the in-laws and anyone else did the office work. "If they're working, you feel like you should also work and not sit on the couch," Parsonage says.

The ATCO trailer is a neutral space that provides "a level of separation," she says. The new office sits about 100 feet north of the family home, hidden on the other side of a row of trees. Her in-laws are on the north side of the same yard.

The ATCO trailer has white metal siding and the typical yellow band around the top. It has a larger room in the middle and two smaller offices at each end. Features include heat, air conditioning, fridge, coffee maker and Internet. It does not have a bathroom, but the shop nearby has one. "You can get these trailers with all kinds of configurations, and they don't have to be so industrial looking," Parsonage says. "But ours is."

They bought it used for around $45,000 and put it down on a concrete pad. It took about a month to get it wired and up and running. If they like the separate office idea and want something better, they can sell the trailer and build a permanent wood-frame building.

Ryan Gauthier

Donnelly, Alberta

Ryan Gauthier uses Climate FieldView from Bayer to collect data on seeding, spraying and harvest operations. "The cost-per-acre analysis helps us apply things where they need to be," he says.

Gauthier mentions nitrogen. "We have portions of fields that run out of water before they run out of nitrogen," he says. So they will use data to create prescription maps that reduce nitrogen fertilizer in those areas.

Financial analysis helps them identify breakeven points on specific inputs and rates. For example, they can identify where it makes sense to aim for wheat yields of 85 bu./ac., and where 65 is a more reasonable target. The same goes for canola and other crops. They use on-farm fertilizer rate trials to test different yield targets.

In 2024, Gauthier also ran a canola variety trial with Corteva and another trial to compare five fungicides on their peas. For all of these on-farm trials, FieldView data management software helps him take proper notes. "It is my remembering tool," he says. FieldView maps have all the trials marked.

Another essential tool for on-farm trials is their grain cart, he says, with a scale so they can record data accurately.

—Jay Whetter is the editor of Canola Digest.

"The cost-per-acre analysis helps us apply things where they need to be."

—Ryan Gauthier

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