

The FENCE POST

Spring/Summer 2023 Issue No. 6



MANITOBA
CROP
ALLIANCE

WORLDWIDE WHEAT

*How Manitoba farmers are upholding
the reputation of Canadian grain
on the international stage*



INSIDE: Secrets of soil health p. 14

The Road to 2050 p. 26

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The FENCE POST

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Farmers, it is time to become engaged

Over the years, several Manitoba Crop Alliance (MCA) directors and delegates have been asked, "What are you doing to show that Canadian farming is sustainable?"

Considering the rising number of inquiries about sustainable farming from the public, I think that as farm organizations and as individuals we need to be proactive on this topic. If not, another country could set their own undesirable standards for Canadian agricultural imports – essentially, telling us, "Here is what you have to do to sell us your grain."

The Canadian Roundtable for Sustainable Crops (CRSC) is leading the development of a national voluntary "code of practice" that will allow Canadian grain farmers to demonstrate their care and commitment to the environment. Currently, the working title is "Canadian Grain – Performance and Practices," but by the time this edition of the Fence Post is mailed out, it is likely to have a new official title.

Two years ago, groups had the opportunity to review the first draft and submit feedback, identifying several issues and concerns. In consideration of this input from farmers, the code of practice was updated. It is important this new release is also reviewed by farmers.

In January and February of 2023, drafting sessions were held with producer groups to gauge their reactions to the revisions. The groups

discussed four areas of focus: soil and nutrient management, pest management and seed use, water and biodiversity, and health and wellness. Overall, the response to this latest submission appears to be more favourable compared with the first draft.

If you have not been involved in the discussions to date, I encourage you to become engaged. We have an opportunity to create solutions that work for farmers and our operations, as well as our customers and consumers. CRSC would like to hear from our farmer members on the revised areas of focus, so please submit your comments, good or bad.

To disagree with the code of practice is OK, but to disagree and not provide alternative solutions or ideas is not productive. Farmers need to identify what might need to be improved upon and help us move forward together.

Both our customers and consumers are asking for this. We need to be proactive and provide them with this information, and we need to do it in a way that reflects the real world to ensure successful farming practices. 🌱

Robert Misko
Chair
Manitoba Crop Alliance



Building our future on the dreams of the past

As I sat down to write this message, I reflected on March 1, 1971. On that date, a group of Manitoba farmers — G.G. (Bud) Graham, Merle Barkley, Gary Bartleman, Murray Coates, Don Cram, Alan Kennedy, Eldon McEachern, Harry McKnight, John Murta and Arklos Wilton — held the inaugural meeting of the Manitoba Corn Growers Association. It was their vision and dream to build a corn industry that would put money into the pockets of farmers who grew it, as well as members of the industry along the value chain. The first objective in the organization's constitution and bylaws read, "To encourage, promote, and assist in the development of grain and silage corn, as an economic alternative to other crops."

Looking back at the history of the Manitoba Corn Growers, I admire the vision of those 10 farmers. In 1971, they decided to work together to achieve their goals, not only for their individual farms and benefit, but for the crop itself and the industry as a whole. Farmers invested in research, devoted dollars to hybrid development, funded agronomic work and extended production information to fellow farmers. This progressive group of farmers also worked with the original owners of the distillery in Gimli, which played a large role in the growth of Manitoba's corn industry, and their relationship formed the basis of Corn School, a yearly event held to promote and educate farmers on growing and marketing corn. The introduction of a grain corn check-off in the late 1990s allowed for an increase in farmer-directed investments in research and market development.

In 1970, the provincial average grain corn yield was 48.4 bushels per acre. In 2022, our provincial average corn yield was 155.9 bushels per acre, crushing the previous record of 144.9 bushels per acre set in 2016 (Source: 2023 Yield Manitoba and Manitoba Management Plus Program). A combination of public funding through check-off dollars and government investment, in addition to private industry investment, has resulted in a crop that is one of the most profitable for Manitoba farmers to grow, based on the 2023 Costs of Production — Crops published by Manitoba Agriculture.

Much has changed since 1971. Today, Manitoba Crop Alliance represents corn growers in Manitoba. There is also increased pressure on commodity groups funded by check-off dollars to show the value of their investments to their members.

However, in other ways, things haven't changed. When farmers work together — leading and directing investments in research and market development — great things can be accomplished. By working alongside the value chain, grain farmers' harvest has increased marketability. The dream of those 10 corn growers in the 1970s to "put money into the pockets of farmers" remains a worthy one today. And, as it was then, it is a dream that is easier to achieve when we harness the strength of working together, through investments in research and innovation, as well as market development and access.

Pam de Rocquigny
CEO
Manitoba Crop Alliance



Meet our new crop committee delegates

CORN

Doug Martin (East Selkirk, MB)

Doug Martin is a fourth-generation farmer who farms in partnership with his wife Laurie, as well as his cousin Gerry and his wife Kelly. Together, they grow winter wheat, spring wheat, corn, soybeans, oats and canola, and run a sow farrow-to-wean operation.



Riley Anderson (Morris, MB)

Riley Anderson is a sixth-generation grain farmer from Morris, MB. He farms together with his parents, Joe and Pat Anderson, and his sister, Kara. They grow corn, canola, soybeans, oats and wheat.



FLAX

Darcy Unger (Stonewall, MB)

Darcy Unger grew up on the family farm, which is over 90 years old, with the seed business beginning operations in the late 1960s. He started farming full-time with his dad in 1994. They grow wheat, barley, oats, flax, peas, soybeans and canola.



Leigh Smith (Oak Lake, MB)

Sixth-generation farmer Leigh Smith and his wife own and operate a mixed grain and cow-calf operation. Their farm is a diverse grain, oil-seed and forage seed operation. They are also seed growers, with an emphasis on flax, barley, soybeans and forage grass seed.



SUNFLOWER

Darcy Watson (Rossendale, MB)

Darcy Watson operates a mixed farm that includes a commercial cow-calf herd and grain production. He has been farming for more than 35 years and grows sunflowers, corn, edible beans, soybeans, wheat and oats.



Dave Van Buuren (Pipestone, MB)

Dave Van Buuren grew up on the family cattle and grain farm and now farms in partnership with his parents and two siblings. They grow cereals, canola, corn and sunflowers, and run a commercial cow-calf operation and feedlot enterprise.



WHEAT AND BARLEY

Scott Mowbray (Cartwright, MB)

Fourth-generation farmer Scott Mowbray farms with his parents, wife and three young children. They've employed zero-tillage for more than 12 years and have started to experiment with regenerative agriculture techniques, including cover cropping, green seeding and intercropping.



Brad Myskiw (Warren, MB)

Fifth-generation farmer Brad Myskiw and his wife Cassidy have two kids and operate a cash-crop grain farm, producing a wide array of crops, including corn, canola, soybeans, wheat, barley and oats. 🌱



Meet our staff

Madison McCausland

In January, we welcomed Madison McCausland to the team as Research Program Manager — Special Crops to cover for Katherine Stanley while she is on leave. Madison holds a B.Sc. in plant science from the University of Manitoba and is currently completing her M.Sc. in plant science. Her current studies focus on genes involved in broad spectrum resistance to blackleg in canola.



Mallorie Lewarne

Mallorie Lewarne resumed her role as Agronomy Extension Specialist — Cereal Crops in February. We are thrilled to have you back, Mallorie.



Ashley Ammeter

We officially welcomed Ashley Ammeter to her new role as Whole Farm Specialist. Ashley previously served as Agronomy Extension Specialist — Cereal Crops while Mallorie was on leave. She is excited about the multi-disciplinary nature of her new role, and that it will allow her to continue to collaborate with farmer members, researchers and other organizations to provide innovative solutions to the issues Manitoba farmers are facing. 🌱



Congratulations to our 2022-23 bursary winners!

Kaitlyn Christine Hunt-Delaurier, *Laurier, MB*



Lianne Rouire, *Treherne, MB*



Milan Lukes, *Gunton, MB*



Stephanie Manning, *Souris, MB*



Hannie Peters, *Ile Des Chenes, MB*



Alison Manness, *La Salle/Domain, MB*



Thank you to the selection committee for evaluating the bursary applications and congratulations to the 2022-23 bursary recipients!

It pays to be a member

Each year, our farmer members invest millions of dollars into the future of our industry, in the form of check-off contributions.

Our responsibility at Manitoba Crop Alliance is to invest those check-off dollars into meaningful, independent research, communications, farmer programs, and targeted advocacy to help our members become more productive and sustainable.

These projects deliver value back to farmer members in a variety of measurable ways. Some examples are highlighted in our new farmer member campaign.

To learn more about the campaign and our work in these areas, visit mbcropalliance.ca.

To all our farmer members: thank you for your contributions. 🌱

Manitoba Crop Alliance

SUMMER 2023 FIELD DAYS

Check out our events page at mbcropalliance.ca for more information and sign up for our Heads Up e-newsletter to be notified of upcoming events.





Five questions

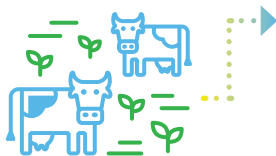
with Pam de Rocquigny

Manitoba Crop Alliance chief executive officer

1. Why did you choose to work in Manitoba's agriculture industry?

Having grown up on a farm near Carman, MB, I always knew I would work in agriculture. To this day, my fondest memories growing up included **checking cows at pasture**, riding around in the combine with my dad during corn harvest, stacking small square bales and just enjoying farm life to the fullest. I wanted to turn the love of agriculture I inherited from my dad into a career.

I considered becoming a veterinarian for a time. And when I applied to the University of Manitoba, I was accepted into the engineering program with the intent to focus on agriculture. However, I decided to keep several options open and entered the Faculty of Agriculture. It was a summer student job with Carla Pouteau, weed specialist with Manitoba Agriculture, that made me realize I loved agronomy and extension as I got to combine the research and science with working with farmers. That set the direction my career has taken.



2. What do you love most about Manitoba ag?

The people. I have met so many great individuals, many who have made an impact on me personally, on my career and on the agriculture industry.

3. What do you think are the greatest challenges and opportunities the industry faces?

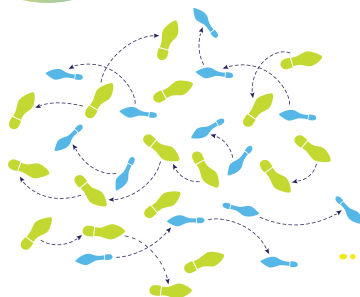
How do we, as farmers, tell our story of how we grow safe and healthy food, while also recognizing the great diversity there is between farms, between different areas of Manitoba and across Canada? I am proud MCA provides funding to programs such as Great Tastes of Manitoba and **Agriculture in the Classroom – Manitoba**. Finding new ways to reach our current and future consumers and providing them with up-to-date and factual knowledge on how crops are grown is so critical.

4. What is your favourite place in the world and why?

First place would be **our farm** that I share with my husband and two boys. I love taking pictures and my muse and inspiration is capturing the activities on our farm, from calving and haying to cows on pasture at sunset. My second favourite place is Clear Lake. The water and gorgeous sunsets make my soul happy, together with my family being there to share it with.

5. What's a fun fact about yourself that people might not know or that might surprise them?

In high school, I **learned social and ballroom dancing** in the Graysville 4-H Dance Club – French minuet, barn dance, polka, quickstep, schottische, waltz, foxtrot, square dancing and two-step, which came in handy at Aggie socials! A few members and I would also go to old time dances in Carman to show off our moves. 🥰



Sharing the story
of Canadian wheat with customers
around the world

Crafted with Care

By Alison Inglis

Public Relations Specialist, Freelance

Canada grew 34.7 million tonnes of wheat in 2022 and is expected to export 23.3 million tonnes to over 80 countries this year.

Customers in these countries are interested in learning how Canadian farmers grow wheat. They are also curious about sustainable production practices, safe storage, protein content and quality, and the impact of moisture on milling and storage.

Cereals Canada, of which Manitoba Crop Alliance (MCA) is a member, is connecting members of the value chain, including farmers, with customers to answer these questions firsthand. They reach customers of Canadian wheat through a variety of

programming, including webinars, in-country trade and technical exchanges, and international programs, as well as new crop trade and technical missions.

In-country trade and technical missions take place each year in late November and December. The goal of these missions is to share technical information on what to expect from the new crop when it comes to quality and engage with customers, government and industry on any concerns or issues.

The 2022 New Wheat Crop Report was shared in-person for the first time in three years by Canadian delegations representing the cereals value chain. Teams made up of representatives from Cereals Canada and the Canadian Grain Commission, as well as farmers and exporters, travelled to more than 15 countries in Asia, Latin America, Europe, Africa and the Middle East.

Continued on next page



Korey Peters was intrigued by the fact that most of the group touring his farm worked in flour mills, one manager included, and had never actually seen a wheat field in person.

Photo courtesy Cereals Canada





The groups from Indonesia and Latin America were very impressed with the quality of Canadian grain and seeing the machinery firsthand.

Photo courtesy Cereals Canada

Cont. from previous page

Together, they reached more than 635 people across seven seminars and 36 customer meetings during the four trade and technical missions.

Farmer participants provided a summary of 2022 Canadian growing conditions. Customers are interested in hearing directly from farmers when it comes to growing conditions, science-based production practices and how the crop is grown, harvested, stored and shipped.

"Hearing directly from Canadian farmers is an important part of the virtual and in-person meetings, as it provides a direct link between the customer and farmer and puts a face on Canadian grain production," says Dean Dias, Cereals Canada CEO. "We have these opportunities to create conversations with farmers and customers to learn from each other."

For Sheila Elder, a grain farmer from Wawanesa, MB, and delegate on MCA's wheat and barley committee, travelling to Latin America was an incredible opportu-

"They really enjoyed learning about the things we do on the farm and the machinery we use."

Korey Peters
farmer & MCA sunflower
committee delegate

nity to represent Canadian cereal growers and gain an understanding of customer interest from an availability, milling quality and end-product use perspective.

"As a farmer, it was very interesting to see the importance of marketing wheat

in this personal way, as well as the support that Cereals Canada provides to the millers and bakers," she says. "The end users clearly have a close, respected relationship with Canada as a result. It really brought meaning to the word 'value' when discussing the value chain."

Elder was surprised by the wide range in preferences that each mill had for different types of wheat. One mill preferred Canada Prairie Spring Red (CPSR), whereas another preferred Canada Western Red Spring (CWRS) and used it exclusively, except for one customer. There were also those in between that used a mixture, as well some that preferred CPSR for lighter products, such as pastries, but used increased amounts of CWRS for breads.

Another surprise for Elder was learning how important wheat is in the shrimp industry in Ecuador, where shrimp farms are a \$5-billion industry and use wheat as feed.

Customers seemed amazed at how much on-farm storage there generally is in Canada.

"They wondered how we ensured that the grain in storage remained safe," Elder says. "They also seemed impressed with both the size of farms, as well as the amount of technology being used."

Elder says the trip reminded her how important it is that farmers speak up about the great work they are doing, as this shapes how they are viewed by the world.

"A lot of the questions on the trip are about farmers," she says. "It is important for customers to be more aware of farmers and the responsible decisions that go into growing food, and how we care for the land, air and water around us, too."

Korey Peters, a farmer from Randolph, MB, and delegate on MCA's sunflower committee, also believes in the importance of taking time to speak with customers about Canadian agriculture. Last summer, he hosted two international groups, one from Indonesia and one from Latin America, at his farm through the technical exchanges led by Cereals Canada.

The groups looked at machinery and walked through part of a wheat field. They talked about the size of the farm and how many people it takes to run it.

"They really enjoyed learning about the things we do on the farm and the machinery we use," Peters says. "They were very interested in our air seeder

"They (were) impressed with both the size of farms, as well as the amount of technology being used."

Sheila Elder
farmer & MCA wheat and barley
committee delegate

and the fact that it has mid-row banders. We talked about using hog manure as fertilizer. They had lots of really interesting questions."

Both the groups were excited to see a Canadian farm. Peters was intrigued by the fact that most of them worked in flour mills, one manager included, and had never seen a wheat field in person. Though they use the grain every day, they had never seen how the grain gets from the field to the mill.

"I broke off a piece of wheat, put it in my hands, rubbed them together and shelled it out for them," he says. "They were all quickly doing the same thing because they just see the end product,

but they had never seen it get shelled out. It was an educational moment."

For Peters, the customers seemed impressed to talk with a Canadian grain farmer who does the same things as his neighbours. They were impressed with the quality of the grain, the machinery and the efficiency of Canadian farms. They appreciated learning about the growing season, time to harvest, different inputs like fertilizer or chemicals and why they are used, as well as varieties and genetics. "I think they really appreciated hearing it from a farmer firsthand," he says.

The technical exchanges showcase wheat production, quality, research and customer support from the Prairies and Ontario. They provide support and build relationships with current and potential customers of Canadian wheat, while enhancing customer knowledge of the organizations involved in the value chain, emphasizing the consistent, safe quality of Canadian wheat.

"Western Canadian grain farmers' success is directly dependent on our export markets," says Fred Greig, a delegate on MCA's wheat and barley crop committee who farms near Reston, MB. "Anything we can do to service our existing customers or encourage new customers will reap benefits for farmers."

After all, farmers are the production experts. "We add credibility to the information provided to our buyers," Greig says. "Farmers passion is evident in the presentations and being there to answer questions is crucial. There are always questions or concerns about current issues not covered by the presentations."

For Greig, initiatives like these are always well received.

"Hearing what our customers want and need better allows us to continue providing the best quality Canadian grain for their use," he says. "It is becoming apparent that the highest-quality, cleanest grain won't be enough to service our customers. Sustainability and stewardship are becoming of greater importance and are becoming must haves." 🌱



Bimbo office, Mexico City. In Mexico, 609,000 metric tonnes of flour are consumed each year, with 45 per cent being Canadian Western Red Spring (CWRS). Photo courtesy Sheila Elder

2023 Annual Report



MANITOBA
CROP
ALLIANCE

This past August, Manitoba Crop Alliance (MCA) celebrated its two-year anniversary. We are proud to say that, since our inception, our board, crop committee delegates and staff have truly built MCA into an organization focused on providing farmer-member value. Here are a few highlights from the past year, spanning our five strategic objectives.

Research and Production

Our investment in research and production in 2021-22 totaled

\$5,277,705

which represented

69% of our annual budget.

At the end of the 2021-22 fiscal year, we had **94** active research projects:



58

Barley & Wheat



5

Corn



2

Flax



2

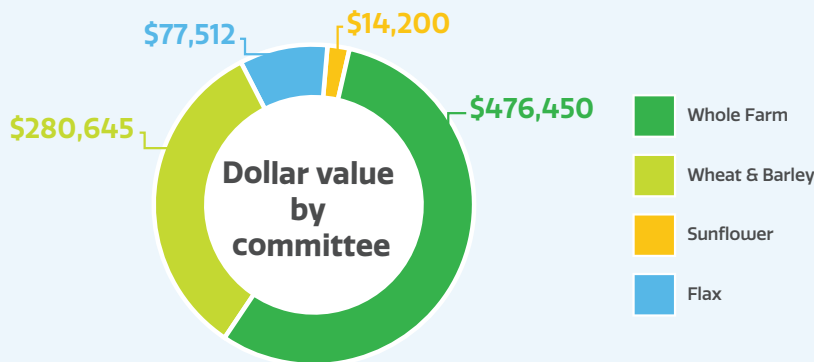
Sunflower



27

Whole Farm

Signed research commitments in 2021-22:



Total Projects: 15

Projects by Crop Committee: Flax (2), Sunflower (2), Wheat and Barley (8), Whole Farm (3).

Lifetime Value: \$4,614,095

Total MCA Contribution: \$848,807

Market Development and Access

To support market development and access, we:

- 1) Fund and provide representation for key organizations that work to establish, develop, and grow domestic and international markets and access for our farmer members.
- 2) Fund and support research and shared knowledge that demonstrates how our farmer members grow high quality crops using science-based and sustainable practices.
- 3) Reach consumers and end users to share factual, science-based knowledge about how our farmer members grow the crops we represent.

Key partnerships & initiatives:

- ▶ Cereals Canada
 - New Crop Missions
- ▶ Canadian Malting Barley Technical Centre (CMBTC)
- ▶ Flax Council of Canada
- ▶ Keep it Clean Canada

Key partnerships & initiatives:

- ▶ 4R Nutrient Stewardship
- ▶ Canadian Wheat Nutrition Initiative – What About Wheat?
- ▶ Habitat-Friendly Winter Wheat Ecolabel

Key partnerships & initiatives:

- ▶ Great Tastes of Manitoba
- ▶ Agriculture in the Classroom – Manitoba
- ▶ Fields to Forks
- ▶ Customer Programs by Cereals Canada

Advocacy

Through our memberships with Grain Growers of Canada and Keystone Agricultural Producers, we ensured Manitoba farmers were represented on several important issues.

Key federal and provincial policy issues:

- ▶ Fertilizer emission reduction targets
- ▶ Carbon tax relief for farmers
- ▶ Sustainable Canadian Agricultural Partnership consultations
- ▶ Changes to Manitoba Agricultural Services Corporation excess moisture insurance coverage levels and requested changes to their Contract Price Option for our crop types
- ▶ Increased government funding for research in crop production and variety development
- ▶ Plant breeding innovation

Communications

We expanded our monthly e-newsletter and social media content, broadened the scope of our biannual Fence Post publication, and directed more visitors than ever to the valuable information and resources available on mbcropalliance.ca.

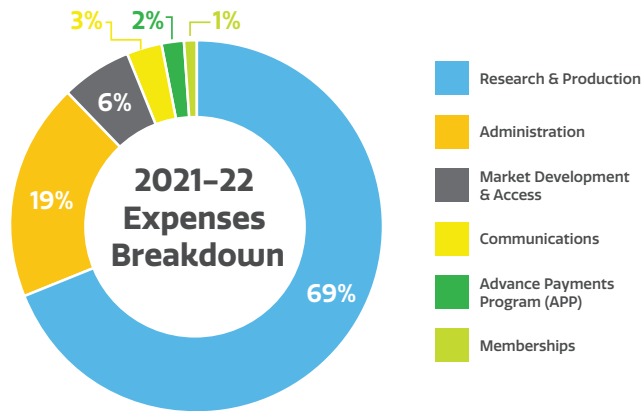
MCA communicates with farmer members through:

- ▶ Heads Up
- ▶ The Focal Point
- ▶ The Fence Post
- ▶ Grain Marketing Insights
- ▶ Social Media: Twitter, Facebook & Instagram
- ▶ mbcropalliance.ca

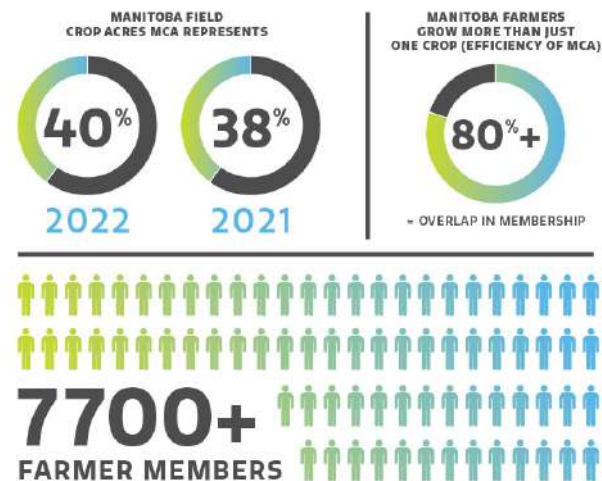


Operations

Our board of directors, with the guidance of the four crop committees, continued to make strategic investment decisions to ensure maximum investment of farmer dollars in research and production, market development and access, and communication.



We are reporting a reduced refund rate of **6.89 per cent**, down slightly from 2020-21. This is a testament to the support of MCA's farmer members for our activities.



Advance Payments Program

Each year, we administer the Advance Payments Program (APP), which offers Canadian farmers marketing flexibility through interest-free and low interest cash advances. We continue to deliver an efficient APP program. In the 2021-22 fiscal year, we are reporting an excess of revenues over expenses of \$194,793.



Advance Payments PROGRAM

2022 Program Year (at the time of this report)

\$63,457,744
in loans advanced

264
farmers

4,862
page visits on MCA's APP webpages in 2021-22 fiscal year

View our complete 2023 Annual Report (2022 activities) at annualreport.mbcropalliance.ca



Secrets *of the Soil*

Discovering what's
happening below
the ground

By Alison Inglis

Public Relations Specialist, Freelance

What does soil health mean to you? How would you define it?

Here's a common definition of soil health, from Doran et. al. (1996): "Soil health is the capacity of soil to function as a vital living system, within ecosystem and land-use boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and promote plant and animal health."

That's a broad definition. Thankfully, there are a few scientists working on different areas of soil health research, with funding from Manitoba Crop Alliance (MCA), who have their own helpful definitions to dig into.

Matthew Bakker, an assistant professor at the University of Manitoba (U of M), draws a parallel between human health and soil health.

"A healthy person can handle a little bit of disruption and stress without falling to pieces. Similarly, a healthy soil continues to support plant growth even when there are some stressors," he says. "It supplies nutrients throughout a season, holds water between rains, limits the success of pathogens and so on."

For Xiben Wang, a plant pathologist at Agriculture and Agri-Food Canada (AAFC), his understanding of soil health includes both the abiotic side — the balance in the nutrients and good soil organic matter — and the biotic side — the more balanced, diverse soil microbes.

"You want good diversity in your soil," he says. "You want to have more beneficial microbes and less pathogenic microbes."

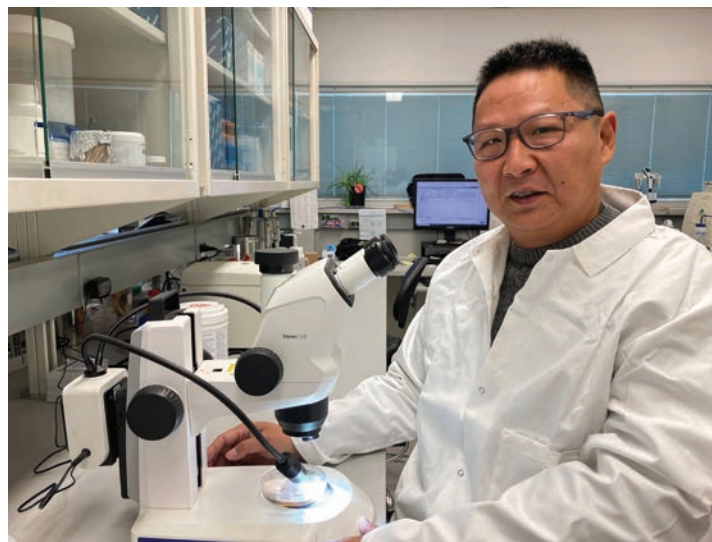
As for Steve Crittenden, a research scientist in soil health and nutrient management at AAFC, he argues that defining soil health is less import-

ant than being conscious about our management practices and how they affect crop production and the agro-ecosystem.

"Don't get bogged down in the details," he says. "There is a lot of noise around the topic of soil health."

As you can see, soil health is a complex topic with varying definitions. It is a complex area of research that poses complex questions, and local information is needed.

Fortunately, scientists are making advances in this area and are beginning



Xiben Wang, a plant pathologist at Agriculture and Agri-Food Canada, looks at bacteria present in soil using a microscope. Courtesy of Xiben Wang.

to better understand what is happening in Manitoba soils. They are also finding new ways to use this knowledge to produce better management information for farmers.

Bakker's research is focused on plant-microbe interactions and plant-associated microbiomes. He is working with graduate students on gathering a detailed understanding of microbial life in Manitoba soils.

This research uses DNA-based methods to profile soil microorganisms (bacteria, fungi, oomycetes and nematodes), process he calls microbiome profiling. This technique relies on the researcher's ability to extract DNA from all of the organisms present in the soil.

"We can get a picture of many hundreds or thousands of different types of organisms that have existed in a given soil sample," Bakker explains. "This is the microbiome profile."

The group is testing how the soil communities respond to different management, including crop rotation, tillage and weather.

The next challenge is to draw out of these complex datasets the "nuggets" that will tell us useful things for agriculture, he says. For example, if we can use DNA to measure the abundance

of anaerobic microbes (those that thrive under oxygen-limiting conditions), this may tell us we could benefit from improved drainage in that field or area.

Another area of focus is identifying pathogen presence and abundance, as well as determining how management practices influence the ability of the microbes in those soils to suppress pathogens. They are currently looking at how strongly the communities in each of those soils inhibit *Fusarium* species.

Bakker says for farmers, this kind of information could be helpful to determine disease risk and could aid in seed treatment decisions, for example, or influence how much emphasis is given to disease ratings when selecting varieties.

"I think, in time, there are going to be more and more connections," says Bakker. "We've got the profile, now we need to test for significant effects."

Wang recently became interested in looking at soil microbes. Some of his current research is investigating how crop rotation affects soil microbiome communities and their influence on disease suppression.

"What we've seen is that a two-year

Continued on next page

5

SIMPLE TIPS

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On-farm practices make a difference in **protecting**
Canada's reputation as a trusted supplier of
high-quality canola, cereals and pulses.

Follow the
Keep it Clean
5 Simple Tips
to ensure your crop is
market ready.

**Keep it
Clean!**

Resources to Grow
Market-Ready Crops

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rotation can cause quite dramatic differences in terms of both beneficial and pathogenic microorganisms in the soil," Wang says. "We hope to identify which group of bacteria has the most potential to control specific diseases."

Once identified, Wang and his team aim to determine which conditions promote the growth of this group of microbes in the soil to help manage the disease of most interest. Wang is most interested in *Fusarium* head blight, the disease that piqued his interest in first looking at how different kinds of rotations affect *Fusarium* populations in the soil.

The group is beginning to see connections between different crop rotations and varying levels of pathogens and beneficial microbes. "The way they are affected is quite different, depending on which rotation we are looking at," Wang says.

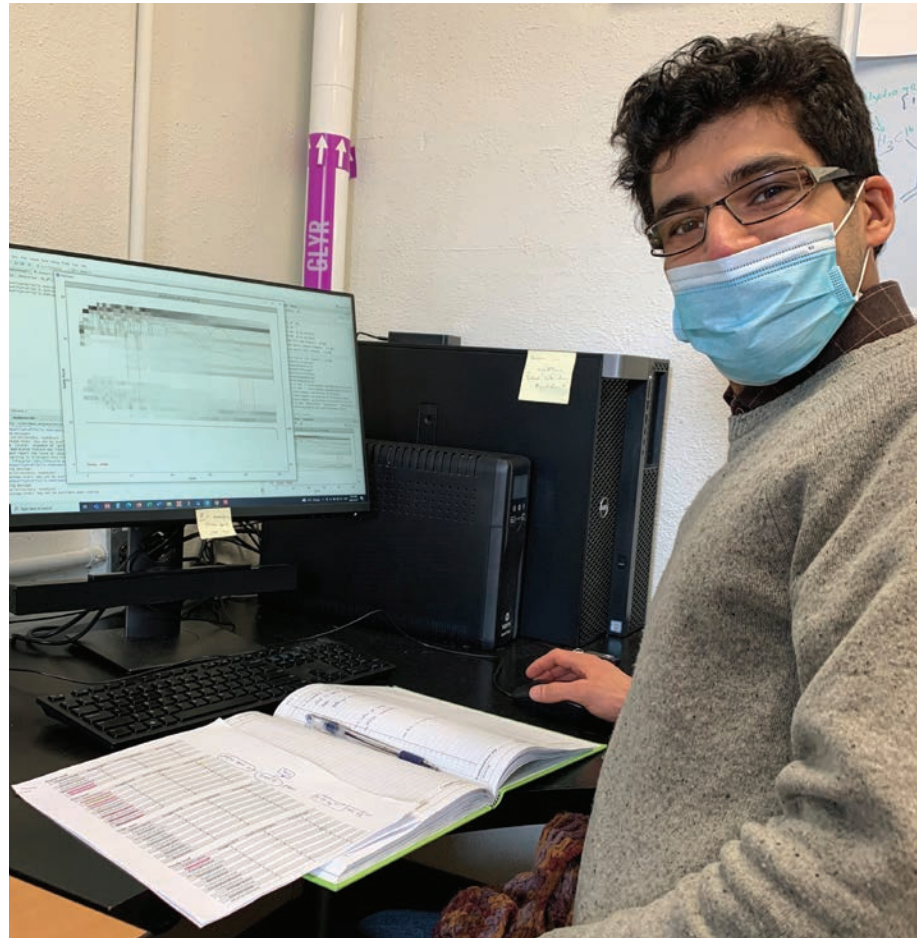
He says the association they are trying to identify is a suppression of the pathogen population and a promotion of the beneficial microbes. "Some of these beneficial microbes already exist in your field, all we need to do is find out what they are and what conditions can promote them."

Crittenden's research is looking to understand how soil health affects corn and soybean yield and protein, and how those effects vary in response to farmer-controlled management and the weather.

"In my case, we are looking at crop rotation and tillage systems, as well as soil health tests, to see if they can differentiate between the management systems, which I think they can to a large extent," he says.

Soil health properties are important for predicting crop performance, he adds, but it is important to remember it is always going to be weather dependent.

"From 2021, we can see that soil organic matter content is linked to corn and soybean protein," he says. "Macronutrients, including nitrogen (N), potassium (K) and sulfur (S), were



M.Sc. student Mehrdad Mohammadiani processes DNA sequence data that provides a profile of soil microbiomes. Photo by Matthew Bakker.

important for corn and soybean yield. Novel soil health indicators like the biologically held N in soil, were sensitive to management changes."

Crittenden suggests part of the reason they are investigating certain soil properties of importance is so they can select the top-five most important and provide this information to farmers, rather than a whole suite of information.

"Whether or not we are there is a good question. Two of the three years we had extreme weather — a drought and a flood year," he says.

"If we can get five or 10 years, instead of two extreme years, we will have a better chance of determining which properties are important for the way soil works to support crop production."

For Crittenden, collecting data and

taking measurements is important for decision making, especially if you are making a change in management.

"Using your own experience and knowledge is still the most important," he says. "If you can supplement that with a monitoring program and analyze soil samples on a regular basis, you will be able to track changes over time — especially, if you make a major shift in management that may change the soil organic matter."

Soil organic matter is a key soil health indicator and is related to almost everything else, he adds. If you are going to measure one thing, that should be it. 🌱

MCA is currently funding several research projects to gain a better understanding of these complex, below-ground soil interactions. To learn more about current research, visit mbcropalliance.ca/research.

Know your enemy

Manitoba weed surveys provide update on new and established threats

By **Ashley Ammeter**
Whole Farm Specialist, MCA

Knowing your enemy is a critical component of any weed management strategy and the foundation for effective, economical and sustainable management decisions. This concept is also the basis for a series of weed surveys funded in part by Manitoba Crop Alliance (MCA). The idea is that to prioritize efforts and mitigate the impact of weeds on Manitoba farms, it is critical to understand the enemies we are facing.

General weed survey

Weed surveys have been regularly conducted throughout Western Canada since the 1970s. The most recent survey in Manitoba, "Residual Weed Population Shifts in Manitoba – 1978 to 2022," was carried out in 2022 and surveyed 704 canola, spring wheat, soybean, oat, corn, barley, field pea, pinto bean and sunflower fields.

Despite delayed seeding in spring 2022, weed control was generally good, with the survey finding the lowest ever weed density and highest percentage of weed-free samples.

Green foxtail, wild buckwheat, lamb's quarters, redroot pigweed, wild oats, Canada thistle and pale smartweed have been in the top-20 most abundant weeds since the first surveys in 1978 to 1981.

Many species have remained consistent, but some important species shifts have been found. Foxtail barley has been steadily increasing in abundance since the 1997 survey and volunteer canola, kochia, biennial wormwood, round-leaved mallow, volunteer wheat and yellow foxtail were found at their highest-ever levels in 2022.

Continued on next page

TOP 5

MOST ABUNDANT WEEDS
IN 2022 SURVEY



Green foxtail



Wild buckwheat



Volunteer canola



Lamb's quarters



Redroot pigweed

5 WEEDS

THAT HAVE INCREASED THE MOST
SINCE THE 1978-81 SURVEY



Foxtail barley



Golden dock



Spiny annual sow-thistle



Yellow foxtail



Green pigweed

Photos courtesy Kim Brown Livingston and MCA; Green pigweed image by Bruce Ackley, The Ohio State University, Bugwood.org.

Herbicide-resistant weed surveys

Herbicide-resistant (HR) weeds are difficult to manage, resulting in more costly weed control and increased yield loss. With the increasing emergence of new HR weeds, it is more important than ever to have up-to-date surveys.

In 2018, a survey of 315 fields, ditches and other non-cropped sites in Manitoba was conducted to determine the extent of glyphosate (Group 9) and dicamba (Group 4) resistant kochia.

This survey, titled "Rapid increase in glyphosate resistance and confirmation of dicamba-resistant kochia (*Bassia scoparia*) in Manitoba," found there has been a significant increase in HR in kochia, with glyphosate resistance present in 58 per cent of the Manitoba populations, compared with just one per cent of populations sampled five years before.

This survey also confirmed the first dicamba-resistant kochia populations in Manitoba (one per cent of populations), with two populations being resistant to both dicamba and glyphosate. Nearly all kochia in Western Canada can be considered resistant to Group 2 herbicides, so triple-resistant kochia is almost certainly present in Manitoba.

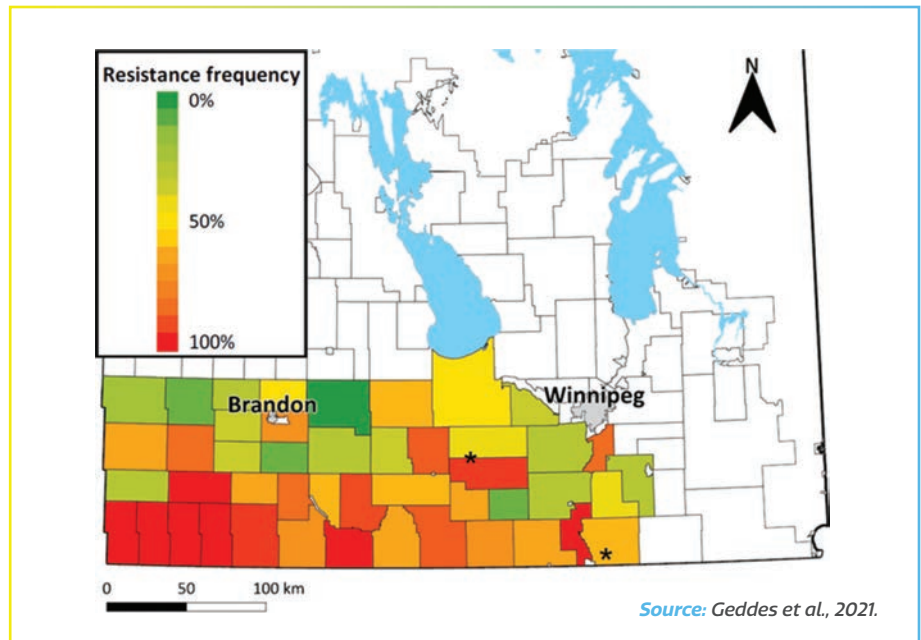


Figure 1: Frequency of identification of glyphosate-resistant kochia populations in Manitoba based on 2018 survey. Asterisks show the locations of the two glyphosate-resistant populations identified in 2013.

Take action on your farm

The most important action you can take on your farm to prevent and control problem weeds is to have a thorough field scouting program. Unless you know which weeds you are dealing with, it is impossible to control them.

Farmers noticing an increase in problem weeds, or the presence of HR weeds, should assess and modify their weed management strategy. Integrated weed management incorporates many different practices to control weeds and reduces the reliance on individual practices. 🌱

Figure 2: Integrated weed management programs incorporate many different cultural, mechanical and chemical control practices to manage weeds. These are just some of the possibilities.

Cultural	Mechanical	Chemical
<ul style="list-style-type: none"> Diversify crop rotation and plant competitive crops Plant with high seeding rate and narrow row spacing Vary planting date Modify fertilizer placement (consider banding instead of broadcast) 	<ul style="list-style-type: none"> Strategic tillage (pre-plant, post-harvest, in-crop) Mowing Hand-roguing Harvest weed seed management (e.g., Harrington Weed Destructor) 	<ul style="list-style-type: none"> Incorporate herbicides with different modes of action (tank mix, sequence with season, across seasons) Vary application timing (pre-emergence, in crop, pre-harvest, post-harvest) Use recommended rate and timing for all herbicides



LOOKING FORWARD

A whole farm and special crops research update

By **Madison McCausland**

Research Manager — Special Crops, MCA

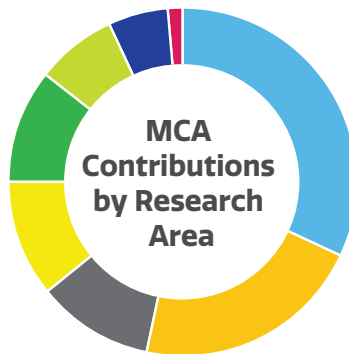
The goal of the Manitoba Crop Alliance (MCA) research program is to fund research that provides data to support and aid farmers in making decisions that positively impact their operations. The special crops portion of funding encompasses four committees — whole farm, corn, flax and sunflower — and accounts for 44 per cent of the total research and production budget in 2022-23.

Whole Farm Research

The MCA Whole Farm Research Committee was formed in August 2020 with the goal of addressing research questions related to cropping systems and other areas that are not commodity specific. Whole Farm Research themes include farm management and economics, crop rotation, capacity development, cover crops, agronomy, weed management and herbicide resistance, soil health, and disease.

The Whole Farm Research Committee presents a unique opportunity to support research that looks at issues impacting farming systems as a whole, regardless of crop type. The committee is made up of members from each of MCA's four crop committees to ensure projects chosen align with all research priorities. Over the last two years of the program, MCA had the opportunity to provide funding in many of the research areas identified as priority areas by the committee.

Whole Farm Research continues to be a priority for MCA farmer delegates,



Total active projects:
27

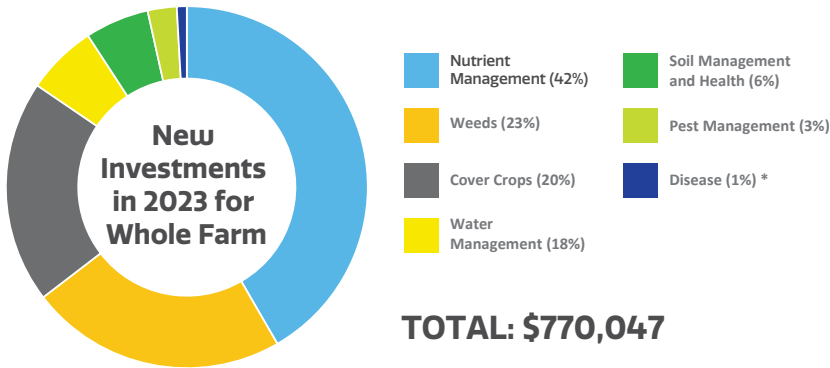
Total project value:
\$20,467,276

Total MCA contributions:
\$1,725,582

and we are excited to continue to fund research in this key area. Whole Farm "Research to Come" is focused on creating strategies to help farmers maintain and improve crop yield, while meeting the goals the federal government's funding programs have put forth to foster sustainability and reduce emissions in response to climate change.

Looking forward, the Whole Farm Research program has identified several new research projects to support in 2023. The program is focused on further developing tools for tracking crop disease, weed spread and acquired herbicide resistance.

There is a large focus on all aspects of the growing herbicide-resistant weeds



TOTAL: \$770,047

issue. Areas of research include understanding the spread of herbicide-resistant weeds, assessing management strategies, preventing expansion of herbicide resistance, and developing and integrating digital tools for farmers.

Recently, there has been increased interest in soil health in Manitoba. The Whole Farm Research program provides opportunities to address many of the questions associated with soil health and will continue to support research that advances our understanding of the issue. Investments have been made to understand how to best assess soil health, how the soil microbe community responds to agronomy practices and weather, and the interactions between soil microbes and fertilizers.

The national fertilizer emission reduction target of 30 per cent by 2030, has created significant research interest in this area from both farmers and the research industry. The Whole Farm Research program has invested in soil fertility research to identify and evaluate strategies farmers can implement to achieve emissions reductions while maintaining yields. Studies have focused on tile drainage and fertilizer loss, fertilizer management, cropping systems to optimize nutrient use, cover cropping and other avenues in recycled crop nutrition.

The Whole Farm Research program has also explored studies on farm machinery, having worked with the Prairie Agricultural Machinery Institute to study grain dryer efficiency and low ground pressure traffic systems. We are continuing to explore the potential for research in this area to further understanding of ways to reduce emissions and minimize yield losses.

Over the past three years, the Whole

Farm Research program has grown exponentially. MCA is committed to continuing to invest in projects that help farmers improve their operations from all angles, while developing innovative solutions to farmers' questions and issues.

Special crops: crop committees

MCA's corn, flax and sunflower crop committees each focus on research that improves some aspect of growing that specific crop.

In corn, MCA has invested in research on the impact 4R nitrogen management and soil health has on yield, development of tolerant and resistant varieties to biotic and abiotic stressors, integration of some disease resistance, and pest management. In addition, there is ongoing on-farm research into aspects of nitrogen fixation and bioinoculants.

In flax, current research investments are largely centered around breeding and genetic enhancement. Much of MCA's breeding investment is directed towards

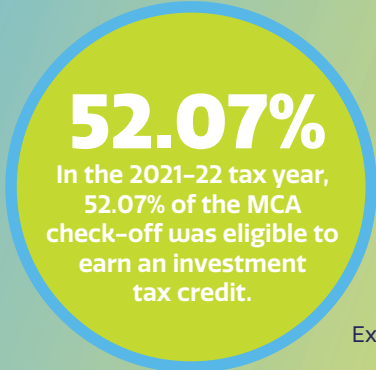
Dr. Bunyamin Tar'an's flax breeding program at the University of Saskatchewan. MCA is also continuing to participate in the Co-op Flax trials to evaluate pre-registration flax lines.

Current investments are focused on variety development and genetic enhancement. To broaden the research being done, MCA has initiated trials at the Manitoba Agriculture Diversification Centres to evaluate agronomy research questions. MCA continually looks to invest in research that will further advance flax production in Manitoba, such as flax crop productivity, yield consistency, residue management and straw utilization, as well as pest and harvest management.

In sunflowers, MCA has continued the work of the former National Sunflower Association of Canada (prior to the amalgamation) to develop long-type confection sunflower hybrids. MCA is committed to continuing this breeding program and integrating herbicide and disease resistance into these hybrids.

MCA is investing in research into protein quality in sunflowers to expand the marketing potential for the crop in Manitoba. In addition to the ongoing Research on the Farm Program, MCA has initiated trials at the Manitoba Agriculture Diversification Centres to further address the research objectives set out by the sunflower committee. MCA continues to evaluate projects that fall into sunflower research priorities, such as pest, residue and harvest management, and will explore additional avenues for growth of the sunflower industry in Manitoba. 🌻

To learn more about MCA's research program, visit mbcropalliance.ca/research.



52.07%
In the 2021-22 tax year, 52.07% of the MCA check-off was eligible to earn an investment tax credit.

Scientific Research & Experimental Development (SR&ED) Tax Credit

Farmer members who contributed check-off dollars to Manitoba Crop Alliance (MCA) **are eligible to claim a federal tax** through the Scientific Research and Experimental Development (SR&ED) program.

Learn more at mbcropalliance.ca

Grain Marketing Insights

The new-crop shuffle



Unpacking the supply situation for Prairie crops

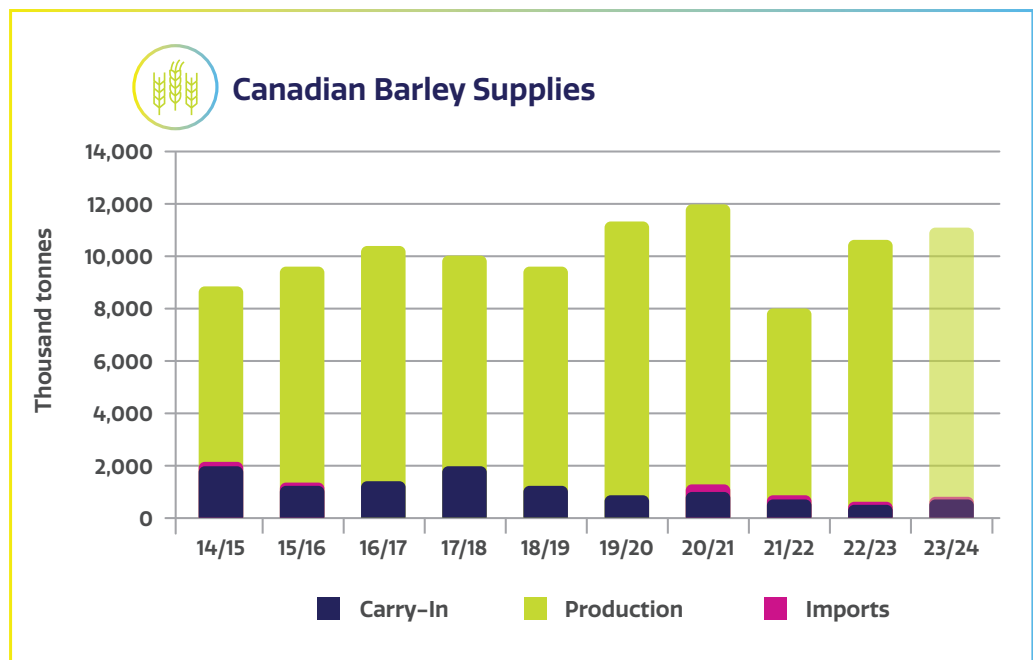
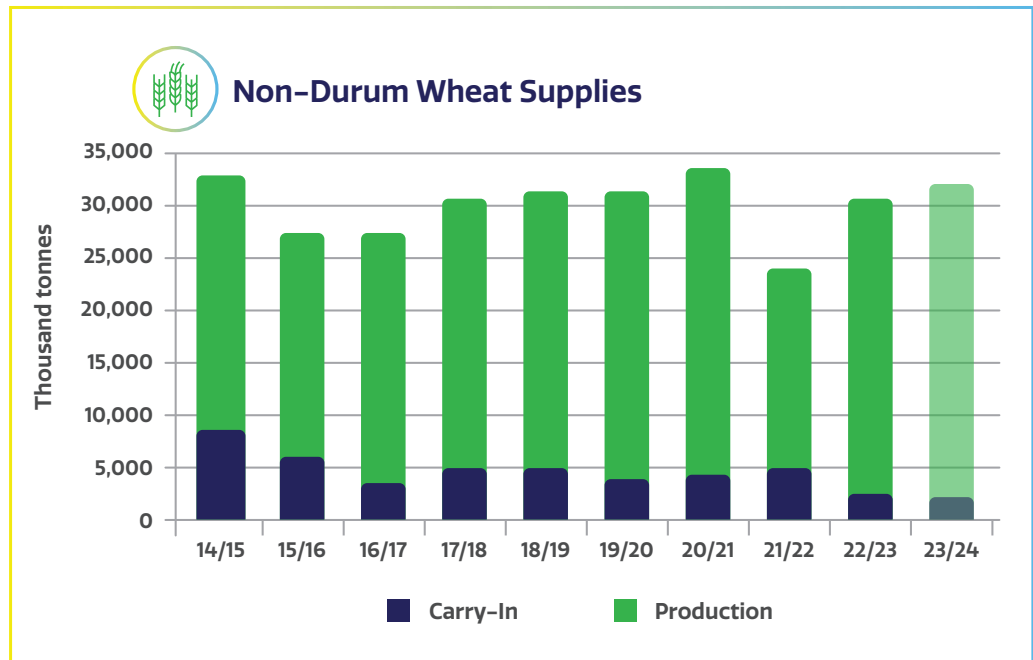
By Leftfield Commodity Research

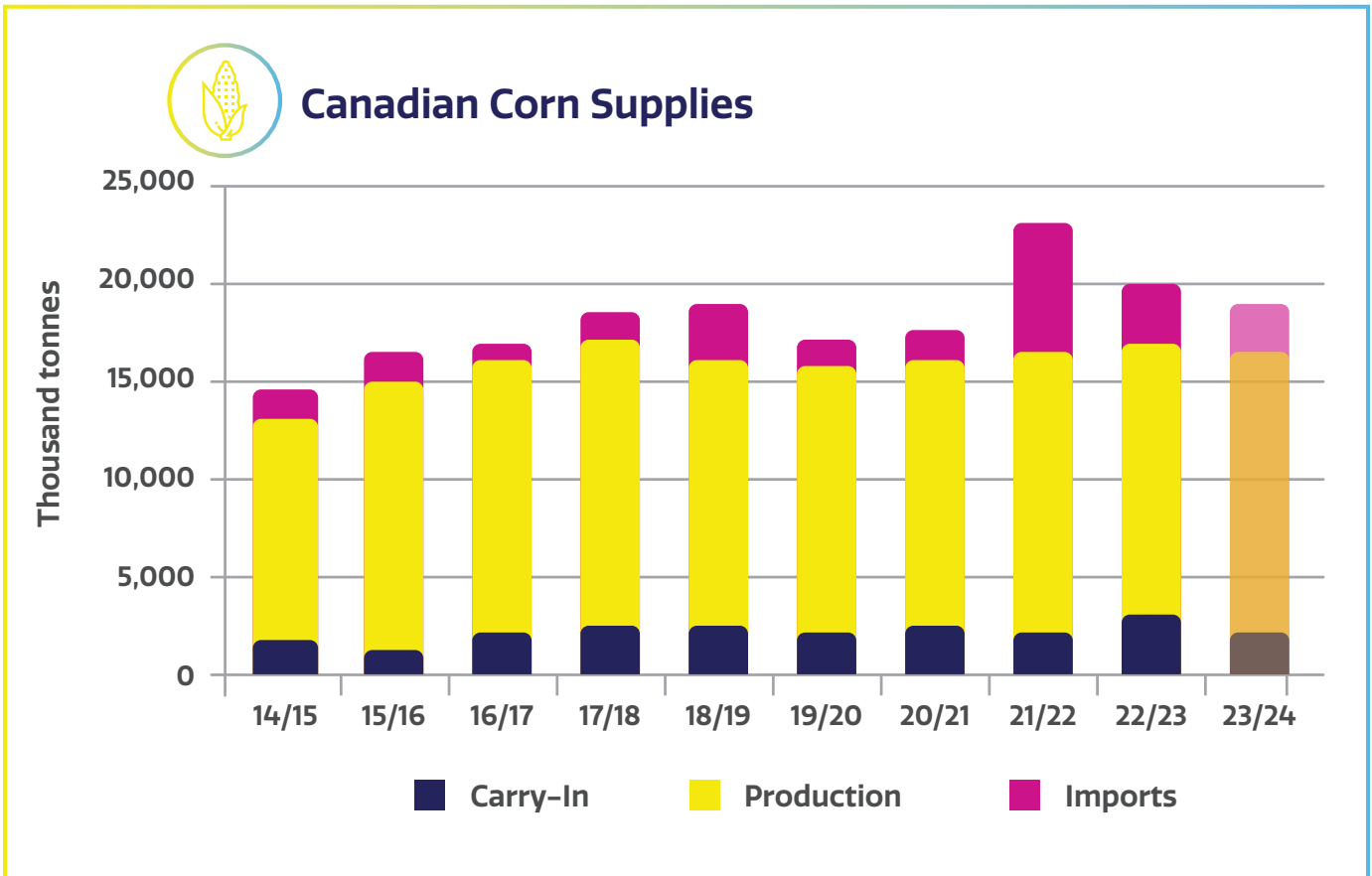
This is the season when farmers still have one eye on selling the rest of last year's crop, but most of the attention is on growing and starting to market the 2023 crop. The shift from one crop year to the next almost always involves a change in supply levels, either getting bigger or getting smaller. And those changes in a crop's inventories mean the market "tone" will be shifting, too.

For some crops, supplies at the end of 2022-23 will be on the snug side, while others are feeling heavier. In general, crops with tighter supplies tend to have higher prices, which should encourage more acreage and production, while the opposite is true for crops with more comfortable stocks. We'll be looking at how old-crop supplies for 2022-23 could influence plantings this spring, which then becomes the base for the 2023-24 supply outlook.

Wheat stocks low within an uncertain global market

Larger plantings and,





more importantly, a rebound in yield allowed 2022 Canadian non-durum wheat production to recover from the sharp drop in 2021. Even so, ending stocks may not see any recovery, ending up again near a record low despite the larger supplies. This is driven by a robust export program, while strong livestock feed demand is also chewing through inventory. This is happening against a backdrop of an uncertain global market, between aggressive Russian exports, uncertainty over supply from Ukraine, a fairly tight world balance sheet and questions about 2023 production in some key growing regions.

Wheat prices have been volatile, but still strong from a historical perspective. This should encourage more spring wheat plantings again in 2023, while Statistics Canada already showed higher winter wheat acres last fall as well (mostly

in Eastern Canada). Weather and yields will ultimately determine final production, but it's possible Canadian wheat supply will be higher this coming season, although still only near the longer-term average. Production in other key exporting countries will largely dictate whether a strong shipping program can match the larger crop.

Can strong exports again offset an increase in barley production next season?

Canadian barley supplies in 2022-23 got a boost from a much better crop last fall, but exports have also been moving well. That said, there is a risk of less export demand from China later in the coming months. Domestic feed use has also been solid, although the malting industry has seen a slowdown. Overall, barley inventories at the end of 2022-23

should be on the snug side.

Even though barley prices have come off the earlier highs, new-crop bids are still looking attractive and could encourage a few more acres this spring. It's still far too early to know how yields will turn out, but if they end up close to average, barley supplies in 2023-24 would likely expand. That means strong export demand will be needed again to keep next year's supply situation from feeling heavy.

Canadian corn production may remain near record levels

Canadian corn acres tend not to fluctuate a great deal from one year to the next, ranging from 3.5 to 3.7 million since 2016. Area will likely end up towards the top of that range in 2023, with yield determining

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whether the crop can match the records from 2021 and 2022 of around 14.6 million tonnes. Even then, total supply for the season will be well below the peak in 2021-22, when massive imports from the U.S. flowed into Western Canada to make up for the overall shortage of feed grains due to the drought.

Corn prices are primarily driven by the U.S. market. There isn't much cushion coming into this season either, in the U.S. or globally, which will keep values very sensitive to weather, but local conditions also impact domestic prices. At this point, it doesn't look like there will be the need to pull an unusually large volume of U.S. corn into the Prairies, although any yield shortfall and/or larger-than-expected export program for wheat or barley could see feeders once again relying heavily on corn imports.

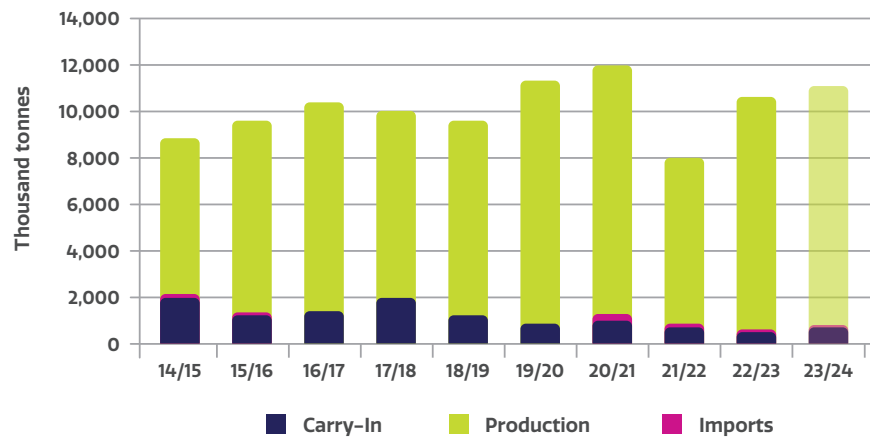
Flax supplies not large, but demand has been lagging

Last summer, Canadian flax plantings dropped 24 per cent but a solid bounce back in yields meant the 2022 crop recovered well from the drought in 2021. The main concern with flax, though, wasn't the increase in 2022-23 supplies, which still weren't historically large. The bigger issue has been the lack of demand, especially from Europe and China, and that's going to leave large supplies by the end of 2022-23.

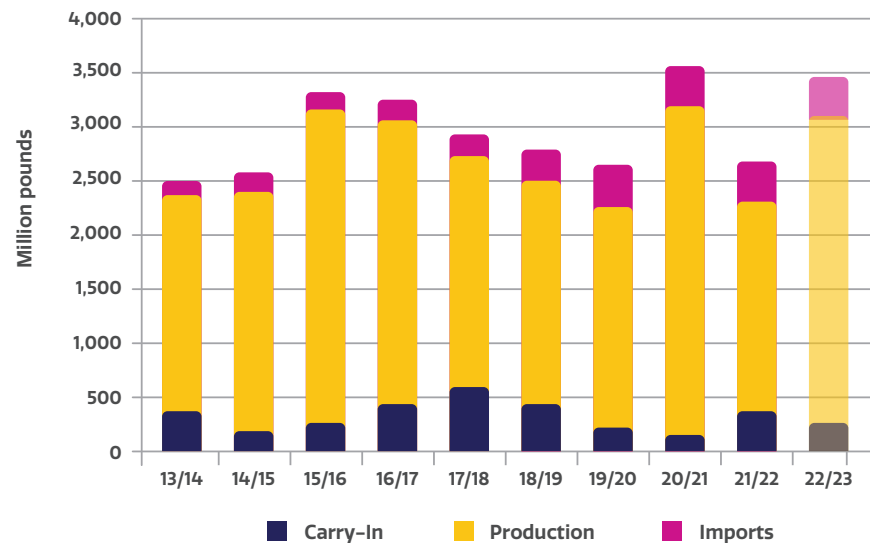
Flax prices have been softening and we think that's going to mean another sizable drop in acres for 2023. Our best yield guess at this point is around the average and that would mean a large decline in 2023-24 production, but with the big carryover from the current year, the smaller crop won't mean lower supplies next year. If so, the flax market will need a recovery of the export business that's been lost.



Canadian Barley Supplies



U.S. Sunflower Supplies



Canadian sunflower market driven by U.S. outlook

Canadian sunflower supply numbers are hard to nail down, as the official estimates from Statistics Canada seem to be far too large. In reality, sunflower inventories north of the border are less important for the outlook than those in the U.S. The big 2022 U.S. sunflower

crop boosted supplies to historically high levels, with oil types generally more comfortable than confections.

Now that oil sunflower prices, especially in the U.S., have decreased, seeded area could see a decline in 2023. With average yields, supplies in the coming year could fall, although the carryover from 2022-23 will help cushion a smaller crop. 🌻

Ag's sustainability journey

Amplifying farmers voices on Canada's path to net zero

By **Alison Inglis**

Public Relations Specialist, Freelance

Canada, along with every other G7 nation and more than 120 countries around the world, has made commitments to achieve net-zero emissions by 2050.

The Canadian Net-Zero Emissions Accountability Act became law on June 29, 2021, and as stated on the Government of Canada website, ensures transparency and accountability as the Canadian government works to deliver on its target of achieving net-zero emissions by 2050.

In recognizing the potential implications to Canadian grain farmers and modern production practices, Grain Growers of Canada (GGC) initiated the Road to 2050, a climate solutions initiative to help meet Canada's ambitious emissions goal.

"The farmer-driven path to net zero must reflect what farmers have done and can sustainably do in the future, which is why GGC decided to lead this important initiative," says GGC chair Andre Harpe.

The Road to 2050 proposes a path forward that focuses on innovation, research and beneficial management practices.

"This will boost productivity while continuing to enhance soil quality, improving the carbon-sequestration potential of crop land and reducing emissions," Harpe says. "This decision represents a practical and proactive approach to tackling climate change."

There is no doubt that the government is committed to implementing policies and programs aimed at reducing emissions. Still, Branden Leslie, manager of



policy and government relations for GGC, notes that the current approach lacks representation from most of Canada's grain farmers.

To bridge the gap, Leslie sees the Road to 2050 as a chance to accurately reflect farmers' perspectives and have them lead the way in developing prac-

tical solutions. However, to accomplish this, he says it is important to adopt the same language as the government when communicating with legislators.

"To shape the narrative effectively and position Canadian farmers as trusted partners and solution providers, not just secondary stakeholders, it is vital to emphasize their role as natural stewards of the land," he says. "Their experience is critical to successfully addressing the challenges we face."

GGC strives to unleash Canada's grain

farmers' potential by maximizing opportunities and outcomes.

"Collaboration lies at the core of all that we do," Leslie says. "We maintain close partnerships with members like Manitoba Crop Alliance (MCA) to stay informed of on-farm realities and engage with government to achieve shared goals. Every level of partnership is crucial in driving success and maximizing opportunities for Canada's grain farmers."

The Road to 2050 initiative is opening new doors for the representation of Canada's grain farmers. "Thanks to our common aim for a sustainable future, we are able to collaborate more closely with government," Leslie says, adding this has led to more meaningful discussions, creating opportunities for greater influence on key issues like transportation, innovation and business risk management programs.

Jonothan Hodson, MCA's vice-chair and a GGC director from Lenore, MB, says one of his core beliefs is that to get involved in grower organizations is to be at the table to offer new perspectives and ideas.

"Ideas not just for ourselves, but ideas for government," he says. "For them to achieve their goals, so we can mutually achieve our goals. If we're not at the table, we're not going to get the opportunity to offer solutions from a farmer's perspective."

No matter who is in power, with the Canadian Net-Zero Emissions Accountability Act, the government's thoughts on climate change are not going away. "As farmers, we want to lessen our footprint because we live here, too," Hodson says.

"Look at the improvements we've made in the last three decades. A lot of that has to do with farm organizations, industry and government matching research funds. These commitments are really good for agriculture and the environment. I think an important part of this roadmap is educating the government on how valuable that investment has been for everyone involved."

Fortunately, agriculture has a good story to tell — from advancements in



"The farmer-driven path to net zero must reflect what farmers have done and can sustainably do in the future."

Andre Harpe,
Grain Growers of Canada chair

best management practices to the capital investments made by farmers to buy new equipment that can apply inputs more precisely and efficiently. Agriculture is a business, and farming must be profitable and sustainable to make changes.

"There's a whole host of other pieces to this initiative, like the regulatory environment and new technologies like gene editing, where we see politics getting in the way of good, science-based policy," says Leslie.

"It all starts with the story. Combining our advancements over the last two or three decades with future opportunities and showing that we want to achieve the same goals as government, is, in my view, how we're going to best influence the current government and make sure we're protecting the viability of the family farm."

The Road to 2050 is led by Rene Drolet and his team of consultants and was supported by an expert advisory council, chaired by Manitoba farmer Brendan Phillips, and industry partners. It is jointly funded through GGC members, including MCA, and external partners Corteva Agriscience, Fertilizer Canada, Royal Bank of Canada, Cereals Canada and CropLife Canada. For more information, visit ggcroado2050.ca.

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