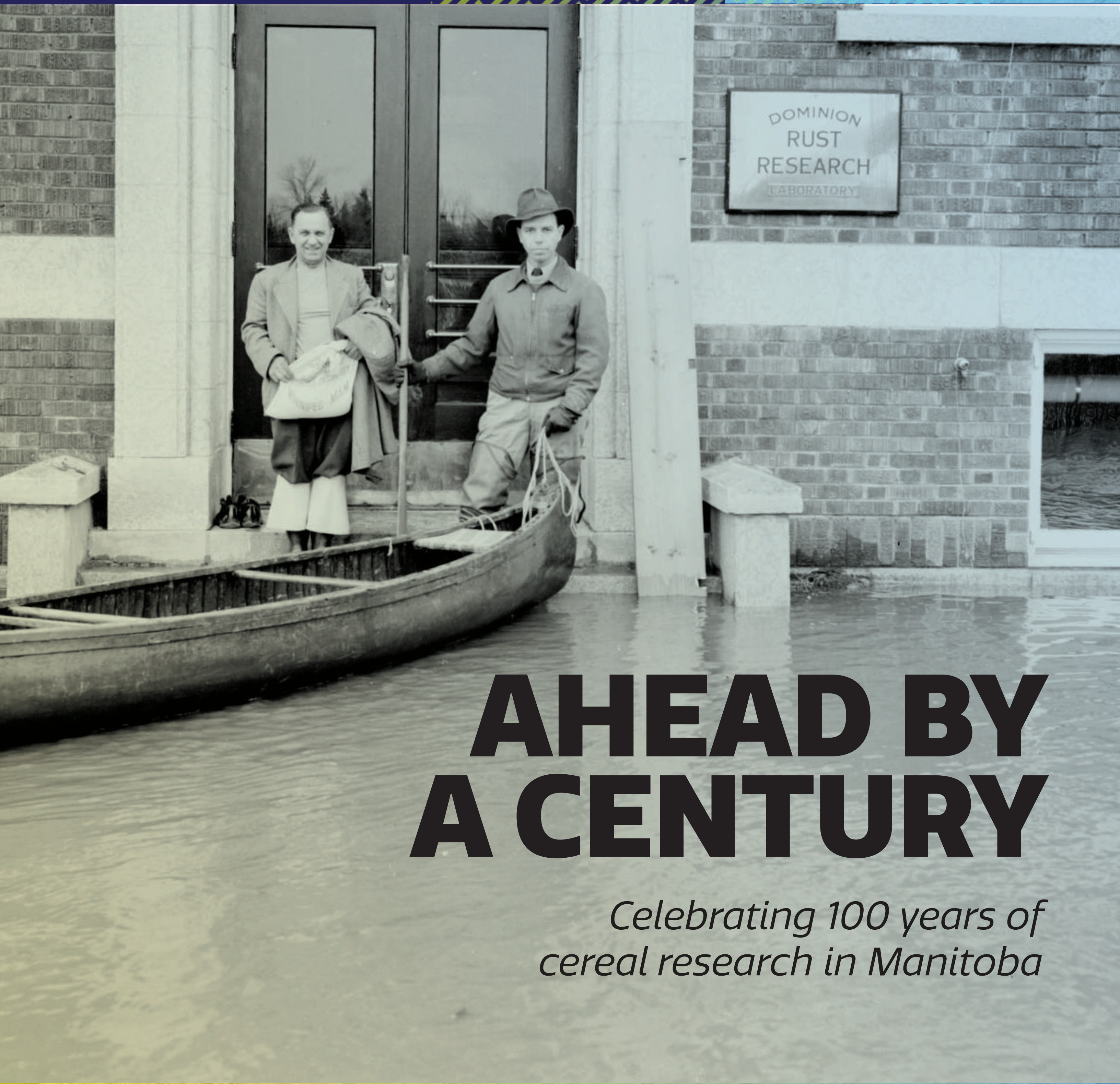
The FENCE POST

Spring/Summer 2025 Issue No. 10

MANITOBA CROP ALLIANCE



AHEAD BY A CENTURY

Celebrating 100 years of cereal research in Manitoba

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***ON THE COVER**: The exterior of the Dominion Rust Research Laboratory during the 1950 Red River flood.*

The **FENCE POST**

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2024-26 BOARD OF DIRECTORS

Investing in the future of agriculture

At Manitoba Crop Alliance (MCA), we recognize the importance of investing in people, knowledge and infrastructure to drive our industry forward. To demonstrate this commitment, we have made investments that support research, innovation and agriculture education.

MCA puts farmer members first and we strive to continuously improve the competitiveness and profitability of all crop types we represent. Recognizing a gap in research capacity for special crops (i.e., corn, sunflower and flax) in Manitoba, we spearheaded the creation of a new agronomist in residence for special crops position at the University of Manitoba (U of M).

In February, Loveleen Kaur Dhillon began in this role. With a PhD from the University of Saskatchewan specializing in plant breeding and agronomy, she is eager to engage with the special crops industry and develop an impactful research program that provides significant benefits for Manitoba farmers.

Her work will focus on identifying best management practices for corn, sunflower and flax, while also strengthening knowledge transfer between the U of M and Manitoba's special crops industry.

In 2021, MCA contributed $500,000 to the U of M for the Prairie Crops and Soils Research (PCSR) Facility. This investment supports U of M's commitment to improving research infrastructure and training highly qualified professionals. The PCSR Facility will enhance research capacity, enabling scientists to better integrate soils, crops, entomology and livestock studies, leading to more sustainable crop production in Manitoba.

We also committed $100,000 to Assiniboine College's Prairie Innovation Centre (PIC) for Sustainable Agriculture. The PIC will expand the college's programming capabilities, increasing the number of agriculture students from 300 to more than 800 each year.

Assiniboine College has a strong track record of delivering agricultural training in the province. The PIC will build on this legacy and serve as a hub for innovation, collaboration and education in agriculture and the environment.

MCA is proud to support agriculture's next generation through our bursary programs, available to post-secondary and high school students.

We recognize that today's students are the future leaders of our industry.

We are also committed to agriculture education through our partnership with Agriculture in the Classroom-Manitoba (AITC-M). In 2023, MCA pledged $185,000 over three years to support AITC-M's programs and resources. We believe in the value of agricultural education and are excited to be expanding our partnership in 2025. More details can be found on **page 27**.

Our investments today will help shape the future of Manitoba's agriculture industry for years to come. By supporting research and investing in education, MCA is strengthening Manitoba's agricultural landscape and creating new opportunities for the next generation of researchers, innovators and industry leaders. I am excited to see how this new generation will make their mark on agriculture in Manitoba.

Jonothan Hodson
Chair
Manitoba Crop Alliance

From stone collector to CEO

Writing your goals and knowing your why

Stone collector. Hairdresser. Photographer. These were my career aspirations, as written in my elementary school memory book. By Grade 12, the goals in my graduation memory book included attending university to get an agriculture degree, finding good summer jobs, watching a Toronto Blue Jays game at the Skydome, travelling to Australia and getting a job I love doing.

During my first year of studying agriculture in university, the local newspaper interviewed me for an article titled, "Some rural youth still choose a farming future." I shared my goal was to help other farmers like my dad. I grew up on the farm and inherited a love for agriculture from him, so I wanted to give back to the agriculture industry.

Research conducted by Gail Matthews, a psychology professor at Dominican University of California, found that people who write down their goals are 42 per cent more likely to achieve them than those who do not. The simple act of writing down your goals helps you clarify what you want to achieve and creates a sense of accountability for yourself.

I did not think I was affirming my life goals when I was filling in my Grade 1 memory book or telling that reporter how I wanted to help farmers. However, when I look back, those acts have directly influenced my career path, reminding me of my "why" and my passion for the work I do.

A "good summer job" with Manitoba Agriculture made me realize what I loved within our agriculture industry: research and extension. I was passionate about finding solutions to problems and communicating that knowledge to farmers. That summer, the seed was planted that grew into my desire to pursue my master's degree, so I could work with the provincial government. That is exactly what I did, and I happily worked as an extension specialist for 16 years.

When an opportunity arose to become the joint general manager of two Manitoba commodity organizations – each led by farmers for the benefit of farmers – it only made sense to apply. On Feb. 13, 2025, I proudly celebrated eight years of working alongside farmers with Manitoba Crop Alliance (MCA). I am proud of the work our organization does and believe strongly in the value MCA brings to farmers.

I hope I am helping farmers. I hope I am contributing something back. Perhaps, the simple act of writing down your goals, no matter when you write them down or how big they are, does help you achieve them.

Next time you are at an event where the next generation is in attendance, ask those young individuals what their goals are and why. Then, encourage them to go home and write those goals down. You just might be helping the next agronomist, wheat breeder, soil scientist or stone collector achieve their goals and follow their passions.

P.S. I still love stones, photography and taking pictures. I have gone to watch the Toronto Blue Jays. However, I am still working on being a hairdresser and getting to Australia!

Pam de Rocquigny
CEO
Manitoba Crop Alliance

Stronger together

Meet our new crop committee delegates

The 2024 nomination period for delegates positions on our four crop committees took place from July 2 – Oct. 1, 2024. In total, 16 farmer members were nominated for 17 available delegate positions across the four crop committees and were thereby elected by acclamation. Among those 16 delegates, eight are new to their respective committees.

SUNFLOWER

Andrew Saramaga

Hazelridge, MB

Andrew Saramaga is a fourth-generation farmer who works with his dad and a few employees in the Hazelridge area. They grow a variety of crop types, including corn, soybeans, spring and winter wheat, canola, sunflowers and various forage seeds. Saramaga's farm has been growing sunflowers for about 15 years.

WHEAT AND BARLEY

Carly Chatham

Killarney, MB

Carly Chatham farms with her husband Cody at his family farm, Chatham Seeds, in Killarney. The Chathams are seed growers and continue to produce top-of-the-market wheat varieties. Chatham was born and raised in Carman and has been involved in the agriculture industry since she was a student.

FLAX

Myles Kubinec

Holland, MB

Myles Kubinec farms with his wife Anastasia and his father-in-law in Holland, growing both commercial and pedigreed seed. He is originally from a mixed operation in Alberta and received a degree in mechanical engineering from the University of Alberta. Kubinec and his wife have three sons that are also involved in the operation.

CORN

Craig Riese

St. Andrews, MB

Craig Riese farms in the St. Andrews and Selkirk area with his wife Crystal and two sons. Together they operate Westphalia Farms Ltd., where they grow corn, soybeans, wheat and canola. They added corn to the rotation in 2016 and currently grow about 800 acres.

Patrick Gamache

Laurier, MB

Patrick Gamache is a sixth-generation farmer who farms in Laurier with the help of his parents, grandfather and employees. Their main crops are wheat, canola, soybeans, edible beans and corn. Gamache was also a seed grower and co-owner in an ag retail business for several years, in addition to working with cattle.

Marcus Loeppky

Niverville, MB

Marcus Loeppky farms in the Niverville area, where he grows wheat, oats, canola, soybeans and corn on approximately 4,800 acres with his cousin Paul. He has been married for 20 years to his wife Candice, and they have two girls, Taylor (14) and Morgan (11).

Ty Ballard

Bield, MB

Ty Ballard has been a dedicated grain farmer growing wheat, peas and canola for many years on his family farm, Rockin' Cattle Company Inc., in Bield. He believes the increasing global demand for wheat and barley is a good opportunity for Manitoba farmers to heavily contribute to the industry and grow the market for the crop.

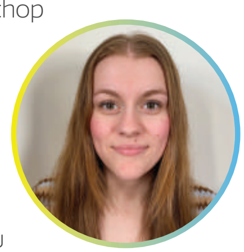
Amanda Ellis

Wawanesa, MB

Amanda Ellis is co-owner/operator with her husband Simon of Black Creek Farm Ltd. and Ellis Seeds, a third-generation, 1,500-acre seed farm and retail. They grow flax, wheat, oats, peas, soybeans and canola, as well as the occasional "project" crop, such as hemp or millet.

Meet our new staff

September Bisschop



September Bisschop joined our team in February as the new administrative assistant of the Advance Payments Program. September grew up in Morden and often visited her grandparents' grain and sheep farm when she was young. This past summer, she worked as a field technician for Nutrien, where she discovered her passion for agriculture. She graduated in December last year with a business administration diploma from Red River College and is eager to apply her recent education to the agriculture industry.

Surjit Bawa

Surjit Bawa joined MCA in March as field research specialist, bringing 16 years of experience in field research at Canterra Seeds and more than 28 years of experience in the agriculture sector to the organization. At Canterra Seeds, he held several roles within the research and development team that equipped him with experience in field research and trial management, statistical analysis and reporting, and building relationship with key stakeholders, such as farmers, breeders and product managers.

Ahead by a Century:

Celebrating 100 years of plant disease and breeding research in Manitoba

Aug. 7, 2025

Brandon Research and Development Centre

Hosted by
Agriculture and Agri-Food Canada
& Manitoba Crop Alliance

To RSVP, email andrew@mbcropalliance.ca

MANITOBA CROP ALLIANCE

Manitoba Crop Alliance

EVENTS

Visit ***mbcropalliance.ca*** to view our summer 2025 event listings. While you're there, sign up for our ***Heads Up*** e-newsletter to be the first to know about upcoming MCA events.

Congratulations to our 2024-25 post-secondary bursary recipients!

Manitoba Crop Alliance (MCA) is proud to support agriculture's next generation. MCA's bursary program is designed to assist with the financial needs of students pursuing education in a field that will benefit the agriculture sector.

We have awarded six post-secondary students from Manitoba with 2024-25 MCA bursaries valued at $2,000 each. The bursary recipients are:

Mika Cleave
Ochre River, MB

Noah Kaminsky
Brunkild, MB

Abby Mazier
Justice, MB

Chad Pouteau
Mariapolis, MB

Layne Thompson
Ochre River, MB

Jadyn Wiebe,
Plum Coulee, MB

Thank you to the selection committee for evaluating the bursary applications and congratulations to the 2024-25 bursary recipients!

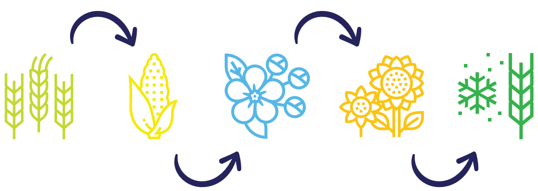
Five questions

with Katherine Stanley

Research Program Manager — Special Crops

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

I grew up in Winnipeg, but my grandparents had a cattle farm near Faulkner, MB. Despite spending holidays on the farm, I didn't know there were jobs in agriculture other than farming. As I approached high school graduation, ***I had no idea what I wanted to study at university****. I liked working outside, wanted to travel and wanted to work with people — what career would that be? To my surprise, the high school guidance counselor suggested agriculture. I took a few first-year courses and haven't looked back!*



2. What do you love most about Manitoba ag?

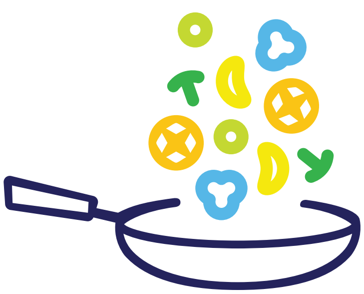
The diversity in Manitoba is incredible — from the ***rich diversity of crop choices*** *to soil types and landscapes. Not to mention the people! There is never a dull moment in Manitoba agriculture.*

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

There are many stresses facing the ag industry in Manitoba, including the emerging trade/tariff threats, ***climate and weather uncertainty****, government regulations and herbicide resistance, to name a few. Despite these challenges, the Manitoba agriculture industry is resilient — farmers and industry members are finding opportunities to engage with new technologies and research, while strengthening collaborations across our industry network. I'm proud to work with MCA and our farmer members to identify opportunities to tackle some of these challenges and continue to grow this vibrant industry in Manitoba.*

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

My favourite place is in my backyard with my family and friends. Growing up in the city, I feel very fortunate to have an outdoor space to have fires, ***garden*** *and relax.*



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

I worked as a cook in a Winnipeg restaurant throughout university to pay for school. I met so many people, including my husband, working in a kitchen — many are close friends of mine to this day! Throughout my career in agriculture, ***I have still been able to dabble in the culinary world*** *by helping friends open restaurants, compete in competitions and cater events! I love finding ways to cook at home with Manitoba ingredients, and making a meal is one of my favourite ways to unwind.*

The 1950 Red River flood significantly impacted Winnipeg, including the Dominion Rust Research Laboratory. Plant pathologist Thorvaldur Johnson checking his plants in the greenhouse during the flood. *Image courtesy Agriculture and Agri-Food Canada.*

100 YEARS OF EXCELLENCE

Highlighting the Dominion Rust Research Laboratory's contributions to Prairie grain farmers

By Alison Inglis
Public Relations Specialist, Freelance

Rust epidemics have caused yield losses in wheat since the early 1900s. The stem rust epidemic in 1916 alone led to a loss of approximately 100 million bushels of wheat in Canada and even greater losses in the United States.

For over a century, Canadian scientists have been at the forefront of research on these devastating diseases.

In 1925, the Dominion Rust Research Laboratory was established in Winnipeg on the University of Manitoba (U of M) campus by the Canadian government.

A team of researchers was hired to work toward a common goal: finding a solution to rust diseases. These researchers included Margaret Newton, the first Canadian woman awarded a doctoral degree in agricultural science, and a member of the Canadian Science and Engineering Hall of Fame.

Initially, the lab focused on studying rust pathogens and breeding rust-resistant wheat and oat cultivars. Over the following decades, researchers made groundbreaking discoveries. They identified the sexual cycle in

Continued on next page

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Cont. from previous page

rust fungi and implemented annual national surveys to monitor rust virulence and other diseases.

In 1956, a new building was constructed across from the Dominion Rust Research Laboratory for researchers from two additional labs. The complex was combined and renamed the Winnipeg Research Station in 1959.

By 1986, the Winnipeg Research Station had released 33 wheat, barley and oat varieties, two of which were widely grown across the Prairie provinces during this time. These varieties were a result of researchers focused on rust resistance, end-use quality and strong agronomic performance.

"By 2011, wheat and oat cultivars developed at Winnipeg occupied 80 per cent of the area seeded to wheat in Western Canada and 50 per cent of the area seeded to oat," says Brent McCallum, a research scientist with Agriculture and Agri-Food Canada (AAFC). "The Winnipeg Research Station was also a world leader in the discovery of resistance genes for rust in cereals."

The end of the 1980s saw a shift to more specialized biotechnology and genetic studies. Scientists enhanced research on cultivar development, disease resistance and the chemistry of cereal grain quality through genomics, genetic mapping and the use of genetic markers to identify and enhance traits of interest.

In 1993, the Winnipeg Research Station was renamed the Winnipeg Research Centre. That same year, the Western Grains Research Foundation (WGRF) established a check-off fund for wheat and barley. This had a positive impact on cereal breeding efforts, expanding activities and accelerating the development of elite varieties.

As Fusarium head blight (FHB) outbreaks worsened in Manitoba, researchers began studying its prevalence, spread and associated mycotoxins. The centre also set up screening nurseries and testing protocols to help cereal breeding programs in Western Canada develop varieties with resistance to FHB.

In 1995, the centre underwent its final name change, officially becoming the Cereal Research Centre (CRC). As we entered the new millennium, the CRC had grown into a leader in wheat ge-

nomics research in Canada, focusing on disease resistance, grain quality, genetic mapping and molecular tool development.

The development and implementation of a wide range of genetic tools, from doubled haploid technology and DNA markers to large disease screening nurseries, accelerated genetic gains in breeding. Cultivars bred from doubled haploid lines have set new benchmarks for yield, and the end-use quality of bread wheat has steadily improved.

The CRC played a pivotal role in increasing disease resistance, identifying key genes for rust fungi in wheat and oats, gene mapping resistance to multiple pathogens, and cloning *Lr1*, a leaf rust resistance gene.

By 2011, the CRC had identified and characterized 44 rust resistance genes and released 51 cereal cultivars: 30 bread wheat, four durum, two barley and 15 oats. Additionally, it launched the new Hard White Spring Wheat class and registered its first two cultivars: Snowbird and Kanata. Since 2011, the former CRC remains a world leader in rust and FHB resistance and has released more than 20 more wheat cultivars, in addition to many new oat cultivars.

In 2014, the CRC was relocated to the AAFC Morden Research Centre (now the Morden Research and Development Centre), with some research staff remaining on the U of M campus in Winnipeg, and wheat breeding was relocated to AAFC Brandon. AAFC Brandon also has a long and successful track record of developing barley, wheat and oat cultivars for the Canadian market.

"For over a century, research that started with the Dominion Rust Research Laboratory, has had a major impact on cereal production in Canada and around the globe," McCallum says.

Continued on page 13

This picture, taken in February 1953, was evidently related to the production of Selkirk wheat. Left to right, A. B. Campbell, T. Johnson, R. F. Peterson, A. B. Mason.
Images courtesy Agriculture and Agri-Food Canada.

West side of the Dominion Rust Research Laboratory showing Winnipeg Electric street car terminal in 1926.

University of Manitoba campus and the Dominion Rust Research Laboratory during the 1950 Red River flood.
Images courtesy Agriculture and Agri-Food Canada.

LEFT:* *Original Dominion Rust Research Laboratory staff (1925): Standing, left to right, C. H. Goulden, M. Newton, J. N. Welsh, T. Johnson, D. L. Bailey. Sitting, left to right, J. H. Craigie, W. L. Gordon, I. L. Conners.

BELOW:* *The Dominion Rust Research Laboratory under construction.

"The development of resistance to orange wheat blossom midge (*Sm1* gene) and major rust diseases has enhanced crop resilience while reducing pesticide use and economic losses for farmers. Many novel traits, including improved resistance to pre-harvest sprouting, leaf rust and FHB, have been introduced into cereal cultivars, while also constantly improving end-use quality and yield."

Breakthroughs in wheat cultivar development, rust resistance and biotechnology have not only supported Canadian farmers but also influenced global cereal breeding programs. As research advances into new areas, the foundation laid by the CRC continues to guide the future of cereal research.

"The achievements of the former CRC and AAFC Manitoba research stations are remarkable," says Andrew Hector, agronomy extension specialist for cereal crops with MCA.

"From improving Fusarium resistance and tackling challenges like pre-harvest sprouting to enhancing genetic research, their contributions have been invaluable to Prairie grain farmers. We're excited to celebrate their contributions this summer, alongside MCA's fifth anniversary."

AAFC and MCA will celebrate 100 years of wheat pathology and breeding research on Aug. 7, 2025, at the Brandon Research and Development Centre. The event will also mark MCA's fifth anniversary and the organization's ongoing commitment to funding innovative wheat research that benefits Manitoba farmers.

For a look at the early years of the Dominion Rust Research Laboratory, an article by the late Dr. Thorvaldur Johnson offers a fascinating look at its people and history. Reviewed and edited by Dr. Stephen Fox, Dr. Brent McCallum and Dr. Zamir Punja, the full article was published in the Canadian Journal of Plant Pathology. https://doi.org/10.1080/07060661.2019.1622594

This article is a condensed summary of work by Brent McCallum, Noel White and Andy Tekauz originally published in Agriculture and Agri-Food Canada's book, "The Innovators Rooted in Science. The History of Research Branch from 1986 to 2011." Editors: Yvon Martel, Jean-Marc Deschenes and Nathalie Corbeil. https://publications.gc.ca/site/eng/454740/publications.html.

Unlocking wheat's potential

What new gene discoveries mean for farmers

By Alison Inglis
Public Relations Specialist, Freelance

FIGURE 1: ***Researchers precisely located the Lr2a gene between marker 1 and marker 2.***

Wheat is one of the world's most important crops. Keeping it productive means staying ahead of threats like leaf rust, which can cause significant yield loss. Understanding the genetics behind resistance is key, but with a genome nearly five times larger than the human genome, its complexity presents challenges and opportunities.

Today's average bread wheat variety might carry somewhere between two to five resistance genes to leaf rust. The effectiveness of each specific gene determines how strong the variety's resistance is, as reflected in Seed Guide ratings.

Lr2 is currently the most common leaf rust resistance gene in Canada Western Red Spring (CWRS) wheat. Originally bred in North Dakota, it came into Canadian breeding material 20-25 years ago. There are multiple variations of the *Lr2* gene. In breeding, these variations are called alleles.

Curt McCartney, an associate professor at the University of Manitoba, studied variations of the *Lr2* gene to understand why different isolates (leaf rust strains) respond differently to different resistance genes. This research was part of the "4D Wheat: Diversity, Domestication, Discovery, Delivery" project, aimed at accelerating the development of higher-yielding, stress-resistant wheat varieties for Canadian farmers by utilizing cutting-edge science.

The 4D Wheat project is led by Curtis Pozniak, professor and wheat breeder at the University of Saskatchewan's (U of S) Crop Development Centre, and Sylvie Cloutier, principal research scientist with Agriculture and Agri-Food Canada (AAFC) in Ottawa.

Through this work, McCartney cloned the *Lr2a*, *Lr2b*, *Lr2c*, *Lr2d* and *Lr15* genes. While they all provide resistance, *Lr2a* protects against more isolates than the others. *Lr2b*, *Lr2c* and *Lr2d* behave similarly, but *Lr2b* appears slightly stronger than the other two. *Lr15* provides resistance to different leaf rust strains than the other genes.

Cloning a gene is the process of identifying its location on the genome, isolating its DNA sequence and confirming its function. To locate *Lr2a*, researchers used genetic mapping and DNA markers. The correlation between individual DNA markers along the chromosome and the resistance is what pinpoints the gene's location.

At the same time, Pozniak's lab sequenced the parent line carrying the resistance gene (*Lr2a*). Using these reference sequences, researchers identified the DNA fragment containing *Lr2a*.

"We knew the gene was located somewhere between marker one and marker two. By positioning them precisely on the fragment, we knew the gene in between was potentially *Lr2a*," McCartney says **(Figure 1)**.

Researchers treated seeds of the wheat line carrying the *Lr2a* gene with EMS, a chemical mutagen that causes random mutations (scattered) throughout the genome, then grew them in the field. They identified plants that were leaf-rust susceptible (lost resistance) and found two possible genes that could be responsible for resistance.

Using long-read RNA sequencing, a newer technology that allows researchers to read an entire gene, they compared results to Pozniak's reference sequence. For the gene encoding the *Lr2a* trait, the mutations they found in susceptible plants either stopped protein production entirely or changed the protein's structure to make it non-functional. In the other gene, the mutants were identical to the original sequence, meaning there was no mutation.

"The original mapping suggested these resistance genes were alleles: different versions of that same gene," McCartney says. Researchers are finding there are certain regions of some resistance genes that are known to be variable among different alleles, while the rest of the gene is identical.

"It's similar to how antibodies in our immune systems have hyper-variable and conserved regions," McCartney explains. "All plants use this kind of defence mechanism."

Once researchers had identified the variations that were responsible, the next step was developing DNA markers to differentiate *Lr2a* from its susceptible allele. These markers help breeders design crosses, select for individual genes and analyze resistance traits in different wheat varieties.

Another 4D Wheat activity examined how suppressor genes interact with resistance genes. Suppressor genes prevent the expression of resistance genes, meaning a wheat variety may carry resistance genes that remain "shut off."

Colin Hiebert, a research scientist at AAFC's Morden Research and Development Centre, led an international team that cloned *SuSr-D1*, a suppressor gene affecting stem rust resistance in some Canadian wheats. This gene was initially discovered through research by former Cereal Research Centre (CRC) scientist Eric Kerber. It is widely present in common bread wheat but does not interact with all stem rust resistance genes.

Previous research on Thatcher and Canthatch varieties showed that when they removed this gene, they gained stem rust resistance **(Figure 2)**. Hiebert's team was interested in identifying which resistance genes "turn on" when the suppressor is removed and whether they were previously known or new discoveries.

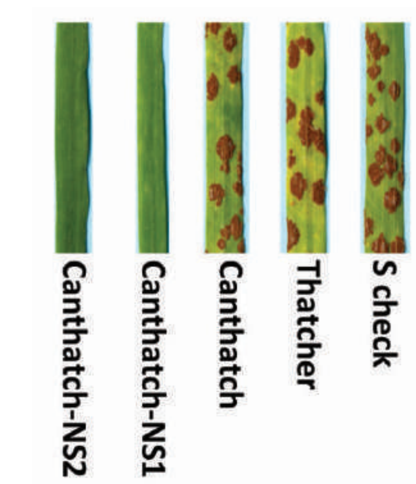
Lr34 is an important resistance gene effective against multiple diseases, including leaf rust (*Lr34*), stripe rust (*Yr18*), stem rust (*Sr57*) and powdery mildew (*Pm38*). It was discovered and characterized in Manitoba at the CRC and cloned by an international team.

Lr34 appears to counteract the effect of the suppressor gene, *SuSr-D1*. "We had resistance genes that were shut off by the suppressor," Hiebert says. "Then we added *Lr34*, and it seemed to partially take away the suppressor's effect."

In this activity, researchers examined which genes give stem rust resistance when the suppressor was removed. They found several genes that interact with the suppressor and with *Lr34*, but of most interest was *Sr12*, or a gene located near it. "We targeted *Sr12* for cloning and believe we have identified its sequence, or we have a strong candidate," Hiebert says. By cloning *Sr12*, Hiebert's lab can determine if *Sr12* is interacting with *SuSr-D1* and *Lr34* or if there is an additional gene that has not been discovered.

As part of 4D Wheat, Hiebert also led a sub-activity examining Stewart 63, a

***FIGURE 2:* How the SuSr-D1 suppressor influences stem rust resistance in wheat, with differences in infection clearly visible. Canthatch-NS1 and Canthatch-NS2 are mutants of SuSr-D1 and have gained stem rust resistance. Canthatch and Thatcher are normal plants (not mutated) for these cultivars, and they are susceptible to stem rust like the susceptible check.**



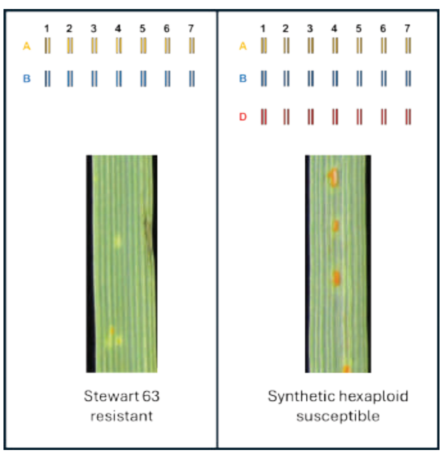


***FIGURE 3:* Comparison of leaf rust resistance in Stewart 63 durum and synthetic hexaploid wheat, with a visual of their chromosome structure. Stewart 63, which is a durum with the A and B genomes, is resistant to leaf rust, while the synthetic hexaploid, which has the A and B genomes from Stewart 63 and the D genome from a relative of wheat, is susceptible to leaf rust.**

durum wheat with strong leaf rust resistance. Durum wheat is an ancestor of common wheat, and this work also built on studies by Eric Kerber, who created a synthetic hexaploid wheat.

Durum wheat carries the A and B subgenomes while common wheat carries the A, B, and D subgenomes. Synthetic hexaploid wheat is created by crossing durum wheat (A and B subgenomes) with another relative of common wheat, *Aegilops tauschii* (which has the D subgenome), adding a third subgenome **(Figure 3)**. When the third subgenome was introduced, the leaf rust resistance from Stewart 63 disappeared.

To investigate which genes were suppressed, researchers created a mapping population of durum wheat and discovered several novel leaf rust resistance genes in Stewart 63, including two of interest that are broadly effective. One of these appears to be a key component of the leaf rust resistance found in modern durum cultivars.

They also explored if *SuSr-D1* mutants or the addition of *Lr34* could help express these suppressed leaf rust resistance genes in a common wheat-like background, but no "magic key" was found to unlock them.

This research takes a different approach by focusing on genetic interactions rather than solely searching for new resistance genes. A better understanding of these interactions may lead to enhanced resistance strategies that are more efficient and applicable to other traits important to farmers, customers and consumers.

The wheat genome is massive. Researchers around the world are working to navigate this complex collection of genes and identify which are responsible for key traits. "It's a big undertaking, but we have better, more efficient tools to help accomplish it," McCartney says.

These discoveries help explain why specific varieties are resistant to leaf rust. They also pave the way for stronger wheat varieties through the development of tools that help breeders select for resistance traits more effectively. As more genes are sequenced and identified, wheat breeding will become increasingly precise.

To learn more about the 4D Wheat project and its collaborators, visit mbcropalliance.ca.

Fields of the future

Why agriculture needs more computer scientists

By Alison Inglis
Public Relations Specialist, Freelance

Earlier this year, Manitoba Crop Alliance (MCA) was invited to speak to a group of computer science students at Red River College Polytechnic (RRC Polytech). During their presentation to the students, MCA whole farm specialist Ashley Ammeter and research program manager for special crops Katherine Stanley explored the connection between computer science and agriculture, from research and data collection to real-world applications and career opportunities in ag-tech.

"We know from Statistics Canada data that the average farm size is increasing," Ammeter says. "With more land comes more variables and decisions. Technology is becoming an important tool in agriculture."

Conversations like this one help introduce computer science students to the potential roles they can play in agriculture.

"We didn't just talk about the technology itself, we wanted to show how students can find their place in this evolving field," Stanley says. "We talked about areas where tech is making an impact, such as AI,

Innovators at work: Hands-on learning as students put their AI software to the test.
Image courtesy ACE Project Space.

automation and data analytics, and connected those to potential career paths, such as grain management and marketing, robotics and AI, knowledge transfer and communication."

Karen Kabel, associate dean of creative arts and applied computer education at RRC Polytech, says a lot of international students without farming backgrounds come to the school and end up considering agriculture.

"Farming isn't something they've ever thought of, but from the hands-on experience they gather through our programs, some begin to see it as a field they consider themselves going into," she says.

RRC Polytech's applied computer education programs include a work-integrated learning component. Students choose between completing a four-month minimum paid co-op position or a four-month term working on an industry project through the ACE Project Space. This initiative provides opportunities for students to work with entrepreneurs, non-profit organizations, government agencies or corporations to bring their unique ideas to fruition. Students with different skill sets, from security and data science to machine learning and software development, are put into groups with clearly defined roles.

"Under the guidance of our experienced faculty, students work with industry clients to develop prototypes, products and services that can be introduced to the market or implemented within their businesses," Kabel says.

ACE Project Space students work together as a team to deliver a product or service the customer needs to help their business evolve. Examples of student projects have included a mobile app to manage a vertical strawberry farm, machine-learning models to predict precipitation for crops, autonomous snow clearing, drone-based crop imaging to create data sets, a program to automatically download and analyze satellite radar images in near real time, and predictive analysis for crop yields based on historical data.

"We've done a lot of projects in manufacturing where we're using AI to help with predictive analysis or the collection of information," Kabel says. "These projects give students opportunities for hands-on experience and a glimpse into the diverse job opportunities available in ag-tech. We are always open to new ideas and collaboration."

"These projects give students opportunities for hands-on experience and a glimpse into the diverse job opportunities available in ag-tech."

Karen Kabel
Associate dean of creative arts and applied computer education at RRC Polytech

AI and data science are already reshaping agriculture. "With the increase in the use of technology in agriculture, we are going to need significantly more skilled people from the computer science world," Stanley says. "From predictive modelling all the way to autonomous equipment, these areas require expertise in data science and AI."

TerraByte, a research group co-founded by University of Manitoba (U of M) computer science associate professor Christopher Henry and University of Winnipeg physics professor Christopher Bidinosti, is focused on solving problems and enabling solutions in the agriculture industry through AI algorithms.

To use these AI algorithms to extract patterns, labelled data is required. For the algorithms to reach optimal speed, they must be trained, meaning they need to process a lot of examples ahead of time.

"At TerraByte, we focus on creating labelled plant data sets to help solve problems like disease detection, plant classification and phenotyping," Henry says. "With labelled data we can develop automated methods to train and use AI to solve those problems."

TerraByte is collaborating with Maria Antonia Henriquez, a research scientist at Agriculture and Agri-Food Canada's Morden Research and Development Centre who manages Canada's largest Fusarium head blight screening nursery. They are training AI to automate plant health assessments, with the goal of eventually replacing time-consuming, subjective visual evaluations done by walking through fields.

R-Tech Industries at Homewood, MB, builds specialized, research-grade equipment for small-scale research. In collaboration with TerraByte, they are building data rovers to collect real-time data from the field. Some of the field testing of the rovers is being done at EMILI's Innovation Farms.

More recently, TerraByte has teamed up with plant scientists at the U of M. "There are so many interesting, image-based tasks, such as estimating the level of flea beetle damage to a plant, for example," Bidinosti says. "Right now, much of the image analysis is done manually, but we are working with them to automate the entire data pipeline — from image collection, through AI algorithm, to output of the desired metrics."

Continued on page 19

Are your crop protection choices creating market risk?

The use of certain crop protection products may create market risk on certain crops. Review the Keep it Clean Product Advisory before proceeding with your crop management plans to learn how you can protect the marketability of your crops.

keep it clean

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Henry and students are also experimenting with generative models to create synthetic examples of real data to shorten the data-labelling process and build up bigger data sets. "We use all that data to train our models," he says. "The synthetic data helps reduce the amount of labelled data we have to collect."

A joint course between Saskatchewan and Manitoba pairs plant science students with computer science students to foster interdisciplinary problem-solving. This collaboration is something both Henry and Bidinosti have been pushing locally with their students and want to see more of in our province.

"We work at the intersection of agriculture and technology," Bidinosti says. "We see our role as helping plant scientists, breeders and agronomists get the digital tools they want to move their research forward."

Companies are already recognizing the value of AI expertise in agriculture and are partnering with students to develop new technologies. "For example, we are doing a project with MacDon because they want to tap into the machine-learning skills and expertise of our students," Henry says. "This collaboration helps their employees gain new knowledge of these approaches."

The demand for these skills will only grow. Bidinosti says every company TerraByte speaks with wants people with these skills, while the plant scientists they work with need AI tools to advance their research.

"AI expertise is a huge skillset, and we believe it is important to get more people into the agriculture industry that have that background," he says. "Not only to fill jobs but to innovate and create startup businesses. Some of these young people will bring fresh, new perspectives from being trained on the AI side to team up with people that have ag experience."

As we look into the future, agriculture will continue to evolve, and so will the workforce that supports it.

"There is a whole new sector of students who will enter the ag industry with a computer science background," says Ammeter. "They may have never grown a plant or set foot in a field, but as technology changes the way we farm, we are going to need them."

TerraByte's data rover gathers field images and measurements, helping train AI models for weed detection, disease identification and crop analysis. *Image courtesy Michael Beck.*

RNA INTERFERENCE

Researchers at Agriculture and Agri-Food Canada are exploring how RNAi can be used to silence genes essential to Fusarium growth and development, providing control and protection. *Image courtesy MCA.*

The future of pest and weed control?

By Ashley Ammeter
Whole Farm Specialist, MCA

Farmers operate in an increasingly complex agricultural landscape. With growing weed and pest pressure and limited control options, the question becomes: what is on the horizon for pest and weed control products? Enter RNA interference.

To understand RNA interference (RNAi), you need to start with DNA. Think of DNA like an instruction manual – it determines an organism's characteristics and contains the genetic information it needs to grow, survive and reproduce. To carry out the functions encoded in the instruction manual of an organism's genes, the DNA must be converted into proteins. We often think of protein as a food nutrient, but proteins perform many important functions. For example, in humans, enzymes, antibodies and some hormones such as insulin are all made of proteins.

To make a protein from the instructions in the DNA, RNA molecules act as messengers. They copy the instructions from the DNA sequence and carry that information so a protein can be made. This allows the genes to be expressed, determining how an organism looks, grows and survives.

A newly explored technology can change the flow of genetic information from DNA to RNA to protein. RNAi also uses RNA molecules, but instead of using them to copy the DNA sequence and make proteins, they are used to interfere with the expression of a specific target gene. This prevents the protein from being produced and the gene is "turned off" (often called gene silencing).

Researchers in medical fields are exploring how to silence genes that cause diseases in humans, but we are also seeing this technology being used to create solutions for on-farm challenges. Researchers at Agriculture and Agri-Food Canada (AAFC) are exploring how this phenomenon can be used in agriculture by designing interfering RNA to silence essential genes in pests and pathogens of concern.

"This biotech approach offers new methods for sustainable pest control and complements ongoing breeding efforts that are developing crop varieties with improved disease resistance," says Steve Robinson, a research scientist at AAFC. "Together, RNAi biotechnology and innovative breeding programs promise new integrated pest management strategies, providing greater options for farmers to manage their production challenges.

"There are several promising RNAi-based technologies being developed that are targeted to important pests of

Canadian crops. Once they have been discovered and tested in the lab, the technology needs to be demonstrated in the field."

RNAi for weed management

Herbicide-resistant weeds are becoming increasingly challenging. A survey conducted in 2022 found that 75 per cent of fields in Manitoba contained weeds resistant to Group 1, Group 2 and/or Group 9 herbicides, compared to just 32 per cent in 2002 **(Figure 1)**.

Researchers at AAFC are trying to confront this challenge using RNAi. If we can use RNAi to turn off or "silence" a specific gene that is essential to the weed's growth and development, can we effectively kill the weed but not the surrounding crop?

Also, as consumer demand for sustainable production practices increases, RNAi technology could be an important tool. "By designing interfering RNA to only match the selected pest genes, there is no toxicity to humans, livestock, beneficial insects and micro-organisms," Robinson says. "By exploiting the natural phenomena of RNAi, we can silence essential genes and generate new pesticides."

RNAi for disease management

Fusarium head blight (FHB) is a serious fungal disease affecting cereals that can result in significant yield loss, downgrading of grain and mycotoxin contamination. While some newer varieties have improved resistance to FHB, varieties that are completely resistant remain elusive. Adding to the challenge, currently available fungicides provide suppression but not control of the FHB pathogen and must be applied during a narrow spray window.

Researchers at AAFC are exploring how RNAi can be used to silence genes that are essential to the fungus' growth and development, providing control and protection against FHB. Using specific RNA molecules designed and evaluated in the greenhouse at the Saskatoon Research and Development Centre, the team has collaborated with researchers across Saskatchewan, Manitoba and Quebec to conduct field trials. By collecting data over multiple years, the team hopes to identify the most effective treatments.

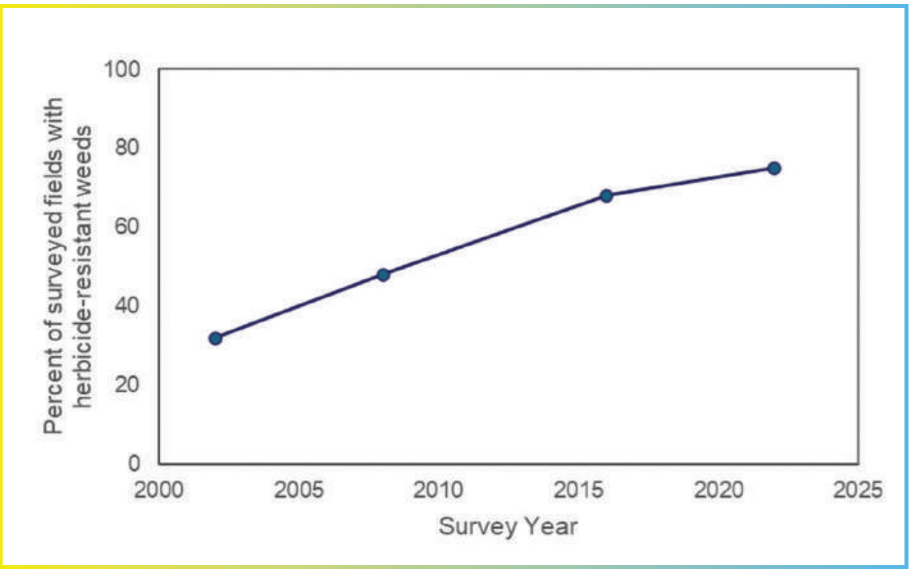


FIGURE 1: ***The percentage of surveyed fields in Manitoba in which Group 1, Group 2 and/or Group 9 resistant weeds have been found. Source: Geddes et al. 2023. Manitoba survey of herbicide resistant weeds in 2022. Available from: umanitoba.ca.***

If we can use RNAi to turn off or "silence" a gene essential to a weed's development, can we kill the weed but not the surrounding crop? *Image courtesy MCA.*

"The data generated from these field trials will narrow the selection of treatments to be evaluated in yield plot trials," Robinson says. "That data will attract industrial partnerships to gain commercial regulatory approval and entry into the marketplace."

The future of RNAi pesticides

With this technology on the horizon, the next question is how it will be regulated. While RNAi-based pesticides have not yet gained regulatory approval in Canada, an RNAi-based pesticide for control of Colorado potato beetle has been approved for use in the United States, and the Canadian agency responsible for pesticide regulation has outlined a path for commercial regulatory approval of this type of pesticide.

What does this mean for Canadian farmers? "In the future, it will be possible to apply solutions of RNA as a pesticide to control some of Canada's most damaging pests and pathogens, increasing pesticide options available to farmers," Robinson says.

To learn more about MCA-funded research related to RNAi-based pesticides, visit mbcropalliance.ca.

Grain Marketing Insights

U.S. trade exposure — outcomes and possilities

By LeftField Commodity Research

There's no shortage of speculation about U.S. tariffs on Canadian crops and crop products, with frequent news reports and changing deadlines. There are plenty of unknowns about how tariffs will be applied and how that could impact markets. It's possible that pushback and lobbying within the U.S. will result in some carveouts, exemptions or variable tariff rates, and adjustments could happen at any time. How long the tariffs last would also determine how badly markets are disrupted.

We don't have a crystal ball to see what these decisions and outcomes will be, or how each crop will be affected. Instead, this article will look at how exposed certain Canadian crops are to trade with the U.S. and, on the flipside, how much the U.S. relies on imports of those same crops and products.

Flax market closely linked

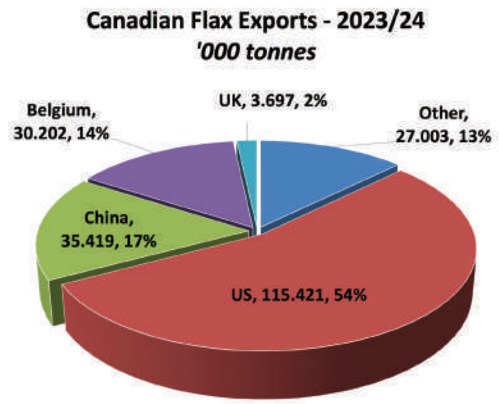
The U.S. has been an important market for Canadian flax for years but became even more central after the 2021-22 drought year. In 2023-24, the U.S. imported 115,000 tonnes of Canada's total flax exports of 212,000 tonnes, with a similar share in the previous two years. Exports are a key part of Canada's flax market, accounting for nearly two-thirds of total usage. If exports to the U.S. were reduced by tariffs, Canadian flax would need to regain share in China and the EU, the other two main importers, which would mean competing with lower-priced flax from Russia and Kazakhstan.

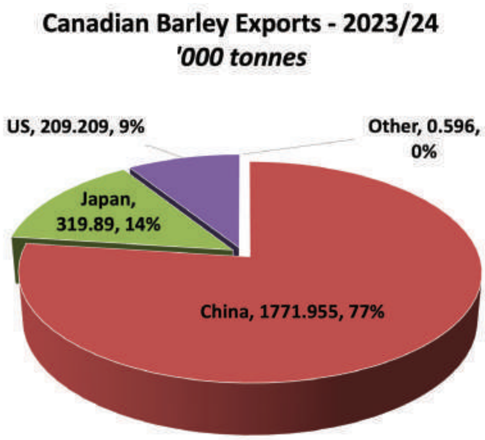
Looking at things from the other side of the border, the U.S. depends heavily on Canadian flax. In 2023-24, U.S. imports were 128,000 tonnes, with Canada supplying 114,000 tonnes (89 per cent) of the total. Flax production in the U.S. has declined in recent years and its domestic crop typically meets less than half its needs. The only other meaningful sources of flax supplies are Russia and Kazakhstan, with barriers to direct trade for Russia and much higher transportation costs from both countries. This situation leaves U.S. crushers and other users with limited options, other than trying to boost domestic production, which would require higher prices to attract acreage.

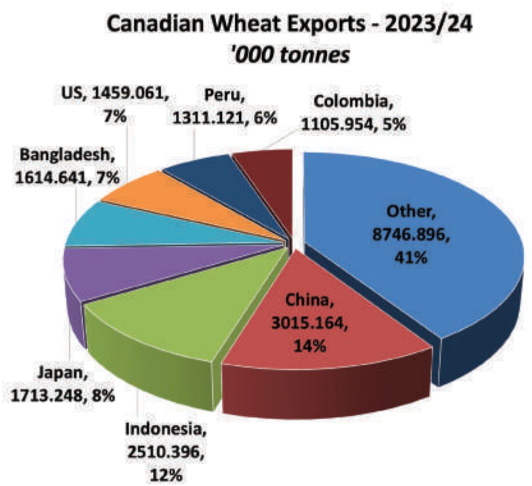
U.S. barley trade smaller but still important

Canadian barley exports are dominated by China, followed by Japan. In 2023-24, the U.S. was in third place with nine per cent of Canadian exports, but over the past five years, has been in second place several times. Volumes to the U.S. have ranged from 132,000 to 476,000 tonnes during that five-year span. If trade is disrupted by tariffs, Canadian barley exports could be diverted to other destinations, but this might require more aggressive pricing. Alternatively, more barley could remain within Western Canada to be fed domestically, with that usage typically twice the size of exports. This is more likely to occur if U.S. corn is somehow restricted from moving north into Canada.

The U.S. relies heavily on Canada for its barley imports and that has been the case over the past five years — except in the 2012-22 drought year, when some Argentine and Danish barley were imported. That said, imports are only a small part of U.S. barley supplies and reduced imports







from Canada would have a limited impact on the U.S. market. As such, the U.S. industry could likely adapt to a tariff situation without serious issues.

The bigger story for Canadian barley would likely be the impact on the malt industry. Over half of Canadian malt exports go to the U.S. Exports represent at least three-quarters of total Canadian malt output. This type of disruption would have a significant effect on maltsters and, by extension, on demand for malt barley. It's not clear how "sticky" the U.S. malt demand is and thus whether tariffs on malt would be absorbed by Canadian or U.S. market participants.

Wheat exports to U.S. a small but important share

Canada sends non-durum wheat to a wide range of countries, with Asian destinations typically taking the largest share. The U.S. received seven per cent of Canada's record-large exports in 2023-24, a total of 1.5 million tonnes. This was the highest since 2018-19, with annual volumes more typically ranging from 1 – 1.3 million tonnes. Because Canada ships to so many other places, alternative homes can be found for any lost U.S. business. However, the close proximity makes these exports somewhat more important than simply the share of business, particularly in years when global markets are more heavily supplied or if rail logistics to Vancouver get disrupted.

Canada provides the U.S. with most of its wheat imports, although this represents only a small portion of their overall wheat supply. The U.S. is also a significant exporter of hard red spring wheat, with volumes often four times as large as the imports from Canada. This means the U.S. can cover their needs with domestic production, even if they prefer the high-quality western Canadian hard red spring wheat for blending and other specific uses.

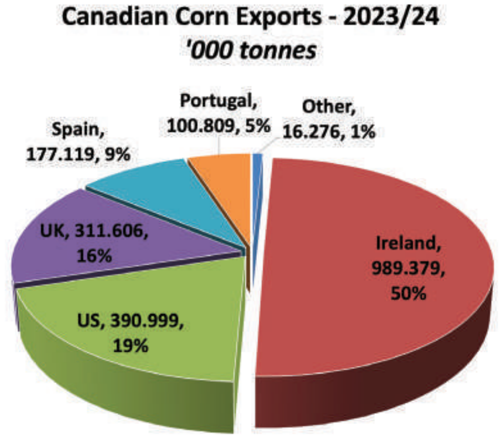
Corn may be more Impacted by indirect effects

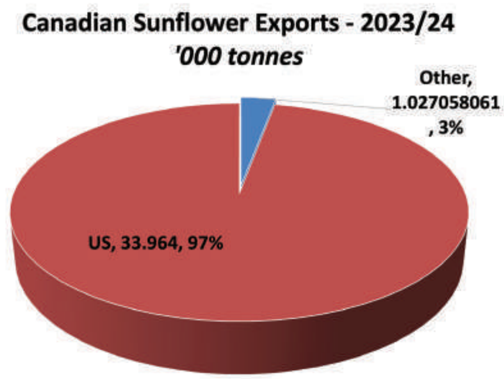
Corn is one of the crops that might be less directly affected by U.S. tariffs. Europe is Canada's largest corn export market, and while the U.S. is second, the volumes are small relative to overall demand that is primarily driven by domestic feeding. As a result, the loss of exports to the U.S. would not materially impact Canadian corn usage. U.S. imports are a miniscule part of their own corn supply, so the loss of Canadian volume wouldn't affect their market a great deal either.

However, it's possible there are indirect impacts that could be felt, particularly on imports into the Prairies. For example, reduced truck movement of grain into the U.S. makes the backhaul of importing U.S. corn more difficult, which when combined with a softer Canadian dollar could see volumes decline. There are many things that drive local corn prices, but lower imports might be beneficial for western Canadian corn prices, everything else being equal, while also encouraging a bump in barley and wheat feeding to make up for any lost volumes.

U.S. demand is critical for Canadian sunflower exports

Nearly all Canadian sunflower exports, mainly confection and black birdseed types, are destined for the U.S. In the past few years, exports have accounted for roughly 30 per cent of Canadian sunflower usage, which makes the U.S. an important part of Canada's sunflower market. If U.S. tariffs disrupt the trade, a sizable portion of Canadian sunflower production would have a difficult time finding alternate offshore destinations. Those markets are supplied through established channels and breaking into those countries would likely require significant price concessions.





Canada is a sizable source of sunflowers for the U.S., accounting for roughly a quarter of its imports. In 2023-24, Canada was the second largest supplier, with Bulgaria as the largest exporter and Argentina in third place. These sizable other sources and established trade channels suggest they could displace some Canadian sunflowers if tariffs are in place. In the short-term, though, the U.S. will need large volumes of imports in 2024-25, as North American sunflower supplies are extremely low. Looking further ahead, U.S. farmers have the capacity to increase sunflower acreage considerably after a very small acreage base in 2024. This would require higher prices to encourage U.S. farmers to plant sunflowers but would partly offset the need for Canadian sunflower imports.

2024 area could fall below initial expectations in both Canada and the U.S.

2025 Annual Report
(2024 Activities)

MANITOBA CROP ALLIANCE

All Manitoba Crop Alliance (MCA) activities are farmer led and directed to ensure we invest our farmer members' dollars wisely and are making strides towards achieving our vision, mission and strategic objectives. In 2024, we

2024–27 STRATEGIC PLAN

debuted a new 2024-27 strategic plan and accomplished three of our year-one step goals.

Here are a few highlights from the past year, spanning our five core principles of investing in research and production, market development and access, advocacy, and communications activities that benefit our farmer members.

Research and Production

Our investment in research and production in 2023-24 totalled **$5,859,520**

At the end of the 2023-24 fiscal year, we had **122 active** research projects with a lifetime value of **$145,188,678**:

69	29	7	7	5	4	1
Barley & Wheat	Whole Farm	Flax	Winter Wheat	Sunflower	Corn	Increasing Capacity

Market Development and Access

Highlights:

- Opening of Indo-Pacific Agriculture and Agri-Food Office in Philippines
- Cereals Canada welcomed representatives from 23 countries with combined average annual wheat purchases of 14.7 million tonnes
- Cereals Canada led four 2024 new crop missions to 18 markets that purchased $8.6 billion worth of Canadian wheat in 2023
- CMBTC hosted Canada China Barley Seminar in Qingdao, 2024 New Crop Tour in Saskatchewan and inaugural New Crop Seminar in Winnipeg
- MCA farmer members hosted 80 international wheat customers through Cereals Canada technical exchanges
- Japanese government agriculture delegation toured MCA director Doug Martin's farm
- Cereals Canada hosted Indonesian delegation, including a visit to the farm of MCA delegate Korey Peters

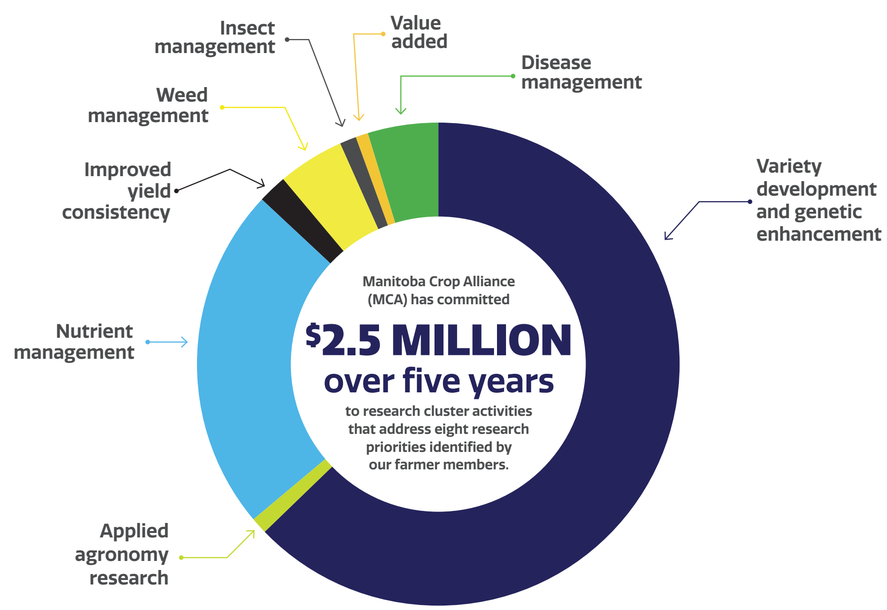
Signed research commitments in 2023-24:

Total Projects: 52

Total MCA Contribution: $6,968,351

Projects by Crop Committee: Wheat and Barley (23), Whole Farm (15), Corn (3), Flax (4), Sunflower (3), Winter Wheat (3), Increasing Capacity (1).

Research cluster funding commitments 2023-28



Highlights

- Enhanced the Research on the Farm program, with new trials and a revamped online results database
- MCA staff travelled to U.S. to establish cross-border relationships as part of north/south partnership strategic plan goal
- Received registration for two confection sunflower hybrids developed through our variety development program
- Created 20 new production resources and 21 new agronomy/extension blog articles

Communications

Our communications program continued to expand and evolve to keep our farmer members informed about the programs and services we offer.

Highlights:

- More than 80 media hits in a variety of agriculture publications to amplify our messaging and bolster our reputation as an industry leader
- Increased engagement with mbcropalliance.ca:
  - ⇧ **69.8 per cent users**
  - ⇧ **75.0 per cent new users**
  - ⇧ **61.5 per cent page views**
  - ⇧ **4.6 per cent average engagement time**
- Growth of our social media and e-newsletter audiences:
  - **X (Twitter):** ⇧ **14.2 per cent**
  - **Facebook:** ⇧ **195.9 per cent**
  - **Instagram:** ⇧ **20.1 per cent**
  - **E-newsletter:** ⇧ **161.2 per cent**

Advocacy

Through our memberships with the **Grain Growers of Canada and Keystone Agricultural Producers**, we ensured Manitoba farmers voices were heard at the provincial and national levels on several important issues. We also supported a variety of consumer outreach initiatives.

Highlights:

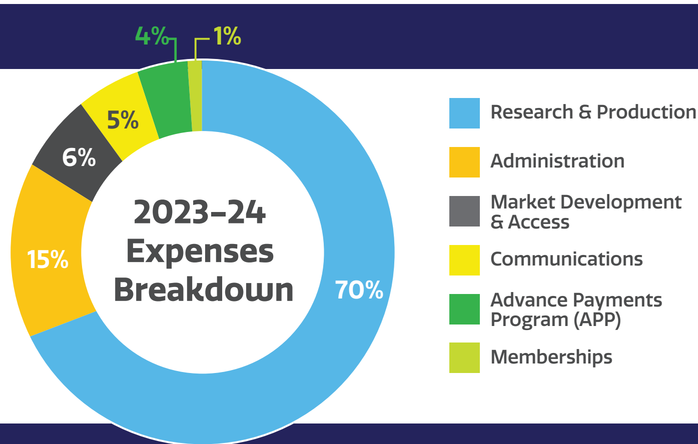
- Grain Growers of Canada's annual Grains Week and inaugural Summer Tour
- From Land to Legislature Breakfast Reception and Cutting-Edge Crop Research and Innovation Field Tour for Manitoba MLAs
- Meetings between MCA directors/staff and Manitoba Agriculture Minister Ron Kostyshyn, Deputy Minister Brenda DeSerranno, and Assistant Deputy Ministers Patti Rothenburger and Maurice Bouvier to discuss opportunities for collaboration
- Continued to build strong relationships with senior Agriculture and Agri-Food Canada and Manitoba Agriculture staff
- Worked with Great Tastes of Manitoba and Manitoba Ag Days to create two "Produced on the Prairies" mini documentaries about plant breeding and malting/brewing

Operations

Under the guidance of our board of directors, MCA efficiently operated within the 2023-24 budget while meeting our strategic plan goals.

Highlights:

- Completed 100-day risk assessment
- Completed renovation of MCA office
- Expanded MCA bursary program with offerings for graduating high school students



Advance Payments Program

MCA continues to administer the Advance Payments Program (APP). In our 2023-24 fiscal year, we are reporting an excess of revenues over expenses of **$75,499**.

CASH ADVANCE

2024 Program Year (at the time of this report)

$85,245,530
in loans advanced

359
farmer clients

12,500+
page visits on MCA's cash advance webpages in 2022-23 fiscal year
(47.1 per cent increase)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Green thumbs

Manitoba Crop Alliance invests in next generation with new commitment to Agriculture in the Classroom-Manitoba

By Tyler Difley
Communications Advisor, MCA

Manitoba Crop Alliance (MCA) recently committed $195,000 to Agriculture in the Classroom — Manitoba (AITC-M) to help expand its Classroom Garden Program, an investment that will educate and inspire Manitoba's next generation.

AITC-M's Classroom Garden Program aims to foster agricultural literacy, environmental stewardship and healthy eating among students across Manitoba through hands-on gardening experiences during the school year. MCA's investment will double the reach of this engaging program to 150 classrooms.

"This investment is about more than just gardens – it's about growing understanding and champions for agriculture," says AITC-M executive director Katharine Cherewyk. "With MCA's support, we're giving more students hands-on experiences with food production, while empowering educators to confidently connect their classrooms to the world of farming."

The Classroom Garden Program currently offers two types of growing opportunities, Little Green Thumbs (Grades 3-12) and Little Green Sprouts (K-3), which teach students about health, the environment and sustainable food systems. The program also encourages responsibility, teamwork and environmental stewardship among participating students.

The Classroom Garden Program is in extremely high demand among Manitoba classrooms. Unfortunately, that demand far exceeds the current capacity, with more than 100 teachers applying in both 2023 and 2024. MCA's board of directors was enthusiastic about the opportunity to expand student access to a program that is making a significant impact on agricultural literacy in our province.

The Classroom Garden Program fosters agricultural literacy, environmental stewardship and healthy eating among students. *Image courtesy Agriculture in the Classroom — Manitoba.*

2024–27 STRATEGIC PLAN
BIG GOAL #3

"Today's students are tomorrow's consumers, leaders and decision-makers, so it's important they gain an early understanding of agriculture and our food system," says MCA chair Jonothan Hodson. "Hopefully, our investment will inspire the next generation to learn more about our industry and the important role agriculture plays in society."

This investment represents the achievement of one of the step goals featured in MCA's 2024-27 Strategic Plan: "Increase support to consumer outreach initiatives that educate and inspire the next generation." In pursuit of this goal, the MCA board of directors considered several investment opportunities from AITC-M, but ultimately decided support for the Classroom Garden Program would be the most impactful.

This new collaboration also marks the latest chapter in the strong and productive partnership between MCA and AITC-M. In 2023, MCA demonstrated its commitment to agriculture education in the province by announcing a $185,000, multi-year funding commitment to support AITC-M and its valuable programming for Manitoba students.

"We are excited to have the opportunity to continue supporting AITC-M and its vision while implementing our strategic plan," says MCA CEO Pam de Rocquigny.

"I'm proud of the strong partnership between our organizations, which will ensure a future where consumers know where their food comes from and appreciate the crucial role Manitoba farmers play in feeding the world."

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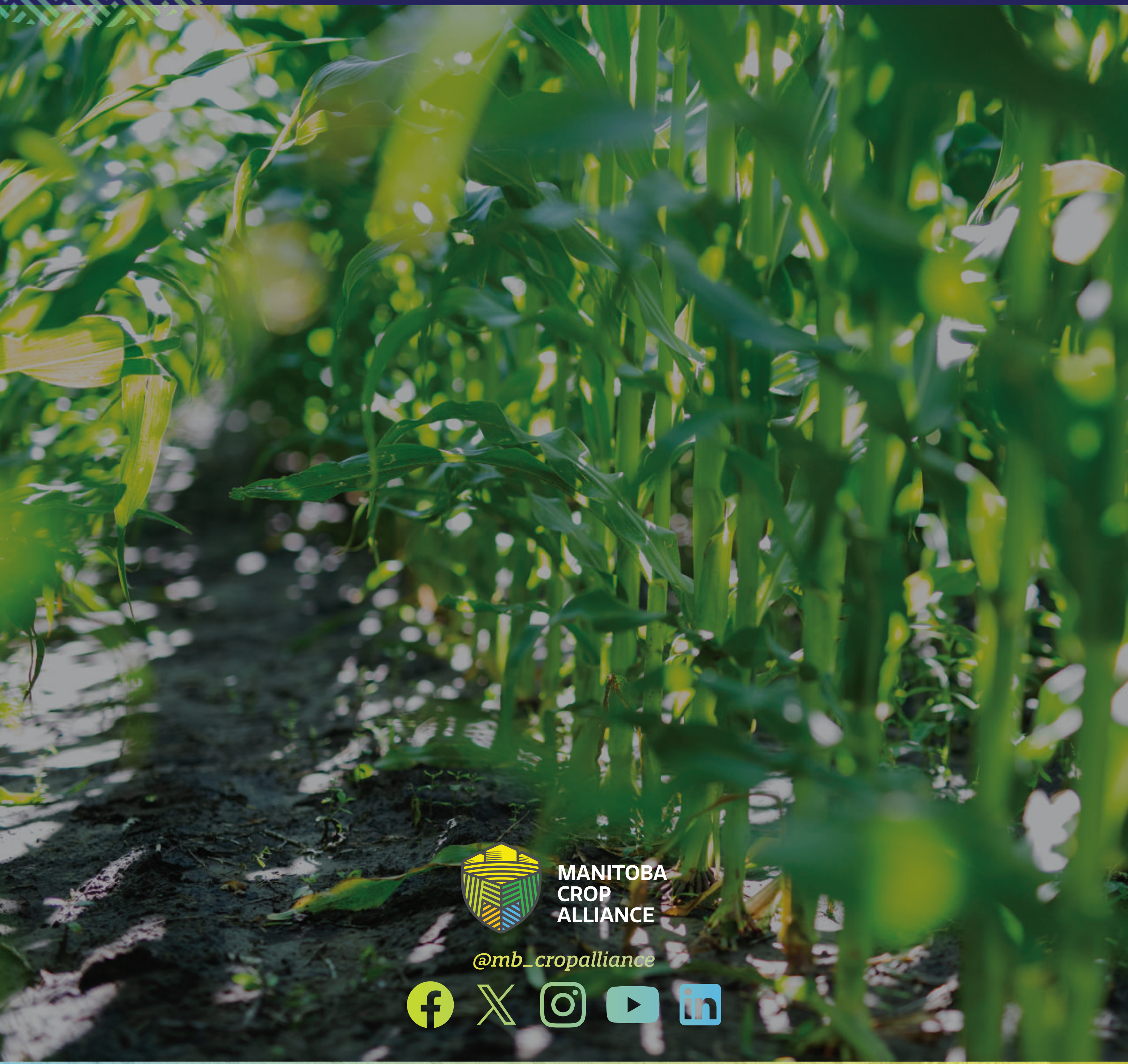

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