THE WORLD-Spectator AG NEWS
JUNE 2023

For the last two years, Vaderstad Industries of Langbank has donated their time and equipment to help seed for the not-for-profit organization Harvest of Hope. Photo credit: Vaderstad Industries.

Harvest of Hope seeds with volunteers, donations

Vaderstad, local ag companies provide inputs

BY SIERRA D'SOUZA BUTTS
LOCAL JOURNALISM INITIATIVE REPORTER

Harvest of Hope had help from farmer volunteers, Vaderstad, and local agriculture companies to get the crop seeded this spring.

Funds raised from the crop are donated to local food banks, in addition to the Canadian Foodgrains Bank, which provides food assistance for people in need around the world. The federal government matches donations to the Foodgrains Bank, allowing the help to go further.

Vaderstad Industries of Langbank is key to the seeding effort, and several other businesses from Moosomin and surrounding area helped contribute towards the project.

"Vaderstad has done all of the seeding in the last two years," said Mark Bateman of the Harvest of Hope committee. "They bring out their seeders, and they're just a tremendous help, taking care of that for us.

"The wheat seed was provided by Crosson Farms and Parrish and Heimbecker Grain Elevator. The fertilizer and chemical was provided by Sharpe's Soil Services.

"The spraying was done by Pattison Agriculture Limited, John Deer. Also a huge thank you to Murray Bruce Farms for heavy harrowing ahead of the seeder, and to Craig Roy for supplying semis, and hauling the fertilizer and seed."

Last year, Harvest of Hope brought in revenue of $130,000 and after input costs, an estimated $70,000 was donated to the Canadian Foodgrains Bank.

Out of the 33 Canadian Foodgrains Bank projects that covered approximately 3,500 acres in Saskatchewan in 2022, Moosomin Harvest of Hope was the largest growing project in the province.

Although the organization has about six core members, there are 40 to 50 volunteers who help with the growing project over the course of the year.

"We're getting more and more help and we have been donating to the local food banks as well as the Foodgrains Bank, so we can help here and overseas. Last year we gave $15,000 to the food bank here in Moosomin and $4,000 went to the Rocanville Food Bank," said Bateman.

"Usually it all went to the Foodgrains Bank before, but I think that's paying more dividends for more help coming locally, if we can keep some of the produce here.

"The nice part is the government matches it. We had record breaking profits last year with $20 a bushel canola and it ended up making over a couple hundred thousand dollars."

After hearing feedback from the community, Bateman said the not-for-profit organization decided to donate their proceeds to local food banks as well.

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VIRDEN COMMUNITY CHAMBER OF COMMERCE &
VIRDEN AGRICULTURAL SOCIETY PRESENTS:

RCMP MUSICAL RIDE

Tuesday, July 25, 2023

VIRDEN AG SOCIETY FAIRGROUNDS
GATES OPEN AT 5 PM
ENTERTAINMENT STARTS AT 5:30 PM
RIDE STARTS AT 7 PM

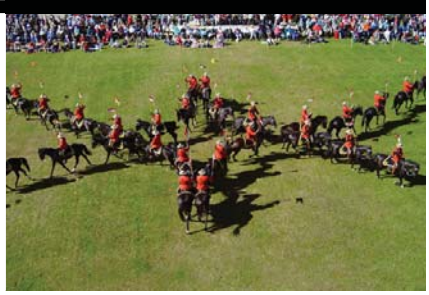
$15 TICKETS • 5 & UNDER FREE
TICKETS AVAILABLE AT THE GATE OR ONLINE

GET TICKETS ONLINE

FOR THE FIRST TIME SINCE 2016, WE ARE PLEASED TO BE HOSTING THE RCMP MUSICAL RIDE TO RECOGNIZE THE **150th ANNIVERSARY** OF THE ROYAL CANADIAN MOUNTED POLICE.

A SYMBOL OF TRADITION, HONOUR, AND PRIDE, THE MUSICAL RIDE IS A CANADIAN ICON RECOGNIZED AT HOME AND ABROAD. THE MUSICAL RIDE SUPPORTS FRONT-LINE POLICE OPERATIONS BY BUILDING POSITIVE RELATIONSHIPS, SUPPORTING RECRUITING EFFORTS AND PROMOTING THE RCMP'S IMAGE IN COMMUNITIES IN CANADA AND AROUND THE WORLD.

THE TROOP OF UP TO 32 RIDERS, WHO ARE ALL POLICE OFFICERS, AND THEIR HORSES' PERFORM INTRICATE FORMATIONS AND DRILLS SET TO MUSIC, LASTING ABOUT 30 MINUTES. THESE MOVEMENTS DEMAND THE UTMOST CONTROL, TIMING, AND CO-ORDINATION.



APAS pushes Senate to pass carbon tax exemption BillC-234 before summer

by Sierra D'Souza Butts
Local Journalism Initiative Reporter

In partnership with Keystone Agricultural Producers (KAP) and the Alberta Federation of Agriculture (AFA), Agricultural Producers Association of Saskatchewan (APAS) has requested the Senate of Canada to pass Bill C-234—a law which would provide carbon tax exemption to farmers for grain drying costs and heating, or cooling, of livestock barns and greenhouses—by June 30.

"We've advocated on behalf of this bill for quite some time and it's so close to coming to fruition. We would hate to see it get lost at this point," said Bill Prybylski, vice president of APAS.

The second reading of Bill C-234 was passed by the Senate in June 2023 and is currently sitting at its third reading, before the bill would officially come into effect.

APAS stated it is critical for the final stages of the bill to be completed before summer starts, as it would give farmers across Saskatchewan financial relief from rising costs before this year's fall harvest.

"If the bill is going to be passed in time and brought to bear before this harvest, we need the Senate to have it passed before they break for the summer," Prybylski said.

"We're looking at this fall. If this fall's harvest, where the grain is coming out tough, we're going to be needing that propane and natural gas for the fall and we would like to have this in place before then."

If the act to amend the Greenhouse Gas Pollution Pricing Act is passed, Prybylski said it can possibly save farmers from paying thousands of dollars in carbon taxes.

"(Monetarily) it depends how much gain a producer is having to dry, but it can be upwards of $10,000 for some producers that are having to dry a significant portion of their crop," he said.

"It's been estimated that—if we have to dry as much grain as we did in 2019—it could amount to roughly $10 million dollars for Saskatchewan producers, just in the carbon tax."

In addition to the carbon tax, Prybylski spoke about a few of the other expenses farmers have to pay for their production.

"The cost of the propane itself and natural gas is going to be very significant, and if it is a wet harvest, it's likely we'll be facing poorer quality grain so the value of the crop will be less and the cost to dry it is going to be more," he said.

APAS Vice-President Bill Prybylski

Prybylski explained why the bill is of great importance to farmers across Saskatchewan.

"Any producers that have to dry grain, the only options are using natural gas or propane, and the carbon tax on the natural gas and propane is getting to be quite a significant cost that comes off of farmers bottom line," said Prybylski.

"If we have a wet fall again like we had in 2019, that will be a very significant cost to producers, as well as livestock producers or those who have to use natural gas or propane to heat their barns will also be facing significant costs this fall and winter."

The federal carbon price already features an exemption for gasoline and light fuel oil costs used in tractors and trailers.

Prybylski was asked why exempting farmers from paying carbon tax on natural gas and propane is just as important as current exemptions.

"We look at it as a cost that we have to bare and we have no alternatives," he said.

"There is a lot of other costs that we have that perhaps a person could look at as an alternative, but when it comes to drying grain or heating barns we have really no alternative that we can fall back on so we're forced to pay the cost with no means of recovering those costs."

Although proposals for farmers moving to renewable energy has been brought up as an alternative—by Liberal MP Ryan Turnbull and Environmental Defence—farmers say that renewable energy would not be a feasible alternative at this time.

Prybylski was asked what APAS's thoughts are if the federal government were to increase accessing to financing for farmers, in order for them to work towards using renewable energy resources for grain drying costs and heating, or cooling, livestock barns and greenhouses.

"Certainly that's a good thing to work towards, but in the interim as of this fall, in September when it comes time to harvest our crops, those other alternatives aren't available to us," he said.

Deep Roots Foundation awards $12,000 in scholarships

The Deep Roots Scholarship Fund—of Hebert Grain Ventures—awarded six local high school students a scholarship of $2,000 each last Tuesday at the Hebert Group office in Moosomin.

The Deep Roots Foundation is powered by the Hebert Group and launched in January 2023. The Deep Roots Scholarship Fund awards scholarships to post-secondary bound grade 12 students pursuing studies in either agriculture or business.

Each year, scholarships in the amount of $2,000 will be offered at each of the five local high schools—Maryfield, Wawota, Whitewood, Moosomin and Redvers.

Students apply by submitting an application form via a website (www.deeprootsfoundation.com/scholarships) and providing a minimum 500-word essay on 'My involvement in the future of agriculture.'

This year, applications were reviewed by the Hebert Group team members and recipients were selected based on their community involvement, the essays they provided and those that best aligned with the Hebert Group core values.

This year Hebert Group was able to award six scholarships to Grade 12 students—three at McNaughton High School, one at Maryfield School, one at Whitewood School, and one at Wawota Parkland School. Since it was the first year offering the scholarship, Hebert Group says they consider it a huge success.

Scholarship recipients are as follows:

- Brynn Easton – McNaughton High School – Attending University of Saskatchewan – Animal Bioscience program
- Conor Fath – McNaughton High School – Attending University of Saskatchewan - Agronomy
- Wyatt Moffatt – McNaghton High School – Attending Lakeland College – Animal Science Technology – Beef Science program
- Walker Porter – Wawota Parkland School – Attending University of Saskatchewan - Agronomy
- Hunter Olson – Maryfield School – Attending Olds College - Agriculture Management Program
- Kenneth Bartlam – Whitewood School – Attending Sask Polytech - Agriculture Equipment Technician Program

"Agriculture is arguably the world's most important industry, and it is one that will see monumental change over the next decades," says Jeff Warkentine with Hebert Group. "By choosing a career in agriculture, these students are choosing a career that is meaningful, rewarding and innovative. Congratulations to all of the recipients on what we hope is a lifelong learning journey. We look forward to seeing them as industry leaders in the future."

From left to right are, Wyatt Moffatt, Brynn Easton, Walker Potter, Karen Hebert of Deep Roots Foundation, Conor Fath, Hunter Olson, and Kenneth Bartlan.

Life after seeding is complete

Three point some odd weeks later, it was all a done deal. Seeding that is. And a return from 'camping on the farm' to home life in town once again. And for me—no more cooking! Well sort of. At least no more cooking and hauling meals for the time being. Woo-hoo!

On the flip side, it also means no more campfires out behind the camper with the grands. Methinks though that harvest time will arrive soon enough and back to the farm we'll go.

The farm grands were prepping for a 4-H event their family was hosting back a couple of weeks ago so I offered to head out to the farm with my weed wacker and do a bit of trimming. The twins (12) told me the spots they thought needed doing but didn't suggest (this time) that I try to trim around their mini oats and wheat plot they have fenced off near the dog house. Last time they suggested I trim the outer area of their plot, I couldn't figure out how they got into the plot without taking some of their fence down and then I realized the 'V' in the tree was their entry point. They are either visually challenged or just extremely hopeful that I could actually fit (like their tall, skinny bodies can) through the 'V.'

In the midst of my weed whacking moments that particular day, the twins had taken a 'tour' via side-by-side to the old farm yards adjacent to the home quarter. Upon their return, I heard, "Grandma, Grandma, we just saw the biggest black bear ever!" This is not an unusual sight as the farm is near a creek but just the same, I couldn't help but get as excited as they were, though I hadn't yet seen the bear. "Let's go," I said as I jumped aboard their ride and they headed north. We didn't spot the bear that afternoon but several days later on a trek with hubby, we saw a couple of bear near the creek and I wouldn't doubt the big black one I saw was the same one as the twins saw that day. I never imagined that life on the prairies would include seeing bear and moose just like I did when I was a kid in the Ontario forests where I had once lived.

One evening we decided we would make a return overnight visit to our mini-home on the farm and we came prepared — strawberries and Toblerone to melt and enjoy around the campfire with the kids. One of the twins helped get the fire going but shortly thereafter disappeared. As hubby and I enjoyed berries and chocolate with the other two, we could hear the little tractor running.

"What is Reid doing?" I asked his brother. "It's nearly dark. Is he roto-tilling somewhere?"

"Nope," came the response. "He's cutting grass." And for the next hour or so, as the sun was definitely setting over the horizon, we could hear the tractor. Finally, at 10 p.m. we retired to the RV. The other kids went up to the house and then that one lone straggler walked into the camper looking for his share of the strawberries and chocolate. His work was done and he was ready for his share of the evening's yummies. I am pretty sure school somewhat interferes with this young fellow's desire to keep the grass cut and the weeds tilled under.

Now that we are entering 4–H and fishing/camping season, it's definitely feeling like the time for a break from the busy spring seeding time and no one is as ready as I am. (Well, more likely it's the men who need it most, though they never actually say so). With school out in the next few days and an end to ball games, I am pretty sure kids everywhere are anticipating nothing but fun-filled days and long, lazy summer evenings.

Our lake days are just a few days off but my bucket list had a mini-jaunt wish on it and when spraying was complete, we literally threw a few things in a suitcase and headed east. From the Saskatchewan plains, the two of us who virtually always go south or west headed east this time. There was this childlike excitement that filled me, especially when we hit eastern Manitoba's tree-surrounded highway. The anticipation was high, knowing I would soon be in Northwestern Ontario, the place I grew up in and to which I had not been for at least 30 years, best guess. There is something that happens when I hit the bush line—I feel like I am home at last.

Having lived on the prairies for 50-plus years now, it seems a little odd that the pull of 'home' had become so strong to me over the past several years, even though I knew 'my' house would no longer be on the Trans Canada Pipelines station where it once stood. Not even the school I attended in the 60's would be in existence as it burned to the ground after I moved away. Something in me though was calling me—and I literally dropped everything at home (including a town council meeting) to hit the road. My guy was a good sport throughout the journey east although he tended to ask, "Are we there yet?" a few too many times.

And yup, nothing was the same. I walked along the road where the eight houses on the pipeline station once stood and could just barely make out some of the driveways. The yards have totally been overtaken by forest. Finding the sidewalk amongst the trees brought me to tears. The only thing that remained the same was the hum of the engines in the distance, something that once lulled me to sleep every single night. A thousand memories overtook me and I was once again a pre-teen biking and walking along the pathways, getting together with friends next door, picnicking or blueberry picking at nearby waterfalls and berry patches. It was so emotional for me to be there though my better half was already yearning for open spaces.

And so as I trip down memory lane out here in Ontario as I write this, I realize this is no longer home for me for truly, home is a place where I am surrounded by family and friends and yes—the farm as well. It is as much a part of me now as the forests and rocks and lakes once were for me long ago here in northwest Ontario.

And so, to all our farmers and friends—may you keep building memories—especially with those of the next generation. Some day they will be recounting the days of their youth and all those warm, fuzzy things that made their days so special way back when.

Virtual mental health supports in Manitoba's rural, remote areas

The Manitoba government is investing $2.4 million annually in a newly enhanced program to improve access to mental health assessments and crisis supports in rural and remote areas, Mental Health and Community Wellness Minister Janice Morley-Lecomte announced June 15.

"Stress related to the Covid-19 pandemic has increased mental health issues across Manitoba and Canada, and Manitobans in rural communities and First Nations face distinct challenges in accessing the services they need, when and where they need them," said Morley-Lecomte. "We are investing in an innovative initiative that allows these individuals timely access to crisis stabilization and psychiatric care without leaving their communities and support networks, keeping them close to home as they seek wellness and recovery."

The new Rural Emergent Telepsychiatry and Integrated Virtual Ward Program combines two successful pilot projects—a virtual crisis stabilization unit (vCSU) and emergent telepsychiatry services (ETS)—that were launched in 2021 to provide provincially co-ordinated virtual mental health supports, the minister said. Virtual programs reduce barriers associated with facility-based services, including the need to travel, while providing individuals with care similar to what they would receive in person.

The integration of the two initiatives into the single expanded program will improve service delivery and efficiency, the minister noted, adding it will provide easier access to mental health services for adults in northern First Nations communities and rural health facilities while reducing waits and unnecessary patient transfers and admissions.

Like a facility-based crisis stabilization unit, the vCSU provides short-term, community-based, supportive care and treatment for individuals in psychiatric or psychosocial crisis and at risk of hospitalization. With ETS, real-time psychiatric assessments are conducted through secure videoconferencing, allowing individuals in remote communities to access this specialized care.

"Our virtual crisis services are breaking through the walls of our acute-care settings and expanding our reach into areas that are underserved, and directly to individuals in need within the security and comfort of their own communities and homes," said Dr. Jennifer Hensel, co-medical director, Rural Emergent Telepsychiatry and Integrated Virtual Ward Program, Shared Health.

As of May 31, the vCSU has admitted more than 1,000 people in crisis, leading to a reduction in unnecessary use of emergency and hospital services. ETS has received 549 calls for service, providing virtual care that prevented 246 unnecessary out-of-community medical transports and 138 hospital admissions.

Several volunteers came out last year with their combines to help with harvesting for Harvest of Hope.

Kids were enjoying time outside with their families on harvest day.

Borderland Co-op donated a tank of fuel to Harvest of Hope during their day of combining last year. **Left are,** Shawn Markwart of Borderland Co-op, Mark Bateman and Kyle Penner organizers of Harvest of Hope.

Harvest of Hope seeding a community effort

☞ *Continued from front*

"I was getting approached by people saying that others would be more willing to help if we donated locally as well as to the Foodgrains Bank," said Bateman.

"The Foodgrains Bank does great things too, this is their largest parcel in all of Western Canada. I just think it would go a long way if we keep some of it locally because I know we're going to get more help locally also, and there isn't just a need in other countries, there's a need here, too."

Bateman spoke about how supportive people from the community are during the growing season, and why he dedicates his time to the project.

"We get so much help," he said. "Pethick Farms always sends out combines from McAuley, and all of the machine dealers send their great big machines on harvest day..

"I volunteer because I've got the time to do it and it's very worthwhile.

"We have the ability to help, and so we should help, it's as simple as that."

Scientist to expand his reproductive health research to beef cattle

by Lana Haight

A University of Saskatchewan veterinarian is exploring how research into the reproductive health of dairy cows as well as emerging technologies can be applied to beef cattle.

"I think there are some clues on the dairy side that have been ignored on the beef side," said Dr. Dinesh Dadarwal (DVM, PhD, Diplomate ACT), an assistant professor in the Department of Large Animal Clinical Sciences at the Western College of Veterinary Medicine.

While Dadarwal is focused on cattle research, animal science wasn't always his passion. He remembers weighing his options between becoming a physician and a veterinarian. As a child being raised in Hisar, a city in India, he expected he would become a medical doctor, but spending every summer at his family's farm kept drawing him to the animal world.

"I still remember the first class I had in veterinary school. It was in anatomy. I thought, 'This is it! I'm not going anywhere,'" said Dadarwal enthusiastically in an interview.

"My interest just grew. There are so many species to work with. It keeps me on my toes."

Dadarwal's experience spans a wide range of animals. In India, his extended family continues to raise water buffalo, cows, camels, sheep and goats. Professionally, he has worked in a small animal clinic in India, caring for pets and stray animals, and he has conducted research on donkeys. He currently conducts research on dairy cows as well as beef cattle and sheep.

In 2007, Dadarwal started his PhD work at USask, focusing on cattle reproductive health. After he completed his PhD in 2012, he returned to India to teach before returning to USask as a resident. During his post-doctoral residency, he narrowed the focus of his work in theriogenology, a specialty of veterinary medicine concerned with animal reproduction. He continues his research into the post-partum uterine health of dairy and beef cows.

Dadarwal is committed to ensuring the health and wellbeing of all the animals that he studies with an eye to improving animal production and profitability.

Within the first week after a cow calves, it's normal for the animal's uterus to be enlarged, inflamed and infected with bacteria. Three things need to happen to prepare the animal for breeding again. Immediately after the birth, the uterus is about 10 kilograms. It needs to shrink to about one kilogram. The bacteria need to be cleared out and the lining of the uterus needs to be repaired.

Dr. Dinesh Dadarwal (DVM, PhD, Diplomate ACT) will participate in a study at the LFCE, looking at the use of "ag-tech" to track cows during the calving season. Lana Haight photo

Research has shown that between 20 and 50 per cent of dairy cows develop inflammation that continues into the fourth, fifth and sixth week after calving. The dairy cows with this sustained inflammation tend to have a lower conception rate in the next breeding season, says Dadarwal.

"It's one thing that the uterus is not healthy enough to support the next pregnancy but even if that animal gets pregnant somehow, it will lose that pregnancy."

Dadarwal wants to know if this is more common with dairy cattle than with beef cattle. Dairy cows are bred and raised for high milk production where beef cows are bred to raise a calf, usually while the pair is on pasture.

"Are we creating two different populations? Beef cows are not pushed metabolically. They are not diverting all their nutritional resources to milk production. Are they able to balance it out compared to dairy cows? Can we use that beef cow as a low-metabolic stress model to study uterine health? What happens if you put a beef cow into metabolic stress and how does that affect fertility?"

Dadarwal's multi-year study, funded by a Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant, will be conducted at the Livestock and Forage Centre of Excellence and at the Rayner Dairy Research and Teaching Facility. He will compare inflammation and fertility of mother-daughter pairs and unrelated older and younger cows in both beef and dairy herds. He will also be examining the bacteria itself.

Continued on Page C12 ☞

Home Design OF THE MONTH

Type: Bungalow
Sq. Ft.: 1,798
Walk-Out
Basement
Garage: 2 Car
Bedrooms: 3
Bathrooms: 2
House Width: 79'
House Depth: 53'

SOUTH PRAIRIE DESIGN | CABINETS | PROPERTIES

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WGRF Research Chair ensuring sustainability is profitable

How to create more resilient cropping systems

When Covid threw Dr. Maryse Bourgault a curveball, she found a new approach that reflects how she's tackling her new role as WGRF Research Chair in Integrated Agronomy at the University of Saskatchewan. "When I was hired in March 2020, I was fresh into the department and had a big puzzle to figure out with this new research position," says Bourgault.

She'd planned to start the seven-year position with farmers—talking about what integrated agronomy means to them. It was input she'd use to look at sustainability from a larger perspective, including the environmental, financial and social dimensions. But when travel and research work wasn't initially possible, Bourgault looked for other ways to start her work.

"Integrated agronomy is an interesting term," she says. "Sometimes it's easier to talk about systems because I want to look at approaches for integrating different crops that will improve resilience, sustainability and profitability for grain production in Western Canada."

Mark Halliday photo

Maryse Bourgault photo

Left: Dr. Maryse Bourgault adjusting the rate on custom-made deep fertilizer bander.

Above: Clover as cover crop in canola.

Winter cropping

Late in the summer of 2020, Bourgault was able to get started planting winter crops, the first of several field research projects. "We've had some success with winter camelina," she says. "We're planting it in the fall at four different seeding dates to try and figure out the best planting time. And we're also increasing plant density to see if this helps plants withstand some winter kill and still have a good stand in the spring."

The winter cropping program has expanded to include the testing of several varieties of winter peas and lentils. "We keep repeating the trials, trying different things to uncover what might work best," she says. "Winter camelina is looking interesting in a rotation with winter cereals."

Bourgault also wants to reintegrate livestock into cropping systems. She's incorporating annual and perennial forages to determine how intensely livestock can be part of this system. Cows are grazing on forages and are free to move around, while the grain plots are fenced off. She also wants to determine how much of a contribution livestock make to soil health by being part of this system versus just having a perennial plant system.

"This crop livestock reintegration study has been an interest of mine and percolating for a few years, so the extra time from the pandemic gave me more time to focus and frame the project," says Bourgault.

Intercropping options

There's growing demand for faba beans, a legume that fixes more nitrogen than any other. And when Bourgault looked at intercropping them with cereals, it became clearer what doesn't work.

Finding a fit for faba beans in an intercropping system hasn't panned out. "We found that oats are very competitive with water and the beans couldn't compete, even in years with normal precipitation levels. But faba beans and flax might work."

This study also investigated intercropping peas and canola, which is very productive. They found it was possible to use less nitrogen fertilizer and increase yields in both crops, compared to growing them separately.

Cover cropping

Working with researchers at the University of Manitoba and University of Alberta, Bourgault is getting insightful information from studying cover crops – an approach designed to provide erosion control and generally improve soil health. "People are often concerned that cover crops will use too much water at the expense of the cash crop," she says. "We aren't actually seeing competition from the cover crop, but we are finding that cover crops are having trouble getting established."

Part of the problem, Bourgault expects, is herbicide options. "We are looking at herbicides you could use without having too much impact on the cover crop, but that will also control weeds in the cash crop," she says.

She's also looking into perennial versus annual species options as cover crops that might need a year to get established before the benefits are seen, as well as getting cover crops growing in the fall in regions where there might be enough hospitable late season weather.

The on-farm factor

With just a few years of results in hand, Bourgault isn't giving on-farm recommendations about integrated agronomy. "I'm still at the point where I want to hear feedback from farmers about the approaches we're working on. I'm not the type of person to tell people what to do. I'd rather share our experiences and let farmers see what might fit, or not, on their farm."

While all the current research projects are taking place on university plots, Bourgault would like to form more relationships with farmers who might be interested in on-farm trials. She's joined the board of SaskSoil as one way to connect with people that share her passion for soil health and interest in trying things differently with crop production.

As her research continues, Bourgault plans to keep looking for opportunities to tap into grassroots ideas to fuel her research across commodities to gain a bigger picture view on sustainability and profitability.

Taking the stress out of growing corn

BY ERIN MATTHEWS

Researchers from the University of Saskatchewan (USask) are investigating how the first frost impacts corn varieties, in the hopes of finding new ways to maximize crop yields.

Global warming is bringing longer growing seasons, allowing producers to expand the types of crops they cultivate. While this can be a benefit, a longer growing season increases the risk of environmental stressors, like frost and cool overnight temperatures.

Researchers from USask are investigating how the first frost impacts corn varieties, in the hopes of finding new ways to maximize crop yields.

"With global climate change, we are realizing that you can push the corn belt northward, so we're wondering how we can enable the production of that crop by expanding the season," said Dr. Karen Tanino, professor of abiotic stress physiology in the College of Agriculture and Bioresources.

The team is interested in the cuticular layer of the plant, a defensive barrier that acts like the plant's skin. If the cuticular layer is more water repellent, it is full of waxy compounds that allow water to run off the plant.

"If water is not present, then the frost is not able to form, which means the plant can avoid that first fall frost," said Tanino.

With the help of the Mid-IR beamline at the Canadian Light Source (CLS) located at USask, Tanino and her colleagues found that the cool temperatures preceding the first frost influence the composition and quantity of the plant's cuticle layer, making it more susceptible to freezing temperatures. Their findings were recently published in Physiologia Plantarum.

"We're trying to help breeders develop and select plants that will be all-rounders, that can get through multiple stresses and survive, and more stably produce yield year after year," she said.

Tanino and her group have been long-time users of the CLS.

"We were one of the first plant groups to use the CLS nearly 15 years ago, and we are so lucky to have it here right on our campus."

Synchrotron beamlines enable Tanino to look deep inside a plant without destroying it, providing a level of detail not available using other techniques.

"We've used the CLS to take a non-destructive look at what is changing and where, and it provides us with our first insight."

Saskatchewan Agri-Food exports up 75 per cent in first quarter of 2023

Saskatchewan's agri-food exports are surging in 2023 to an estimated $6 billion in the first quarter of 2023, up 75 per cent from the same period in 2022. This increase solidifies Saskatchewan's position as a major player in global agricultural trade and demonstrates our commitment to meeting global food security.

Leading Saskatchewan exports continue to be canola oil, canola seed, non-durum wheat, durum and lentils.

"Increased export numbers demonstrate the strength and resilience of our agri-food sector," Agriculture Minister David Marit said. "Trade statistics like these reinforce Saskatchewan's sustainability story internationally, showing global investors that Saskatchewan producers are in an excellent position to feed the world today and in the future."

High agri-food prices, in some cases by as much as 100 per cent relative to 2021, and increased supply are fuelling the growth in export volume and value for the first three months in 2023. Crop production in Saskatchewan rebounded from the 2021 drought thereby doubling the volume of Saskatchewan exports for the first three months of 2023.

The export numbers build from a solid foundation in 2022 where Saskatchewan exported a record $18.5 billion in agri-food products. Saskatchewan's numbers demonstrate the sector is on its way to reaching the target of growing Saskatchewan's agri-food exports to $20 billion by 2030, as outlined in Saskatchewan's Growth Plan.

Saskatchewan remains committed to supporting the growth and development of the province's agri-food sector.

By investing in research and development, fostering partnerships around the world and promoting trade opportunities, Saskatchewan aims to further enhance its global market presence and reinforce its reputation as a reliable supplier of high-quality agricultural products.

Governments invest $18 million for diagnostic services for animals

Today, the Governments of Canada and Saskatchewan announced $18 million to support Prairie Diagnostic Services in Saskatchewan over the next five years under the Sustainable Canadian Agricultural Partnership (Sustainable CAP). This investment supports the organization and the work they provide in disease diagnosis, surveillance, research and supporting animal health and welfare.

"Understanding and containing disease outbreaks is key to safeguarding producers' animals and maintaining the international reputation of our agricultural industry," said Marie-Claude Bibeau, Minister of Agriculture and Agri-Food. "With their focus on prevention, health monitoring and surveillance, Prairie Diagnostic Services has an important role to play in our industry."

"Prairie Diagnostic Services plays a critical role in the sustainability of our agriculture industry," Saskatchewan Agriculture Minister David Marit said. "Their work is instrumental in protecting animals, ensuring the safety of the food supply and supporting the resiliency of Saskatchewan agriculture."

Prairie Diagnostic Services is a veterinary diagnostic laboratory located in Saskatchewan. It is a not-for-profit organization that provides comprehensive diagnostic services for animals, primarily focusing on livestock, poultry, wildlife and companion animals. They work in collaboration with governments and stakeholders to support animal health, disease surveillance and research in the province. Their collaborative approach supports the development of new diagnostic tools, vaccines and treatment strategies that strengthen the integrity of the collective management and response to animal health and welfare needs.

"The government's continued support for Prairie Diagnostic Services demonstrates its commitment to livestock health," Prairie Diagnostic Services CEO Yanyun Huang said. "The livestock sector plays a vital role in Saskatchewan's economy and the work we undertake at Prairie Diagnostic Services serves as a safeguard for the health of our livestock, thereby benefiting the economy of Saskatchewan."

Sustainable CAP will provide $3.6 million per year with a total of $18 million over five years to Prairie Diagnostic Services. This is a $400,000 increase from the funding provided under the Canadian Agricultural Partnership.

Sustainable CAP is a five-year, $3.5 billion investment by Canada's federal, provincial and territorial governments that supports Canada's agri-food and agri-products sectors. This includes $1 billion in federal programs and activities and a $2.5 billion commitment that is cost-shared 60 per cent federally and 40 per cent provincially/territorially for programs that are designed and delivered by provinces and territories.

Scientist to expand reproductive health research to beef cattle

☞ *Continued from Page C7*

"Bacteria involved in the inflammation in the dairy cows in the post-partum period are commensals that are in the uterine tract all the time. What are the conditions that made the bacteria decide to cause sustained inflammation?"

Dadarwal is hoping to develop a tool or a test that would help beef producers identify cows that have sustained inflammation so they can cull these animals from their herd. He also hopes to learn if mother-daughter pairs respond the same or differently after having a calf. Ultimately, beef producers want to raise healthy cows that produce healthy calves as that is their source of income. Dadarwal's research could result in the development of selection criteria, increasing the profitability of beef producers.

Producers need to consider their return on investment, whether it's selecting breeding animals or implementing emerging technologies as part of their management strategies. While companies develop and market artificial intelligence applications for the cow-calf industry, these applications often aren't validated by a third party.

"The key thing is the price. As long as the cost is not prohibitive for these capital inputs, if you have an algorithm that can identify cows that are lame or calving or having problems calving and have that send you a text message, that's a pretty good thing," said Dadarwal, who will be a collaborator on a smart-tech research project with Dr. Jaswant Singh (BVSc, PhD), a Western College of Veterinary Medicine professor.

Data will be collected three ways: video surveillance, ear tags with GPS tracking and tail sensors.

"We will try to compare visual observation with the camera system with the ear tag system and the tail sensors that are out there for the calving. Can they somehow 'talk' to each other? That would be the perfect scenario."

With experienced cow-calf workers in short supply, Dadarwal is hoping the research they are conducting will benefit the owners of cow-calf operations.

The two-year study, beginning in the spring of 2024 at the LFCE, will be funded by the Saskatchewan's Agriculture Development Fund.

Drone innovation by USask researcher comes from family farm roots

BY BROOKE KLEIBOER

Kaylie Krys is on a mission to bring accurate drone surveillance technology to the forefront of agriculture in Saskatchewan, starting right at home on her family farm and expanding into the province's vast agricultural landscape.

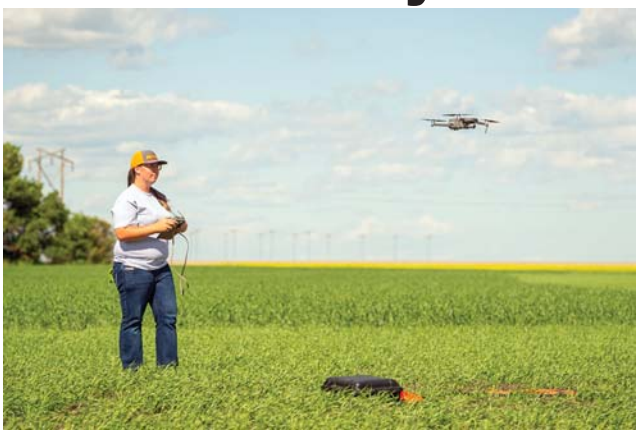
As a University of Saskatchewan (USask) College of Agriculture and Bioresources graduate student, her research is focused on investigating how unmanned aerial vehicles (UAVs)—more commonly known as drones—can help farmers count the number of early season canola seedlings in their fields to offer a more solid idea of crop yields and help determine next steps in the growing season.

"Crop emergence is important as the number of plants that emerge can affect the amount of yield harvested," said Krys. "Producers want these plant population counts so that they can make early season decisions, such as if reseeding is needed, based on the results."

Although drones have been used to take footage of crops from above for producers to look at, Kaylie's work takes drone imaging to a new level by implementing a computer model that allows emerging seedlings to be counted and reported back to the farmer.

"Through my post-secondary journey, I have grown a passion for sustainable agriculture," said Krys, who is pursuing a master's degree in Plant Sciences. "In my last summer of my undergraduate degree, I took an Agriculture Drone School by Landview Drones and absolutely loved it. I began looking into how I could apply UAVs on our own family farm and reading more about UAV use in the agriculture industry."

Krys's method works by using a drone to obtain images of a crop, and then uploading the images to a computer where a specialized model is trained to recognize canola seedlings. The computer program can provide a seedling count and a percentage of plant ground cover. This information is helpful to farmers as it provides an accurate method for keeping an eye on the growing season while being a relatively low labour-intensive activity.



USask graduate student Kaylie Krys flies a drone above a Saskatchewan crop.

Chris Hendrickson photo

USask graduate student Kaylie Krys.

"Many crop fields are 160 acres or larger, and current practices consist of walking across the field to manually count the plant populations," said Krys. "Not only do UAVs provide a remote and fast alternative, but the images and data can be stored for later use or reference if needed."

The computer model Krys is assisting in developing can currently count seedlings with 90 per cent accuracy. She notes that she and her research team have been working to increase the accuracy of the count by further training the computer model with additional images.

"To create the computer model that counts the canola plant seedlings, I am collaborating with Erik Andvaag, a graduate student from the USask Computer Science Department," said Krys. "I have learned a lot about computer sciences, machine learning, and computer coding from this amazing connection created through my project."

Collaborating with local producers has also been an integral part of Krys's work.

"I had the opportunity to cold-call and connect with five outstanding Saskatchewan canola producers who let me apply my research on their crop land," said Krys. "This research project helps to fill a gap in precision agriculture at the seedling stage of the crop, allowing for a more thorough understanding of the emergence uniformity and how that may affect grain yields."

Krys plans to present her work at the USask Soils and Crops Conference in March 2023, and at the European Conference on Precision Agriculture in July. Her research work has been supervised by College of Agriculture and Bioresources professor and plant science expert Dr. Steve Shirtliffe (PhD).

Krys's work has applications for many crops besides canola, and she has conducted the research with the goal of making sure local farmers are able to access and implement the technological solutions she is developing.

"What drives me forward is a passion for my family farm, and those like it, that have prompted me to learn more about agroecosystems, dig deeper into scalable precision agriculture practices, and strive to find the balance of providing for our land while it provides for us in a more sustainable way, so that we can continue to farm for generations to come," said Krys.

Funding support for the project has been provided by the Canola Council of Canada, the USask-based Global Institute for Food Security and Plant Phenotyping and Imaging Research Centre, Canada First Research Excellent Fund, and Case New Holland International.

USask's LFCE receives funding to build research capacity

Saskatchewan's minister of agriculture, the Honourable David Marit, announced funding on June 20 on behalf of the Governments of Canada and Saskatchewan of $6.6 million over five years for the University of Saskatchewan's (USask) Livestock and Forage Centre of Excellence (LFCE).

The investment demonstrates the federal and provincial governments' strong commitment to advancing the livestock and forage industries across Saskatchewan and beyond, said centre director Dr. Scott Wright (PhD).

"We are grateful to both levels of government for providing this critical funding," said Wright.

"It will enable us to do our part and further leverage this funding to grow capacity in these sectors through the dynamic and innovative integrated research, education, and outreach conducted at our centre by students and university faculty scientists. In addition, we are building a solid, science-based staff to enhance research, teaching, and industry engagement."

The LCFE provides resources including beef cattle, bison, annual and perennial grazing land, a 1,500-head feedlot, and laboratories that are used by agricultural, environmental, economics, veterinary, and other researchers. These researchers, in turn, support the advancement of innovation, education, and adoption of agriculture technology, practices and solutions as they focus on animal health and welfare, environmental sustainability, and producer profitability.

The world-class complex of field and science laboratories brings under one roof almost every facet of livestock production from forage development and grazing management to cattle reproduction, genomics and genetics, cow-calf management and feedlot health, growth, and productivity. In addition to beef cattle research and education, the LFCE is a centre for bison reproductive work, vaccine development, disease control, and nutrition.

"The aim of the centre is to support scientists as they seek to improve the livestock and forage industries in the Prairies, across Canada and around the world in being part of, and building on a strong network of partnerships," said Wright.

Marit announced the funding, under the Sustainable Canadian Agricultural Partnership (Sustainable CAP), at the LFCE's Summer Field Day presented by Canadian Western Agribition on June 20.

"The livestock sector plays a key role in the overall sustainability of Canada's agricultural industry," said the Honourable Marie-Claude Bibeau, Minister of Agriculture and Agri-Food in Canada. "Investments in research, and getting that research into the hands of producers, provide tools to help the sector become more resilient, address challenges, and seize opportunities to continue opening new markets."

"The provincial economic growth targets we've set for the end of this decade connect directly to our agriculture industry and to our livestock producers, who are already among the most sustainable in the world," said Marit. "This funding for the LFCE directly supports the kind of innovative work that helps our livestock sector not only stay globally competitive but remain a leader when it comes to best practices."

More than 200 producers, scientists, industry representatives, and government livestock and forage specialists attended the day-long field day that featured the centre's Pens, Plots and Paddocks tour during which a dozen USask scientists presented their respective research conducted at the centre. Topics ranged from manure management to selection of high efficiency heifers to the use of drones in agronomy. Another 11 graduate students presented their research during a scientific poster competition.

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