LETHBRIDGE COUNTY
Rural Living & Ag Extension

RURAL LIVING & AG EXTENSION

LETHBRIDGE COUNTY NEWSLETTER ★ FALL 2024

FARM FAMILY SPOTLIGHT: B & R BUCKMAN FARMS

Submitted by: Brian Buckman

Farming has always been and continues to be an entire "family affair" for Brian and Robin Buckman, the 2024 BMO Farm Family from Lethbridge County. "We're still a small, family-based farm, and that is a big highlight for me as more and more farms in the area have become big businesses," Brian reflects as he shares his pride for their operation. Brian and Robin have been lifelong residents of Lethbridge County and are proudly third generation farmers for both of their families. They are equally excited to see it continue to the fourth generation through their daughter, Holly.

Brian grew up on his family's farm in the Picture Butte Barrhill area and Robin on her family's farm in the Nobleford Keho Lake area. Brian helped his parents, Bill and Maria Buckman, farm for many years. However, Brian took the first step into starting his own farming operation in 1992, when he rented 160 acres of irrigated land from his parents while working fulltime in Lethbridge. In 1994, Brian and Robin married and purchased their first piece of land in the Bowville area. Three years later, they purchased Robin's family farm, moved into the house she had grown up in and made the switch to full-time farming. Robin's family farm was started by her Grandpa Frank Spencer in 1927 and handed down to her father, Buck Spencer in 1960.

B & R Buckman Farms operates 3,500 acres, which is comprised of their own land and rentals, where they run a continuous crop rotation of pulses, oil seeds and cereals that run a cycle every 4 years. As times have changed, so have their farming practices. They grow more diversified crops – incorporating crops like peas, lentils and canola into their crop mix. The crop rotations, as well as the chemical and weed management and how the land is worked, have been some of the biggest changes they have experienced over their farming career.

Family and community are key pillars in the Buckman's lives. While Brian is the main farm operator, Robin helps during harvest, by operating the combine, cooking meals for the workers, chasing for parts and helping out wherever needed. As soon as Holly was old enough, she started to help out during the busy season and did a variety of odd jobs. Even their hired man, Frank, has become part of the family. While Holly's "day job" is a Registered Veterinary Technologist in an animal hospital in Calgary, she continues to fulfill her farming roots. In 2021, she rented 145 acres from their farm neighbors and started farming her first crop. On weekends and days off, she returns to the farm to help and eventually hopes to return to the area and take on a bigger role.

The community spirit and generosity are some of the things the Buckmans appreciate most about where they live. "Our little district here is very community minded and we like to help each other," Robin & Brian share. "It's just being able to help somebody that needs help; and in turn they would do the same thing for us." As a result, it is second nature for Brain and Robin to give back. As conditions in the area have become drier, harvest fires can become more of a common occurrence. With their local volunteer fire department working so hard with limited resources, along with local farmers, the Buckmans join together in providing equipment to help combat these fires. Brian shares it even goes as far as just checking in via text messages during busy times to help maintain good mental health in their farming community.

They have also served in a variety of positions in various community organizations. Brian was involved in Picture Butte Fish & Game Association and the Nobleford Museum Society for many years. He also serves as the current president of the South Keho Water Co-op. Robin volunteered her time at the Noble Central School with fundraising efforts and driving for extra-curricular activities, and volunteered at the Lethbridge Regional Hospital, as well as has served on the Board of the Lethbridge Curling Club.

A notable achievement for the Buckmans was being nominated and recognized for the Outstanding Young Farmers Award within Alberta and Northwest Terrorities in 2005. They placed in the top four for their contributions to farming for those under 40 years old.

Brian, Robin and Holly are excited to see their family farm continue to flourish, as well as reflect on the past when they celebrate 100 years of farming on the Spencer land as third and fourth generation farmers in 2027.

LETHBRIDGE COUNTY

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WHAT'S *in this* ISSUE?

Why I wrote Practical Regeneration

Submitted by: Scott Gillespie, Plants Dig Soil

My takeaway from a soil health conference many years ago was frustration. As I sat there listening to presentation after presentation, it became clear that everyone seemed to be heading in the same direction. There did not seem to be any critical thought put into the changes farmers were being asked to make. Chief among those leading the charge were the celebrity farmers. It was not the academics, food companies, or government policy makers driving the conversation—it was these farmers who had made it big on social media, speaking as though they had it all figured out.

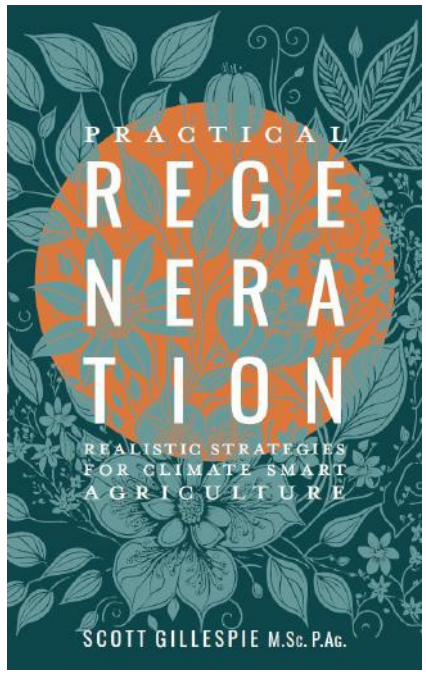
Their journey fit the classic narrative: struggle, resistance, breakthrough—but farming is more nuanced than this. These stories started with them farming the conventional way, but something was not working. They resisted change but were eventually forced to try something new. It was a struggle while they figured it out, but in the end, they had something transformational to bring back to the rest of us.

When I said everyone seemed to be going in the same direction, that was not entirely true. One person approached me afterward to say that what was being proposed would not work on her farm—or, at best, it might work, but not on the timelines suggested. The truth was, her farm would likely be bankrupt before the system could adapt to the new practices. I'm sure she wasn't the only one thinking this.

This hit home for me because it reinforced something that had been turning over in my mind: Even the healthiest soil struggles when the rains do not come. The celebrity farmers also have two things most farmers do not have: High priced speaking gigs and a direct market product. For the vast majority of producers that do not have a major city near them, and do not want to become marketers, there had to be another way of making it work.

At that time, my only creative outlet was my podcast. I preferred writing articles for my website, but I knew podcasts were the best way to get the information out in an easily accessible form. When you drive a lot, like most agronomists and farmers do, putting on a podcast is a great way to fill the time. My son was interested in podcasting at the time, and new software made it easy to produce. So, with his help, I dove in.

The idea for a book came after about a year of podcasting. I had been gathering so much information and insight that I felt I needed a more permanent way to share it. I spoke with a hybrid publisher,

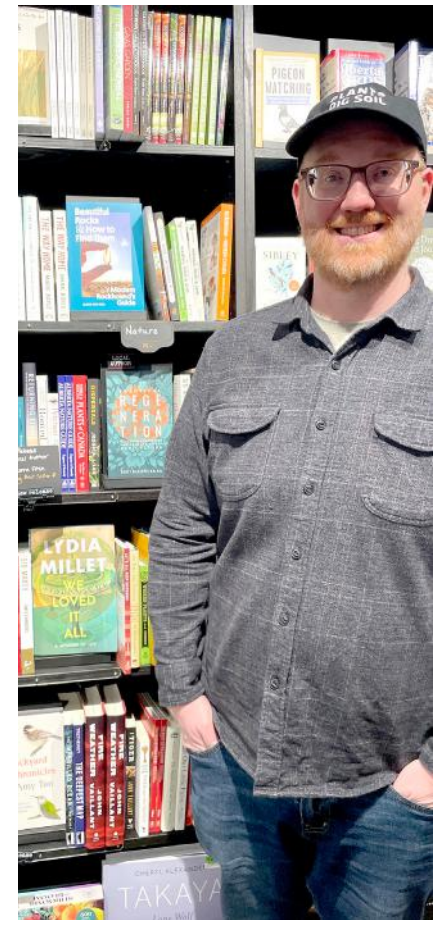


and their advice was simple: Write the book first, then come talk to us. After another year of podcasting and trying my hand at online course creation I realized I already had the beginnings of a book. I did not need to start from scratch. I organized my podcast scripts, presentation outlines, and lesson plans from the course, discovering that I had a skeleton of a manuscript that just needed fleshing out. Over the following year, I filled in the gaps and developed a rough draft.

I decided to go with FriesenPress, the same hybrid publisher I had spoken to originally. They are a Canadian company with a strong worldwide distribution network for both print and ebook formats. They are an offshoot of a Manitoba printing company that's been in business for over a hundred years. Their print-on-demand model appealed to me because it meant I would not need to keep large inventories of my book. Instead, they could print copies as needed, either in-house or through their partners worldwide.

The decision to go with a hybrid publisher was about control. Traditional publishing often requires you to give up the rights to your book, along with much of the creative decisions. Publishers set their own timelines and make decisions about marketing and distribution. With self-publishing, on the other hand, you retain all rights, but most of the work—getting your book distributed, marketed, and sold—falls on your shoulders.

FriesenPress offers a middle ground. They separate the publishing process from royalties. A traditional publisher takes a financial risk by covering production costs upfront, hoping to recoup those costs through sales. In exchange, the author earns royalties only after a certain number of copies are sold.

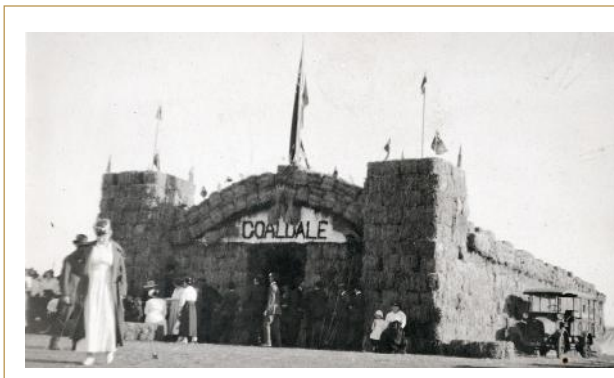


FriesenPress, by contrast, charges for services upfront and earns future revenue from printing the books. This means the majority of royalties go to the author. While bookstores, whether independent or chain, still take a portion of the cover price, that is fine with me—I cannot be everywhere selling it myself.

What mattered most to me was retaining the rights to my book. If I ever want to go to another publisher, I can. But the fact that FriesenPress provides high-quality service meant I was not locked in by contracts, only by choice. This approach fits well with how I prefer to do business. I do not believe in using proprietary software or processes to lock in clients. Instead, I offer solid advice and build trust, so people choose to come back because they want to, not because they have to.

It is always exciting to see Practical Regeneration in the wild. Still, I have discovered that personal connections are crucial to getting into bookstores. Shelf space is limited. With self-publishing, the number of titles that a bookstore owner could stock has increased exponentially.

If you have ever thought about writing and publishing a book, go for it! Feel free to reach out if you want to chat about the process. I love talking books just as about as much as I love talking about agriculture, and I am always happy to share what I have learned along the way.



Photo's courtesy of Galt Museum and Archives

Coaldale Fair, 1919

Submitted by: Belinda Crowson

In 1919, many local Alberta communities were forced to cancel their local fairs as a drought that year had impacted local crops. Coaldale, in the middle of the irrigation district, was one of the exceptions. Coaldale used its fair to promote the community, but it was also an opportunity to advocate for irrigation and to highlight what could be grown in an irrigated area. It was no coincidence that the Lethbridge Northern Irrigation District was started in 1919 as the need for irrigation was apparent across the area and dry land areas were looking to Coaldale, and other communities, to see what was possible.

As the 15 September 1919, Lethbridge Daily Herald noted about the Coaldale fair:

"Today the centre of irrigation is a hive of industry in preparation for the event. The alfalfa palace is all built and ready to receive the thousands of visitors who will pass through in the next couple of days. The livestock entries are all sleeked-up for the event, and the thousand and one exhibits showing what can be produced on irrigated land in a dry year are being put in place for the enjoyment of the visitors."

So, what was planned at the Fair?

- Parade – decorated automobiles and floats
- Livestock exhibits
- Baseball games
- Other games, including races, tug-of-war, novelty races, mule race, pony race, team-pulling contest

There were also numerous horticultural and agricultural displays. These were on display in a specially made temporary building – the alfalfa palace.

Alfalfa palaces were exactly as it sounds – a building constructed of hay bales. Alfalfa palaces were first built in the United States starting in the 1880s. The first in southern Alberta was constructed in Magrath in 1912 and was built for the International Dry Farming Congress. Lethbridge also had an alfalfa palace at the 1918 fair.

Coaldale, not to be outdone, had two in 1919 – the main alfalfa palace and a smaller one to be used as a dance pavilion, which had room for hundreds of dancers.

"Alfalfa Palace Bulging With Exhibits is Luring City People to Big Fair….

An immense exhibition building has been made entirely of bales of alfalfa. In it are housed the numerous domestic garden and field exhibits and it is crowded in the doors. In fact, the directors have been at their wits end to crowd all the exhibits into this immense building." (16 September 1919, *Lethbridge Daily Herald*)

The one photograph shows the Coaldale Alfalfa Palace of 1919, while the other photograph shares parade floats from the 1919 Coaldale Fair.

Greetings From the Alberta Lamb Producers (ALP)

ALP is the marketing commission for sheep and wool for the province of Alberta, and are a non-profit, producer led organization who support the advancement of a successful and sustainable industry. ALP has seven directors hailing from across the province, as well as an opportunity for a director in training. The head office is in the Alberta Agriculture building in Airdrie, Alberta.

The organization strives to provide education, advocacy and research to the industry and provide information to the consumer.

ALP maintains the website ablamb.ca for producers and stakeholders. If you are new to the sheep industry or want to learn more about raising quality market lambs, "Shepherding 101 – Getting Started" can help. This practical and easy to understand resource was created for people thinking about getting into sheep or expanding their flocks and serves as an excellent refresher for established producers as well. The module covers a variety of topics, including: an introduction to sheep, considerations to take when setting up facilities, feeding & nutrition, breeding & reproduction, flock health, marketing, and much more. If you are looking to dive deeper into detail, there are specific learning modules on Predation Management with a Focus on Coyotes, Marketing Your Lambs, An Introduction to Managed Grazing, Setting It Up: Sheep Infrastructure, The Busine$$ of Sheep, Flock Snapshot (Cost of Production Tool), and Sheep and Goat Management in Alberta with specific modules on nutrition, health and reproduction. Many other resources are available on the website to help you start, improve or expand your sheep farm!

If you are a consumer looking for recipes or where to buy Alberta lamb check out albertalamb.ca. Did you know Canadian lamb has 2x the iron and 6x the vitamin B12 of chicken? Learn how to cook lamb, get nutritional information, and watch cooking videos! A producer listing will help you find lamb to purchase in your area.

Regarding advocacy, ALP has been focusing on collaborating with industry partners to ensure appropriate veterinary products are available to our producers to ensure the best environment for raising sheep. Collaborating with fellow provincial organizations ensures the sheep industry in Canada will continue to grow and prosper.

As for research, ALP maintains an excellent relationship with our Alberta universities and colleges as well as private research firms to collaborate on projects such as the creation of a pregnancy detection device, parasite management, vaccine development, and the recent successful development and roll out of the Anesthetic Care-Ring™ Ligation Band. Recent projects ALP is collaborating on are the adaptation of the Anesthetic Care-Ring™ Ligation Band technology to prevent Fly Strikes, and the Unique Grazing Accreditation Course that will be available in 2025.

The ALP board is working on creating updated cost of production information for new producers. They are looking for established producers to join the AgriProfits Program through Alberta Forestry and Agriculture to enhance and add to the information currently accessible through the ALP website.

ALP's annual conference will be held on November 23, 2024 at the Pomeroy Inn & Suites in Olds this year. Topics include ALP's own ration balancing program SheepBytes, and industry experts will speak on topics such as the wool industry in Alberta, the development and efficacy of the Lido Band, Feeding Lambs: Early Growth vs. Finishing, the rollout of the Targeted Grazing Accreditation Program, a presentation from West Fine Meats Inc., Alberta's only Federally inspected lamb abattoir, as well as our keynote speaker, Kristen Ritson-Bennett of Blue Rock Nutrition. This day will be an excellent opportunity for networking with fellow producers, industry partners and your board of directors. A roast lamb lunch and coffee breaks will keep you nourished, and the trade fair will keep you up to date on the industry. Tickets will be available until November 10, 2024, and the event is open to the public.

TAKING ACTION *on verticillium stripe*

Submitted by: Breanna Miller, Canola Council of Canada

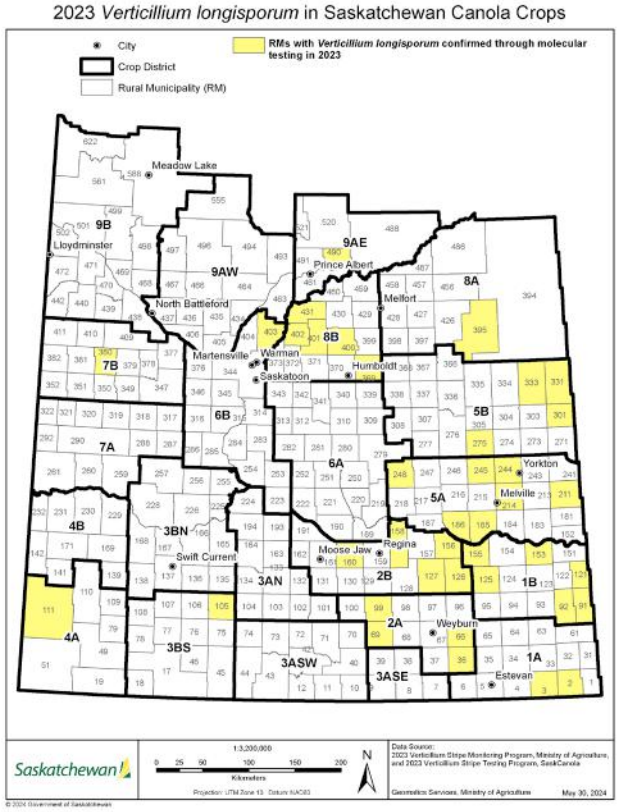
Researchers detected verticillium stripe, caused by the pathogen Verticillium longisporum, in canola in Manitoba in 2014. Since then, the disease has been found across the Prairies, causing yield loss and lodging in some fields.

Disease surveys from the three Prairie provinces indicate the verticillium stripe situation in each province.

Manitoba 2023

Surveyors participating in the Manitoba Agriculture and Agriculture and Agri-Food Canada Brandon survey assessed 129 canola crops in August 2023. Most of the fields were ripening, not yet swathed or combined, when surveyed.

2023 *Verticillium longisporum* in Saskatchewan Canola Crops



Disease prevalence is the percentage of fields surveyed that have infection in them. The average prevalence was 29 per cent for verticillium stripe. Incidence is the percentage of plants surveyed within a field that have disease symptoms. Average incidence in infected crops was 11 per cent.

Saskatchewan 2023

In 2023, the Saskatchewan Ministry of Agriculture surveyed 218 fields through the general canola disease survey and an additional 103 fields after harvest. Results confirmed verticillium stripe in 25 fields in 23 rural municipalities (RMs). SaskCanola also expanded its disease testing program last year to include verticillium stripe, which found the disease in an additional 16 RMs, bringing the total to 39. (See the map for RMs with known verticillium stripe.)

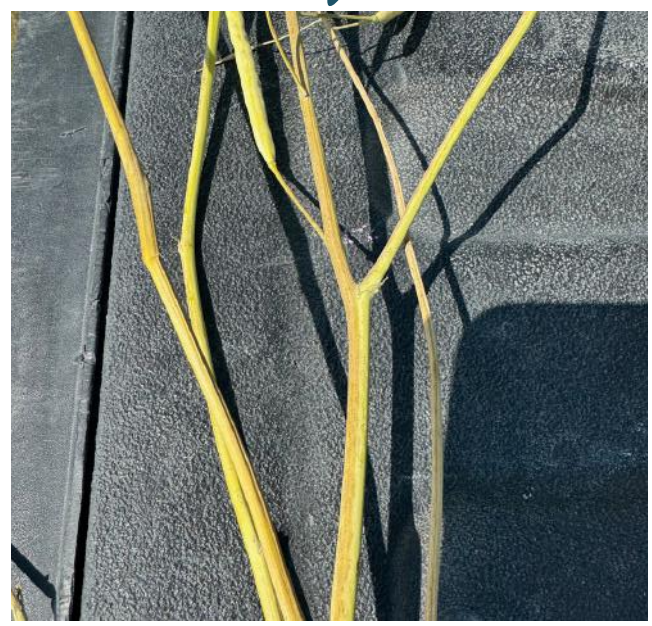
Map caption: Saskatchewan rural municipalities in yellow are confirmed to have verticillium stripe, based on 2023 surveys.

Alberta 2023

In Alberta, 356 fields were included in the 2023 disease survey, resulting in verticillium stripe prevalence at 18 per cent and incidence at just under one per cent. The complete plant disease situation from 2023 will be posted in the Canadian Plant Disease Survey once finalized.

What can growers and agronomists do?

- Verticillium microsclerotia are soil-borne. Steps to keep soil in place could provide some reduction in spread.
- Two- or three-year breaks between canola crops is a disease management best practice. This should help reduce verticillium severity, although verticillium microsclerotia can remain viable for many years.
- Scout effectively. If you suspect the disease, submit samples for testing. Watch the video "How to collect canola samples for verticillium stripe testing" at youtube.com/canolacouncil.
- Get involved. For more information on verticillium stripe testing and participating in disease surveys, check out the 'Preparing for 2024: Canola disease recap" blog at CanolaResearch.ca.



What's next?

In the long term, we hope genetic resistance or tolerance will provide the best solution for control. Canola breeders are actively working to develop this trait.

Research is also underway to help quantify yield loss from verticillium stripe across the Prairies. Four Canola Research Agronomic Program (CARP) projects are investigating the disease.

To learn more about verticillium stripe, check out the verticillium stripe chapter at CanolaEncyclopedia.ca, or the Canola Watch fundamentals article 'How to identify verticillium stripe' at CanolaWatch.org.

– Breanna Miller is an agronomy specialist with the Canola Council of Canada.




(Left to right) Brown-spotted Range Grasshopper, Dawson's Grasshopper, Purple-striped grasshopper and Turnbull's Grasshopper, or Thistle Grasshopper.

Crops, pastures, birds, and grasshoppers

Submitted by: Dan L. Johnson, University of Lethbridge

- GEOG2090 discussion of various writing and tech transfer

Everyone with rural experience knows that grasshoppers catch our attention and become problems for agriculture whenever drought and warm weather boosts their numbers and activity. In recent years, they even pour into cities and towns in some cases. A few warm years in a row can turn small numbers into widespread outbreaks. Most people also know that many kinds of grasshoppers are not pests. Some are even a bit beneficial, like one called Turnbull's Grasshopper in Canada, or Thistle Grasshopper in the USA, which eat weeds such as kochia, Russian thistle, and lamb's-quarters. In some unusual years, grasshopper pest species can overgraze range and pasture, but usually the impact of the more typical species is undetectable.

The diversity and positive value of the non-pest grasshoppers might come as a surprise. Of the 50 or so species that we could likely find during a long hike through pastures, roadsides, and rangeland with nets in July, only 3 or 4 species are pests. The rest are part of the grassland ecosystem, often eating small amounts of wild forbs or grasses, and a closer look indicates that they are more than just a neutral feature. In two years of field experiments in the 1990s, the Canadian Wildlife Service worked with Agriculture and Agri-food Canada in studies on southern Alberta grazing reserves to find out what songbirds, such as Chestnut-collared Longspurs, were feeding their young. It turned out that over 80% of the nestling diets consisted of pest and non-pest species of grasshoppers that parents captured, typically within 100 m of the nests. The diet is entirely non-pest species when the feeding occurs before the end of May. This means that birds can eat a lot of the pest species later, but earlier in the year they need the non-pest species to be available. Grasshoppers are also a key food source for game birds such as ring-necked pheasants and sharp-tailed grouse. A recent University of Lethbridge graduate, Sejer Meyhoff, found that sharp-tailed grouse in fescue grassland depend on a small flightless insect, Dawson's grasshopper, that is often unnoticed. Grasshoppers are not only abundant and easy to catch, but high in protein and essential fatty acids. Priya Mir and Brad Lindemann at the Lethbridge Research and Development Centre analyzed a range of grasshopper and katydid species from our studies and found high levels of essential fatty acids that may promote health, such as linolenic, palmitic, linoleic, myristic, and others.

These results have become even more interesting now that many birds are declining in numbers. A new major report on "The State of Canada's Birds" (https://naturecounts.ca/nc/socb-epoc/report/2024/en/) is a collaboration of Birds Canada and Environment and Climate Change Canada. They examined available bird counts and research data to find out how bird numbers are doing, from 1970 to now. They grouped birds into ten groups. Some are secure, but the greatest declines were in the Grassland Birds (such as songbirds) Aerial Insectivores (such as swallows and nighthawks). We do not know exactly why their populations have declined, and causes may vary, but the timing, quality, and availability of insects seems to be one important factor that is not well understood. If we lose the diversity of insects that some wild birds depend on, we might not only lose the birds but also lose a controlling force on pest insects when they suddenly increase in numbers and threaten agriculture. Coexistence is one of the foundations of sustainability of both agriculture and the environment.

On native and developed grassland throughout Alberta, a major portion of songbird diets are insects in the order Orthoptera (grasshoppers, crickets, and katydids), and these range and pasture insects are also frequent food for owls, hawks, grouse, amphibians, reptiles, and even mammals like coyotes. A new study (2024-2025) funded by Alberta Environment and Protected Areas is designed to find out about the food web in the protected areas, because some of the most abundant insects are the grasshoppers, primarily non-pest species, that inhabit heritage grazing land, parks, conservation areas, and native grassland. The team (Dan Johnson, entomologist, ecologist, Jason Cheng, GIS, Richard Hedley, Species at Risk Habitat Specialist, Barry Robinson, Grassland Bird Biologist, and Steven Van Wilgenburg, Boreal Ecologist, plus student research assistants Natalja Polzin, Lizzy Kaufmann, and Azlin Ferguson) are counting and identifying the various grasshopper species in about 20 protected areas, weighing thousands of the collected specimens according to age and type, and mapping the biomass of available bird food. The results will be compared to vegetation, weather, and proximity to agriculture. As it turns out, these protected areas are not generating pest species, but might be taking over the job of feeding wild birds, allowing better coexistence of agriculture and wildlife.

Other unexpected benefits seem to occur in some cases. For example, although birds kill many grasshoppers, parasitic flies are as great an enemy of pest and non-pest grasshoppers. Their maggots typically infest 1-10% of grasshoppers, killing them early when they burst out and pupate. The non-pest grasshoppers could be hosting and releasing the enemies of the pest species, which is another reason to control the harmful grasshoppers but leave the others alone.

One of the applied problems that needs to be solved is how to make it easier to tell the harmful and harmless apart during early stages, and make the identification tips available to crop and range managers, but also for wildlife researchers, and members of the public who are interested in nature, biodiversity, and sustainability. Another problem is recognizing and documenting the big differences in the grasshoppers of different regions (biogeography). The Canadian Agricultural Partnership funded a University of Lethbridge study of northern (Peace and Athabasca) grasshoppers, some of which have caused extensive damage when they appear suddenly due to special forecasting difficulties. The project focused on species, surveying, genetics, and life cycles. After identifying over 12,000 grasshoppers collected by the Association of Alberta Agriculture Fieldmen, we found that the dominant species were very different from those in southern crops and grassland, with the top 70% almost absent from the south, and many southern species are absent from the north. Understanding ecosystems and their components requires studies of the local situation, and benefits from observations by an informed public.

Dan Johnson is a professor at the University of Lethbridge, previous president of the Entomological Society of Canada and the Entomological Society of Alberta, member of the Global Locust Initiative, entomologist, and grassland ecologist.

Did you know?

Submitted by: Gary Secrist, Manager, Utilities and Agriculture Services Lethbridge County

The Lethbridge County Agriculture Services Department is responsible for administering Provincial Legislation, which includes the Agricultural Pest Act. The Pest Act is enabling Legislation that provides the County with the legal authority to manage native and introduced pests that can affect agricultural production. The related Pest and Nuisance Control Regulation is where you will find listed species that are a concern across the province. To support this Legislation, Agriculture Services staff carry out pest surveys that include:

- Clubroot/Blackleg in Caola
- Bacterial Ring Rot in Potatoes
- Bertha Army Worm/Canola
- Wheat Head Survey for a variety of diseases
- Grasshopper

Of particular concern over the past few years has been grasshoppers. With this survey, staff sweep for grasshopper numbers in every township in the County in early August. The adult grasshopper counts give Alberta Agriculture staff an indication of the individuals capable of reproduction and egg laying. With this data, they can project where grasshoppers could be a problem the following year. However, environmental factors can result in a higher or lower actual population than forecast. In Southern Alberta, grasshopper numbers have been increasing since 2021 as warm temperatures in late summer and early fall the last few years have led to ideal conditions for laying eggs.

For further information on Grasshoppers and potential risks for 2025, please go to the following Alberta Government website: https://www.alberta.ca/grasshopper-forecast

Diamond City Swing

Playground Upgrades

This year, Lethbridge County completed updates to playground equipment in Monarch and Diamond City, focusing on the old swing structures. Both sets of swings had reached the end of their lifespan due to natural wear and tear, prompting the need for replacement. In Diamond City, mud buildup in the gravel beneath the swings further contributed to the decision to upgrade. These improvements greatly benefit the communities by providing safe and enjoyable play spaces for children and families.

Monarch Swingset

FARMERS CARE comes full circle

AgSafe Alberta looks back on how far we've come – and the work that remains – to foster a culture of farm safety in the province

Submitted by: Jody Wacowich, Executive Director, AgSafe Alberta

Recently, we launched the fourth and final level in our FARMERS CARE program.

FARMERS CARE is our multi-stage, introductory safety program, with new strategies and resources shared at each level as users advance and expand their safety knowledge. This launch was the culmination of a journey that began three years ago, when we realized a new approach was needed to encourage a culture of farm safety across the province.

This realization led us to determine the most common causes of farm injuries and deaths on Alberta farms, as well as strategies to prevent them. Soon thereafter, FARMERS CARE was born.

FARMERS CARE is a simple and effective tool to help make Alberta farms and ranches safer places to live, work and grow up. Each level of the program is interactive, easy to navigate and fast to complete, and those who graduate from the program come away better equipped to mitigate risks and prevent serious incidents. FARMERS CARE was designed as an introduction to safety culture for Alberta farms and ranches of all sizes, with no previous safety knowledge or experience required.

Level 1 is the first step for farmers and ranchers beginning their safety journey, introducing them to the common hazards and mechanisms of injury found on farms and ranches, so they can take steps to minimize those risks. Level 2 takes these basic farm safety practices to the next level, introducing the topics of training, orientation and communication. These topics are just as critical to managing the hazards and risks on a family farm as they are on a farm with employees.

Moving into the back half of the program, Level 3 outlines basic inspections that will benefit a farm of any size and type, as well as how to conduct an inspection, fix issues found during an inspection and communicate inspection results to the farm team. Finally, Level 4 introduces emergency action plans and important considerations that will help keep people on farms safe during an emergency. It also covers practical measures related to emergency prevention, preparedness, management and recovery.

Everyone who completes a level of FARMERS CARE receives a personalized certificate to recognize their achievement. They also retain access to all the program materials and can review them whenever they need to jog their memory. Additionally, those who complete all four levels of the program can order a FARMERS CARE sign to proudly display their commitment to health and safety on their operation.

Since the creation of the program, awareness of and engagement with FARMERS CARE has continued to grow. To date, more than 300 farmers and ranchers have enrolled in FARMERS CARE and more than 200 have completed at least one level of the program.

This represents great progress towards the goal we set out to achieve when we created FARMERS CARE, but our work is far from complete. We recognize that unexpected things can happen to even the most experienced farmers, regardless of their level of safety knowledge and preparedness. However, many farm safety incidents that result in injury or death are preventable, so there is still work we must do as an industry to ensure those incidents are few and far between.

Most of us know of someone who has died on a farm, and even more know someone who has been injured or left permanently disabled. Some of us have had our own close calls as well and wondered what would have happened if things had gone a little bit differently. But we shouldn't have to wait for something to happen before trying to improve safety on our farms and ranches.

FARMERS CARE can help prevent these tragedies. Now, with the complete program available on demand, there's no time like the present to commit to making farm safety a priority – for your family, for your employees and for yourself.

Visit agsafeab.ca today to learn more about FARMERS CARE and enrol in the program.

County Winter Tree Cutting Operations

Crews will begin tree cutting along County roadways beginning in November.
For everyone's safety, please be courteous, slow down, and give them plenty of space to work.
Thank you for your cooperation!

Coaldale Collection Site to Close

as Transition to Retail Sites Concludes

The Coaldale transfer station will stop accepting empty pesticide and fertilizer containers under 23L as of January 1, 2025. The new year marks the end of a program change that began in 2021, shifting the collection of small crop input containers from municipal depots to agricultural retail locations.

Triple rinsed containers under 23L being prepared for drop off at a collection site.

Farmers are encouraged to call their local ag retailers to find out if they are accepting crop input containers for recycling as part of Cleanfarms' collection program.

Since its inception in 1989, the program has allowed farmers to safely recycle triple-rinsed containers at designated collection sites. The transition to the new retail collection model was put in place to improve convenience and consistency for both farmers and Cleanfarms' partners.

The Coaldale transfer station is the last remaining municipal site accepting small containers in the county and is among the few still operating in Alberta. As the transition wraps up at the end of 2024, only a handful of remote municipal depots across the province will continue to accept containers, but none in Lethbridge County.

While many materials are already being collected at retail locations, including seed, pesticide and inoculant bags and large non-deposit totes and drums, rolled grain bags and bagged twine will still be accepted for recycling at the Iron Springs transfer site. The county offers a grain bag roller to use free of charge – contact (403) 328-5525 and ask for the Ag Department. To recycle used silage plastic or bale wrap in Lethbridge County, contact DBS Environmental in Lethbridge at (403) 328-4833; on-farm pick-up of these materials is available under certain conditions and for a nominal fee.

(Left top) Fire Discussion, (Right top) Beaver Prevention, and (Above) Drone Demo

Join the Oldman Watershed Group Today

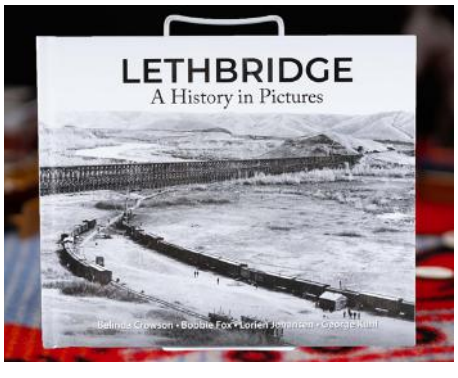
The Oldman River Watershed Group is an informal collection of landowners from along the Oldman River who meet periodically to discuss issues of common interest and receive information on watershed-related topics. Past presentations have focused on bio-controls for leafy spurge, co-existing with beavers, off-site watering, native plant restoration, prescribed burns for grassland health, dugout treatment techniques, drone applications in agriculture, bats and grant funding opportunities.

Founded in 2016 through the efforts of Lethbridge County's rural extension specialist, the Oldman River Watershed Group continues to receive support from the County — including access for its members to flea beetles for the control of leafy spurge. It also benefits from affiliations with organizations like Cows and Fish, Oldman Watershed Council, Alberta Invasive Species Council, MULTISAR (Multiple Species At Risk), Oldman Watershed Council and Alberta Agriculture and Irrigation.

Anyone who owns or has an interest in riparian lands is welcome to join the Oldman River Watershed Group. If you would like to receive notification of its activities, please send your name and email address to Harley Richards at tharleyrichards@gmail.com.

County Wordsearch: *Soil Edition*

Can you find all the hidden words? Send a picture of the completed wordsearch to mwells@lethcounty.ca or text to 403-634-0147 to be entered for a chance to win an amazing book, written by the one and only Belinda Crowson! Completed wordsearches can be submitted until December 4th. Good luck!



Nutrients
Porosity
Degradation
Aggregates

Loam
Salinity
Microbes
Clay

Organic
Fertility
Infiltration
Compaction

Aeration
Erosion
Sand
Alkalinity

W	B	G	Z	I	F	W	Z	C	P	U	R	T	B	G	Y	S	N	L	E	E	H	T
U	G	V	E	B	X	O	D	F	D	M	I	C	R	O	B	E	S	M	N	G	A	V
T	E	Q	O	C	H	H	R	U	C	B	D	X	W	K	G	T	P	W	M	I	D	N
B	R	P	O	R	O	S	I	T	Y	V	R	G	A	F	Q	A	V	T	M	X	L	O
M	H	B	W	R	V	U	W	W	M	T	U	U	L	F	N	G	Y	W	K	A	K	I
N	C	F	Z	X	X	D	S	X	U	U	N	Q	K	H	Z	E	B	V	A	H	I	S
V	M	A	N	H	E	E	L	J	S	R	I	S	A	H	B	R	U	M	Z	O	N	O
C	L	K	M	T	M	D	N	A	S	B	J	U	L	A	A	G	X	M	R	E	G	R
T	L	Z	Q	W	R	X	S	E	Z	V	F	Z	I	A	T	G	P	D	W	S	I	E
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- Local Spotlight -

Want to Promote Your Agriculture Business?

If you're a small business producing goods from agriculture or the environment and want to showcase your offerings, we'd love to feature you in an upcoming newsletter! For inquiries, please contact Matthew Wells at mwells@lethcounty.ca or call 403-634-0147.

Next year, it will be 15 years since we started a new venture as a family. For many years, Gerrit & Jeanette Van de Bruinhorst have already sold eggs to local customers. A constant refrain was, "When are you also going to sell meat?" 2010 was the year. Together, with the help of many of our children, we started raising broilers, turkeys, beef, lamb, and, of course, eggs. As the years continued, some of our children married, and others moved away.

Things also changed here on the farm, as there were fewer hands to help. Now, we raise grass-fed, grass–finished beef and our delicious eggs.

One of the principles that we feel very strongly about on our farm is that we raise everything as naturally as possible. That includes how we raise our crops. Everything starts with your soil. Healthy soil gives healthy crops and, as a result, healthy animals. We provide natural nutrients, not chemical nutrients, to our soil, and if necessary, we will spray nutrients on the crops if they are deficient in certain nutrients. When crops are healthy, insects will go somewhere else. There are times when you can't prevent everything. Some of our land is close to dry land, and in 2023, we were getting an infestation of grasshoppers. We sprayed our crops with sugar water because grasshoppers can not digest sugar. As a result, the grasshoppers did not survive, and we did not have to spray with insecticides. We have also done this when we have aphids in our alfalfa.

Another principle we strongly believe in is raising our animals as naturally as possible. As many of our customers know, my husband's parents started a dairy farm when they immigrated to Canada from the Netherlands in 1975. They had the customary Holstein milk cows. As the years went by, my husband became more and more frustrated with the many health issues that his cows had. In 2010, after much research, we decided to change to a different breed of dairy cow. We started transitioning to Fleckvieh dairy cows. These are the red/white cows that you see in the picture. This is originally a breed that has come from Europe, but it is now also in Canada. They are a much more robust dairy cow with a beef build. This fits in very well with our plans. A healthier milk cow, plus then the steers could be raised for beef. We do not give our animals hormone implants, and because they are so healthy, it is not common to give them antibiotics, either. In the summer, our beef graze on our pasture, and in the winter, we feed them hay and silage (fermented crops).

Our chickens are free-range and fed non-GMO grains. We used to feed them organic grains, but when feed became astronomically expensive then we made the very difficult decision to at least feed the GMO grains organic, but the rest of the grain is conventional. We also feed our chickens greens and alfalfa. Our eggs have dark yellowy-orange yolks, which gives them so much flavor that our customers absolutely love them!

We are so thankful that the Lord has helped us be able to provide healthy food to so many families. It is so rewarding to be able to interact with all the families over the years that have ordered our products, and we hope to be able to continue doing this going forward as the next generation becomes more involved on the farm.

Winner's Circle

Congratulations to our latest winner for participating in our last wordsearch!

Are you looking to be the next winner? Be sure to complete this edition's wordsearch puzzle for a chance to win a book, written by the one and only Belinda Crowson!

Lethbridge Polytechnic welcomes students to Cultivating Roots

On October 2 and 3, the Southern Alberta Collegiate Institute (SACI) welcomed 330 junior high school students for the E3 – Explore, Engage, Experience program. This dynamic initiative, a collaboration between Lethbridge Polytechnic and seven school divisions in Southern Alberta, offers students hands-on experiences that highlight various agricultural careers and essential skills for future success.

Students participated in engaging activities, including visits to the Ag for Life mobile unit, tours of aquaculture and greenhouse facilities, and interactive labs focused on soil texture and seed development. Additionally, students had the opportunity to learn about Indigenous uses for plants in Southern Alberta, enriching their understanding of local agricultural practices and cultural heritage. The program emphasizes experiential learning, giving students a valuable glimpse into the agricultural industry.

Participating school divisions included Westwinds, Horizon, Palliser, Grasslands, Holy Spirit, Lethbridge, and Livingstone, with students from Willow Creek, GS Lakie, Noble Central, Tilly, Rolling Hills, Alcoma, Vauxhall, John Davidson, DA Ferguson, Stirling and Erle Rivers schools in attendance.

Students were able to visit the Ag for Life trailer which was on campus for both days. Ag for Life is a charitable organization dedicated to sparking curiosity, understanding, and excitement about agriculture and food. Through interactive learning, real-world experiences, and storytelling, they strive to bring agriculture literacy to life. It was eye opening for the students to see the breadth and depth of agriculture in Alberta.

A visit to the Aquaculture Centre of Excellence also showcased the symbiotic relationship between fish and plants and the necessity of thinking sustainable. Bioreactors and greenhouse research exposed students to a variety of sciences involved in agriculture.

Looking ahead, the next E3 event is "Harvesting Ambitions," a Women in Agriculture Day on November 21. This dynamic career exploration event aims to inspire and educate young women about opportunities in agriculture through practical, hands-on experiences. For those interested in getting involved, please contact Lori at lori.adamson@lethpolytech.ca.

E3 also offers workshops in Trades and Health Care, providing students in grades 7-9 with project-based learning, career exploration and networking opportunities with career experts.

For more information about SACI and upcoming events, please contact info@southernalbertacollegiateinstitute.ca.

University of Lethbridge

ULETHBRIDGE STUDENT DISCOVERS AN EMERGING PARASITE

A significant find by a University of Lethbridge graduate student has led to a key paper in the International Journal for Parasitology: Parasites and Wildlife, as well as a touching tribute to one of the most respected aquatic biologists in North America.

As an undergraduate student, Molly Tilley found large, white, disfiguring lesions surrounding the eyes of fathead minnows in the University Pond. Her observation kicked off a long process of discovery that uncovered what she and supervisor Dr. Cam Goater refer to as an "emerging parasite" that can disrupt the aquatic food chain. The new parasite infects fathead minnows, a species that plays a significant role in the food webs of prairie ponds and lakes.

The new parasite is known as a myxozoan. One member of this group of parasites has become infamous in recent years, especially in Alberta, for causing whirling disease in trout. This disease is spreading rapidly in western North America, posing a major challenge for fisheries management and conservation.

"The problem is that fatheads tend to occur in the middle of our aquatic food chains," says Goater. "Pike eat them, trout eat them and all sorts of fish-eating birds like herons and pelicans eat them. Our worry is that infection rates are often so high in juvenile minnows that they are unlikely to survive through the winter to reproduce the following spring. You're really upsetting the ecosystem by losing a key part of the food chain."

Given its prominence as a new species and being identified in southern Alberta waters, Tilley and Goater felt it was fitting for the parasite to be named after retired ULethbridge professor Dr. Joe Rasmussen — Myxobolus rasmusseni.

"Joe and I had been close friends and colleagues for many years," says Goater. "His stature within Canadian science circles is legendary — I can't think of an award in his field that he hasn't won. Naming this parasite after him was another way to honour his range of contributions. To me, he is the top aquatic biologist in the country, maybe North America, and nobody is more deserving of a recognition of this type."

Rasmussen, who spent 16 highly productive years at ULethbridge, says one of the most significant honours a biologist can experience is to have a new species named after them.

"The naming of species is an integral component of the communication of information about nature, and the stability of our system for describing and naming new organisms is a cherished aspect of our science," he says. "To have your name attached to a new species is, therefore, one of the finest forms of immortality that can be conferred, and to be recognized in such a distinguished manner by my colleague Dr. Goater and his student, Molly Tilley, is gratifying beyond words."

"Indeed, my involvement with Dr. Goater as a friend and colleague has been a major highlight in my career at the University of Lethbridge."

Tilley recently completed her master's thesis on the discovery of M. rasmusseni. She says that she is now authoring another paper on its effect on individual minnow behaviour and survival.

"The results suggest that not only does infection with M. rasmusseni ultimately cause the death of the host, but we also found that infection reduces the physiological performance of individual fish which in turn impacts their functional role in the ecosystem," she says. "This work will provide a solid foundation for future research which could ultimately inform management strategies."

PUBlic Professor SERIES

Learn more about the exciting research taking place at ULethbridge. Everyone is welcome to our free community lectures.

go.uleth.ca/public-professor

Molly Tilley (BSc '18, MSc '22) & Dr. Cam Goater

ALBERTA LANDOWNER PROGRAMS

When landowners and Ducks Unlimited Canada (DUC) work together, it's a win-win. There are several DUC landowner programs available that can become an integral part of your long-term land management plan that can help achieve your sustainability and conservation goals.

DUC Forage Program
DUC assists producers in reducing input costs associated with the conversion of cultivated lands into perennial forage. On eligible lands, DUC pays $65 per acre, with an additional rebate of $100 per 50lb bag on all seed purchases through Nutrien dealerships. Forage crops do more than offer sustainable haying and grazing options for livestock. They also provide critical vegetative cover that serves as nesting habitat for waterfowl and other wildlife.

Wetland Restoration Lease Program
DUC provides financial compensation to landowners for the restoration of previously drained wetlands. Restored wetlands remain under the landowner's management through a ten- year lease agreement. These wetlands can be used for haying or grazing and are safeguarded against drainage or other alterations during the lease term. DUC's lease is based on fair market value and provides substantial compensation for landowners. Restored wetlands are not only crucial wildlife habitats but are proven to mitigate the impacts of droughts and floods during extreme weather events. They enhance water quality, recharge local aquifers and provide producers with a dependable source of forage and stock water.

Revolving Land Conservation Program (RLCP)
DUC acquires land parcels, restores their wetlands and grass- lands, and resells them with a Conservation Easement (CE) on title. Proceeds from land sales are reinvested into DUC programs to support ongoing conservation efforts. The RLCP offers cost-effective opportunities for new and expanding cattle operations.

Winter Cereals
DUC partners with Alberta growers to increase their profitability and yield potential by offering incentives to grow fall rye, triticale or winter wheat. Eligible producers can access $20/acre and agronomic support by participating in the Alberta Winter Cereals Incentive Program. Eligibility is based on location and a cap of 250 acres per operation.

Conservation Easement (CE) Program
DUC perpetually helps preserve the natural integrity and features of a property through this program, while ensuring landowners can continue to pursue their business on the land. CEs place restrictions on the type and extent of development that can occur, while landowners retain the management rights, including permitted activities such as haying and grazing. Eligible lands can qualify for financial compensation, which is based on fair market value.

Rangeland Improvement Program
DUC enrolls native or tame pasturelands associated with wetland habitat. The overall goal of the program is to ensure these habitats remain intact, while rewarding landowners for their stewardship of the land. DUC provides compensation for eligible lands, with no limitations on how the funds can be used. This ten-year term agreement will protect the land from habitat loss, with no management restrictions or caveats on the land title.

Marginal Areas Program (MAP)
DUC offers a financial solution to unproductive land in annual cropped fields through perennial forages. MAP can be an answer to salinity, hard to access parcels and other recurring hurdles. Program participants manage forage areas at their discretion, to suit their operational needs. Eligible cooperators can receive a cash incentive of $150 per restored acre and the option to select pollinator friendly species from a pollinator power pack. Eligibility is based on location and a cap of 40 acres per quar-ter section.

1-866-479-3825

du_edmonton@ducks.ca

Ducks Unlimited Canada-Alberta

Learn more at ag.ducks.ca

SEPTEMBER 2024

Funding Opportunities for Alberta Farmers

Sustainable Canadian Agricultural Partnership

Eligible Applicants
- Primary producer responsible for the day-to-day management of an agricultural operation (crop, bee, or livestock) that produces at least $25,000 worth of farm commodities annually.
- Indigenous applicants (First Nation, Métis Nation, Inuit).
- Groups such as Grazing Reserve Associations and Community Pastures (Pertains to ***Resilient Agricultural Landscape Program***).
- Owns an irrigated agricultural operation in Alberta (Pertains to ***On-Farm Irrigation Stream***).
- Is liable to pay Alberta income tax or corporate tax (or claim losses) on income from production of farm commodities under the Income Tax Act (Canada) or the Alberta Corporate Tax Act (Pertains to ***On-Farm Water Supply Stream***). and
- Has current Environmental Farm Plan (EFP) certificate or letter of completion, or will obtain and submit one with their final report (Pertains to ***On-Farm Efficiency, and Resilient Agricultural Landscape Program***).

SCAP Funding April 1, 2023 - March 31, 2028

On-Farm Efficiency Program – **Currently accepting applications**

The program aims to support the adoption of innovative technology that optimizes farm efficiency, minimizes agricultural waste, advances the digitization of an operation, and/or gathers information that will help the producer knowledgably enhance their operation. New technologies that are progressive, commercially available, and that have been successful in Alberta are most likely to be successful applications.

Funding List
- Supported activities fall under four streams:

❖ **Smart Farm technology** ❖ **Farm security** ❖ **Energy Efficiency** ❖ **Efficient Grain Handling**

Funding
- Grants will be funded at a cost-share rate of 50% and paid in one lump sum reimbursement after item(s) are determined to be eligible and approved.
- Funding maximum per Applicant is $150,000 over the duration of the Program (2024-2028). Funding minimum per applicant is $500.
- The maximum funding per stream over the duration of the Program is:
  - ❖ Maximum grant of $50,000/applicant for Smart Farm Technology Stream
  - ❖ maximum grant of $2,000/applicant for Farm Security Stream
  - ❖ maximum grant of $50,000/applicant for Energy Efficient Stream
  - ❖ maximum grant of $100,000/applicant for Efficient Grain Handling Stream

There is limited funding in the program. Applications are evaluated on a case-by-case basis according to the eligibility criteria and funding availability

Email questions to OFEP@gov.ab.ca or call 310-FARM (3276)

Note Some eligible items have their own maximum grant amount, which is detailed in the Funding List

Resilient Agricultural Landscape Program – **Currently closed *will resume February 1st, 2025***

The program aims to accelerate the adoption of Beneficial Management Practices (BMPs) that maximize provision of Ecological Goods & Services (EG&S), particularly increased carbon sequestration and enhanced climate resilience.

Funding List
- Supported activities fall under four funding categories

❖ **Pasture Management** ❖ **Cropland Conversion** ❖ **Tree Establishment** ❖ **Wetland**

■ Note: Wetland funding is available to agricultural landowners participating in Alberta Environment and Protected Areas Wetland Replacement Program (WRP). All grants are subject to WRP terms and conditions.

Funding
- For the three categories (Pasture Management, Cropland Conversion, and Tree Establishment), funding is determined using the calculation below and is paid over a three-year term.
  - ❖ **Implementation Costs** + **Opportunity Cost** (if applicable) + **Impact Adjustment**
- For the Wetland category, funding is a flat rate payment of $1,000 per acre for a term of three years.
- For all four categories, approved projects will be funded to:
  - ❖ minimum grant of **$2,000**
  - ❖ maximum grant of **$150,000** for Primary Producers
  - ❖ maximum grant of **$300,000** for Indigenous (First Nations, Inuit, Metis) and groups such as Grazing Reserve Associations and/or Community Pastures

Intake Cycle
- Pasture Management, Cropland Conversion, and Tree Establishment
  - ❖ Year 3: February 1, 2025 – November 20, 2025
- Wetland
  - ❖ Year 3: February 1, 2025 – January 31, 2026

Email questions to RALP@gov.ab.ca or call 310-FARM (3276)

Note: the Wetland funding category has a different schedule than that of the other beneficial management practices (BMPs).

Water Program – **Currently accepting applications**

This program aims to support primary producers enhancing agricultural water management to support continued growth and long-term success of the agriculture industry.

Funding List
- Supported activities fall under 2 streams:
  - ❖ **On-Farm Water Supply Stream** – Maximum of $40,000/applicant over program term
    - ■ Standard incentives for New or Expanded Water Source Developments – eligible expenses cost shared at 50% for a maximum of $20,000/applicant over program term.
    - ■ Special Incentive Projects – eligible expenses cost shares vary and are project specific. Maximum grant of $20,000/applicant over program term.
  - ❖ **On-Farm Irrigation Stream** – Maximum of $35,000/applicant per fiscal year of program
    - ■ On-Farm irrigation system purchases – eligible expenses cost shared at 50% for a maximum of $17,500/parcel.
    - ■ On-Farm irrigation system upgrades – eligible expenses cost shared at 50% for a maximum of $6,000/parcel.

Email questions to irrigationefficiency@gov.ab.ca or call 403-381-5532 for more information regarding On-Farm Irrigation Stream

Email questions to farmwatersupply@gov.ab.ca or call 310-FARM (3276) for more information regarding On-Farm Water Stream

List of other Programs Available
- On-Farm Climate Action Fund
- AAFC Agricultural Clean Technology Program
- AAFC Living Labs
- ECCC Nature Smart Solutions Program
- NRCAN 2 Billion Trees Program (2BT)
- RDAR Producer Research and Evaluation Program

Canada's Outstanding Young Farmers Program

To discover, celebrate and recognize progress and excellence in Canadian agriculture.

At the end of November, leaders in Agriculture will arrive in Lethbridge for the National Outstanding Young Farmers event. The five-day event will showcase young farmers from across Canada as they share their stories, experiences and expertise in various fields of Agriculture. This year we have honourees representing the dairy, grain, fruit/vegetable, wine and beef industries.

Lethbridge is an exciting place to host this event as it is a hot spot of Ag driven technology, innovation, crop varieties, beef production and irrigation. It is a unique location in Canada with so much for our alumni and guests to experience. Various stops on the two days of tours in Lethbridge and the surrounding area, will centre around production and industry of southern Alberta. Southern Alberta OYF Alumni will also be a highlight of the tours – Stamp Seeds at Enchant, Schooten & Sons of Picture Butte and Mercer Seeds from Lethbridge County.

The Outstanding Youngt Farmers Program originated in the United States in 1954. In 1979, the Calgary Jaycees, with the support of the Alberta/Northwest Territories Region Jaycees, proposed the introduction of a similar program to foster better urban-rural relations and recognize farmers' achievements. The first Canadian national recognition event was held in November 1980 as an official program of the Canadian Junior Chamber/Jaycees.

Canada's Outstanding Young Farmers Program recognizes young farmers who exemplify excellence in their profession. Eligible nominees must be farm operators

between 18 and 39 who derive a minimum of two-thirds of their income from their farm operations. Each year one farming couple is selected from each of the program's seven Regional Recognition Events to represent their respective region at the National Recognition Event. At the National Event, the seven honourees are recognized for their achievements and judged by a distinguished panel of judges using the following criteria:

- Progress made during their farming career
- Maximum use of soil, water and energy conservation practices
- Crop and livestock production history
- Financial and management practices
- Contributions to the well-being of the community, province and nation

Each year, two of the seven honourees are chosen by the judges as Canada's Outstanding Young Farmers.

The vitality of the Program is maintained through the continued participation of alumni, who return each year to the National Recognition Event to honour and welcome new members. The OYF program is sponsored nationally by John Deere Canada ULC, CIBC, Bayer, CN, Sollio Agriculture, Meridian, and Agriculture and Agri-food Canada. We are also thankful to our supportive sponsors from across Alberta that will be part of the 2024 event.

Please become involved in Outstanding Young Farmers by nominating someone that is a leader and innovator in Agriculture. Nomination forms can be found at www.oyfcanada.com.

Canada's Outstanding Young Farmers
Jeunes agriculteurs d'élite du Canada

Upcoming Events

Canada's Outstanding Young Farmers 2024 National Event

- Event Date: November 27th – December 1st
- Location: Sandman Signature Lethbridge Lodge
- Event Type: In-person

2025 Nutrient Management Webinar Series

- Event Dates: January 27th, February 3rd, and February 10th
- Event Type: Online • Cost: **FREE**
- Registration coming soon to lethcounty.ca

Lethbridge Ag Expo

- Event Date: February 26th – 28th
- Event Type: Conference

Lethbridge County Shelterbelt Workshop

- Event Date: April 2025
- Event Type: In-person
- Location: TBD • Cost: **FREE**
- More information coming soon

Lethbridge County Pesticide Applicator Workshop

- If interested please contact Gary Secrist, Utilities and Agriculture Services, at 403-732-5333 or at gsecrist@lethcounty.ca

Have an upcoming ag-related event you'd like to showcase?
Please submit to mwells@lethcounty.ca to include in future newsletters.

MILLETS: New crops on the block

Submitted by: Neha Vaid

The declaration of 2023 as the International Year of Millets by the United Nations General Assembly created a lot of buzz regarding the potential of millets for food, feed, and environmental sustainability. However, most Canadians have never heard of millets, so what are they? Millets is a collective name for eleven species with small-sized grains where each seed is attached to the main stem by a thin stalk. The oldest record of growing millets dates to 6000 BCE along the Nile River in Africa and in Mongolia. At present, millets are majorly cultivated in India, China and several central African countries, with approximately 31 million hectares globally under production.

Millets are highly nutritious cereals, rich in essential vitamins, minerals, antioxidants, phenolics, dietary fibre, and micronutrients. For example, finger millet has 11- and 52-times higher calcium, while pearl millet has 2- and 3.5-times higher iron, than wheat and corn, respectively. Millets are gluten-free and therefore a nutritious alternative for gluten-sensitive and coeliac disease patients. Several millets, such as teff, fonio and barnyard millet, have a low glycaemic index, which means that these grains raise blood sugar levels slower than many refined grains. This makes these millets ideal grains for diabetic people. Millets are also considered a good source of animal feed. In a study conducted in Quebec, replacing the corn diet with pearl millet improved body weight and feed conversion in broiler chickens. An increased egg production was observed by replacing 60 to 75 per cent of corn with finger millet and pearl millet. In another study, beef cattle fed with a 79 per cent pearl millet diet showed the same weight gain per gram of feed as a meal composed of 73 per cent corn and 6 per cent soybean.

Millet species have evolved in hot and dry conditions in Africa and South Asia, and hence most species are heat and long-term drought tolerant. Some pearl millet cultivars can grow in as little as 50 mm of rainfall during growth season. Foxtail millet requires less than 50 per cent of the water needed by wheat and maize to gain a gram of biomass and can tolerate temperatures as high as 42° C. Millets can also grow on poor-quality and low-fertility soils. Several cultivars of foxtail millet and finger millet can maintain growth in saline soil. Pearl millet can grow in sandy loam and acidic soil. Millets are C4 plants, which means that they are more efficient in photosynthesis, water, and nitrogen uptake than wheat or canola. Due to this, species, such as pearl millet, require minimum to no fertilizers, and in Lethbridge, they produce more biomass than forage corn. A recent study in Prince Edward Island found that the use of pearl millets as a cover crop captures more carbon than red clover and alfalfa, reduces nitrate leaching, suppresses the growth of plant disease-causing nematodes and increases potato yields. Increased carbon capture in the form of fibrous roots by crops such as millets can reduce soil erosion, improve water-holding capacity and soil microbial community, and hence can help reclaim non-fertile marginal lands where input costs outweigh productivity.

The declaration of 2023 as the international year of millets was majorly aimed at improving food self-sufficiency (less import-dependent) in low- to middle-income countries. However, millets could also be potential crops and solutions to several areas of concern for semi-arid southern Alberta. Most Albertan crop farmers have substantial resource-intensive but non-profitable marginal lands or triangular dry areas at the corners of central pivot irrigated lands where, due to reduced water availability, seeded crops don't thrive. Millets can grow on these land patches without much investment in terms of fertilizer input and irrigation. Due to its high nutritional value, millet leaf biomass and the seeds could be used as an alternate feed supply for livestock. The heat and drought tolerance characteristics will ensure a steady supply of feed in the hot and dry years when other feed sources fail to grow. The long shelf life of millets means that the seeds can be stockpiled in anticipation of harsh weather conditions. Millets have an extensive fibrous root system, which can bind to soil particles and prevent erosion of the topmost fertile soil layer. Therefore, millets can serve as excellent cover crops and crops for grazing pastures.

Clearly, millets could be potential new crops for southern Alberta, but much work needs to be done before we can introduce millets to our region. Not much research has been conducted to identify the millet species that would be: (i) most suitable for growth on marginal lands across Alberta; (ii) a nutritious feed alternative or supplement for livestock health; and (iii) the best option for restoring marginal lands and preventing soil erosion in different regions of Alberta. With these aims, we at the University of Lethbridge have designed a research program that will test 11 millet species on marginal lands in south (Lethbridge County), central (Battle River) and north (Peace County) Alberta. In collaboration with researchers from the University of Alberta, the seeds produced from these trials will be lab-tested for their suitability as feed for pigs and poultry. We are seeking funds from Research-Driven Agricultural Research (RDAR) to conduct this research. We are encouraged by the support from Lethbridge County, the St. Mary River Irrigation District and the Lethbridge Northern Irrigation District, who have recently funded our research to explore the potential of millets as cover crops and a solution to prevent soil erosion. Millets have a short life cycle and can be used as a second crop for forage production. This would be highly advantageous for an irrigator who is nearing their annual water allocation and for the irrigation district, as it will help maximize reservoir carryover levels.

Millets can provide an environmentally sustainable solution to many concerns of southern Alberta farmers. With funding support for research, technology transfer and adoption, I believe millets will be an excellent crop choice for marginal lands, animal feed and soil health improvement.

The Promise of Millet Research for Resilient Grains

Submitted by: Raju Soolanayakanahally,
Research Scientist, Agriculture and Agri-Food Canada

Millet, a nutrient-dense crop, is emerging as a vital solution for global nutrition security and climate resilience. Dr. Raju Soolanayakanahally at Agriculture and Agri-Food Canada in Saskatoon is at the forefront of efforts to unlock the genetic potential of millet, with the goal of developing stress-resilient varieties that can thrive in Canada's diverse climates, including water-limited regions like Lethbridge County.

This research aligns with global initiatives to combat "hidden hunger" through the biofortification of millets with essential micronutrients, such as iron and zinc, which are critical for malnourished populations. Studies conducted at the Canadian Light Source have confirmed the localization of nutrients within millet seeds, emphasizing their nutritional health benefits in developing regions. Additionally, millet's long shelf life makes it a sustainable food source.

Noteworthy breakthroughs have been made in mapping drought-tolerant genes within millet, highlighted in the **AAFC 2023 Science Success Story**. These genetic insights position millet as a prime candidate for crop expansion in areas affected by climate change, making it an appealing option for Canadian agriculture. As reported by **Top Crop Manager**, millet is both economically and environmentally sustainable, requiring fewer inputs than traditional grains. This makes it especially suitable for organic farming and regions grappling with water scarcity. Its natural gluten-free properties and high yields with minimal water requirements have also attracted considerable attention from health-conscious consumers seeking allergen-free and environmentally friendly grains, as noted by **CTV Saskatoon** and **Brandon Sun**.

Millet can enhance cropping systems, improve soil health, and help tackle global food security challenges. Dr. Soolanayakanahally's research promotes millet as a resilient grain that addresses ecological concerns and dietary needs while boosting agricultural sustainability in Lethbridge County and beyond. This ongoing research offers potential solutions for climate change impacts and food security, positioning millet as an important crop for the future of Canadian and global agriculture.

Here are the news links referenced:

- **Canadian Light Source** – Addressing Hidden Hunger in Developing Countries (May 2024)
  https://www.lightsource.ca/public/news/2024-25-q1-apr-jun/addressing-hidden-hunger-in-developing-countries.php
- **AAFC Science Success Story** – Mapping the Genes of the Little (But Mighty) Millet (November 2023)
  https://collab.agr.gc.ca/br-dg/stb-dgst/SitePages/Science%20Success%20Stories.aspx?lcid=1033
- **Top Crop Manager** – It's Millet Time (September 2023)
  https://www.topcropmanager.com/its-millet-time/?custnum=1116815363&title=It?s%20millet%20time&utm_source=TCW&utm_medium=email&utm_campaign=ANXC-D230920015&oly_enc_id=5789D1279756B1Z
- **CTV Saskatoon** – Looking at the Future of Millet (February 2023)
  https://saskatoon.ctvnews.ca/video?clipId=2629542&binId=1.2376412&playlistPageNum=1
- **Brandon Sun** – Millet: A Sustainable, Nutritious Alternative Grain (February 2023)
  https://www.brandonsun.com/westman-this-week/2023/02/23/millet-a-sustainable-nutritious-alternative-grain

The Great Twine Round-Up is coming to Alberta with $12,000 in cash prizes for 4-H clubs and ag charities!

Cleanfarms, through the 'Alberta Ag-Plastic. Recycle-It! pilot program is hosting 'The Great Twine Round-Up'; a new province-wide twine collection contest with four cash prizes of $3,000 each, for the winners' 4-H club or an Alberta-based agricultural charity of choice.

Here's how to participate:

- **Collect used plastic baler twine** in the collection bags provided for free at participating collection sites and select County offices.
- **Mark each bag** with your 4-H club/district name and the date if you're participating on behalf of a 4-H club or full name/farm name and the date if you're participating individually.
- **Drop off the bags** at a participating collection site between November 1, 2024, and May 31, 2025, and snap a photo of your bags at the site!
- **Submit your photo** through the contest webpage to enter: greattwineroundup.ca

The more bags you drop off, the more entries you'll have. You'll also be helping to keep used baler twine out of landfills and burn piles.

There will be four chances to win;

- One early-bird prize draw for a winning 4-H club/district in January.
- Two prize draws at the end of the contest for winning 4-H clubs/districts.
- One prize draw at the end of the contest for an independent entrant's Alberta-based agricultural charity of choice.

For more information and full contest rules, visit the contest webpage: greattwineroundup.ca

'The Great Twine Round-Up' is part of the 'Alberta Ag Plastic. Recycle it!' pilot program, through which Alberta farmers return used plastic baler twine and grain bags for recycling. Last year, Cleanfarms recycled 673,000 kg of grain bags and 95,400 kg of twine through this pilot. Learn more about this program: https://cleanfarms.ca/alberta-ag-plastic-recycle-it-program-details/

Used plastic baler twine ready for recycling at a collection site.

Thanksgiving and Gravy

Submitted by: Norine Ambrose, Cows and Fish

Photo credits: Cows and Fish

At this time of year, after harvest is done, or hopefully nearing completion, thoughts turn to turkey. Roast turkey that is, and usually mashed potatoes and gravy. Luckily, most of my Thanksgivings include them. When considering what to impart in this article, I thought it should be relevant to the season – so of course, celebrating a bountiful year of farm production by eating those farm products and being appreciative of them, is part of it.

Sometimes, in agriculture, it isn't a celebration of success and bounty, but of persistence, 'making it through', more than outright accomplishment. Success is always the goal, but since we can't control the weather, which has a big impact on the bounty of crops, harvestable forages, and pastures, which in turn, affect livestock production, what do we control? I think the answer is gravy. Let me explain…

Gravy is the topping, the added flavour and the conduit to help that turkey, stuffing and potato reach our bellies. It is also the proverbial 'icing on the cake' -- or more specific to my example, it is the bonus you get on top of the planned-for potato – you can make do with plain potatoes, but most would argue it is better with the gravy. Shifting from the food on the table to supporting the creation of it in the pasture, if we think of the anticipated amount of grazing you do as the 'planned-for potato', then the possible extra regrowth of forages you might get is the 'gravy'. This 'gravy' is critical for the long-term sustainability of your pastures and their health, it's what is going to help you get through the normal years but also plan for the extreme ones. To benefit from the 'gravy', we need to have a good understanding of the base (or potato) we have to start with. What does forage production mean and how does it influence your grazing management?

At a couple of past grazing and pasture management events I've attended, some thoughtful producers questioned why the amount of measured forage production listed as expected from a particular kind of pasture or plant community is based on clipping it only once, at the end of the growing season. This didn't seem to make sense to them, when in practice, it might be grazed more than once and they would instead think it made more sense to tally the amount of forage available at each grazing pass, to determine the cumulative total amount of production available.

Measured forage productivity (lbs/acre or kg/hectare) for pastures is based on total production, because the plants are clipped right to the ground (2 cm height), leaving little to nothing behind. When you graze, that is not the same approach—you want to leave some of the current season's growth to keep the plants healthy and have the ability to regrow, this year, and next, ensuring future grazing opportunities. This means you aren't using up the total production, but rather are taking only part of it, leaving the rest behind, whether it is standing, trampled, or loose litter on the ground. This remaining plant matter is important for cooling soils, holding scarce moisture, reducing erosion, providing habitat and of course, soil building, not to mention as emergency forage in a drought, if there is little or no growth next year. If everything is grazed off on a first pass, not only will these ecosystem services be impaired, but you will reduce plant vigour and thus reduce potential future forage production.

This brings me back to gravy: pasture regrowth is gravy. You might safely assume you will get one grazing opportunity, most years, most places, but you never know how much a pasture will regrow, or if there will be any regrowth. Just like that unexpected bonus, or opportunity you didn't know was coming in your life, you can't plan for it—maybe you can plan for the potatoes (base production you estimate for that pasture) but you don't know if the gravy boat will make it to your side of the table with much left. This is why assuming you will get another grazing opportunity is risky. Based on recent experiences in south and central Alberta, livestock producers were sharply reminded that even a first graze isn't always possible, since drought conditions are always possible.

The old saying 'talk half, leave half' is about ensuring plant vigour and future production are maintained. Native pastures often do better with less than 50% utilization, while tame pastures can more commonly be sustained at or somewhat over 50% use, but every situation is unique, such as if the pasture is recovering from drought. Riparian areas, those areas next to waterbodies, which tend to be sensitive to trampling their wet soils, are highly desirable for livestock to hang out in. Because they are frequently a mix of native and tame plants species, and moist soils are more sensitive to grazing impacts, it can be challenging to graze them sustainably. Yet because they can produce 2-4 times more forage than drier adjacent upland pastures, long-term health of these areas is a key part of many grazing operations, while also conserving the waterbodies they are next to. Resting riparian pastures to stockpile forage in more abundant years is one possible strategy for drought resiliency, sort of like putting a leftover turkey pie in the freezer, for later! Whether riparian or upland, if there is more forage than anticipated towards the end of the growing season, you have options: use that gravy, provide another pasture a little longer rest or delay when you start feeding in the fall.

Whatever your plan, be sure to leave enough behind for both future main course (aka, the potato), and for possible regrowth (aka, the gravy).

Many thanks to Donna Lawrence, former Rangeland Specialist, in Barrhead for the original 'gravy' analogy.

Check out Alberta's Range Plant Community Guides for sustainable stocking rates based on decades of research. Alberta's long history of range science and monitoring stems for the ranching community investing in research in Onefour Research Station in the early 1900s.

Check out Cows and Fish's technical report series on riparian forage research: https://cowsandfish.org/wp-content/uploads/RiparianForageProductionSurvey2006report028.pdf

Hyperspectral Imaging Technology to Classify Herbicide-Resistant and Susceptible Kochia for Weed Management

Submitted by: Keshav D. Singh, Charles M. Geddes, Prabahar Ravichandran, Manoj Natarajan
Agriculture and Agri-Food Canada (AAFC), Lethbridge Research and Development Centre, Lethbridge, AB, Canada

Kochia (*Bassia scoparia*) is an invasive weed originating from Eurasia that has become a significant problem in North American agriculture, causing up to 90% yield losses in major crops like corn, sorghum, sugar beet, and sunflower (*Geddes and Sharpe 2022*). The prevalence of herbicide-resistant kochia in North American prairies has escalated in recent years, posing a substantial challenge to crop productivity. Traditionally, herbicides have been the primary method to control kochia. However, the increasing incidence of herbicide-resistant kochia necessitates new detection techniques. Traditional methods such as dose-response and genetic assays, although effective, are often labor-intensive, time-consuming, and subjective. This situation underscores the urgent need for techniques to quickly identify herbicide-resistant kochia biotypes to suggest alternative control measures promptly. This warrants the development of high-throughput tools and techniques using advanced sensing systems.

This study aimed to explore high-resolution hyperspectral imaging (HSI) and low-cost Raspberry Pi (RPi) systems as potential tools for screening herbicide-resistant kochia biotypes. HSI has been previously used to estimate biochemical components and detect early disease onset in crops, making it a promising tool for identifying herbicide-resistant kochia (*Scherrer et al. 2019*). This project evaluated HSI technology for classifying herbicide-resistant and susceptible kochia biotypes. The experimental design included several phases conducted over three years (2022, 2023, and 2024) at the Lethbridge Research and Development Center (LeRDC) in Lethbridge, AB (Figure 1). Two herbicides, glyphosate and fluroxypyr, were tested at field rates (900 and 140 g ae ha-1, respectively) on different kochia populations collected from across western Canada. Each population was grown in greenhouse trays during 2022 and 2023 and brought to the field during the 2024 season. The herbicides were applied when the plants reached a height of 3-5 cm using a moving-nozzle cabinet sprayer.

Figure 1: Experimental set up of kochia populations

Hyperspectral images were captured using a high-resolution sensor system before treatment (baseline) and at 1, 3, 7, 14, and 21 days after treatment (Figure 2). For initial analysis, images from baseline, 1, 3, and 7 days after treatment were used. The acquired images were calibrated and processed to extract spectra representing the actual weed plants, excluding soil. The extracted images were analyzed using machine learning models to classify the kochia as resistant or susceptible. Plants were visually rated as resistant or susceptible, which provided the ground truth for machine learning models. The spectral data from the kochia plants were split into training and test datasets in an 80:20 ratio. Linear Discriminant Analysis (LDA) and Quadratic Discriminant Analysis (QDA) models were trained using 10-fold cross-validation and evaluated using confusion matrices and classification accuracy. The results showed that QDA models performed better than LDA models in both glyphosate and fluroxypyr trials based on the coefficient of determination (R2). For glyphosate, the QDA model achieved a classification accuracy of 82.58% before treatment and 78.60% after treatment in Trial 1 (2022). In Trial 2 (2023), QDA achieved 68.78% accuracy before treatment and 61.38% after treatment. When combining the trials, QDA accuracy was 70.21% before treatment and 71.77% after treatment. Similarly, for fluroxypyr, QDA achieved 86.81% accuracy before treatment and 86.78% after treatment in Trial 1, 64.68% before treatment and 64.49% after treatment in Trial 2, and 74.31% before treatment and 74.61% after treatment when trials were combined. From 2024 field measurements, for glyphosate (kochia plants in a field pea crop), the preliminary QDA and LDA model achieved a classification accuracy of 67.74% and 63.65% before treatment, and 55.12% and 73.02% after treatment, respectively. Similarly, for fluroxypyr (kochia plants in a wheat crop), the preliminary QDA and LDA model achieved a classification accuracy of 58.01% and 54.22% before treatment, and 74.36% and 74.57% after treatment, respectively. The overall results show correlation values ranging from 55% to 86% across multiple kochia populations (*Ravichandran et al. 2023*).

In addition to the HSI technology, indoor experimental trials were conducted using low-cost Raspberry Pi (RPi) based automation systems. These trials complemented the HSI-based experiments and contributed to the development of red-green-blue (RGB) based machine learning models capable of distinguishing resistant and susceptible kochia biotypes. The RPi-based imaging systems offered an efficient method for extracting phenotypic traits of weed plants. The system captured high-resolution images at defined intervals throughout the experimental cycle. These images were processed to extract changes in physical and morphological traits, providing valuable insights into the bio-physical properties of the plants. The integration of open-source image processing pipelines enhanced the repeatability and accessibility of the experiment, making it possible to monitor plant growth over time with minimal labor-intensive methods. This approach provided physiological information on the weed plant tissue, enabling the identification of herbicide-resistant kochia (*Singh et al. 2023*).

The confusion matrices indicated significant classification accuracy (~70%) on baseline spectra, with accuracy improving over time after treatment. This study demonstrated that HSI combined with machine learning and RPi-based imaging systems offers a promising alternative for screening herbicide resistance in kochia, achieving accuracies between 55% to 86% across different populations and herbicides. The success of this study suggests the potential of integrating spectral imaging systems and IoT-based sensor networks to facilitate real-time monitoring of crop health and enable timely decision-making for weed management.

Looking ahead, the project plans to include more populations in future field trials to enhance the robustness and versatility of the models. The goal is to predict resistant biotypes across diverse populations of kochia and wild oat in two different environments (Lethbridge and Lacombe in Alberta). By leveraging advanced technologies such as high-resolution HSI systems and low-cost RPi-based automation, this study offers innovative solutions to address the challenge of herbicide-resistant kochia and wild oat, ultimately improving weed management practices in real-world agricultural settings. By leveraging digital imaging tools and machine learning techniques, this research paves the way for more efficient and timely management of herbicide-resistant weeds, helping farmers to maintain crop yields and reduce losses.

Figure 2: Hyperspectral image acquisition system

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Acknowledgments

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FARMING SMARTER RESEARCH - *SEARCHING FOR COVER*

Submitted by: Kristi Cox, Farming Smarter

Southern Alberta has a soil conservation challenge. Lighter soil, dry conditions and high winds add up to a lot of displaced soil if it is unprotected. Farming Smarter initiated the Saving Soils Program to run a suite of studies to examine how practices such as cover crops may mitigate soil loss while providing additional benefits including a potential added revenue source for producers.

Over the past 20 years, most farmers adopted reduced tillage farming systems. The stubble holds soil in place and captures moisture. Growers harvest specialty crops like potatoes, dry beans and sugar beets late and leave little to no stubble or roots in the ground increasing risk of soil loss.

"The biggest limitation to establish cover crops is the waning heat and sunlight as days get shorter in the fall," said Farming Smarter Field-Tested Manager Lewis Baarda. Farming Smarter wants to generate viable solutions.

"We wanted to put together a suite of projects that would help us develop practices and tools that farmers could use in a way that fits their system, that is economical, and that can protect their soil from erosion," said Baarda. "We put together about a dozen different trials to look at what farmers can do to protect that soil from being blown away."

Financial support from the Weston Family Foundation and RBC Tech for Nature enabled the dynamic and broad scope to the study.

"Both those groups supported our initiative and gave us a fair bit of flexibility and adaptability within the project," said Baarda. "We're pushing the limits and testing things we weren't sure would work, taking risks to see what's possible. It's nice to be able to try something, reevaluate and adjust for the next year."

The studies:

Potatoes & Sugar Beets

Potato and sugar beets crops leave little time to establish a cover crop after a late harvest.

"If you've got a long, hot autumn, plenty of different crops will grow," said Baarda "But not every year will be like 2023. Sometimes we get frost in the middle of September and things cool off enough that nothing grows."

One approach to solving this challenge is to try different application methods including broadcasting seeds on growing potato plants so they germinate before the potato harvest. For sugar beets, they tried seeding between the rows in spring, to establish the plants before the beet harvest.

"On-farm research is where we get to work with farmers to fine tune something that they've been thinking about," said Baarda. "It's that open, real-world environment where you get to figure out some of the pieces you might not have thought about – some of the economics, or the right equipment. You run into challenges you might not in a small plot and find the practical limitations of some of the things you're trying."

Small plot trials

Three small plot trials test options for cover crops: Roller crimping, living mulch and camelina.

Roller Crimping:

This study looks at the use of roller crimping vs herbicide application to terminate cover crops. Initially, the project used fall rye and winter oats for cover crops, but winter oats proved quickly to have low survivability, so winter wheat replaced it in the trial. To assess efficacy of the methods, they measure soil nutrients, yield of the main crop, soil moisture and weed density.

"This looks at how the whole system works," said Mike Gretzinger, Farming Smarter Research Coordinator. "How does roller crimping potentially benefit things further down the road? Hopefully, we'll be able to answer some of those questions for this project."

Living Mulch:

In this study, rather than roller crimping in the spring, the fall crop becomes living mulch. At spring planting, they strip till between the rows of the fall cover. Again, fall rye and winter wheat served as cover crops. Treatments included low and high seeding density of the cover crop and following with corn, canola or dry beans. The project compared this with conventional herbicide treatment and no cover crop.

Camelina:

Camelina provides a new opportunity for a fall seeded cash crop. Its oil profile is good for biodiesel and is a good source of omega 3.

"It's an emerging market, so there's the challenge of getting the value chain set up," said Gretzinger. "In previous work, we found that fall seeding is a terrific option for Canada. You get fall cover, and the camelina itself could be a cash crop."

Treatments in this small plot study include varied seeding rates, planting depths and planting dates. Results examined include plant density, yield, days to flower, emergence and weed density.

Results:

The goal is to develop practical, economical solutions that can help protect the valuable soil resources in southern Alberta. Overall, the project is in an exploratory phase. The funding support from Weston Family Foundation and RBC Tech for Nature enables Farming Smarter to try different ideas and learn from the results.

"Farmers are just as interested as anybody else in making sure they protect that valuable soil resource," said Baarda. "The support of a group like Farming Smarter helps them fine tune it and figure out what works and what doesn't. Using science, research, and all the tools at our disposal, we can get them close to practical solutions. We have six inches of soil here in southern Alberta. Once it's gone, it's gone. It takes years and years to put it back together. I think it's in everybody's interest to find practical ways that don't compromise production yield, but also provide that benefit of preventing soil from blowing."

Whether you're a grower facing challenges, or someone who wants to share what they've been trying, if you want to discuss solutions to soil erosion, Baarda and Gretzinger would like to talk with you.

"I'd love to talk to anybody about what they've been trying," said Baarda. "What's worked, what hasn't, and how we can potentially incorporate their ideas into some of our research, or perhaps incorporate some of our ideas into their farm."

RBC Tech For Nature extended its support for the Saving Soils program for two additional years providing funds to continue to 2027.

Find contact information for Lewis and Mike in the staff directory on farmingsmarter.com

Breeding Project: Oat Advantage

A 55-lb bushel, high-protein oat, with top grain yield, is [hopefully] in your future

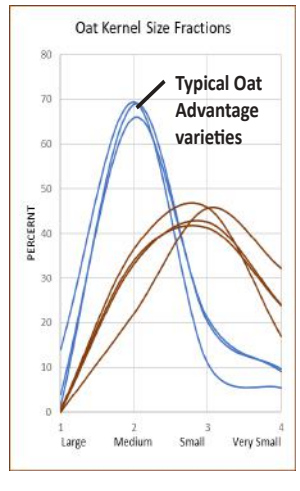
Progress Report submitted by Jim Dyck, Oat Advantage (and published in POGA's June 2024 Oat Scoop)*:

Key among our 2021-2024 successes are the four new Oat Advantage oat lines entered into the 2024 Western Cooperative Oat Registration trials. Our data indicated that these oat lines have top yield potential for Alberta and Saskatchewan along with very high physical grain quality. Oat Advantage milling oat varieties are shown to have very high Oat Kernel Uniformity which means 80% to 90% useable grain and less waste for the oat milling industry.

We have discovered that our pathway and goal to a 55lb/bushel oat is more complicated than first thought. One of the main obstacles is the function of the third (tertiary) kernel of the oat floret [see photo]. These very small kernels, which fall through a standard industry sieve, fit between the large and medium kernels in a load of grain, creating a higher test weight. Very small kernels can typically comprise over 10% of the harvested grain and are non-optimal, or even a waste product, for oat millers.

Oat Fraction sizes	Oat Fractions
1 (>7.0 64th)	Large
2 (7.0-6.5 64th)	Medium
3 (6.5-6.0 64th)	Small
4 (<6.0 64th)	Very small

The Oat Advantage cut-off for very small kernels is above the standard industry sieve and is therefore higher than the Oat industry standard. Kernels falling through this sieve can make up 15% to 30% of some top oat varieties currently in the market. We are working to eliminate all the very small kernels in our oat varieties. As depicted with the tall peaks (in blue) in the chart below, we have successfully bred oats with a high percentage of medium sized kernels. The group of lower and wider peaked chart lines (in brown) are an example of the grain fractions from other top oat varieties in western Canada.



In our report to POGA (August 2023), we indicated that we are advancing in our work to increase the density and weight of oat kernels. Density increases have been observed in the analysis of the combined, sieved medium and small kernel fractions. Specifically, we have seen a 2% to 10% increase in density between comparable lines from an oat population with which we are working. This population generated the four lines that are now in the 2024 Western Cooperative Oat Registration Trial.

So, to summarize: one of our top goals is to produce heavier oats, but not by increasing the number of third kernels that fall through the standard industry sieve and we are making progress on that goal.

This project is funded by the Prairie Oat Growers Association (POGA).

**To read more about the project (objectives and previous progress reports), please go to: https://poga.ca/research-projects/a-55-lb-bushel-high-protein-oat-with-top-grain-yield-is-in-your-future/*
Readers can access the Oat Scoop newsletter at: https://poga.ca/communication-advocacy/oat-scoop-newsletter/

HIGHLIGHTING RURAL INSIGHTS: Behind the Camera

Submitted by:
Matthew Wells, Rural Extension Specialist

What a fantastic season! You couldn't ask for better weather as harvest winds down and we prepare for the winter months. This year, for the first time in a while, we had the chance to truly appreciate the vibrant fall leaf colors. Fall has always been my favorite season – the changing colors, Halloween festivities, and the satisfaction of seeing all the hard work pay off as crops are harvested.

Though it's been several years since I've been back for harvest on my family's farm, I still vividly remember the immense pride of watching the grain go from the field to the bins. Ours is a small operation in the overall grand scheme of agriculture, but knowing we contributed to feeding the world always felt incredible. Although my role in agriculture is quite different today, I still carry that same pride in my work, whether through the newsletter, helping producers with their Environmental Farm Plans, hosting workshops, or producing extension videos. It's rewarding to continue contributing to the agricultural community.

Some of the latest work I'm excited to share is the informative videos we've produced under Lethbridge County Rural Living & Ag Extension. These videos provide excellent information and complement our newsletter and social media efforts. Here is a quick overview of each video with a QR code if you are interested to learn more.

Tree Planting

In this video, our favorite certified arborist, Grant, discusses five key factors that are crucial to the successful growth of a newly planted tree: location, hole size, planting, staking, and drought-hardy trees to consider for this area. A particularly valuable tip is incorporating compost when planting to help enrich the soil and break down compact clay soils, allowing the roots to establish readily in the soil column.

Tree Watering Essential Guide

As the summer heated up, Grant and I discussed proper watering techniques, and what each tree requires every week. He notes the importance of establishing deep root systems early by forcing roots downward to allow the tree to reach moisture held deep within the soil. It is also beneficial as it reduces surface root exposure, simplifying long-term maintenance.

When to Stop Watering Your Tree

As summer turned to fall, Grant and I discussed the ideal time to stop watering your trees as winter approaches.

"Once you see the coloration of your leaves start to change, that's when you can do your last heavy watering," Grant explains, "that's a good time to start watering heavily for maybe a day or two."

Watering your trees sufficiently is essential to prepare them for the winter months. However, as Grant notes, be sure not to water too late, especially before the temperature drops to -20°C, as that could lead to tree damage.

Uncovering Soil Erosion: Voices from the Field

In partnership with local producers, organizations, and governing bodies, we produced this video to explore the complexities of soil erosion and the steps producers are taking to manage it. Soil erosion is a multifaceted issue in Southern Alberta due to the region's unique environmental challenges and the diverse crops that can be grown here, which are made possible by irrigation. The agricultural system here is truly remarkable when you look at the complexities and issues farmers face today.

What impresses me most isn't just the technology or equipment, though no-till systems and stripper headers certainly make a difference—but the resourcefulness of producers. One technique that didn't make it into the video but really stood out to me was Tom Lievaart's innovative plan

B for late-season bean harvests. If the beans are swathed late, he uses an old 28-foot Case seed drill to seed winter wheat between the windrows, right behind the windrower. "After harvest, we'll have these strips that are already two weeks ahead of where those swaths were laying," he explained.

"It just goes to show you don't have to spend a lot of money. This drill was very cheap. Old technology, but just its width made it the perfect size for this operation," Tom added.

Soil erosion is a critical topic that we could have spent hours discussing. The video does a fantastic job of highlighting the strategies farmers use to prevent and manage it. I encourage you to watch the video as you can see and hear the producers' passion for the land and how they strive to be good stewards. At the end of the day, lost topsoil means lost income, which no one can afford in today's challenging economy.

If you've enjoyed the videos, please subscribe to the Lethbridge County YouTube channel for more informative content. If there's a topic you'd like to see covered, don't hesitate to reach out! You can email me at mwells@lethcounty.ca or text me at 403-634-0147. Your feedback is always welcome.

Thank you to Trevor Wallace, Kevin Seward, Todd Green, Gary Secrist, Michiel Buijsse, Tom Lievaart, Darren Van Raay, Jordan Sears, Jason Zeinstra, and Grant for sharing their knowledge and expertise.

Looking Ahead: Nutrient Management Webinar Series

As we prepare for the New Year, there's plenty to look forward to. The Soil Erosion video is a perfect segue for our upcoming Nutrient Management Series, starting on January 27th. We will dive into important topics, including water resilience, soil health, and pasture management. More information will be available soon, and you can always find the latest updates on our webpage at lethcounty.ca. Be sure to mark your calendars and subscribe to the series, as you won't want to miss it!

Have a wonderful rest of your year!