Grow With Us

2025, Issue 4

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LAKELAND AGRICULTURAL RESEARCH ASSOCIATION

IN THIS ISSUE

Crops quality looks good this year across Prairies

Canadian Grain Commission's limited sampling finds top-notch quality in all crops with the exception of durum

by Sean Pratt, The western Producer

The Canada Post strike came at the most inopportune time for the Canadian Grain Commission's Harvest Sample Program.

"Due to the mail strike, we are quite a bit behind on where we would normally be with the amount of samples we have received," said Derek Bunkowsky, the chief grain inspector for Canada.
The program had received 2,800 samples as of Oct. 14, well below the approximately 10,000 that would have arrived in a normal year.

"Obviously it would be nicer to have a better picture with more samples, for sure," he said.

Postal workers were back on the job Oct. 14 despite no renewed collective agreement, but mail service will still be disrupted or delayed by rotating strikes.

The CGC has made arrangements for farmers to drop off samples at grain elevators that are members of the Western Grain Elevator Association.

The samples will come in eventually, but Bunkowsky is confident the CGC has a pretty good bead on crop quality despite analyzing less than one-third of the usual volume.

"I don't expect the numbers to change drastically," he said. Bunkowsky said 80 per cent of the Canada Western Red Spring (CWRS) wheat samples made the top grade and another 18 per cent graded No. 2.

"We've got 98 per cent of CWRS in the top two grades," he said. "That's excellent."

Protein levels have averaged 13.8 per cent so far, which is in line with the 10-year average.

"It's a really good story on CWRS," said Bunkowsky.

Things are not looking nearly as good with the Canada Western Amber Durum crop with 22 per cent making the top grade, 27 per cent No. 2 and 37 per cent No. 3.

"The primary reason for downgrades in the amber durum crop is severe midge and darkened kernels," he said.

The percentage of samples in the top two grades is less than it has been the past few years.

The average protein level was 14.8 per cent as of Oct. 14, slightly above the long-term average of 14.4 per cent but nowhere near as problematic as it was during the severe drought years.

Ninety-seven percent of canola samples made the top grade with the remainder being No. 2.

There are often no big quality concerns with the canola crop unless there is an early frost, which can lead to elevated levels of distinctly green seeds that cause high levels of chlorophyl in the oil.

"We're not having the kind of frost events it seems like we had 20 years ago," said Bunkowsky.

Climate change has resulted in a longer growing season, which is helping canola and other crops.

"We used to have quite a few issues with the wheat crop as well and we're just not seeing that anymore," he said.

Photo: File

"That's a positive aspect of climate change."

Twenty-seven per cent of the pea samples graded No. 1, with 58 per cent No. 2 and 16 per cent No. 3.

Bunkowsky said that is right in line with what they would typically see with the pea crop. The biggest downgrading factor was colour.

Forty-two per cent of the lentil samples made the top grade, with 49 per cent grading No. 2. Colour was again the main downgrading factor.

"We're also seeing some staining in the lentils this year," he said. "That would be on account of the excess moisture at harvest time."

All in all, the 2025 crop is of top-notch quality, except for durum.

And the yields were a pleasant surprise as well.

"What I'm hearing when I'm talking to my contacts in the industry is that there's a lot of quantity," said Bunkowsky. "It's a big crop out there."

Original article was published on October 15, 2025 on The Western Producer online. The article can be found at: https://www.producer.com/news/crop-quality-looks-good-this-year-across-prairies/

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Spray Smarter, Feed Better: How a Simple Copper Spray enriches Silage Crops

by Momna Farzand, LARA Research Agrologist

Many cattle consuming locally produced forages are susceptible to copper (Cu) deficiency in Alberta. In an average situation, daily intake of about 10 ppm Cu in the ration dry matter is required to meet beef cattle needs.

A big challenge for livestock producers in many parts of the province, including the Lakeland region, is that Cu concentrations in soils as well as locally produced forages (e.g., hay and silage) are too low to achieve animal health and performance targets. Cows dealing with insufficient Cu supply have low conception rates and often encounter weight loss issues unless Cu supplementation is provided.

Cu supplementation through injections or free choice mineral kits is an option to correct deficiency in the animal but may not be sufficient alone in scenarios where cattle are fed on Cu deficient forages grown in areas with low Cu in the soil.

In this context, there is a dire need to elevate the level of Cu in our locally grown forages, particularly in wheat (Triticum aestivum L.), barley (Hordeum vulgare L.) and oats (Avena sativa L.) which are the most susceptible to Cu deficiency. Enhancing the Cu content of forage crops through foliar-applied Cu amendments presents a promising and economical approach to improve cattle health and productivity.

However, this technique is not very well adopted in our area due to the lack of technical information available regarding the foliar Cu fertilization of forage crops.

Thus, a field investigation was undertaken to assess the effect of different levels of foliar Cu fertilizer on silage wheat, barley and oats grown in grey-wooded soil at the LARA research farm (54°18' N, 110° 37' W) in Fort Kent, Alberta during the 2025 growing season.

The Cu was applied in the sulfate form ($CuSO_4.5H_2O$; 25% Cu) at the boot stage of each cereal species (wheat, cv. Alotta; barley, cv. AB Maximizer; and oats cv. CDC Endure) studied.

The Cu treatments (T) were as follows.

T1	Control (No CU application)
T2	CuS04 foliar application @ 0.1 lb Cu/acre
T3	CuS04 foliar application @ 0.3 lb Cu/acre
T4	CuS04 foliar application @ 0.5 lb Cu/acre

The results indicated that a single Cu spray at the boot stage can increase the Cu content of silage wheat, barley, and oats by 41%, 48%, and 64%, respectively, compared with the untreated control plots.

In wheat, the highest Cu concentration (7.08 ppm) was recorded in plots sprayed with $CuSO_4$ @ 0.5 lb Cu per acre, whereas the lowest concentration (4.15 ppm) was recorded in the control plots. Similarly, foliar application of $CuSO_4$ @ 0.5 lb Cu per acre caused the largest increase in Cu concentration in silage oats (8.04 ppm vs 2.93 ppm in the control). In silage barley, the highest Cu concentration (6.65 ppm) was obtained with foliar application of $CuSO_4$ @ 0.3 lb Cu per acre, while the control plots had the lowest concentration (3.45 ppm).

For more information, please contact Momna Farzand (Research Agrologist at LARA) via phone: (780) 812-1037 or email: cropping@laraonline.ca.

Momna Farzand sharing insights on how foliar copper (Cu) applications can improve cereal silage quality and cattle productivity during LARA summer field tour in Fort Kent, Alberta, on July 31, 2025.



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Weather factors to watch this winter

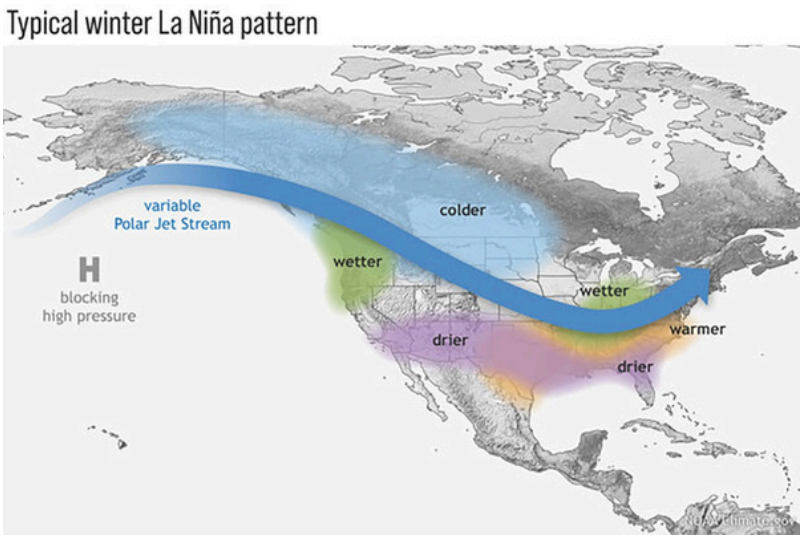
by Daniel Bezte, The Western Producer

Taking a look at the full long-range winter forecast and take a detailed look into what factors might come into play.

There are currently three main factors that could be a driving force behind the type of weather we may see this winter:

- La Nina, which is currently in a weak stage.
- The northern Pacific is experiencing well above average temperatures.
- Early season snow cover across Siberia.

Let's start by looking at La Nina and how can it impact our winter weather.



The map shows typical weather anomalies we see across North America during a La Nina winter. Source: NOAA

La Nina is the opposite of an El Nino event, and it occurs when there is an increase in the strength of the normal pattern of trade wind circulation.

Under normal conditions, these winds move westward, carrying warm surface water to Indonesia and Australia and allowing cooler water to upwell along the South American coast.

When a La Nina event occurs, these trade winds are strengthened, which helps to increase the amount of upwelling, which in turn creates more cooler water along the coast of South and Central America and builds up warmer waters on the western side of the ocean.

These changes in the tropical Pacific are usually accompanied by large changes in the jet stream across the mid-latitudes impacting North America. This shifted jet stream can contribute to large changes in the normal location and strength of storm paths and can result in temperature and precipitation anomalies over North America that can persist for several months.

Like last year, the latest La Nina advisory is predicting the current weak La Nina to continue through early 2026 before transitioning to neutral conditions. Since La Nina is expected to be on the weak side, this would likely result in limited impact on our weather this winter.

The map shows that we often see colder than average temperatures, but if we look back at the last 13 weak La Ninas, six of them saw near to below average temperatures, six were near to above average and one saw above average temperatures over the eastern Prairies with below average temperatures over the West.

So, statistically, this does not help us out that much in predicting this winter's temperature forecast because it is almost a perfect split between whether a weak La Nina winter will be warmer or colder than average.

When it comes to snowfall, during a usual La Nina winter we will, on average, see above average snowfall over most of Alberta and parts of extreme southern Saskatchewan along with the north-central parts of Saskatchewan. The rest of south-central Saskatchewan along with southern and central Manitoba typically sees near to below average snowfall.

Original article was published on October 20, 2025 on The Alberta Farmer Express online. The article can be found at: https://www.producer.com/news/weather-factors-to-watch-this-winter/

BMP Bingo: When One Paddock Does It All

by Daryl Chubb & Karen Schiml's Living Lab on the Prairies

Before "living labs" became part of the regenerative agriculture conversation, Daryl Chubb and Karen Schiml were already living the concept—quite literally—on their farm. Nestled in southern Alberta, their quarter section is divided into 10-acre paddocks with a central alley and managed using adaptive multi-paddock (AMP) grazing. But it's not just the infrastructure that sets their place apart—it's the mindset.

Daryl is an independent ag consultant. Karen is a beef nutritionist. When they're not farming and ranching, they're deep into professional roles that inform—and are informed by—their land-based experiments. Karen's deep care for cattle and Daryl's unrelenting curiosity for "what might work better" has created a farm culture centered on innovation, risk-taking, and relentless learning.

And this year, one paddock in particular captured the full attention of the Regenerative Alberta Living Lab (RA-LL) team.

A Paddock That Stopped Us in Our Tracks

With a project mandate to push the boundaries of regenerative agriculture and soil health, we're used to seeing creative approaches. But even by our standards, this paddock hit a new level. So many **best management practices (BMPs)** were layered in that we struggled to categorize it.

The result? A BMP blackout in what we affectionately call "BMP Bingo."

Let's walk through what happened.

From Sod to Soil Health Showcase

Step One: Intentional Grazing and Transition
The season began with a **heavy graze** on the perennials in the paddock. Afterward, rather than tilling, the team applied **glyphosate** to terminate the stand—then direct-seeded into sod. That means zero tillage. Right away, this ticked off major soil health boxes: minimal disturbance, soil armor, and living roots.

Step Two: A Diverse Seeding Mix.
Into that sod, they seeded **spring triticale, oats, sweet clover, peas, and winter triticale**—a mix that ensures ongoing root growth and biodiversity throughout the season.

The **staggered maturity** of the triticale types meant the field stayed green and growing when harvested for green feed.

Step Three: Supporting the Biology
The seed wasn't left on its own. It was treated with **phosphorus, worm extract, micronutrients, and humics,** and they floated **65 lbs of nitrogen and 12 lbs of ammonium sulfate.** These additions aimed to stimulate early establishment while reducing reliance on synthetic fertilizers through strategic biological inputs.

Step Four: Grazing as a Tool for Establishment
Grazing wasn't just an endpoint—it was a **tool for success.** Livestock helped manage the initial forage, cycle nutrients, and contribute to plant establishment in a way no machine could.

BMP Bingo: A Full House

Here's what they stacked into one system:

✅ **Perennial forages in annual crop rotations**
✅ **Annuals seeded into perennial stands**
✅ **Cocktail cover crops (for livestock feed)**
✅ **Intercropping/companion cropping**
✅ **Relay cropping & seeding green**
✅ **Application of biological amendments**
✅ **Livestock and annual crop integration**
✅ **Tame forage rejuvenation**
✅ **Extended grazing potential**
✅ **No-till seeding into sod**
✅ **Increased legumes in crop rotations**

Every soil health principle was hit:

- **Reduce disturbance** – zero tillage
- **Keep soil covered** – dense seeding for ground armor
- **Maintain living roots** – staggered species for continual green growth
- **Plant diversity** – mix of cereals, legumes, and cover crops
- **Livestock integration** – grazing before and after
- **Input reduction** – targeted biologicals and reduced synthetics

Unexpected Revival: What Brought the Alfalfa Back?
One of the most surprising outcomes? The **resurgence of alfalfa** in the paddock.

While this wasn't a planned goal, it's a great example of how regenerative systems often deliver more than expected. The mix of deep-rooted plants, the influx of biological inputs, and the dynamic grazing pressure appear to have re-energized dormant alfalfa plants that had been lagging in previous seasons.

What could explain this? Here's a hypothesis we're watching closely.

Alfalfa fixes nitrogen thanks to **Rhizobium** bacteria living in nodules on its roots. These beneficial microbes can sometimes be suppressed by **bacteriophages**—viruses that attack bacteria. While this is still an emerging field, researchers are exploring whether shifts in soil **carbon-to-nitrogen (C:N) ratios**, especially through diverse cover crops and enhanced soil carbon, could improve the resilience of nitrogen-fixing bacteria.

We're not drawing hard conclusions yet—but we're definitely intrigued. It's yet another sign that **soil health is as much about biological relationships as it is about physical and chemical ones.**

Soil Data on the Horizon: Learning by Doing

The RA-LL team is now tracking key soil health indicators in this paddock, including:

- **Soil organic carbon**
- **Aggregate stability**
- **Available nutrients and efficiency**
- **Microbial community structure and function**

This is more than an experiment—it's a **roadmap.**

By layering BMPs and observing both expected and unexpected results, Daryl and Karen have helped us push the conversation from "what works" to why it works, and for whom. When producer-led innovation is paired with research-grade monitoring and mapping, the outcomes aren't just anecdotal—they're actionable.

This kind of experimentation is what the RA-LL project is all about: **a place where innovation is measured, shared, and used to inspire others.**

Whether you're just dipping your toe into regenerative practices or you've been stacking BMPs for years, we hope this story sparks ideas—and maybe even encourages you to try something bold.

Inspired by this approach? Got a paddock you'd like to experiment with? Let's talk. Because the next innovation in soil health might just start in your field.

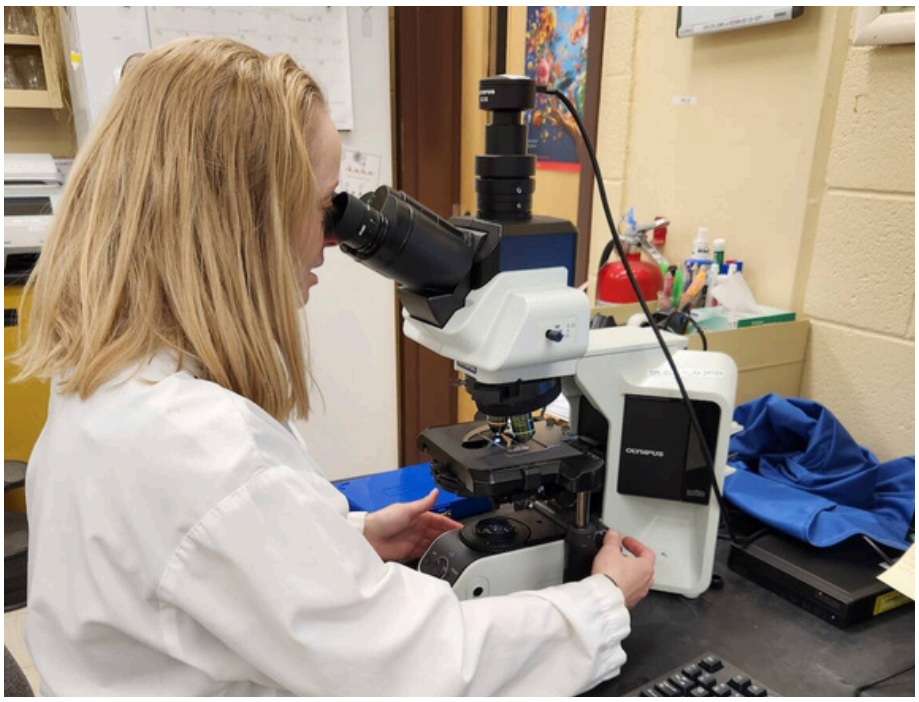
Original article was published on November 4, 2024 on The Regenerative Alberta Living Lab online. The article can be found at:
https://www.producer.com/news/weather-factors-to-watch-this-winter/

What is going on deep below the surface?

Even 60 centimetres below, microbial communities can affect how organic matter breaks down

by Alexis Kienlen, Glacier Farm Media

Most of the activity in the soil happens in the first 15 to 30 centimetres, but there is a thriving world down under. Monika Gorzelak, research scientist with Agriculture and Agri-Food Canada in Lethbridge, is digging more than 60 cm below to uncover microbial communities that shape how carbon and nitrogen cycle through our soils.



Monika Gorzelak, a research scientist with Agriculture and Agri-food Lethbridge, looks through a microscope. She is studying microbial communities at 60 centimetres below the soil surface. Photo: Supplied

"We assess the carbon stocks below 60 cm, and we found that, based on previous models, we've actually found that what's there is a bit higher than what was predicted previously," she said.

This was an interesting finding that made Gorzelak think about how microbes are transforming carbon in the soil. She is interested in researching what microbes are doing to facilitate carbon sequestration, hinder sequestration or hinder and support sequestration.

"They are basically eating carbon as a food source, so they're breaking it down and decomposing it. That releases CO2. That carbon gets lost as CO2 potentially, or it gets stored for the longer term, which is called soil carbon sequestration," she said.

Microbes will eat fertilizer if the plants don't, so they contribute to an uptake of nutrient use efficiency or a reduction in nutrient use efficiency. Gorzelak stressed this is why it is important to follow the 4Rs.

"Nitrogen is food for microbes as well. They will gobble it up, transform it into something that is not as useful for the crop," she said.

Researching the deeper soil depths can help define the parameters under which soil carbon is retained and prevented from emission as greenhouse gases.

Regenerative farming practices reshape the fungal communities and carbon compositions even at 60 cm below.

Gorzelak is studying the land of a farmer who has been practicing regenerative agriculture since the 1980s.

"We just did an across the fence comparison, and found a lot more undecomposed carbon, below the 60 cm, under regenerative management. That's something we're trying to publish right now. We've written the paper and we're trying to get it out at this point," she said.

"There's a lot of data associated with that study that we can leverage as well to understand to what's going on. That replication is just going to be a little more powerful. We're going to try to capture some of those microbes and characterize them a little better," she said.

In a soil profile, there is an organic layer, an A horizon, and perhaps a B horizon, depending on the soil type.

Deeper below, there is less activity and less carbon.

"We acknowledge there is more happening at the top in terms of things that matter to crops. You want to fertilize where the roots are. They're going to be at the surface, in the top layer, essentially, and that's just where most of the research in agriculture has been done," she said.

Some compounds deep in the soil stick around, but experiments have shown a bacteria or fungi will break it down.

"There's always some organism that's evolved to break these things down. I mean, we're even finding organisms that can break things down that we've created, like plastics."

The metabolic capacity of microbes is astonishing, she said. "It's really not that it's the type of compound, I think it's more of the circumstances or the environmental characteristics, essentially, that are created deeper down that are contributing to carbon sticking around for the longer term.

"It's almost like trying to create systems that are a bit slower and emulate more natural or native ecosystems that were here previously," she said.

Gorzelak's research is helping to refine the Denitrification Decomposition model (DNDC), which predicts how much carbon and nitrogen processes essentially emit greenhouse gases.

Loss of nitrogen to off gassing or to leaching can cause financial losses to farmers, she said.

The DNDC is a model and a tool that's used to predict loss under different conditions.

However, the model is not designed to understand what is happening with the microbes.

"Part of what we're trying to do is generate data and an understanding of the systems, essentially how microbes are going to respond," she said.

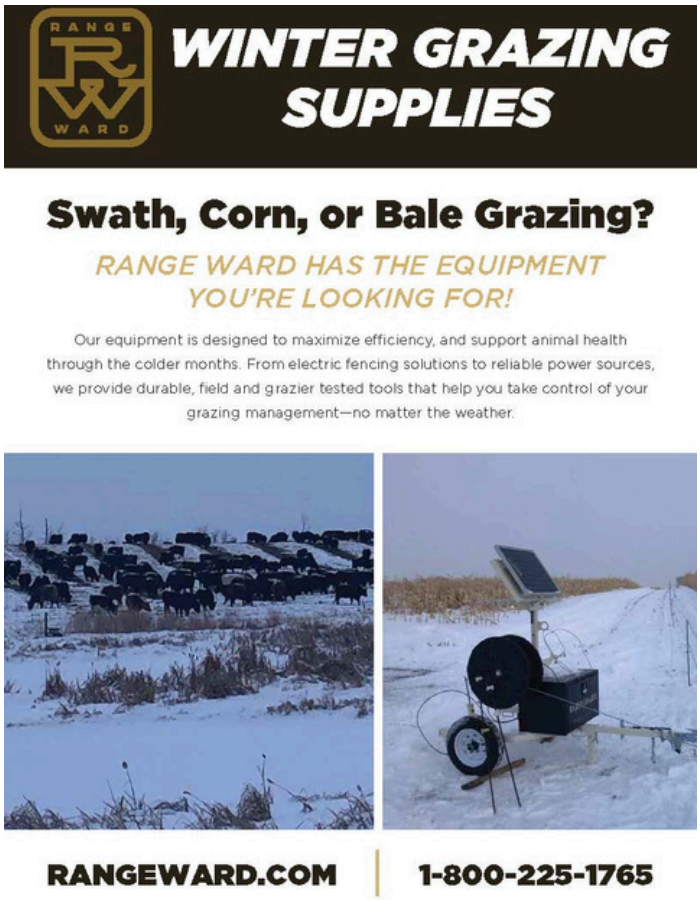
Gorzelak wants to find out which microbes are below 60 cm, how they respond, and if they contribute to greenhouse gas emissions and loss of fertilizer, soil carbon or soil organic matter.

Doing deeper soil research helps to understand efficiencies.
The better your soils, the fewer inputs you must put in, she said.
"It's hopefully building a more resilient system if we can find management practices above ground that can influence stuff below 60 cm," she said.

The models have shown about 15 per cent of soil organic carbon is below 60 cm, and it's unlikely to be tilled.

"Understanding what is going on at that level, even though it's a small percentage of the overall activity, does hold the potential, on a large scale to have a positive impact," she said.

Original article was published on October 15, 2025 on The Alberta Farmer Express online. The article can be found at: https://www.producer.com/news/crop-quality-looks-good-this-year-across-prairies/



Navigating Manure Storage: What Producers Need to Know

by Alberta Environmental Farm Plan

When it comes to responsible farming practices, manure management is a critical aspect that farmers in Alberta, need to be well versed in. Proper manure storage is not only essential for efficient agricultural operations but also for safeguarding the environment and nearby communities.

Before setting up manure storage facilities, it's important to determine whether you need permits or approval from relevant regulatory authorities. The permitting process ensures that your manure management practices align with environmental protection standards.

Manure storage is one step in the manure management cycle. The design and construction of manure storage facilities play a vital role in preventing leaks and contamination of soil and water. Alberta's regulations often outline specifications for factors such as size, location, lining, and structural integrity. These guidelines ensure that your storages are built to last and minimize the risk of environmental harm.

Maintaining appropriate distances between manure storage facilities and sensitive areas is crucial. Alberta's regulations require minimum setback distances from water bodies, riparian areas, wells, residences, and public spaces. These setbacks are designed to prevent potential contamination and address odor concerns, fostering harmony between farming activities and neighbouring operations.

Effective management of leachate (liquid draining from stored manure) and runoff is paramount. Regulations often demand systems that prevent these substances from entering water bodies or causing pollution. By implementing proper management strategies, you contribute to maintaining the integrity of Alberta's water resources.

Preparedness is key in farming. Having plans in place to manage overflow or emergencies that could lead to manure spills or leaks is a regulatory requirement. These plans detail steps to mitigate incidents and provide a clear framework for reporting. By being proactive, you demonstrate your commitment to responsible farming practices.

Regulations often stipulate the importance of maintaining detailed records related to manure management activities, including storage, application, and disposal. By keeping accurate records and adhering to reporting requirements, you contribute to transparent practices that support regulatory compliance.

For larger operations, an environmental impact assessment might be necessary to evaluate potential effects on the surrounding environment. These assessments provide insights into the potential impacts of the manure storage and help tailor management strategies accordingly.

Navigating manure storage regulations in Alberta requires a commitment to environmental stewardship and sustainable agriculture. By staying informed about these regulations and following them diligently, you contribute to the well-being of your farm, your community, and the province. To ensure you have the most current and accurate information, regularly consult Alberta's government websites and relevant regulatory bodies.

The Alberta Environmental Farm Plan works with producers to create an action plan for their operation based on their on-farm management practices. The EFP considers setback requirements, AOPA regulations, NRCB requirements within the question relating to manure management and on farm utilization. To learn more about the Alberta EFP, contact Dustin Roth at (780) 812-1036.

Original article published by Alberta Environmental Farm Plan on August 3, 2023 and can be found at https://albertaefp.com/navigating-manure-storage-what-producers-need-to-know/

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Lakeland Agricultural Research Association

Mission Statement:
LARA conducts local, innovative, unbiased applied agricultural research and extension throughout the Lakeland to promote sustainable agriculture practices for producers, stakeholders and our rural communities.

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