Over the Fenceline

Fall 2018

Battle River Research Group

Welcome BRRG's New Manager!
Khalil Ahmed PhD., PAg

Khalil's key research interests are sustainable agriculture and protecting the environment. He has more than eight years of research experience; holding a PhD in Agriculture and a Diploma in Environmental Sciences from NAIT Edmonton. Before BRRG, Khalil joined SARDA Ag Research as an environmental coordinator and was promoted to a research coordinator.

In the past he has worked in the fertilizer industry in Pakistan, at the Agricultural Institute of Malaysia and at Integrated Crop Research Management Services in Fort-Saskatchewan.

He has published his research in various refereed journals and newsletters, and has presented in many conferences. His publications include 11 reviewed research papers, 15 proceedings, one book chapter, and several reports and articles.

Apart from work, he enjoys playing cricket, and tennis, watching documentaries and watching YouTube videos on how to repair things.

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Staff

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Khalil Ahmed PhD., PAg

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Thank You for Your Continued Support

Grazing Hay Fields This Fall? Here are Some Things to Consider

Pastures have undergone a lot of stress this year. Much of them have been stressed from as far back as 2017 with the hot, dry summer. This year has proven no different, and the hot and dry conditions have reduced the amount of time livestock typically spend on pasture—until September or November. This year, cattle are pulled off pasture around 60 to 70 days earlier than normal, which means some options must be considered to continue to pasture cattle for as long as possible, before the snows come again. One option to think about is grazing hay fields in the fall.

Most hay stands will have a significant amount of alfalfa in them. Higher quality hay typically needs to have a legume component in providing sufficient protein and energy to meet animals' needs. The grass component of a hay stand is beneficial for grazing than a pure alfalfa stand. Alfalfa, though, still poses risk in the fall with regards to bloat.

The best time to begin grazing alfalfa-grass stands in the fall is after mid-September, when plants have begun to slow growth and go into dormancy. This is also past the critical growth period, which is 45 days long starting from the first of August, that alfalfa plants need to prevent winterkill. Alfalfa must be able to put energy down into its crown and roots so that it can survive winter and use those energy stores for regrowth in the spring.

Also, when plants have already reached maturity and are going into dormancy, fiber content is higher and digestible protein and energy content are lower. This makes them harder for ruminants to digest, which lowers bloat risk especially when cattle are first introduced onto hay stands. However, there is still some risk of bloat, so management practices to reduce incidences are still good to keep in mind.

Introduce animals to the hay stand in the middle of the day, and when they are not hungry. If you have access to some hay or straw, leave a bale or two out for them for the first four to five days. Also, having access to another forage stand that is predominantly grass may also work, especially if hay is in short supply. Check on them at least twice a day during this first week, as you may have some chronic bloaters that will need to be removed as soon as possible.

Don't be alarmed if you start grazing and you get frost on the alfalfa. Nitrate toxicity with alfalfa is not an issue because of its nitrogen-fixing capacity—as with all legumes—and most hay stands are usually not fertilized. Nitrates are mostly a problem with annual cereals such as barley or oats.

Frost, however, tends to increase digestibility of the plants because it breaks apart the plant cell walls making the contents within more readily available to rumen microbes. This can be concerning particularly when introducing animals onto hay stands. Avoiding introductions in the morning and supplying a more fibrous feed source will help.

Once animals are becoming adjusted to the hay stand, it is best not to remove them from that stand, even at night. They will need to be re-introduced to the stand using the same practices as you would use when they first enter the hay field. It is best to leave them there for as long as you need them to graze that stand.

Karin Lindquist
Ag Info Centre

Control green seed to reduce storage concerns

Late season rains in some areas may have caused regrowth (from the bottom of some plants) or even late season flowering in fields that are otherwise close to harvest. Green material and green seeds can both cause significant volatility in storage, the latter potentially impacting grade. With significant patches of weeds like lamb's quarters, kochia and redroot pigweed reported in several fields this year, managing green seed in canola isn't the only issue to be aware of.

Fortunately, most of this green material should blow out the back of the combine, but sometimes the flowers and green material can go easier than the seed. Watch sample quality in the grain tank closely and adjust settings as necessarily, or at least be aware of what is being put into the bin for proper manage. Use this CCC combine optimization tool for support with setting adjustments.

Other management options for regrowth are to spray it with a desiccant or pre-harvest aid, or to cut it as high as possible. Although cutting high will not address the weed escapes that have moved above the crop canopy, a desiccant or pre-harvest aid will help with dry down.

In any case, proper conditioning (putting canola on aeration as soon as it comes off the field) should be followed once the grain is put in the bin and it should be monitored very closely until it is brought down to 8% moisture. It should continue to be monitored regularly even after the moisture content has dropped.

Canola Council of Canada
Alberta Canola Producers Commission

Soap Hole Research

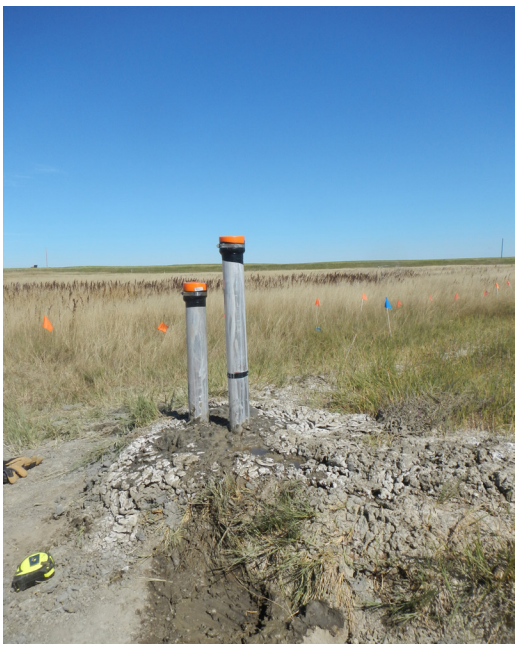
Researchers from the University of Calgary are studying mysterious occurrences of liquified clays found on the Canadian prairies. These features have been noted in the region since early settlers came to the prairies in the early 1900's, with the features being nicknamed 'Soap Holes' due to the greasy/slippery feeling of the clays that are extruded. However, there are several different names that have been encountered to describe these features including Mud Holes, Mud Boils, Turtle-backs, Quickclay, Mud Volcanoes, and Pingles.

This study is attempting to understand the local and regional conditions required for the formation of these features. Local analyses are studying the water pressures and chemistry, along with the clay properties directly in the soap holes and the area surrounding the occurrence. At a regional scale, we want to assess the spatial distribution of the features across Alberta and Saskatchewan to determine if there are patterns in their occurrence related to other large-scale structures. There are some similarities between these features and the bogs, marshes, and muskeg that can be found throughout the province as both are areas of saturated soils. However, the soap hole formations are not exclusively found in low lying areas but can occur on the sides of hills or flat regions. They are also very localized in their extent with the diameter varying from 1-20ft and sometimes form a mound feature that may extend a few feet above the ground surface. Depth of these features is also different as some only extend 3 feet deep before solid ground is reached, but some have been found to extend to depths of more than 45 feet.

Seasonal variations in the features have been noted, with the soap holes appearing more active/wet in the spring and drying out as the summer progresses creating a dry soil crust over a few inches thick. This crust can easily be pierced exposing the wet clays below, but if only slightly agitated the dry soil waves and moves as if it was floating on a lake. In the winters, ice blocks can form in the ground and may result in the mound expanding.

These features have not been extensively studied at a regional scale so we are hoping to build a dataset to assess the spatial distribution of these features. We want to log the locations of these features across Alberta, so we can try to analyze their distribution to find commonalities between the various locations where they are found. Alberta and Saskatchewan are very large regions to cover, so we are hoping to engage with the members of the community to help with this project.

We are primarily looking to take pictures and record the coordinates of the formation to help build a dataset on the distribution of these features. The land will not be altered in any way, although we would also be interested in collecting water and soil samples if the landowner grants us access for sampling. Features can be reported either by contacting the 'Soap Hole Research' Facebook page, or by emailing dzcunnin@ucalgary.ca.



Storing Grain Safely

Harvest can often be difficult when light showers stall harvest progress. Frequent showers can slow harvest and grain quality may suffer. You can harvest and store damp grain for a short time but it needs to be dealt with fairly quickly. Drying and cooling the crop is essential for safe, longer term storage. Binning the crop is only half the job. Even if harvest dry, if it is too hot going in the bin it needs to be cooled immediately.

Hot grain, even dry will still respire for a little while after harvest. It takes time for grain to stop respiring and moisture to equalize in the bin. Moisture will migrate and end up in the top centre part of the bin. Aeration to cool the grain will minimize the likeliness of this happening. Even more importantly, hot grain attracts grain beetles, especially rusty grain beetles. Even if it is too dry to allow breeding, they can be in there and any live insect in grain is cause for it to be rejected at delivery. No one wants to bring home a semi loaded with grain.

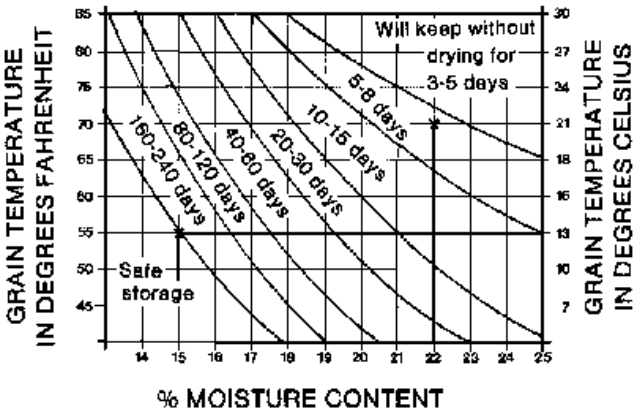
Safe storage is a combination of both the temperature of the grain and the moisture level it is stored at. Here is a list of crops and the maximum moisture content they are considered to be “dry” at and safe to store over the winter.

Table 2 Maximum moisture content levels for straight grade seeds*.

Barley (feed)	14.8
Barley (malt)	13.5
Canola rape seed	10.0
Corn/maize	15.5
Domestic buckwheat	16.0
Domestic mustard seed	10.0
Fababeans	16.0
Flax	10.0
Lentils	14.0
Oats	13.5
Peas	16.0
Rye	14.0
Safflower	9.5
Soybean	14.0
Sunflower	9.5
Triticale	14.0
Wheat	14.5

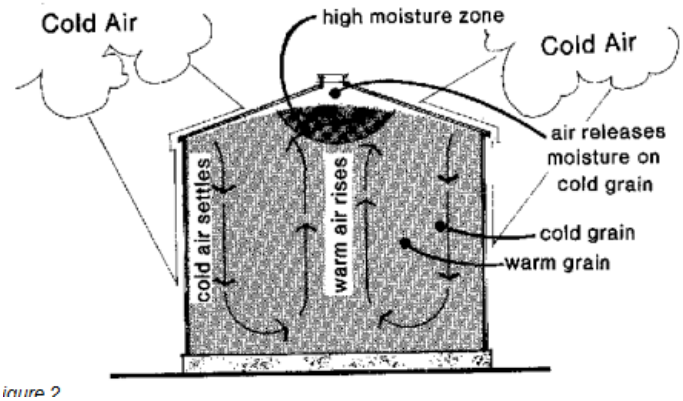
*Percentage wet weight basis

The chart above shows approximately how long damp



grain can be stored safely. This gives roughly the amount of time it can be in the bin. Be warned that deterioration can start to occur before the time expires. It still has to be either dried or aerated. Aeration requires warmer temperatures and low humidity. Warm temperatures are usually in short supply as we go further into the fall. Using aeration, to reduce moisture, will take longer the later in the fall it starts. Also Aeration as a means of grain drying takes a lot more air flow than most aeration fans can produce. If you are trying to use aeration to dry, consider upgrading your fan.

The hot grain or oilseed creates circulation in the bin. Cold air outside will cool the grain against the bin sides



igure 2

and moisture will move down the outsides of the bin

the come up the middle. If there is any place for the moisture to accumulate, it will be just below the top, middle of the bin. Green seed, immature seed or even excessive weed seeds in the bin may also contain more moisture and add to the problem. This is why it is imperative when harvesting hot grain to cool it quickly. Aeration under hot harvest temperatures is important to get the grain or oilseed temperature down to a safe storage level.

Warm conditions at harvest and multi-staged crops are potential ingredients for storage problems. You've spent a lot of money and time getting the harvest in the bin. Take the time to monitor the stored grain condition and cool those bins down. Don't get an unpleasant surprise when selling the grain with discounts for heated grain or insect problems.

Harry Brook - Ag-Info Centre

Feed skyrockets in many areas—but there are options out there

Record-setting temperatures in mid-August have added pressure to an already desperate situation for cattle producers across Alberta.

"There are some people who are going to be really short on feed and pasture," Alberta Beef Producers executive director Rich Smith said in mid-August.

"Some people are in a really tough situation. The heat last week was hard on everything."

Paltry soil moisture reserve this spring meant timely rain showers were badly needed. But they've been meagre and spotty with unrelenting heat hammering many — particularly the south, said Smith.

"It's such a variable year across the province," he said. "We've got a good chunk of the province that is near-normal precipitation and areas that are way below normal."

As a result, hay and silage yields have been variable as well, but some estimates put hay yields 25 to 40 per cent lower than average and silage yields 30 per cent below average. Crop quality has also suffered. According to the Aug. 14 crop report from Alberta Agriculture, only 22 per cent of pasture was rated good or better. Save for irrigated land, haying is done as it's been too dry for a second cut (and less than half of the first cut was rated as good quality).

However, in the frequently dry Peace Country, 80 per cent of pastures are rated good or better. Nearly three-quarters of central Alberta pastures received that rating but second-cut hay was poor as it was in the northwest and northeast — and those areas also have vast stretches of dried-out pastures.

"Some areas got some moisture, and that helps. But there are some areas that haven't got moisture at all," said Smith.

Reduced quality and yields are pushing prices up, he added.

"Prices are pretty high. As people get more and more desperate to find feed locally, that tends to drive prices up," said Smith. "There are parts of Alberta where feed supplies aren't too bad. But if you're not living in those areas, it can be pretty expensive to bring feed in."

Getting creative

That's what Patrick Kunz has seen on his mixed operation near Beiseker.

"Hay around here is selling for $250 a tonne all day long. You put it up and it's gone," said Kunz, who farms with his brother and father.

"You can't have a cow-calf operation and feed that kind of hay free choice."

Hay prices in that area have peaked at $290 a tonne — a far cry from the usual $100 to $150. It's "crazy" to feed cows hay that's priced so high, said Kunz, who runs a 2,000-head feedlot and 85-head cow-calf herd in addition to 2,000 acres of grain.

"At this price, I just can't pencil it," he said. "Actually, it doesn't require a pencil or a calculator to figure out it's too high. So I'm not going to be feeding that much hay."

Instead, he'll use "a little bit of creativity."

"People have a sense of dread because there isn't much feed around, but there are options out there — you've just got to look for them."

He'll be feeding a maximum of 10 pounds of hay a day

during lactation only, but even at that point, he'll be feeding mostly barley straw supplemented with a bit of barley (though his silage yields were down).

"It doesn't take much barley. At the peak when we started calving, it was about three pounds a head a day max," he said.

"That's not that much, but it actually helped cheapen up the ration even more."

But the key to nailing down the right ration — one that balances the nutritional needs of the cattle with the feed budget — has been working with a nutritionist.

"That's pretty important. If you're going to control costs, you have to know what you're feeding and then manage it."

Kunz also bunk feeds, which makes it easier to manage what the cows are actually eating.

"We've managed to reduce feed costs drastically that way — we've cut them in half by not feeding hay out in the field," he said, adding there is a trade-off with higher labour requirements.

"If you shred it and put it into bunks and manage it, you can probably still feed cheaper than a guy who has hay at half the price but is just putting bales out in the field."

And while culling his herd isn't yet on his radar, he thinks it's "not a bad option" for producers who are running into serious feed shortages.

"Everybody has cows that they need to get rid of anyway," he said. "It's not a bad idea to make your herd a little bit younger, a little bit leaner, a little more efficient.

"If you can get rid of those big old cows that are eating you out of house and home, you can make a heck of a difference really quickly."

Government relief

It's getting close to decision time for producers on whether to cull or sell off animals, said Smith.

"There will be some people who will be stretched, and in extreme cases, there will be people who have to reduce the size of their herd," said Smith. "We never like to see people being forced into selling animals because of the weather. But there is some risk of that."

But the sector is stuck in wait-and-see mode as the grain crop harvest gets underway. Initial estimates place the provincial dryland grain yield at six per cent below the five-year average, with yields in southern Alberta 25 per cent below average. But grain quality is still up in the air, so it's hard to say what proportion of the crop will hit the feed market.

"It's not a fully clear situation yet," said Smith. "Sometimes you have crops that turn into feed, so it's difficult to tell how it's going to look. We don't have a crystal ball."

Alberta Beef Producers has been in discussions with provincial ag officials about relief for those struggling

to find feed or who may have to sell some cattle.

"As time goes on and we learn more about the full extent of the trouble, we're going to be moving forward with some requests for assistance," said Smith.

"We're hopeful the government will recognize those challenges and take action to try and help. At this stage, there haven't been any programs announced, so we're still waiting to see what will happen there."

One such program is the federal Livestock Tax Deferral Provision, which allows farmers to sell part of their breeding herd due to drought or flooding and then defer a portion of sale proceeds to the following year.

"We don't want producers to end up with a big tax burden if they're forced to sell animals they weren't planning to sell," said Smith.

Continued on Page 8.

Up Coming Events

Cattle Nutrition & Marketing Update

October 18, 2018 | 4:30pm-8:30pm
Stettler Agri-Plex Pavillion

Calling all Farmers & Ranchers to our beef cattle marketing and nutrition seminar! Join us for a tasty dinner and hear how the beef cattle markets are this fall and when you should sell, as well as learning key strategies for getting through winter on low feed supplies, how to read and utilize your feed tests. We suggest bringing your feed tests with you so you can follow along! The Stettler Vet Clinic will also be informing us of the drug dispensing laws coming into effect in December 2018.

Anne Wasko - Gateway Livestock Marketing Inc. - **Beef Cattle Markets**

Barry Yaremcio - Alberta Agriculture - **Strategies for Getting Through the Winter on Low Feed Supplies**

Courtney O'Keefe - Blue Rock Animal Nutrition - **How to Interpret & Utilize Your Feed Test**

Dr. Josh - Stettler Vet Clinic - **Changes to Drug Dispensing Laws**

To Register:
www.battleriverresearch.com/coming-events
780-582-7308
Cost $40/person
Supper Included

Alberta Government | County of Stettler No. 6 | Flagstaff County | Battle River Research Group

But there are other tools that government can employ to help producers struggling to feed their herds. Those include allowing grazing on public lands, haying along roadsides, feed freight assistance, and "drought disaster" loans.

"We're trying to see if we can figure out a strategic approach to providing assistance to those people who are hit the hardest," said Smith, adding it's important for producers to get in touch with their elected officials about the situation.

"Dry conditions are something that people are pretty familiar with, and producers are pretty resilient and resourceful. But their provincial and municipal elected officials need to know if they're struggling." Kunz agrees.

"People are in a bad spot, so if there's some relief, that's great," he said. "But farmers are a lot more resilient than they give themselves credit for. I think people will get through this."

Jennifer Blair - Alberta Farm Express

Wednesday October 10th

2:30 – 4:30pm

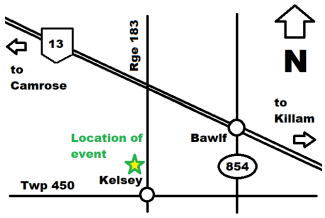
UAlberta agroforestry research information session

An outdoor field event presented by forest soils professor Scott Chang and the agroforestry research team

We study ways to increase soil carbon storage and reduce greenhouse gas emissions from soils in agricultural fields using manure and biochar applications, and by planting trees. Come learn about research happening here in Camrose County!

Where is it? In the field on the **west side of Range Road 183, ½ mile north of Kelsey**. Approximately 30 minutes SE of Camrose.

Approximate address 42450 Rge 183. For GPS systems, use coordinates (52.85091, -112.54484)



This event is possible thanks to the generosity of landowner participants, and Agriculture and Agri-Food Canada.

UNIVERSITY OF ALBERTA
DEPARTMENT OF RENEWABLE RESOURCES

An outdoor event on a field

Hot drinks and refreshments provided

Rain or snow or shine!

See previous research at aggp.ualberta.ca

Questions? Or want to know more about our research?
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