FOOTHILLS FORAGE AND GRAZING ASSOCIATION
Innovation, education and regenerative agriculture
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GRASSROOTS NEWS & VIEWS
JULY 2020

Director's Note - Morrie Goetjen

Howdy Folks!

So how's your spring been, thus far? Here in the Cochrane/Cremona area we are damp.... ok... wet... Not quite "I need my snorkel" wet, but close. I had a little trouble getting my swath-grazing in so I had to switch from an air-seeder (not mine, my neighbour's), to having it broadcast, then tilled in. I have had decent results with this method in the past, especially on wet years.... so I guess we'll see? One thing that's certain in these parts, is the pasture and hay conditions are as good as they have been for quite a few years; the only question now is, can we get the feed put up in decent condition? Oh, the vagaries of farming and ranching...

On the Foothills Forage front, this is my final director's notes (quell the cheering, please) as I am forced into sabbatical, as per our bylaws. This is my fourth, 3 year term (with a 1 year break after my first 6 year stretch) and quite likely, my last. When I joined back in 2007, this association operated quite differently than it does now and it'd be hard to argue that the changes have not been beneficial.

Along with the changes to FFGA, our little cattle operation has changed as well. Long gone are the combines (whew) and the haying equipment (whew, again). Our cattle numbers have increased and so has the length of our grazing season.... which, I think is most beneficial to the soil and our bottom line.

As mentioned earlier, this is my final term with FFGA and with our AGM being called, I can oh-fish-ully cease my duties, along with 3 other sitting directors. In case you missed it, our AGM has been planned for Wednesday July 29th at the Highwood Memorial Centre in High River, AB (see page 6). Any interested parties are asked to attend, especially those of you who have put your name forward as a potential director. With the ousting of 4 current directors, there is now plenty of room for some new blood AND new ideas!!

Another quick reminder of our Riparian & Range Pasture Walk scheduled for August 6th in the Linden area (see page 3). This walk will discuss riparian areas, native/ non-native plant identification, pasture management, and more.

As mentioned previously, this is my final term with FFGA. I've learned a ton, but more importantly, I've made some great friends... I may forget what I've learned, but I'll never forget the people.

Until our trails cross again...

Morrie
Goetjen

IN THIS ISSUE

Breeding season bull management


Photo: Sonja Bloom

As breeding season gets underway there are some points to remember about the bull battery. The most economically stable ranches are those that get cows and heifers bred early in the breeding season. The two key factors in making this happen are that the female is cycling and the bull is in proper condition. If we assume the bulls are in proper body condition score, have had adequate exercise, and have been with the other herd bulls to determine social dominance, we should be able to turn them out and forget about them, right? No, as ranchers you need to continually observe and manage bulls.

Young bulls have great potential to bring genetic improvement to your herd, however they will experience an acclimation period prior to breeding any females. In order to start calving on your selected date, it may be important to turn young bulls out a few days early, so they can get adjusted to their environment and be ready to breed cows when you would like them to start. Another key point with young bulls is to have three or more bulls per pasture, as this helps increase sexual activity. If only one yearling bull is put in a pasture, there may be decreased early season conception rates, having a negative impact on overall calf crop.

Social dominance in pastures can be a concern. Make sure that yearling bulls and older, mature bulls are in separate pastures. If they are together, the yearlings cannot compete with the older bulls and may get cows bred, resulting in limited genetic improvement, as well as possible injury to the younger bulls. If older bulls have been used more than two breeding seasons, they have a tendency to become territorial and may spend more time fighting and defending their territory than servicing cows. This is another situation where observation is key, not only because they may not be getting the cows bred, but because they could be injured or causing injuries. Work to group bulls together that will minimize this negative behavior.

When determining which bulls to group together, the next important question is how many bulls to put in each pasture. The traditional rule of thumb has been 25-30 cows per bull, however, there has been research that indicates this number could be increased to as many as 50 cows per bull without a negative impact on conception rate. However, a breeding soundness exam must be done 30-60 days prior to bull turn out.

When determining proper bull power, there are three factors for each ranch to consider. First, what is the topography, feed condition and pasture size? There is evidence that the cow finds the bull, however if the pasture is hilly, has a lot of vegetation, or in the case of western South Dakota, is very large, this limits the number of cows that a bull will be able to service.

Secondly, is to consider the age and condition of the bulls. Young bulls will be more challenging because they are still growing. They have higher nutrient requirements and therefore will lose condition faster than mature bulls. This may be a situation where young bulls are rotated in groups for shorter periods. The maximum time to leave yearling bulls with cows is 70 days, but shorter is better.

Finally, the length of the breeding season and the amount of observation is critical. Ideally, a 60-90 day breeding season is best to ensure similar calf ages and weights at weaning. Ranchers need to observe bulls for mating desire as well as physical injuries. If you are observing animals closely, bulls that are either injured or lack desire can be removed. Research in Texas and Colorado indicate that one in five beef bulls is questionable or unsatisfactory as a breeding bull, so don't be surprised if the bulls are not performing as you would expect.

Author: South Dakota State University Extension. Original article can be found at https://www.drovers.com/article/breeding-season-bull-management

On the Cover: Birdsfoot Trefoil found near one of FFGA's Operation Pollinator partner's ranch, summer 2019 *Photo by Sonja Bloom*

Thank you to our municipal supporters!

Range Pasture Walk

August 6, 2020 | 12:30-3:30PM | Linden area

Topics Include:

- Riparian/pasture health & forage productivity
- Native and non-native plant ID
- Pasture assessment & management
- Alternative watering, fencing for riparian pastures, and grazing management

Register at:
https://ripariangrazingpasturewalk.eventbrite.ca

Contact information:
Fallon Sherlock - Land Care Coordinator, Kneehill County
(403) 443-5541
fallon.sherlock@kneehillcounty.com

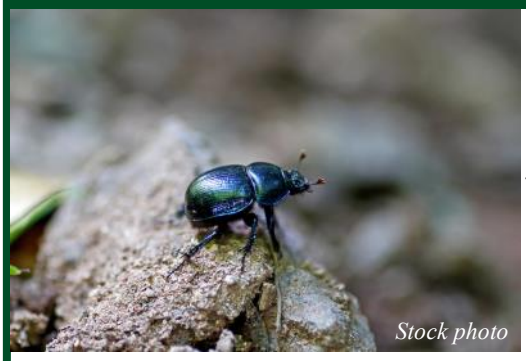
Kneehill COUNTY

FOOTHILLS FORAGE AND GRAZING ASSOCIATION

Join Kneehill County, Cows & Fish and Foothills Forage & Grazing Association on this exciting pasture walk & talk

There is no fee to attend. Registration is **mandatory** as space is limited to respect COVID-19 public health restrictions. A map with the location will be sent to registrants before the event. If you are feeling unwell please don't attend.

Been there, dung that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What if ranchers could find a way to increase grazing, recycle nitrogen, reduce the number of pest flies, increase forage yield, improve soil water retention and ground aeration, lower animal disease rates and beautify landscapes?

What would such combined services be worth?

Regardless of the number, the dung beetle does it all and does it for free.

There are 300 species of dung breeding insects in Canada, and dung beetles are among them, said entomologist Kevin Floate of Agriculture Canada in Lethbridge.

It's a case of been there, dung that for the beetles.

They break down cow patties so grass can grow again, return nutrients to soil and reduce habitat for flies bothersome to cattle.

Floate said dung beetles can make short work of manure, depending on the type of beetle and environmental conditions.

"I have seen them rip apart horse dung in a matter of a few days," he said.

"When you get literally 2,000 or 3,000 beetles, even though they're pretty small, just that activity … it essentially eliminates (manure) as a negative force in the pasture within a week."

Adult dung beetles feed on bacteria in manure. Sieve-like mouthparts allow them to squeeze the material and extract micronutrients. Thus fortified, the beetles lay eggs and the larva feed on plant fibre within the manure.

Similar to a cow's rumen, dung beetle larva have expanded guts that produce enzymes for digesting fibre.

"A dung beetle larva may eat their own weight every day in plant fibre just to get enough nutrients to develop," said Floate.

Most dung beetles overwinter as adults, reappear and lay their eggs in spring. Larva feed on manure through mid-summer before emerging as adults in fall.

There are some native species of dung beetle, but most species in Canada came from Europe during settlement and subsequent cattle import and movement.

They arrived ready to start work.

"All the European species that we see in cattle dung are sort of generalists with dung of a big round pie: bison dung, cattle dung," he said.

"We do have specialists in the sense that some dung beetles have a strong preference for maybe horse dung, but you also find them in cattle dung, or vice versa."

Floate and his colleagues have surveyed dung beetles and researched the results of their activity. Cow pies in pastures without dung beetles become virtual hockey pucks that can potentially remain intact for years.

"But if you have insect activity, the insects themselves are tunneling, they're feeding, they're breaking up the manure," he said.

"And by breaking up the crust, they're allowing water to get in, they're allowing plants better access from beneath."

Insect presence attracts birds, which play their own role in manure redistribution.

Floate said he occasionally gets concerned inquiries about manure that fails to break down. His first question is, "when was the manure deposited?"

Insects can't colonize manure in winter, so those cow pies will likely be around longer than those dropped in spring.

"Where insect activity is most important is probably shortly after turnout, so May, June, maybe early July," he said.

"That's when the dung beetles are actively laying eggs, tunneling, feeding, and dung beetle larva are developing and feeding."

Beetle activity lulls in the peak of summer, but many other beneficial flies, fly parasites, beetles and mites also enjoy a good pie.

Who doesn't?

Floate tells of mites that ride on flies and dung beetles "like passengers on a bus. The dung beetle is the bus. When it arrives at a fresh cow pie, the tiny little mites hop off."

However, that's not the end of the trip. The mites feed until new dung beetles develop from larva.

"The mites will line up and wait for the new dung beetle adult to leave, sort of like passengers waiting at a bus stop… It's pretty amazing, actually."

The caveat on this insect activity comes in the form of cattle insecticides. Products applied to cattle to control parasites and pest flies can be passed in manure and limit subsequent insect activity.

The scope of those effects depends on the product and when it was applied.

Insecticides can do the job if the goal is to kill pest flies, but the choices are different if the focus is on preserving dung beetles and other beneficial insects.

"In our studies, we have shown several times that if you apply the recommended dose of a certain product to cows in the spring, there's enough residue in the fall, in fresh manure being deposited by that animal, to suppress at least the development of some insects," Floate said.

"Whether that's good, whether that's bad, it's a judgment call."

Ivermectin, the most studied cattle-applied insecticide, is commonly used in fall.

The absence of insects in winter reduces the impact, and manure residue is gone by the time cattle are

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turned out in spring.

Treatment in spring is a different story, and probably the worst case scenario for dung beetles, Floate said. Research has found reduced insect activity in manure for up to 12 weeks after insecticide application.

Dung beetles find manure by following an odour plume, which they detect through sensors in their antennae. They are efficient flyers and will travel for more than a kilometre if the potential meal smells good.

There are three types: dwellers, tunnellers and rollers.

Most species in Alberta are dwellers. They are attracted to fresh cow pies, where they eat bacteria and lay their eggs.

As the name implies, tunnellers will bury bits of manure five to 20 centimetres below the surface, where the material will feed the larva.

Rollers take a piece of manure and push it away from competitors. Then they bury it in a small ball, inside which they've laid an egg. When the larva emerge, their meal is ready.

Floate said dung beetles are not pests "in any serious sense," although some farmers suspect that the larva from one dung beetle species feeds on crops where manure has been spread.

He is not yet convinced they cause damage worthy of any control efforts because damage is usually spotty.

Floate has researched a number of different insects, ranging from wheat blossom midge to livestock pest flies.

And dung beetles, of course.

The work continues to fascinate and he likes to share his interest, though he has a squirm-inducing way of putting it.

"One of the greatest pleasures I get is getting out of my office, away from my desk, sticking my hand in cow dung and sharing this passion with other people."

Author: Barb Glen, The Western Producer. Original article can be found at https://www.producer.com/2014/12/been-there-dung-that/

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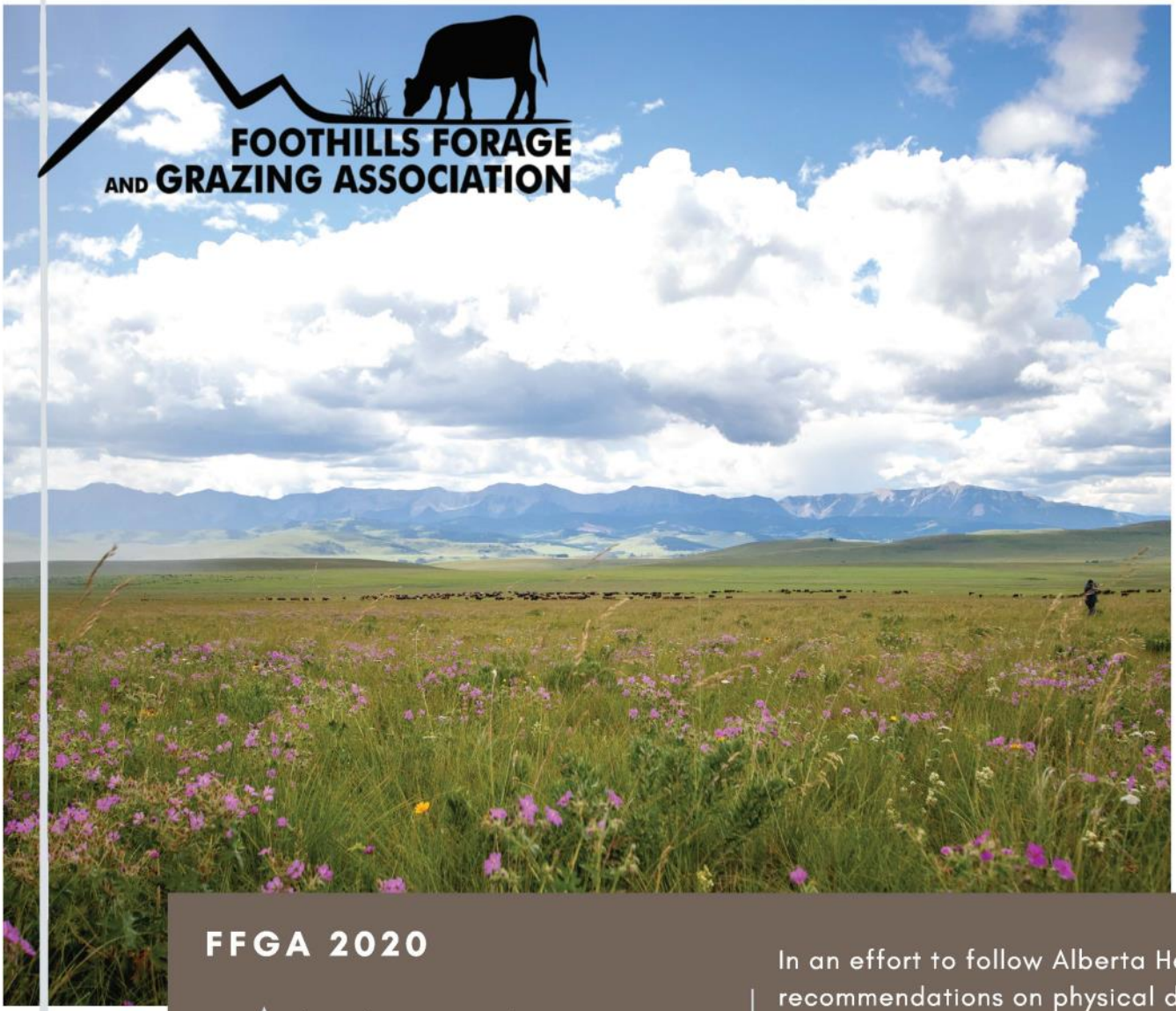

FFGA 2020

Annual General Meeting

July 29, 2020 | 1 PM to 3 PM | Highwood Memorial Centre, High River

In an effort to follow Alberta Health's recommendations on physical distancing we will not be having a guest speaker or a meal this year. The AGM will be free to attend and registration is required.

Please note, you must be a member in good standing to vote during the Business Meeting. Memberships can be purchased online at www.foothillsforage.com/membership

Are you interested in joining the Foothills Forage & Grazing Association Board of Directors? Email manager@foothillsforage.com for more details!

Register at https://ffgaagm2020.eventbrite.ca

Where does short-season corn fit?


Photo: Sonja Bloom

Statistics Canada reports that Western Canada's silage corn acreage has grown significantly in recent years. Nearly 30 per cent of seeded corn silage acres aren't harvested, suggesting it's likely being used for grazing. The potential for a 50 per cent higher yield compared to barley may offset corn's 30 per cent higher input costs, but only if growing conditions are right.

It is critically important to pick a hybrid that can grow under local conditions. A hybrid with a higher corn heat unit (CHU) rating than local conditions provide will not have time to reach optimal maturity before it is harvested or frozen, and will contain more fibre, more moisture, fewer cobs and less starch than ideal. It will also be less palatable and nutritious, whether it's harvested for silage or left for grazing.

On the other hand, a short-season hybrid grown in a historically hot area would be ready to harvest before the growing season is over, sacrificing some potential yield. Corn silage that is harvested too late will be too dry, making it harder to pack and reducing silage palatability. Not every year is "average," and year-to-year variations in growing conditions also need to be considered before deciding whether to try corn, or which hybrid to try.

Agriculture and Agri-Food Canada's Karen Beauchemin and Vern Baron recently published a Beef Cluster study examining short-season corn hybrids grown in different CHU zones in Western Canada (*Corn Forage Yield and Quality for Silage in Short Growing Season Areas of the Canadian Prairies*, doi:10.3390/agronomy8090164).

What they did: Short- to medium-season corn hybrids were grown in 2013, 2014 and 2015 at Lacombe, Lethbridge and Vauxhall (Alberta) and Elm Creek (Manitoba), sites that have considerably different growing conditions. Five or six different hybrids were chosen for each site based on their suitability for the long-term average CHU during the growing season at that site.

Hybrids with CHU ratings between 2000 and 2200 were grown in Lacombe (long-term average of 2025 CHU during the growing season). Hybrids with CHU ratings of 2000 to 2600 were grown in Lethbridge (long-term average of 2135 CHU). Hybrids with CHU ratings between 2200 and 2600 were grown in Vauxhall (long-term average 2161 CHU). Hybrids with CHU ratings between 2175 and 2650 were grown in Elm Creek (long-term average 2590 CHU).

Most hybrids were only grown at one, two or three sites; only one was grown at all four sites. Plots were generally seeded in mid-May and harvested in mid- to late-September, just before the first frost. The Lethbridge and Vauxhall sites were irrigated, and all plots were fertilized generously to ensure that hybrid maturity and climate were the only factors limiting corn growth. Temperature and moisture (precipitation and irrigation) data were collected, and corn yield and nutritional value were measured.

While new hybrids have become available in the five years since this research was completed, the key findings and principles haven't changed.

What they learned: Lacombe received 26 per cent to 39 per cent less rainfall than average in all three years. Actual CHU during the growing season only reached the long-term average in 2013, when plot yields averaged 23 U.S. (short) tons of wet silage per acre. Yields were lower in the cooler years (10 to 11 tons per acre). Only the lowest CHU hybrid achieved the minimum dry matter (30 per cent), starch (20 per cent) and cob (50 per cent) percentages required for adequate silage quality, but it also had the lowest yield.

In Lethbridge, actual CHUs exceeded the long-term average every year, but yields varied from 8.2 to 20 tons per acre in spite of irrigation. All hybrids met minimum silage quality parameters.

In Vauxhall, actual CHUs exceeded

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the long-term average every year and yields were relatively stable (15 to 20 tons per acre), but the two hybrids with the highest CHU rating failed to meet minimum silage quality parameters.

Elm Creek received 24 to 40 per cent less rainfall than average each year. Actual CHUs were below the long-term average every year, but average yields remained reasonably stable (16 tons to 20 tons per acre). The two hybrids with the highest CHU ratings failed to achieve minimum silage quality parameters.

Corn needs heat, and it needs it at the right time. The period between silking and harvest (when cobs and kernels are developing and filling) is particularly important. At each site, yields were always lower in the year (s) when actual CHUs from silking to harvest were low.

What it means: The growing season is too short and variable in many areas to reliably grow short- to medium-season hybrids for silage or grazing. Corn can be a risky choice, especially in regions where long-term average CHUs during the growing season are close to the minimum CHU rating of the available hybrids.

There are tradeoffs between yield and quality. Hybrids with the highest CHU ratings often yield better but generally have lower nutritional value. Whether animal performance will be impacted (e.g. feedlot growth rate and feed conversion, or body weight and condition score of breeding stock grazing corn) will depend on the hybrid, year-to-year growing conditions, and other nutritional management factors.

Author: Dr. Reynold Bergen. Original article can be found at https://www.canadiancattlemen.ca/research/where-does-short-season-corn-fit/

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FFGA MISSION & VISION STATEMENTS

Mission: Assisting producers in profitably improving their forages and regenerating their soils through innovation and education.

Vision: We envision a global community that respects and values profitable forage production and healthy soils as our legacy for future generations.

This Publication is made possible by our major funder—Alberta Agriculture and Forestry.

FFGA is a proud member of AFIN Alberta Forage Industry Network, ARECA, CRSB