FOOTHILLS FORAGE AND GRAZING ASSOCIATION
Innovation, education and regenerative agriculture
Unit 4A, 710 Centre St. SE, High River, AB T1V 0H3
Phone: (403) 995-9466 ~ www.foothillsforage.com

GRASSROOTS NEWS & VIEWS
AUGUST 2020

Director's Note - Steve Yule

Howdy folks;

Two things have been proven this year. Perfect timely rains make ranching easier, and just when you think the world is straightening out, you're wrong – again!

The early May rains that offered the grass a solid start, were such a welcome relief! Even with the cooler weather, the moisture brought the optimism we all needed. We experimented retaining some yearling steers on dryland Triticale this year, and because of these rains we were able to graze into late July before we moved to grass. We found that this project really hinges on how much moisture comes every year. Using management tools like proper stocking rates was a difficult task as the grass grew fast in those wet spring conditions, then slowed considerably in July. We discovered that the ideal situation is to have the grass right beside the dryland acres as this was the best way to finish off the season.

Mid July, we also disced some alfalfa into old stands of irrigated hay. Although it is preliminary, we will know in the fall if this was a success or not. For everything else, we continued with what was working well for us in our operation…. corn, hay and some greenfeed.

Through this COVID-19 crisis, as with everyone else, ingenuity has become forefront in keeping business rolling. Foothills Forage & Grazing Association is so lucky to have Laura and Sonja who were quick to come up with ways to meet our guidelines and offer educational events that help to share our message virtually and at future in person events (see this edition for more details).

For us, we are grateful we haven't really changed our everyday ranching life. If we were faced with living in an inner city apartment, I am sure our outlook would be different, but as of now our goal is to always have time to enjoy our family, friends and this rural lifestyle we have grown up with.

Everything ending abruptly this past March left several unfinished ends which made it tricky to have a successful season. We look forward to being able to chase our kids from rink to rink all hockey season, and sincerely hope things turn back to "normal" soon, however that may look. Having a plan in place for our business allows us to be able to enjoy all of what we consider the best things in life…. family and friends.

Steve Yule

This sums up ranching...looks like fun, but sometimes we just get drug through the mud! ~ Steve Yule

IN THIS ISSUE

Swath later for better winter grazing


Photo credit: FFGA

Research into the optimal stage of maturity to swath grain for winter grazing suggests later than previous recommendations.

University of Saskatchewan beef scientist Bart Lardner said producers have typically cut barley or triticale at the soft dough stage and oats at the late milk stage.

But he said those recommendations actually came from the best time to cut cereals for a silage pit.

He told the Foraging Into the Future conference that a small barn metabolism study looking at whether those guidelines applied to grain left on the field for extensive grazing found that later maturity was better.

"There's a doubling of effectively degradable dry matter, so potentially more nutrient content for the animal to absorb and utilize out in the field," he said.

The results of that study were tested in a three-year field grazing study that wrapped up last spring.

"We had oat, barley, triticale and moved all three of those from late milk to hard dough, or soft dough to hard dough, collected all kinds of data on the cow, on the yield, on the quality and economics and found, you know what, you're going to get more grazing days when you go from soft dough to hard dough," Lardner said in an interview.

The study used a 120-acre field divided into three 40-acre plots seeded to CDC Maverick barley, CDC S01 oats or Taza triticale. Each crop was seeded in early June at two bushels per acre with 50 pounds of nitrogen.

The crops were cut at the previously recommended stages and the later hard dough stage.

The final report on the study is not yet complete, but Lardner said the cows all experienced more positive body weight changes when eating the more mature swaths. For example, cows on oats at the hard dough stage gained 10 kilograms more than the cows on the oats cut at the late milk stage.

Animal grazing days increased on all the later-stage crops through the three-year study. For oats, the number of days increased from 69 to 89, while for barley the number rose from 61 to 70 and for triticale, from 89 to 94.

Lardner said extensive feeding practices continue to gain traction among producers because costs are lower than dry lots. About two-thirds of Saskatchewan producers responding to the Western Canadian Cow Calf Survey said they use some type of winter grazing.

He reminded producers to make sure they have protection from wind and snow so the cow remains in good condition prior to calving.

"Don't jeopardize condition for lower feed cost per day," he said.

Lardner also told producers to consider adding non-bloat legumes to their pasture systems to increase the quality and help reduce greenhouse gases.

"Maybe we can mitigate emissions of methane in grazing cows by incorporating those non-bloat legumes into our long-term pasture systems," he said.

Legumes reduce the need for costly fertilizer applications, he added.

Lardner said producers around the world are looking at better ways to graze their cattle.

Double cropping, intercropping and extensive grazing are ways to stretch out the season, and grazing systems will vary by region.

"Can we grow corn and have a legume in between rows? Can we have a greenfeed crop followed by maybe a fall rye?" he said. "Are we able to grow a crop that we seed in spring, take it off maybe in early summer and seed back to a winter type of crop?"

He said researchers hope to take a look at some of these ideas now that the Livestock and Forage Centre of Excellence is up and running.

Author: Karen Briere, The Western Producer. Original article can be found at https://www.producer.com/2019/02/swath-later-for-better-winter-grazing/

On the Cover: One of the many bulls at CL Ranches. *Photo by Sonja Bloom*

Thank you to our municipal supporters!

The five principles of soil health


Photo: Sonja Bloom

USDA researcher says healthy soil needs a systems approach

At the Regenerative Agriculture Forum in Brandon in November, Jay Fuhrer, soil health specialist with the Natural Resource Conservation Service of the USDA, spoke about soil health. Fuhrer has identified five principles of soil health, and how they work to improve soil health and increase productivity.

Fuhrer defined soil health is defined as "the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans." Fuhrer says achieving soil health requires a systems approach that combines five principles: soil armour, minimal soil disturbance, plant diversity, continuous living plants/roots and livestock integration.

Fuhrer is the lead educator at Menoken Farm, a 150-acre demonstration farm east of Bismarck, owned and operated by Burleigh Country Soil Conservation District. Established in 2009, the farm hosts visitors from around the world who come to learn about its systems-approach conservation farming system.

Over his 40-year career, Fuhrer has helped many growers improve their soil health one field at a time. He reminded farmers that a regenerative system takes many years to develop, during which time the benefits accumulate slowly but surely, in terms of improved soil health, water management and ecosystem services.

1. Soil armour

Soil armour is residue left on the soil surface that serves many functions such as preventing erosion from wind and water, regulating soil temperature, building soil structure, increasing soil organic matter and better managing water resources.

Fuhrer says to achieve better water infiltration and maintain moisture where it's needed most, it's important to manage for transpiration, not evaporation. When farmers till, they are managing for evaporation. That leads to issues such as salinity. Using a no-till system with good residue management is managing for transpiration.

"Transpiration buys you something, evaporation costs you something," Fuhrer says. "Soil armour takes the energy out of a raindrop and prevents soil compaction."

The first four to eight weeks of a new, green plant's life when it puts exudates (sugars) into the soil to feed the soil biology. Plants don't need to be three feet tall, as long as they have leaves to harvest carbon dioxide from the atmosphere.

"Every green plant is a carbon inlet," says Fuhrer. "I like to have a mix of dead litter on the surface and green plants because most of the carbon in the dead litter goes back into the atmosphere, but the green plant is reversing that by taking the CO2 and putting it back into the soil."

2. Minimal soil disturbance

As Fuhrer sees it, farmers can either continue to push iron or start pushing carbon in their soils.

Long-term tillage systems encourage maximum release of nutrients like nitrogen, phosphorus and potassium and leads to degraded and compacted soils, says Fuhrer.

What farmers want is soil aggregation. "That is why we need to have minimal soil disturbance and fibrous roots in the ground, so we have aggregates forming and glomalin (sometimes called soil 'glue') to hold the soil together," he says. "That is how we start to build soil."

3. Diversity

A diverse mix of plants is essential to maximize the carbon going into the soil to feed soil biology and make the system more robust and resilient.

"It's always good to have cool- and warm-season grasses and cool- and warm -season broadleafs," says Fuhrer. "When we have diversity of plants on the surface, we have diversity of biology in the soil."

Some ways to get more diversity include longer crop rotations of three to four years, and practices such as cover cropping, inter-cropping, or relay cropping (following a short-season annual crop with another annual crop). The right method for a particular farm depends on many factors, such as length of the season, soil and water conditions, available equipment, and the desired end goal.

Fuhrer showed an example of a seven-year rotation at Menoken Farm from 2012 to 2018 that included a perennial component, grazing and no inputs at all. The first two years a cereal crop was grown, the field was sown to grass the third year then grazed for four years before being cropped again.

The soil was analyzed with phospholipid fatty acids (PFLA) tests that show the weight of biological organisms in the soil. In the first two years, the PFLA showed 3,000 nanograms/gram. During the two years of grazing, the mass of microbes went down slightly rising over the last three years of the rotation to reach almost 6,000 nanograms/gram by the final year of grazing.

The soil pH started at 5.8, but after five years in the system, Fuhrer said, it had returned to neutral. Calcium content increased to around 63 per cent and the soil organic matter increased by around 0.1 per cent per year. "Now I have a healthy soil," says Fuhrer. "Perennials can do a lot for us, but you have got to have diversity of plants, you have got to have enough and you have to manage grazing and it all has to come together as a package."

4. Continuous live plants/roots

It's important to choose crops in the rotation that leave enough high carbon material on the surface to prevent erosion. "Soybean followed by canola, for example, both produce low carbon residue and have difficulty protecting the soil," says Fuhrer.

Menoken Farm generally plants a fall cover crop or, in corn crops, interseeds other crops between the corn rows. They have been experimenting with 60-inch wide corn rows to allow more sunlight to get to the companion crop.

They are planting green (into something like a fall rye crop sown the previous fall) for crops like canola. "We plant canola green and avoid any members of the brassica family before it," says Fuhrer. "We will put a mix of species to-

(Continued on page 5)

To improve pasture health land managers must manage for soil quality. As the soil improves, so too will forage production which in turn will lead to higher profits. Join FFGA at the Waldron Ranch for this exciting event!

TOPICS

- Rotational grazing on native rangeland (including fencing, watering systems, stocking rate & grazing days)
- Rotational grazing effect on soil health & soil carbon - featuring Kimberley Cornish with the Food Water Wellness Foundation
- Corral system tour (optional)

DETAILS

Date: August 19, 2020
Location: Waldron Ranch
Time: 12:00 to 5:00pm
Cost: $20.00 FFGA Member, $25.00 Non-member + GST (includes bagged lunch)
Registration deadline: August 17

This is an outdoor event, please dress for the weather

COVID-19 public health restrictions are in place for this event. If you feel unwell please do not attend. Please maintain at least 2 meters (6 feet) of space at all times. Masks & hand sanitizer will be available.

Register at: www.foothillsforage.com/events

(Continued from page 3)

gether and built it around fall rye so that in the spring the rye is growing and transpiring water instead of having bare ground evaporating water. We are building soil aggregates now we have active biology in the soil when we plant the canola into it in the spring."

Fuhrer has also planted soybeans into fall rye, which provides supplemental carbon for the soybean crop and achieving a higher yield than two other soybean fields that were not planted green.

5. Livestock integration

Plants, soils and animals evolved together, and all are essential to a properly functioning ecosystem. Livestock convert high-carbon material to low-carbon material that feeds the soil food web. Manure provides a home and food for beneficial insects that help cycle nutrients and can reduce pest issues.

The top half of growing plants have more protein and energy than the bottom half, so ensuring that animals graze only the top half provides cattle with the most nutrition for better, faster weight gain and leaves the bottom half of the plant trampled to the soil surface to begin recycling nutrients and maintain soil armour.

"When you put the top half in the rumen and trample the bottom half, good things happen in the cropping field the following year," says Fuhrer. "As well, if you graze the bottom half, you will put your animal on a lower plane of nutrition, so if your goal is maximum gain on yearlings or custom grazing, you won't get that gain."

What does that mean in terms of available forage? As an example, a warm-season cover crop mix on the Menoken Farm, used for grazing, produces 9,000 pounds of forage per acre. "Grazing half of that, if I have got 2.7 per cent of a cow's body weight, and have a 1,400 to 1,600 lb. cow, I am going to need about 45 lbs. of dry matter per day, so at that yield, I have 100 grazing days per acre," says Fuhrer, who adds he can usually meet the nutritional needs of gestating cows winter grazing diverse cover crops.

Constant process

Fuhrer monitors the system at Menoken Farm closely, performing standard soil tests, a Haney P test and PLFA tests at 20 monitoring sites in spring and fall each year, but he emphasizes that no one result in one year gives the true picture of how a system is functioning or improving. Tests can vary over time.

Because it's not a linear process, it's important to allow time for the system to work and a trend to emerge, adds Fuhrer.

"There are years when we expect things to go up and they don't, and years we expect a crash and it pumps up a bit, and you have to have enough years so you can put all the data together on a graph and put a line through it eventually, get a trendline and see where you are," he says. "It can take a number of years to truly see the value in what you are doing."

Author: Angela Lovell, freelance writer based in Manitou, Manitoba. Original article can be found at https://www.grainews.ca/features/the-five-principles-of-soil-health/

LARA, NPARA AND FFGA PRESENT:

Soil Health Webinars

Join Lakeland Agricultural Research Association, Foothills Forage & Grazing Association and North Peace Applied Research Association for these exciting Soil Health themed webinars from the great instructors at Understanding Ag!

Webinar Details:

Soil Building Secrets with Ray Archuleta
Tuesday August 4 at 7:00pm MST
Register:
https://us02web.zoom.us/webinar/register/WN_DRGWahLnROiE4uKbLXH2Mw

Adaptive Grazing - What is it & How to Implement with Dr. Allen Williams
Tuesday August 18 at 7:00pm MST
Register:
https://us02web.zoom.us/webinar/register/WN_VXPoMv-vTqWkRaJA8RNqCQ

Lowering Input Costs & Rejuvenating Soil with Gabe Brown
Tuesday September 1 at 7:00pm MST
Register:
https://us02web.zoom.us/webinar/register/WN_Ss5YxyylRgCl00XfmJ0-Gg

LARA · FOOTHILLS FORAGE AND GRAZING ASSOCIATION · NPARA NORTH PEACE APPLIED RESEARCH ASSOCIATION · AB · GRASSTONE BEEF COMPANY

Connect with the FFGA on social media!

Instagram · YouTube

Taking a fresh look at your land, cattle and grazing system

Photo: Sonja Bloom

Range management principles are 'fairly simple' but applying them depends on local conditions

You might think you know your land inside and out, but getting back to basics can improve pasture productivity.

"It's important to look at this basic stuff because it helps tune the eye," said Ross Adams, range management specialist with Alberta Environment and Parks.

"It's easier to integrate livestock into the system if you understand the behaviour of the rangeland system and the grazing animals.

"Your management will be better if the underlying behaviour of the system is better understood."

Effective range management focuses on the land, animals, and grazing system, said Adams in a July 16 Cows and Fish webinar.

"No two ranches — and no two pastures — are the same," said Adams. "There's no one-size-fits-all approach. It requires monitoring and the application of a set of fairly simple principles that allow beneficial grazing systems to be developed to address the unique challenges in an operation."

While the tactics may vary from ranch to ranch, the underlying principles are the same across the province: Balancing forage supply and demand; avoiding grazing during vulnerable periods; distributing livestock impacts across the landscape; and allowing for effective rest.

"It's about managing grazing activities on rangeland in a way that recognizes the natural constraints of ecosystems and applies the principles of range management," he said.

Balancing forage supply with demand is the first — and most important — step.

"If too much is being consumed, there's really no way to manage around that," said Adams.

'Decreasers' versus 'invaders'

Forage supply will depend on things such as moisture, soil health, topography, plant communities in the pasture, litter, the level of disturbance — basically anything that impacts plant health and growth.

"All of those will come together to determine the composition of the community and influence how productive those plant communities are."

Some plants — called 'decreasers' — are relatively intolerant of grazing disturbances.

"They're called decreasers because, as grazing or other disturbance intensity increases, they tend to decrease in dominance," he said.

"They are replaced in the stand by increasers or invaders, which are more tolerant of disturbance. They're usually more grazing tolerant, but are also usually shorter in stature, less productive, and in many cases less palatable."

As the level of grazing increases, the plant community starts to shift from highly productive decreaser species to one that is less productive and less attractive to livestock.

"Comparing very heavy grazing to light or moderate grazing, you're going to have a much more productive plant community at those light to moderate levels of disturbance than at heavy or very heavy."

But productivity isn't the only consideration, he added.

"Plants need to maintain enough leaf tissue that they're able to meet their growth needs, maintain their root systems, and set seed for the next growing season," he said. "If too much of that leaf material is removed by grazing animals, the plant will begin to lose vigour and productivity, and at high levels of disturbance, the plant may die.

"It's important to recognize that some fraction of productivity must be left to maintain the plants to keep them on the land."

Managing grazing

Avoiding grazing during vulnerable periods — the next tenet of effective range management — is also key.

"For range plants in Alberta, they're most vulnerable when they're coming out of dormancy and initiating new growth in the early spring," he said.

That's when plants draw on stored carbohydrate reserves from the previous year to initiate growth. By the early part of summer, plants have enough leaf material "to meet their fuel demands," and can tolerate grazing better.

"If grazing is done in this early period when they're relying entirely on stored sugars, this can really weaken plants and limit growth and productivity later in the growing season," he said. "It requires the plants to dig deeper into limited carbohydrate reserves to replace those leaves that are lost to grazing.

"But if grazing is deferred later into the season once they have more leaf tissue above ground, the impacts of grazing are much less severe."

Distributing livestock evenly reduces the impacts of grazing.

"Livestock are attracted to certain features on the landscape, and if left to their own devices, they will avoid other areas," said Adams. "Over time, we need to overgraze the preferred areas and leave forage resources unused in areas they're less likely to visit."

Active management of livestock distribution means understanding what makes your animals tick. Cattle tend to prefer spending their time close to water sources, on open grasslands, and on level terrain. So you may need to develop water sources in under-utilized areas or herd the animals to other parts of the pasture in areas of rough terrain, he said.

More predictable forages

The final consideration is providing enough rest after grazing — "and this

(Continued on page 7)

(Continued from page 6)
means growing season rest."

"Plants need time to replace lost leaf material, build up stores of carbohydrates before the next growing season, and to set seed and complete their lifecycles. This can only be done during the growing season," he said.

"Plants that have been heavily grazed will require more time and more rest to recover than lightly grazed plants."

Plant type will also play a role in that, he added.

"Grasses have their growing points at or near the soil surface, so unless vegetation is being very closely cropped, there will be some growing points after grazing to initiate new growth," he said.

"But on trees and shrubs, the growing points are up in the air, and if they're grazed off, that effectively turns off that part of the plant. So it takes trees and shrubs a much longer time to recover."

These foundational range management practices already exist on ranches across Alberta, said Adams, but by seeing your pasture with fresh eyes and a beginner's mind, you can manage the land more effectively — and make the most out of your productivity.

"The benefits of a stewardship approach to rangeland management is that it provides a more stable and predictable forage base from year to year," he said.

"If you know how the system works and how you would expect it to behave, you can anticipate how systems might respond to different disturbances and how to address an issue when it does come up.

"It allows you to be proactive rather than reactive."

Author: Jennifer Blair—Alberta Farmer Express. Original article can be found at https://www.albertafarmexpress.ca/livestock/back-to-basics-taking-a-fresh-look-at-your-land-cattle-and-grazing-system/#_ga=2.69075409.1962682341.1596657462-630980340.1593120985

Thank You to Our Corporate Sponsors

Gold Sponsors

DATAMARS

maiagrazing

UNION FORAGE

AB Alberta Beef — ALBERTA'S #1 BEEF MAGAZINE

Unique Financial Services AFSC — INSURANCE • LENDING • INCOME STABILIZATION

GEMSTONE CATTLE COMPANY

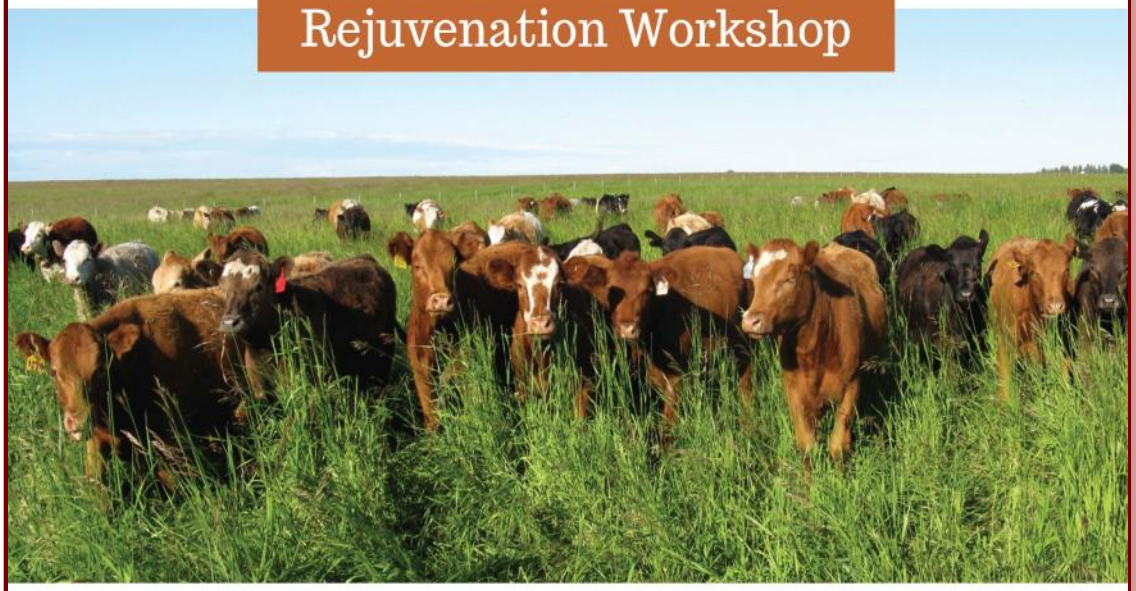
Silver Sponsors

RAWEST IN — Agriculture, Automotive & Short Line Equipment Distributor

BrettYoung

Farm Credit Canada

FFGA Perennial Pasture Rejuvenation Workshop



Tired, worn out pastures? This hands-on & classroom workshop will give you the tools to rejuvenate like a pro!

Details:

Date: Wednesday, September 9, 2020
Location: Madden Community Hall & Southern Cross Livestock
Time: 9:30 to 4:00
Cost: $30.00 for FFGA Members, $35.00 for Non-members + GST (includes lunch)
Registration deadline - September 2nd, 2020

Topics:

Experts Grant Lastiwka & Graeme Finn will present on:

- Direct/sod/frost seeding
- Planning ahead for success; preparation, species selection & rotation
- Managing for success; establishment, fencing & weed control

COVID-19 public health restrictions are in place for this event. If you feel unwell please do not attend. Please maintain at least 2 meters (6 feet) of space at all times. Masks & hand sanitizer will be available.

Registration & information found at: https://www.foothillsforage.com/events

ROCKY VIEW COUNTY
Cultivating Communities

MUNICIPAL DISTRICT of BIGHORN

FOOTHILLS FORAGE AND GRAZING ASSOCIATION

Board of Directors

Chairman:
Alex Robertson
(403) 888-1517

Vice Chairman:
Rod Vergouwen
(403) 934-1666

Treasurer:
Justin Blades
(403) 336-5952

Directors:
Mike Roberts
(403) 625-0337
Steve Yule
(403) 934-7855
Marcel Busz
(403) 394-7614
Ben Campbell
(403) 803-9190
Daryl Chubb
(403) 836-2202
Tanis Cross
(403) 652-0954
Emily Lowe
(403) 990-4548
Daniel Doerksen
(403) 633-0530
Tamara Garstin—ARECA Rep*
*Non-voting

Staff
Manager:
Laura Gibney
manager@foothillsforage.com
Cell: (403) 998-4687
Environment & Communications Coordinator:
Sonja Bloom
enviro@foothillsforage.com
Cell: (403) 700-7406

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.

Alberta Government

FFGA is a proud member of AFIN ALBERTA FORAGE INDUSTRY NETWORK, ARECA, CRSB