



The Blade

Creating an Awareness of Forages

Monthly
Newsletter
of the
**Grey Wooded
Forage Association**

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GWFA Mission Statement

*To promote environmentally and economically
sustainable forage and agricultural practices.*

GWFA Vision Statement

*The community is engaged in regenerative
agricultural production methods.*

Photo Credit: Ginette Boucher

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Message from the Chair

By Amy Leitch



So let me start by saying I am excited to have the Chair position for the Grey Wooded Forage Association. As my young family is stepping forward into the vast and unending episode of learning, and experiments of grazing our herd of registered Kiko and Commercial goats, I value all that we learn through doing, and conversing with others. This is why I am a person who feels that all growers, farmers, ranchers, acreage owners, market garden cooperators, and anyone involved in agriculture has valuable experience to share that, experience that is more powerful than any textbook data. In this message from the chair my intent is to start the conversation of sharing our successes, but more importantly the eloquent failures we all have. Our knowledge has more effect when shared than when stored for only personal reflection. So let's set forward with conversation.... Just like coffee shop reflection of the last season, contact myself or any Grey Wooded Forage Director &/ Staff to chat.

Lone Star Ranch & Sales
is operating as usual
Message from Steve Cannon



Carbon & Forages Field Day

Featuring:

Dr. Barry Irvine

*APO/Manager Research Stations, Agricultural, Life & Environmental Science,
University of Alberta*
Carbon capture & forages—the current research happening in Alberta

Grant Lastiwka, P.Ag

Forage/Livestock Business Specialist, Alberta Agriculture & Forestry
Pasture management, forages, carbon, and connecting the dots. The big picture and why measuring carbon isn't easy

Dianne Westerland

Manager, Chinook Applied Research Association
Tour of the Foothill Forage Perennial Forages Trial of 32 different varieties of forages.

July 19, 2017

Rugby Hall (15 minutes west of Didsbury, AB)

1:00pm—4:30pm

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RICHARD TEAGUE and more!

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Manager's Notes

Ginette Boucher



Greetings,

It's July already, haying season is in full swing, plants are utilizing the sun's energy and are growing. Be sure to manage your pastures to optimize your grass production well into the fall. In this publication, you'll find an article from Karen Lindquist providing some insight on grazing management. We work as a team to gather and deliver pertinent information to assist you. You'll also find in this publication is a great article from Kristen Ritson-Bennett on silage production. Thank you to all who contribute to making our Blade publication the best.

Our AGM tour was very successful, it was a great opportunity to learn and visit with other producers. Thanks to Enna, there is a gallery of photos from the tour on our website. Our AGM and supper was also a success. From the business meeting, there was a proposed bylaw change that was brought forward to the membership. GWFA's membership fees had not been increased in over 20 years. One of the proposed bylaws changes was to increase the membership fees from \$20.00 to \$40.00 starting April 2018. This bylaw change was proposed, discussed and the membership made a motion and passed the membership increase. We will remind our members, next year when the membership is due. We are still looking for some board members for this fiscal year. We currently have seven board members and are looking for two more. If you or anyone you know would be interested in contributing and directing the association please send them our way.

Jim & Barb hosted our pasture walk in Acme on June 26th, many of Jim's neighbors attended. Jim taught us how to estimate forage density, average height, and calculate the number of animals the pasture would carry. This assisted those who attended in improving their pasture management, reducing the over grazing, and allowing the plants a long-term recovery before returning them to the same area. Thanks Jim and Barb for the hospitality, the yummy frozen treats, and the education.

We had an opportunity to partner with Kubota in their field day

on June 20th. Kubota brought out their haying equipment and demonstrated the features and benefits, farmers were also able to try out the equipment. This was another successful day and we plan to grow this partnership into the future. As we develop these new partnerships we are growing our membership and are reaching a greater number of producers.

We are working at building our digital distribution system into the thousands; currently we are just under 600 contacts who are members and associates and have agreed to receive our correspondence via email. If you know of anyone who would benefit from being on our list and receiving the monthly updates from our activities please be sure to let them know how to connect with us.

Upcoming events include, a Grazing Management Tools and Tips, in the County of Wetaskiwin July 11th, a Carbon & Forages Field Day in Mountain View County July 19th, The Cow-Forage Gentec Tour August 22nd at the Lacombe Research Centre, this tour will include a high legume pasture tour with GWFA. Be sure to register for the upcoming events that you can attend.

Our projects are currently under way, Devin and Enna are working hard in getting clippings and managing the project sites. Our weevil's projects are also getting setup for this upcoming fall. Stay tuned for some news as the season progresses. We are continuously looking for new opportunity to develop projects that will attract new members. If you have project ideas please bring them forward for the board to consider. Currently I am working with Livestock Gentec and looking at future opportunities. We are still looking for some funds and some partners to assist us financially in maintaining our alfalfa project at Doug & Debbie Skeels.

Best regards,
Ginette



The Grey Wooded Forage Association Board and Staff welcome Jason Bradley as our new Board Member



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Dr. Charlie Brummer - University of California, Davis

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The Fine Art of Making 'Dry' Hay

By Devin Knopp, P.Ag.

Making dry hay is a real under appreciated art. Last year, I'd say there were very few acres of hay baled without at least one rain shower on the hay. The way June has gone thus far, I think it may be a similar scenario this year. We can't control the weather, but there are a few things to consider in speeding up the drying process to put good quality feed in the bale.

Ever consider leaving a little longer stubble? Leaving longer stubble means your cutting less hay and reducing overall yield. However, this year we're seeing hay growth and yield much greater than we've seen over the past few years. Having longer stubble may help dry your hay faster. Our soils are moist, if not saturated, right now and the tall thick growth of the hay is preventing solar radiation, and wind from penetrating to the soil surface to dry it up. So, once you have cut the crop that swath is now lying on wet ground or close to it. The exposed ground around the swath will dry as the cover has been removed but under that swath stays just as wet as before. Leaving a little longer stubble allows better air movement to pass between the ground and the swath, as the swath will be held higher off the ground. This will help dry the bottom edge of the swath and wilt those plants that otherwise may look as green and untouched as the day you cut. I know you might say, once the ground dries and I turn the hay, it's flipped over onto dry ground. That is true to a point, but with the frequency in which we are seeing rain, and the saturation levels of some of our soils, the ground may not actually dry out. Then the dry top of the swath is in contact with wet ground, reabsorbing the water from the soils surface. That is incredibly counterproductive, as the swath may be nearly dry enough to bale, but never coming down that last 5% moisture you need to bale dry hay. This in turn, may force you to have to rake the hay again increasing the dry matter losses and prolonging the overall drying time to the point where an optimal window for making hay may close.

It may be the year of the tedder. Tedder rakes have been around for a long time. Their popularity in Europe has slowly made its way to North America with imports of new equipment, and demand from producers who are beginning to use or have used this technology before. In Europe, it is not uncommon for hay and silage producers to only own a tedder rake. The principal behind a tedder rake is to take an existing swath and break it apart into a much wider 'carpet' over the ground. Thus, increasing the surface area of hay exposed to the sun and wind to increase the rate of drying time, wilt down, and curing. However, there is some debate as to when the tedding process should occur. Some believe it should be done closer to the end of drying to help accelerate the dry down of the last 10% of moisture before baling. However, doing that will increase the rate of leaf loss that will occur decreasing total dry matter and quality of feed. The best time to use the tedder is shortly after cutting the swath. That means within the first 24-48 hours. The swath is still very green and moist, and that helps hold onto the leaf structure. It also allows the center and bottom of the swath to be exposed to the sun and wind much sooner. It creates a much wider, thinner, fluffier hay layer then



a densely packed swath. When done properly, tedding has been attributed to increasing the drying time of hay. However, if you do get any rain, a tedded swath will have greater dry matter and quality loss as the surface area exposed directly to the rain is much greater, increasing incidence of leaf loss and leaching of nutrients. There is some risk to using a tedder, but the rewards of faster drying time may outweigh the

risk. There are lots of different designs, shapes, and sizes of tedders available in the market. I would seek out someone who has a tedder and speak with them or ride along as they use their tedder. They are a relatively simple machine, but if you are unsure of how well they work, how to use them, or just curious in general, seeing them in action is never a bad idea.

How about using hay preservatives? In the past, the propionic acid hay preservatives did a wonderful job on the hay, but they ate the paint and anything rubber on the equipment. The buffered propionic acid has since been released and is much safer on equipment. These products are meant to be used on hay in the 16-30% moisture range, to help prevent mold and fungus growth, thus preventing spoilage. Its relatively easy to dry hay down to about 20-30% moisture. Its that last 5-10% that takes the longest. One scenario that comes to mind where these products could be very beneficial is in a variable crop stand, where the lighter half of the field may be at 15% moisture or less and the other half with heavy swaths is still at that 18 – 20% moisture. Since this product is applied with a sprayer configuration you can turn the product on when you need it and off when you don't. It can be the difference between baling hay at 2 or 3 o'clock in the afternoon and trying to bale at 5 o'clock when the storms start roll through. The other popular use I see, is custom hay operations, where baling with this product adds a secondary buffer to ensure quality feed. Before jumping into one of these units the economics behind it should be considered. These units can be expensive depending on which one you decide to install Also, the preservative itself is an added expense for the hay. Depending on the product, it may only be a few dollars a ton, but can get upwards of \$10/ton additional cost. Using this product for every bale you make may not be practical. However, there may be a shortage of quality hay and under the right circumstances one of these units could put your sale hay into that category. It is something to consider, but really do your research on them first. Talk with someone who is using one of these units. As I understand there is a certain finesse to these units and improper use will not preserve hay, but will increase your cost of production, you'll be doubly discouraged with a bad result.

There are many more options out there to help improve the hay making process, and not all of them revolve around the purchase of new iron. Planning on the forecast and crop readiness rather than the calendar go a long way toward making quality hay in a timely fashion. Rain on a swath can be incredibly damaging; depending on timing, duration, and intensity of the rain, the dry matter loss on a swath can be as low as 2-3% to as high as 30% or more. I made a prediction that this year may be another struggle to produce quality dry hay, but I hope I'm wrong.

Can Forage Seed Breeding Compensate for Fewer Pastures?

Mustafa Eric | AFSC Media Coordinator

The latest census by Statistics Canada on agricultural trends has produced some data that clearly shows the country's agricultural landscape is slowly but steadily being transformed.

Some of the most interesting highlights that came out from the census data indicate that there is a process of consolidation in the agricultural sector with the number of farming operations in decline but the size of those operations getting bigger. In addition, the stats show that the demographic composition of Canada's farming community is getting older.

One set of data, which has a particular importance for Alberta, says tame or seeded pasture area, nationwide, has declined by more than 1.1 million acres between 2011 and 2016. This is important news for the province because Alberta accounts for almost half of the total national contraction with around half a million acres: from 5,920,507 in 2011 to 5,421,962 in 2016. And this comes on top of an almost 200,000-acre fall between 2006 and 2011.

Contraction of forages and pasture areas poses a considerable threat to competitiveness of the beef industry as observed by the Beef Cattle Research Council (BCRC).

"Pasture and hay/silage of perennial and annual forage crops provide the majority of feed for Canadian beef cattle," says the statement on the council's website.

"It is important that cattle producers have access to high yielding, high quality, and well adapted varieties to improve the economics of production. Canadian plant breeding programs have developed many improved varieties of a number of grass and legume species."

As Alberta is home to the largest cattle herd in the country, shrinkage of pasture and forage areas is of particular concern for beef producers of the province, given that these areas have a major impact in bringing down the cost of production in cattle industry.

"Over the long term, improving forage productivity is crucial for future competitiveness of the cattle industry," states BCRC.

"Current competition for land from other crops is putting further pressure on the forage industry to increase margins or be converted into a more profitable commodity. This makes forage breeding a key piece to the long-term health of the beef industry."

Forage breeding: work in progress

Prof. Bruce Coulman of Plant Sciences Department at the University of Saskatchewan says the program that he is leading, a joint program between the university and the federal government, is 95 years old.

"I think it was 1922 that it actually started," said Coulman.

But a clear, data-based picture of how much the program has achieved in terms of profitability has yet to emerge.

The benefits to be derived from using improved forage seeds are likely to come over an extended period in terms of higher yield,

according to the scientist.

"One benefit would be higher yield. Forage producers, at least in Western Canada, would often keep their forage plantings in five, 10, or sometimes longer, years. So, if you can get five or 10 per cent higher yield every year by using superior varieties, that can add up to a lot of extra forage over the long term."

The attainment of desired results in higher profitability from using new improved varieties of forage seeds, however, needs some homework to be done on the part of the producer as well. This includes acquiring detailed analysis of the soil, moisture and climate conditions prevailing in the forage area to be seeded, and based on that, selecting the right kind of seed that will flourish under those conditions.

Dr. Surya Acharya, who works at the Lethbridge Research Centre, one of the five operating under Agriculture and Agri-Food Canada (AAFC) to develop forage crops and cultivars to improve productive and nutritive value, says in a paper he published in a dairy industry publication that the breeding efforts have now become more sophisticated as compared to earlier stages of research.

"In the past, our emphasis was improvement in productivity, stand longevity and ease of establishment. Cultivars developed earlier were mainly for monoculture production and were primarily for hay."

"Presently, the AAFC breeding programs are aiming towards development of cultivars with ability to grow in mixed stands with grasses and other legumes for grazing purposes," he explained in his paper. (<http://www.wcds.ca/proc/2006/Manuscripts/Acharya.pdf>)

"Genetic improvement has been carried out on most of the common forage species that are planted by producers," said Coulman, adding "Most of the forage breeding is done by traditional breeding methods but more and more breeding programs are incorporating molecular genetics analysis".

Grant Lastiwka of the Livestock and Farm Business Branch under Alberta Ag and Forestry reminds that "Forage breeding takes a long time from a breeding program to an end product."

With the productivity and disease resistance assessment of a new breed of forage seed requiring up to a decade or more, a clear picture of the profitability of forage breeding programs has yet to emerge in the near future, but the ongoing decline in the tame or seeded pasture areas could motivate both cattle and dairy industries to take a chance with the new varieties without further delay.



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Back to Basics: Making Silage

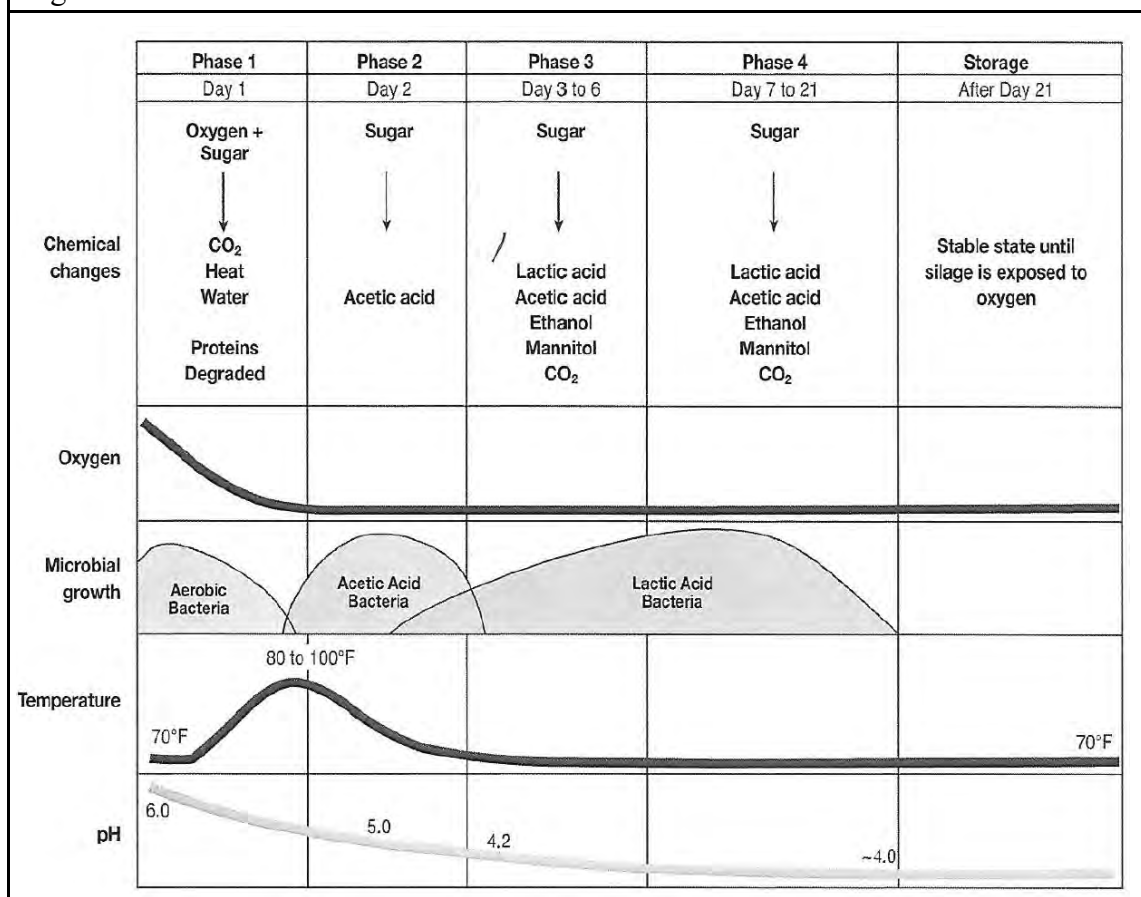
Kristen Ritson-Bennett-Beef Cattle Nutritionist
Blue Rock Animal Nutrition | 403-227-2742

Making silage might be one of those things you do on your operation every year. Sometimes these things become so routine, we forget some of the basics when it comes to optimization of silage harvest. I spend every fall and early winter testing quality of forages fed to beef cattle, including haylage and silage. There is often opportunity for improvement when it comes to getting the crop up so I've put together a few basic guidelines to help you ensure you are getting the most out of your crop! I'm also going to run over how the ensiling process works to give you context around why you are doing the things you need to do.

The goal of making silage is to capture optimal forage nutrient content and preserve it so that it can be fed later in the feeding period. The preservation comes from the fermentation process that occurs. This means that plant sugars are converted to organic acids. With a drop in pH (acidification) of the forage, we get a pickling effect. The ensiling process usually takes about 21 days. See Figure 1 for details (Credit: Penn State Extension Services). If proper ensiling does not occur, secondary fermentation can take place and that will lead to significant nutrient losses.



Figure 1: Phases of Normal Fermentation. *Penn State Extension Services.*



There are 4 major factors that affect nutrient preservation and reduction of nutrient loss over time: Moisture content at harvest, chop length, elimination of oxygen, and bacterial populations.

(continued from previous page)

1. Moisture content at harvest

To maximize yield of your crop, ensure good palatability, and minimize storage losses silage must be harvested at the correct moisture level.

Alfalfa Silage:

Figure 2: Recommended Moisture Content (%) of Forages for Ensiling.			
	Alfalfa/Grass Silage	Cereal Silage	Corn Silage
Wrapped Bales	50-60%	-	-
Silage Pit	65-70%	60-65%	65-70
Bagged Silage	60-70%	60-70%	60-65%

When forage is put to too wet?

- Silage ensiled too wet may ferment poorly and seep. Seepage removes nutrients, particularly soluble nitrogen and carbohydrates, reducing nutrient content. It also leads to high dry matter losses, higher pH, and increased butyric acid. When this occurs, it gives the silage a nasty smell. Rotten fish and rancid peanut butter smells don't leave your nose that easily! This will lead to decreased dry matter intake which reduces production whether that be milk production or growth.

When forage is put up too dry?

- When the silage is too dry no matter how many passes you make on the pit with your heavy machines, you will never get it packed well enough to eliminate all of the oxygen and this will allow oxygen "loving" mold and toxins to develop.

How do I measure the moisture content?

- Koster Tester or microwave. Use a small digital scale to measure out 100 grams. Dry down completely and measure the weight again. This will give you the dry matter % in the forage.
- A rough measurement can be done by squeezing the chopped material tightly for 90 seconds. If the ball expands slowly, and no excess moisture is on your hand you are likely at 60-70% moisture.

What stage should I cut at?

- Cereal crops - soft to mid dough stage (3-4 weeks post heading).
- Corn silage cutting stage - ½ to ¾ milk line.
- Alfalfa silage cutting - mid to late bud stage.

2. Chop length

Chop length is extremely important when it comes to proper rumen function in the cow and compaction in the pit. Ideal chop length is ½" to ¾" for corn silage, ½" for alfalfa silage and barley silage at a ½". You will find that with a longer cut, the feed will not pack

tight enough, allowing potential for mold growth.

3. Oxygen Exclusion

You will notice a trend throughout this article that keeps referring to packing and elimination of oxygen. PACK, PACK, PACK. There are so many instances that I have seen that if more time was spent on the packer, or if the machine used for packing had additional weight there would not be the spoilage or dry matter losses. The other main thing you can do to reduce oxygen, is harvest and get it into the pit as quickly as possible. Excess oxygen in the forage will increase heating, which decreases the digestibility of protein. COVER, COVER, COVER! Having a plastic silage wrap and weighted with tires is the tried and true method for the best silage sealing. Not all plastic wrap is created equal. You have just invested a large amount of money to put this silage up, now do what you can to ensure that you are doing everything you need to preserve the quality. Face management plays a role here too. Management of the face will reduce secondary fermentation and will increase the consistency of feed that goes to the cows.

If you are going to make 1 improvement on your operation during silage season, strategize how you can improve packing and covering of your pit to eliminate oxygen.

4. Bacterial population/inoculant

I cannot pretend to be an agronomist, and silage inoculants are not my strong suit. This is a topic on its own! There are a lot of products on the market, and you will have to do your own research. Keep in mind that inoculant will not make poor quality forage better, but will maintain the quality that you have harvested. I believe that investment in an inoculant is a must, especially due to the fact we already have so many different variables we fight with during harvest. They will improve the fermentation speed of your silage and will reduce the pH to a range where molds and yeasts cannot survive and multiply. This will result in less degradation of quality of your silage and maintain your dry matter yield.

(continued from previous page)

There are quite a few people in the industry who know a lot more about inoculant than me. Below are a couple of my valuable contacts (in no particular order)!

George Uebelhardt, Dairy Nutritionist - (403) 350-5116

Greg Paranich, Dupont Pioneer - (403) 923-4071

So those are the basic rules of thumb associated with putting up good quality silage. There are certainly a few more factors to keep in mind such as frost, nitrates, mycotoxins, and other harmful molds and yeast. I cannot stress the importance of testing feed annually. Every year can differ depending on harvest timing and environmental conditions. You can simply pull random samples (freezer bag size) off the silage wagon as it is going into the pit throughout the day. Throw it into the freezer and get it to the nutritionist when it works well for you. In theory, if the silage is put up properly, the forage quality should be as good coming out as it was going in even after ensiling. If you have further questions on this topic please feel free to give me a call and we can discuss further! Thank-you for reading!

Kristen Ritson-Bennett - Beef Cattle Nutritionist

Blue Rock Animal Nutrition – 403 227 2742



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Interpreting the Results of a Soil Analysis Report

Enna Graham

Knowing how to read your soil test results is an important tool in managing healthy and productive land. Here's a quick overview of a typical soil analysis report. For detailed information check out the Nutrient Management Planning Guide on Ropin' the Web.



Address: ABC Farms Box 123 My Town, AB T0G 0N0				Grower Name: Joe Smith Client's Sample ID: 1a Field ID: Brown Place Legal Location: NW 6-39-29-W4								Tracking Number: 200610-01999 Date Received: October 19, 2006 Report Date: October 26, 2006 Disposal Date: November 30, 2006				
Nutrient Analysis (PPM)												Quality				
Depth	N	P	K	SO ₄	Cl	Cu	B	Ca	Mg	Fe	Zn	Mn	pH	EC	OM	Texture
0 - 6"	4	11	175	19	12	0.6	0.7	800	300	3	1.5	2.5	6.7	0.4	5.5	Loam
6 - 12"	1			10												
12 - 24"	1			8												
Total																
Range	D	D	A	A	M	M	A	A	A	M	A	A	Neutral	Good	Normal	
E: Excess A: Adequate M: Marginal D: Deficient																
lb/ac	14	22	350	90									Cation Exchange			
Available lb/ac	14	22	350	90									TCEC: 44 meq/100g			
													BS: 100%			
													Ca	Mg	K	Na
													55%	35%	9%	1%

Recommendations (lb/ac)														
Crop	Conditions	Yield	N	P ₂ O ₅	K ₂ O	S	Cl	Cu	B	Ca	Mg	Fe	Zn	Mn
Wheat	Excellent	68	125	30	0	0	0	0	0	0	0	0	0	0
	Average	57	100	25	0	0	0	0	0	0	0	0	0	0

Table from: Nutrient Management Planning Guide, Alberta Agriculture and Forestry

Nutrient Analysis

The first part of a soil sample typically classifies nutrients, either in parts per million, or pounds per acre and groups them as deficient, marginal or adequate. Nutrient classification and requirements will vary with crop type and soil zone.

Macronutrients are what you want to look closely at, a small change in them will have a large impact on productivity and yield. They are Nitrogen (N), Phosphorus (P), Potassium (K), and Sulfur (SO₄). Micronutrients will have less of a drastic impact on yield but should still be monitored, as an imbalance of macro and micronutrients can cause significant issues in the field. They are Chlorine (Cl), Copper (Cu), Boron (B), Calcium (Ca), Magnesium (Mg), Iron (Fe), Zinc (Zn), and Manganese (Mn).

pH

pH measures the concentration of hydrogen (H⁺) ions, on a scale of 1-14, neutral is near 7. Soil is considered acidic when the pH is below 6, and alkaline when the pH is above 7. The tolerance of pH conditions varies from crop to crop but, most crops grown in Alberta prefer a pH of 6.5-7. Soil pH affects the availability of nutrients and influences the activity of soil organisms. The further the pH is from neutral, the greater the impact on nutrients and microorganisms; for every one-point change on the pH scale, there is a ten-fold change in hydrogen ion concentration.

Salinity-Electrical Conductivity (EC)

Electrical conductivity measures total soluble salt concentration in

the soil. High salt content disrupts osmosis, which is the process plants use to take up water and nutrients. When salt concentrations are high, plants must use more energy to maintain the inward flow of water and nutrients, leaving less energy for growth, and reducing crop yields.

Organic Matter (OM)

Soil organic matter is a measure of the amount of decomposing plant and animal residue in the soil, the end product of decomposition is humus. The amount of OM in soil depends largely on what native vegetation the soil developed under, and the climate in that area. Brown soils developed under drier conditions and short prairie grass, they have the least OM in Alberta. Black soils developed under cooler, moister conditions with greater vegetation and therefore have accumulated more OM. Organic Matter acts as a nutrient 'bank account' from which nutrients can be released over time. Soil OM has many benefits, including better soil structure, tilth (suitability for crop growth), water infiltration, more resistant to compaction and increased oxygen levels in soil. Areas where soil developed under forest cover are called Luvisolic, previously they were called wooded or forest soils, such as Grey Wooded.

Texture

The texture of your soil comes from the ratio of sand, silt and clay. Soil with lots of sand will be coarse, soil with lots of clay will be fine, if the soil has roughly even proportions of all three it will be loamy.

Cation Exchange Capacity (CEC)

Cation exchange capacity of a soil is primarily influenced by soil texture and organic matter content. CEC is an estimate of the capacity of soil to hold (or adsorb) positively charged(cation) nutrients. Simply put, CEC lets you know how many nutrients the soil particles can have adhering to it. Soil particles with lots of nutrients adhering to them (soils with higher CEC) are better able to retain nutrients in the top soil. Soils with high clay content or organic matter have will have a high CEC. There is potential to increase soil CEC by adopting practices and crop rotations that focus on building soil organic matter content.

Base Saturation (BS) (adds up to 100%)

Percent Base Saturation refers to a measurement or estimation of the percent of the soil CEC that is occupied by a particular nutrient (nutrient saturation) or the sum of a group of nutrients (base saturation)

Managing your soils won't always be easy, but it doesn't have to be complicated. Getting your soil tested regularly will help you stay on top of any arising problems, make sure to look at more than nutrients and fertilizer recommendations. There are a wealth of benefits that can be achieved from monitoring and adjusting soil organic matter or CEC that don't involve adding lime, fertilizers or additives.

Rejuvenating Pastures: Grazing with the Soil in Mind

Karin Lindquist-Forage-Beef Specialist | Ag-Info Centre, Stettler 310-FARM

It may be tough to imagine that you can use the very thing that has been causing a pasture to go downhill in the first place: Grazing. To many, this can seem pretty counter-intuitive!

We have to first understand that the primary reason that a pasture needs rejuvenation is not because of grazing in and of itself, but rather the *management* behind the grazing.

Grazing management involves time, the animals, the plant resource, and also the soil resource. Just misusing one of those pillars causes the rest of the pillars to fail, thereby causing the whole system to also fail. If you try to rebuild those pillars but continue to misuse that one particular pillar, the system will fail again after 5 to 7 years.

Sisyphus was cursed to roll a boulder up a hill only to have it fall back down again, and to repeat this for eternity. I really don't want you to continue to be your own Sisyphus of grazing management!

The grazing management pillar that gets misused the most often is *time*. Time, with grazing, is how long animals should graze the forage resource, and how long to rest that resource. Overgrazing in particular is associated with time. It has never been, nor ever should be, about too many animals.

Overgrazing is allowing animals to come back when a plant's energy stores are already depleted, or rather, *coming back too soon and taking too much*. This can be done *regardless* of the size of your herd or your pasture: Overgrazing can occur with a small herd on a large pasture just as it can with a large herd on a small pasture. This demonstrates that, with misusing time, forage resource also gets misused.

And so with misusing the forage resource, you also misuse the soil resource.

Soil really doesn't get thought about much, because it's hidden away where it's not so noticeable. But it's there, and certainly shouldn't be ignored.

You're probably wondering at this point what the soil has to do with rejuvenating pastures. It actually has a lot to do with rejuvenation. The Alberta Tame Pasture Scorecard (go to [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex8267](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex8267) for more information) mentions soil in a means to check for the amount of bare ground you are seeing, and signs of erosion and compaction.

Besides looking for evidence above ground, taking a shovel, digging up a clod in a random location in your pasture, and then looking at the structure of the soil is a great way to do an on-the-spot soil test.

When you dig up a clod (plants and roots still attached), look to where the roots are relative to the soil surface, thickness of the litter layer, what the vertical vs. horizontal structuring (horizontal plating typically indicates compaction issues) looks like, and soil colouration (dark versus more light as the sample goes deeper into the ground). You may need help from a professional with more experience in soil structuring to show you what's what, beyond what I have room to tell you here.

Armed with that information, the question now becomes just how do you use grazing to rejuvenate a pasture with the soil in mind??

Basically, it involves using grazing principles where you are tightening up your herd, making more and smaller paddocks with temporary electric, and moving soon enough that you're leaving plenty of plant material behind. A long period of rest is highly recommended as well.

When you start grazing a herd on a much smaller area, each area that gets grazed will receive more rest than leaving the animals out on a bigger area to select what they want to eat. With the old decadent



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plants getting trampled down and manure spread out more uniformly, that opens up the ability for new plants to come through and gain a hold.

If your pasture is particularly thin, reseeding using a no-till drill or feeding legume seeds in the mineral will also help establish new plants. Be careful with alfalfa, because the old plants release an autotoxin in the roots preventing the establishment of new alfalfa seedlings.

This intensive grazing approach may also be a way to combat most weeds due to the trampling of many hooves for a short period of time. But don't use this as an excuse to not use herbicides when they're needed.

The key is to move quickly so that there's litter left behind. And please, **do not be afraid to waste grass!!** "Wasted" grass is actually good for the soil because it protects it from erosion, and encourages more water infiltration into the soil. During a big rain event, instead of the majority of the water puddling on the surface, eventually you may find that it percolates into the soil instead. This would be all thanks to both the rest given to the plants to allow them to grow deeper roots, and the litter left behind to encourage more soil microbial activity (predominantly fungal) near the surface.

As already hinted above, legumes are a huge bonus to have in pastures as well. Having a mix of different legumes adapted to the area (cicer milkvetch, sainfoin, alfalfa, birdsfoot trefoil, different clover species) will push down taproots and interact with specialized soil bacteria to encourage nitrogen fixation. Having a mix of

species that are bloating and non-bloating, plus grass, will provide some of the nitrogen to the soil needed for plant function (the rest of the nitrogen coming from the manure), as well as a highly nutritious source of fodder for your animals with low bloat potential. Consider it a win-win situation!

The key thing to keep in mind is to *not worry about how many paddocks you need* when using grazing to rejuvenate a pasture, or even just grazing altogether. Determine paddock size by how many animals you have and how much forage is available for the animals to use. If you're already checking animals daily or once every few days, that's enough time to move them from one area to another. Temporary electric fencing is ideal for this, and back-fencing as well to prevent them from going back to their favorite plants.

There are several other options to rejuvenate a pasture, but grazing is one option I highly recommend to give serious consideration to. When you have the animals already, all you need to do is plant fence posts--temporary posts, that is!

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3 Ways Environmental Planning Can Boost the Farm Finances



According to the Network for Business Sustainability, companies who “improve their impacts on the environment” stand to increase revenues, as “customers will pay up to 10 percent more for products that are green...or ethical.” Alberta farmers and ranchers are becoming increasingly aware of the value that environmental stewardship provides to a sustainable agricultural operation. There are financial benefits that accompany improved environmental stewardship, and without environmental planning, your farm may miss out on these chances to save money or even access new markets for your products. Producers that have invested the time into completing an environmental farm plan have seen their operations with a different perspective. This new knowledge is a powerful way to make your business more environmentally sustainable.

Access to Sustainable Agricultural Funding

An environmental farm plan can provide access to sustainable agriculture funding programs that can benefit their business. One example of this is the Growing Forward 2 program. While the remaining programs for Growing Forward 2 are limited, several of those in Alberta still taking applications are environmental initiatives. With a certificate of completion of a provincial EFP program, producers are eligible for stewardship funding. Producers can apply for funding to help improve their management of grazing, manure and livestock facilities, crop input and agricultural waste. For example, the Irrigation Efficiency funding program allowed producers to apply for funding for 40 percent of the costs of approved equipment upgrades to a maximum of \$5,000, or \$15,000 towards a new irrigation system.

Reduce the Costs of Inputs

Improved environmental stewardship also offers the opportunity to reduce the cost of inputs. For example, preventing leaks in fuel tanks is an act of sustainability that helps to save on the cost of wasted fuel. AEFPP offers information on the impact and importance of preventing contamination of surface and ground water sources: “A small leak of one drop per second, for example, can release about 900 litres (200 gallons) of gasoline into groundwater

over the course of one year.”

Sustainable Sourcing

Consumers want to know how their food is produced, and the agri-food industry is listening, giving producers a chance to capitalize on this demand. Food purchasers across Canada, including manufacturing companies and major restaurant chains, are more frequently requiring the products they use to be sustainably sourced. Commodity groups are already responding to this market demand, and a completed EFP plays a valuable role here. For example, all members of the Potato Growers of Alberta are required to complete an EFP, a step taken by the organization to meet the stewardship standards of major companies such as McDonald’s and McCain’s. By not making stewardship efforts known to consumers, there are valuable marketing opportunities both from a local and global perspective that Alberta producers could leverage.

Alberta’s agricultural producers have an opportunity to improve their environmental stewardship with the help of an updated EFP; by doing so, they can access new markets and funding opportunities, and save money in the everyday running of their farm or ranch. With sustainability becoming vitally important to many facets of the agriculture industry, an environmental farm plan helps producers to narrow in on specific issues and create an action plan that will improve stewardship and, in turn, reap financial benefits.

Contact Alberta EFP

For more information go to www.albertaeefp.com or send an email to inquiries@albertaeefp.com
To start the EFP process, email us at register@albertaeefp.com
Phone: 780-612-9712



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PASTURE PRINCIPLES

GET THE MOST OUT OF YOUR PASTURE!

Date: July 26, 2017 - \$10.00 per Person

Location: Gilby Hall (23 km West of Bentley on Hwy 12, North on Range Road 3.4-5, Eckville)

8:30 am – Registration

9:00 am – Local Pasture Tour with Talks from:

- Grey Wooded Forage Association (Pasture Management)
- Cows and Fish (Riparian Management)
- Dow Agro Sciences (Weed Control & Herbicides)

12:00 pm – Lunch Provided at Gilby Hall

To Register Please Contact:
Lacombe County Agricultural Department
(Krista) 403-782-8959



Grey Wooded Forage Association

Creating an Awareness of Forages

Grey Wooded Forage Association

2017/2018 Memberships

Memberships are \$20.00 and run from April 1, 2017 to March 31, 2018.

Memberships are open to anyone interested in forage production, grazing management and environmental sustainability.

For information call 403-844-2645

Member Benefits:

- Receive discounts on courses, seminars, workshops, and tours
- Receive The Blade
- Receive Environmental Farm Plan delivery
- Free Equipment Rental (deposit required)
- Access to the GWFA library
- Access to our Member Facebook Group
- A chance to network with like minded producers
- Free Farm consultation service (phone, email, and in person in the office)
 - On-site farm calls are \$0.55/km travel each way
- Receive an Annual Report

Please fill out and mail the portion below with a cheque for \$20 or \$30 (\$10 printing/postage fee for paper copy of The Blade added) to:

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Box 1448, Rocky Mtn House, AB, T4T 1B1**

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The Blade: Email _____ Canada Post _____

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How would you describe your occupation

- Forage Producer
- Beef Producer
- Sheep Producer
- Goat Producer
- Dairy Producer
- Annual Crops
- Other _____

How many head of livestock are you managing?

Beef Cows/Heifers: _____
Dairy Cows: _____
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Ewes: _____
Does: _____
Other: _____

How many acres are you managing?

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What topics are you interested in learning more about? _____

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