



Photo Credit: Jim Bauer



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May 2017

Vice Chairman's Note

Happy Spring Everybody!

Is it just me or does everybody have that one lesson they have to periodically repeat? Mine seems to be the close the gate rule. Each time I enter a pasture the debate rewinds in my head, "Do I need to close the gate? I'm only going to be a moment after all."

Logically I realize that it takes less time to close and open the gate than to round up the cows, sadly I'm not always logical. It was to be just a moment of course, but my ADHD kicked in and I was chasing a squirrel somewhere only to find myself doing the equivalent of stuffing toothpaste back into the tube as my cows launched into a full scale jailbreak. After a winter of chewing on, in our case, baled oat green feed those tender shoots of green grass just through the gate are a mighty temptation. A reminder of why I avoid casinos as once again I gambled and lost.

Some lessons we regret repeating, others are well worth the effort as is the case on May 23 and 24, when once again FFGA will be hosting our soils school in Claresholm. New Zealand soil scientist Nicole Masters of Integrity Soils will lead the two day school. Day One will feature an introduction to the basics of soil science, focusing on soil structure and biology. You will be introduced to the fundamentals of what we can do above the surface and how it affects the micro-organisms and water infiltration beneath the surface. Day Two is the advanced school, which you can only do if you have taken the day one course, delves much deeper into some of the methods and amendments a manager can introduce to wake up their soils and build more symbiotic environments below the surface to support healthier production above and vice versa. To

give you an idea of how participants valued last year's school, Day Two is now fully booked but spots are still open for day one.

If you have never considered the effect your surface management has on the microbiology below the surface, I can assure you Nicole's presentation will be thought provoking. Part of each day will be spent at my place viewing a site with two open trenches in close proximity to each other. One is an irrigated paddock which has been in mixed alfalfa/grass hay for a number of years and most recently in a diverse cocktail swath grazing mixture. The other site, just across a road allowance has been in continuous perennial grass pasture for 50+ years. I'm looking forward to seeing what differences, if any, exist in the two soil profiles.

As the summer rolls on we will again be hosting the Jim Gerrish Grazing School in late June. This years edition will be held in the County of Newell hosted by Arno Doerksen in Gem, AB.

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Jim will lead attendees through the basics of pasture and grazing management and stocking rates as well as provide you with some practical insight to calculate stocking rates, estimating forage stockpile and some business tools to consider and apply at home. Please visit: <https://jimgerrishgrazing.eventbrite.ca> or <https://soilschools.eventbrite.ca> to enrol in these two events.

FFGA is always looking to expand our membership and spread the good word about forages, grazing and healthy soils. We are here to provide valuable information and opportunities to our membership. Plan on attending one of our many events and bring your neighbour along. It really doesn't need to be a very big idea that you take home with you to pay back your membership tenfold.

Some of you I will see at the soils school in May, others I will see down the road at other events. To all I wish a successful calving, branding, seeding etc. Stay Safe.

Andy Hart,
Vice-Chairman
FFGA



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Manage Your Pasture's Nitrogen Cycle

While legumes can put quite a bit of nitrogen (N) into a pasture, just how effectively are you as a grazer recycling N in your pasture system?

Whether it comes from legumes or fertilizer, N in pasture can be recycled for new pasture growth. The more effective job you do of managing the natural N cycle, the less money you'll spend on N fertilizer.

While cattle consume a lot of N as protein in the forage, less than 5% of the N is retained in their bodies. The rest is excreted as either dung or urine.

When the diet protein level is close to what the animal needs, the excreted N is split equally between dung and urine with the fecal N being slowly released as manure decomposes. Almost all urinary N is readily available in the soil.

As the protein content of the pasture increases, most of the extra N passes through the urine, making urine a potent N fertilizer. If you've noticed dark green patches of green in your pasture, it's because urine has the N-fertilizer equivalent of 200-1,000 lbs. N/acre in that little patch.

Because most of the N in urine is in a urea form, N can be lost to the atmosphere as ammonia gas, just as with urea fertilizer. Hot, dry soils lose a lot more ammonia than cooler moist soils.

As the urine remains in contact with the soil, the ammonia is converted to ammonium, a positively charged ion, and it becomes bound to the soil. However, as ammonium in the soil is converted to nitrate, it can also leach out of the soil, especially on sandy soils. So even though most of the N consumed passes through the animal, over half of it can easily be lost from any further potential as a fertilizer. These loss pathways are why we have to continually add N to soils.

Grazing management that leaves more of the soil covered with green plant residual or dead litter

keeps the soil cooler and enhances urine infiltration rate. Good grazing management traps a lot more N in the soil and reduces the ammonia loss, leaving more N in the soil to support the next plant growth cycle.

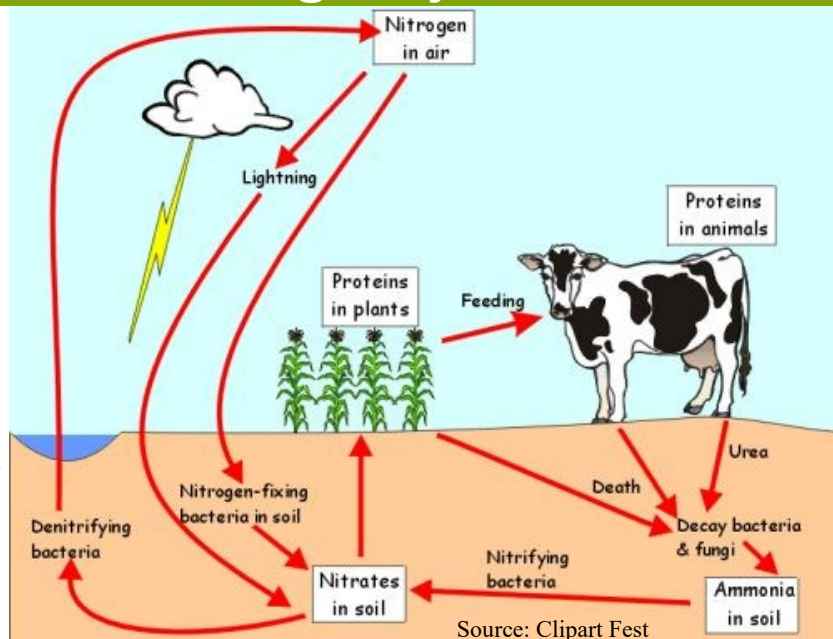
Short grazing periods that leave taller residuals after grazing result in a much more effective nutrient cycle, compared to grazing shorter through a longer grazing period.

Changes in grazing management can make big changes in the effectiveness of the N-cycle. On continuously stocked pastures you may have noticed the urine spots seem to be scattered and don't really affect large areas of the pasture.

Nutrient cycling research has shown that as little as 2-5% of the pasture area may be affected by cattle urine in a single grazing season. No wonder urine spots just serve as a reminder of how desperately the pasture needs N.

Graziers using high-intensity, short-duration grazing notice much more uniform pasture growth following a grazing period of just a few days. Research shows that in a short-duration grazing system, as much as 50% of the pasture surface area may be affected by urine in a single year. This produces a much more uniform pasture; and when cattle pass through a pasture the next time, they tend to graze more uniformly.

In a continuously grazed pasture with typical stocking rates for the Midwest, the effective N application rate from cattle urine is



less than 1 lb./acre/day. This level does little more than feed the soil microbes.

At the opposite end of the spectrum is a grazing system where cattle are moved to a new paddock every day. In this scenario, the effective N-fertilizer equivalent from urine is around 50 lbs./acre/day -- a fertilizer rate that will really make grass grow! Other stocking scenarios fall between these two extremes.

A twice-weekly rotation puts about 20 lbs./acre of readily available urinary N on the pasture. If the pasture has 30-40% legume in the pasture, the combined effectiveness of legume-fixed N and recycled urine can support a relatively high level of productivity. Several university studies around the U.S. indicate a well-managed legume pasture with effective nutrient cycling produces yields comparable to applying 100-200 units of N/acre.

With cost management an ongoing concern for most beef producers, taking nutrient-cycle management seriously is a key step to reducing or eliminating fertilizer costs.

By: Jim Gerrish

Source: beefmagazine.com

Bursary Winner: Erin Anderson



I want to send my most sincere thanks to the Foothills Forage & Grazing Association for selecting me for their \$500 bursary this year.

This bursary is so much more than a way to help me pay tuition - it is an investment in my learning and ultimately in my future; it will help me

gain knowledge and experience in agriculture, something I'm deeply passionate about; and it supports my growth as a young adult, helping me work towards achieving my goals.

I cannot even express how grateful I am for their hand in the success of my education. It warms my heart to know that FFGA cares about youth and wants to contribute to the future of food production through this bursary. Again, I am truly thankful for all they have done for me.

- Erin Anderson

What's in Your Calving Kit?

Being prepared is one of the best ways to ensure that the season goes smoothly. Here is a few things every producer's calving tool kit should contain:

- 1.) **Veterinarian's phone number** – call if you are not sure about the calving.
- 2.) **Long plastic gloves** – These should be worn when examining the cow to protect you and the cow. If these are not available, be sure to wash your hands and arms thoroughly, keeping all materials as clean as possible.
- 3.) **Pail of warm water.**
- 4.) **Disinfectant** – Udder wash diluted in warm water or a suitable iodine preparation can be used to wash the plastic gloves and cow's vulva.
- 5.) **Clean towels and paper towels.**
- 6.) **Lubricant** – Use a veterinary lubricant or a light

mineral oil or Vaseline or Crisco oil.

7.) **Calving chains plus two handles.** Put one loop above the dewclaw and the other below the dewclaw. Use one chain for each leg. Put the large link on top of the foot, so the pull is on the topside.

8.) **Special Equipment** – a calving jack and calf snare – be familiar with and know how to use these pieces of equipment before calving starts.

9.) **String** or dental floss to tie off a bleeding navel cord.

10.) **To stimulate breathing** have a) cold water to put on the calf's head b) clean straw to put in nostril. Do not put your fingers in the calf's mouth – use a clean paper towel or apply pressure with your hand from the eyes on down to the nostrils to clear the nasal cavity of mucus.

11.) **Colostrum** – Have a supply of fresh, frozen or commercial colostrum available for calves: from thin cows, cows with large teats, twins, premature calves, from difficult or cesarean deliveries and/or uterine prolapses.

12.) **Nipple bottle or esophageal feeder** to ensure that the calf gets colostrums. Try the nipple bottle first but make sure that at least 4 litres of colostrums are given to the calf within 6 hours after birth.

13.) **Tags, notebook and pencil.**

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Jim Gerrish

3-Day Grazing School

June 12-14, 2017

Gem, AB

Whether you're a beginner, intermediate, or advanced grazer, this 3-day workshop will help you move to the next level. Key concepts of stocking rate, stock density, residual, intake, balancing use and recovery will all be covered in detail along with more advanced topics of year-round grazing and feed allocation. This combination of classroom and field sessions provides both the conceptual and practical application of Management-Intensive Grazing.



Includes classroom and field sessions!



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\$200/members, \$225/non-members

REGISTER: jimgerrishgrazing.eventbrite.ca

"Jim's experience includes over 20 years of beef-forage systems research and outreach while on the faculty of the University of Missouri. As well he has 20 years of managing a commercial cattle and sheep production on their family farm in northern Missouri. His research encompassed many aspects of plant-soil-animal interactions and provides foundation for many of the basic principles of Management-intensive Grazing."

-American Grazing Lands Services

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Fresh Water is the Primary Soil Nutrient You Should Be Managing For



Lee Gunderson Photo

BUSBY, Alberta: A problem we have in agriculture is that the water cycle is generally broken. To see what I mean let's look at our fields or pastures when it rains at a microscopic level.

Without a protective layer on the surface of the soil, a rain drop comes hurling to the ground and impacts the soil. It is like a small explosion that destroys the soil structure. Breaking apart the aggregates, this damage causes soil capping. This leaves a smooth surface that the next rain drop can't penetrate.

The rain no longer has anywhere to go, so it runs off. As it runs off of the land, it takes with it the best parts of the damaged aggregates and our valuable humus is washed away.

What moisture did get into the soil is now vulnerable to evaporation. The moisture in the soil does not work by gravity. It actually works by diffusion.

This is a movement from an area of

greater concentration to an area of lesser concentration (wet to dry).

If the top layer of soil's moisture is evaporated by the sun and the wind, the lower moisture will then move up to the dryer area. It will then begin to evaporate and more moisture will move up. Suddenly our

water cycle has been reversed. As this moisture moves up through the soil and evaporates, it can also bring with it unwanted salts that can be detrimental to growth.

With a healthy water system, our water bodies will evaporate and the moisture will rise up and form clouds.

These clouds will then get dense enough to form precipitation and fall back to the ground as rain. Here we need the rain to soak into the soil and infiltrate through the soil to again replenish the water bodies which will again have the moisture evaporate.

So how do we stop this unhealthy cycle? Leave more residue. We need to make sure that the first rain drop cannot hit the exposed soil. It needs to land on live or dead plant material, as that rain drop will then break apart and soak into the soil without damaging the soil structure. If the soil is in good health, the organic matter will hold onto the moisture. Excess moisture will

infiltrate down into the soil and away to larger bodies of water, thus filling them from the bottom and not from run off.

I believe that in the future, water is going to be a very valuable resource.

Ask anyone from California. Holding onto water and protecting riparian areas will be an important part of maintaining our ecosystems and our industry. If this means that water bodies and ponds appear on our land, so be it. This is a good thing.

In a lot of agricultural practices, we end up destroying these riparian areas in the name of profit. The most limiting factor we have in many areas is water. To produce a crop, you need upwards of 200 times more water than you need nitrogen. Which do you think is a more important nutrient?

It frustrates me when I see grain farmers ditching their fields to drain away wet areas. Yes, we get to farm a few more acres, but at what cost? How much flooding occurs downstream because of it? How much topsoil is washed away with it? How many riparian areas are destroyed? How much biodiversity is lost? Do you know who is responsible for most of the biodiversity in North America? Long before we were ever here, our friendly, hard working beaver, that's who!

To make a home, he backs up water...

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.

...He causes his environment to flourish in biodiversity because all life needs water. Plants, animals, fungi, insects and birds all rely on water and thanks to the beaver, they can all thrive with abundant riparian areas. Each ecosystem relies on the other and it all starts with water.

I know that some folks will be offended by this article as we have all grown up fighting against the beaver, hunting him, and cussing him. It is a paradigm, but just for a moment, sit back and think about what your area would be like without him.

I am not saying that we never have to manage the beaver. Environments can get out of balance, predators are sometimes scared off and we might need to re-balance the system again.

But if we do, we need to figure out how to work with the beaver and allow him to do his job as well as letting us do ours. All relationships

need to be win-win. Fresh water should be the number one nutrient you are trying to manage. Without it, agriculture will cease.

Try to build your soil and rebuild a healthy water cycle. The sustainability of agriculture

depends on it.

Source: The Stockman Grass Farmer
By: Steve Kenyon

This article was reprinted with permission from the Stockman Grass Farmer.



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Western Canada Conference on Soil Health & Grazing

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The Radisson Hotel South — Edmonton, AB

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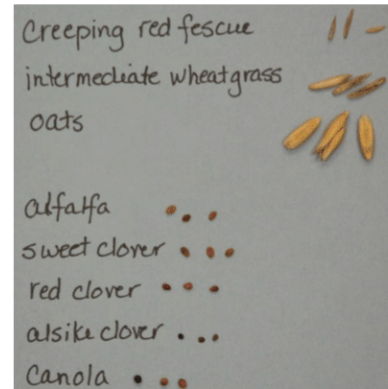
Check out our website for more info! www.absoilgrazing.com

Seedbed Preparation for High Legume Pastures



Precision seeding will ensure the seeds are placed at the correct depth, and allow for most effective soil to seed contact.

Consider the average forage seed size...



BE PREPARED

Seedbed preparation and firmness prior to seeding is critical to a successful forage establishment. Forage seed cost is not cheap, nor is taking a forage stand out of production and then putting it back. Management to ensure germination is important so that reseeding is not necessary.

Weeds

Control the weeds before you seed, especially if you are using a mixture of grasses and legumes. Make sure there have been no residual herbicides used in the past that will affect your new crop. Watch closely throughout the growing season to ensure weeds are not choking out the forage seedlings as they try to establish.

Seedbed Firmness

If land is tilled prior to seeding, the seedbed should be firm enough PRIOR to seeding so that a footprint in the soil will be no deeper than 0.65 cm. Firm soil will allow uniform, shallow coverage of the seed and prevent it from drying out. A seedbed can never be too firm before seeding. A seedbed that is not firm enough is often the reason for a stand's failure to establish.

Inoculation of Legumes

Legumes require inoculation with specific rhizobia bacteria to more greatly fix nitrogen from the atmosphere. Ensure the inoculant or pre-inoculated seed has not expired, is specific to the seed being sown, and is stored in a cool place out of sunlight prior to use.

Timing of Seeding

Depending on the emergence of weeds, spring seeding can be an effective time to seed forages. Soil temperature for germination ranges from 5°C to 20°C.

Late summer seeding is best suited to irrigation land. Timing must ensure that there is sufficient root development before freeze up so 6 to 8 weeks of growth (3+ leaf stage) is usually required.

Very late fall seeding can also work. It is important that the soil temperature is below 2°C so that germination will not occur until the following spring.

Seed Placement

Seed placement is determined by seedbed firmness, seed size, soil texture, and moisture conditions. As shown above, seed size varies.

Typically forage seed size is quite a bit smaller than most cereal grains, or even canola, so shallow placement is crucial. Smaller seeds do not have the energy to emerge from a deep planting, and is often the reason for establishment failures.

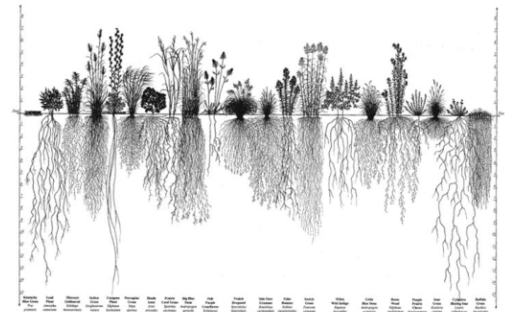
Once the seeds have germinated, it is crucial to monitor the stand throughout the growing season to ensure the young forage seedlings are not stressed by plant competition for moisture, nutrients, or most importantly lack of sunlight.

HIGH LEGUME PASTURES

Advantages of High Legume Pastures

Higher quality and quantity of forage over the grazing season.

- ◆ Increased profit per acre.
- ◆ Increased production from each acre.
- ◆ Increased gain per acre per animal.
- ◆ Improved cow condition and conception rates.
- ◆ Extends the grazing season, and helps manage the summer slump.



Root Systems of Native Plants

Builds soil quality, and is a source of Nitrogen for the pasture. (The highest potential happens when the seed has been inoculated with the correct bacteria).

- ◆ Nitrogen that is fixed is a symbiotic bacterial process, and root nodules are formed.
- ◆ Fixed Nitrogen is available to other forage plants through legume root cell leakage or fecal transfer.

Biodiversity of organisms above and below ground.

- ◆ Legumes with grasses bring more diversity of functional traits, and access various depths in the soil profile to capture and transfer moisture, nutrients, and enhance plant/soil/organism ecological systems.
- ◆ A healthy pasture has increased soil organism activity, insects, birds, and wildlife.

Greater stability of yield during drought.

Carbon sequestration can be improved with legumes added to grasses, and increased management.

Increased possibility for family succession on the same land area.

“The fear of bloat costs the livestock industry far more than bloat itself”

- Jim Gerrish



Alfalfa

Sainfoin

Red Clover

Alsike Clover

Considerations for Using Overwintered Crops as Livestock Feed

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Using overwintered cereal crops for swath-grazing in the spring or baling for use as greenfeed in the fall and winter are two options to utilize the 2016 crop for ruminants. It is also possible to thresh the crop and feed the grain to monogastrics and ruminants.

However, there are a number of concerns associated with feeding overwintered crops to both types of live-stock.

Does the forage or grain meet nutritional requirements of the animals?

Crops become weather damaged when left out over winter. Typically, protein and energy contents are lower in the spring compared to the fall. Digestibility of the feeds can be reduced as well. In the case of greenfeed or swath grazing, digestibility could be up to 10 per cent lower.

This drop in digestibility further reduces the suitability of unthreshed crops or spring-threshed grain if these materials are to be the major component or sole ingredient in a ration. These components will need to be blended off with other feedstocks to make up for the loss in quality.

Animals in late pregnancy or in lactation have approximately 25 to 30 per cent higher nutrient requirements than animals in early or mid-pregnancy. While there are differences between species, this trend is true for all. As a result, spring swath grazing or cereal greenfeed harvested from overwintered crops needs to be tested for quality, and rations need to be balanced to meet animal requirements.

Mycotoxins and overwintered crops

Mycotoxins can be found in many cereal grains (wheat, barley, rye, etc.) and corn. Mycotoxins are much less common in crops such as canola and legumes (peas, soybeans, faba beans etc.). The fungi that have the potential to produce mycotoxins predominantly infect the seedhead and not the stems or leaves of the plant.

Ergot is produced by the fungal species *Claviceps*. *Fusarium*, another fungus, also infects crops early in the growing season. Molds develop in the seedheads over the summer, and mycotoxins are formed in the developing crop.

If the weather is reasonably mild with high relative humidity, conditions are ideal for mycotoxin development. Ergot concentrations appear to reach maximum values by mid to late July. Levels remain stable for ergot. Levels of some of the *Fusarium* mycotoxins can increase when grain is in storage.

For crops that remain out in the field, such as for swath grazing or corn grazing, microbial activity stops when temperatures drop below 5C, which locks existing mycotoxin levels into the crop over winter. The same microbial levels are present in the crop going into spring.

Because the concentration of mycotoxins in the spring is very similar to what was present in the fall, it is important to test for the presence of mycotoxins, not the type of microbes or populations present on the material.

Nutritional quality of the greenfeed or grain is a big concern. If feed test results indicate that there is sufficient nutritional quality to feed to livestock, then testing for mycotoxins is required before any of the material is actually fed to the livestock.

Spring-threshed crops

Spring-threshed cereal crops may contain ergot, *fusarium*, molds, dirt and fecal contamination. Any problem that was present in the crop last fall will still be there in the spring. Freezing temperatures during the winter only stopped further microbial development.

In the warmer fall temperatures, there was a risk that mycotoxins were produced by various molds and fungi, which could be harmful to all classes of livestock.



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This Publication is made possible by our two major funders - the Agriculture Opportunity Fund and Alberta Agriculture and Forestry.



ALBERTA FORAGE INDUSTRY NETWORK



...Before feeding a salvaged spring-threshed cereal grain or greenfeed, it is advisable to have the feed tested for nutrient content and also screened for mycotoxins.

Silaging overwintered crops

Ensiling is the process of controlled fermentation to preserve wet forage material to a stable feed source. Salvaging overwintered feed by ensiling is not recommended.

There are two stages of fermentation during the fermentation process. Understanding the process helps explain why ensiling an overwintered crop is not an option:

The first stage involves aerobic respiration because oxygen is present. When plant material is first chopped and put in a pit, pile, bag or bale, oxygen is present. Bacteria use up available oxygen and plant sugars. Carbon dioxide and heat are produced. A shorter aerobic stage produces less heat and uses less soluble sugars resulting in higher quality silage.

The second stage follows in an anaerobic environment when all the oxygen is used up within the sealed pit, pile, bag or bale. Anaerobic bacteria use plant sugars to increase their populations to produce lactic acid, which lowers the pH of the silage allowing the preservation or “pickling” to occur. The entire process typically takes 3 to 4 weeks to complete and requires a minimum of 6 to 12 per cent plant sugars in the material to ensile effectively.

Overwintered cereal crops should not be chopped or baled to make pit, pile or bale silage because they may not ensile properly. The overwintered plant material would have been wetted and dried repeatedly, resulting in the leaching of soluble sugars and proteins out of the plant material. Without adequate amounts of sugars, microbe populations die off, and fermentation does not occur.

It is very unlikely that overwintered crops will have adequate moisture to create a good environment for proper fermentation. For proper fermentation with

chopped silage, the recommended moisture content is 60 to 65 per cent and for bale silage, 45 to 50 per cent.

If moisture levels are lower than those for chopped or baled silage, it is very difficult to pack the material in a pit or pile, resulting in higher oxygen content, longer fermentation and possibly, lower quality silage. In bale silage, the drier material will not pack in the bale, and the desired fermentation may not occur.

There is no point in going to the expense of making silage only to find a marginal to poor quality product that may not be suitable for use.

Baling crops

Overwintered forage must be dry before baling. Bales with a moisture content more than 16 to 18 per cent have the potential to heat and lose quality. During the heating process, some of the sugars (or energy) will be used by the microbes thereby reducing the energy content in the feed. If temperatures within the bale get above 40°C, the bales will smell sweet or like tobacco.

The forage colour can change to dark brown or black. When this happens, a portion of the protein will be bound to the plant fibre and not be available to the animals. If this change occurs, request an Acid Detergent Insoluble Nitrogen (ADIN) or ADIP (protein) test in addition to the regular feed analysis. Use the adjusted lower protein value when formulating rations.

Raking or inverting overwintered crop windrows in low areas of the field or where the crop has dropped through the stubble helps with the drying process. These actions also help to get a more uniform moisture content in the material going into bales. The raking or inverting should be done at lower speeds to prevent grain heads from breaking off the stems. If dirt is kicked up into the crop material and moisture levels are higher than anticipated, white mold can form in the bales.

Molds can develop in greenfeed bales that have a higher moisture content. A loss

possible, and feed refusal increases.

If mold is present, bales should be rolled out rather than fed in a bale feeder, which will allow the animals to sort through the feed and avoid the material contaminated with mold. For example, forcing cows to eat 5 per cent moldy feed can potentially reduce ration digestibility by 10 per cent.

Rolling out the greenfeed also reduces the amount of dust and spores the animal breathes in, reducing the risk for eye and respiratory problems.

Feeding considerations

When feeding ruminants mature cereal crop greenfeed, many problems can occur. Grain overload, acidosis and bloat may occur in cattle and sheep because the weight ratio of grain to straw in this material is approximately 1:1. The animals prefer to eat the grain rather than the straw.

Macro mineral imbalances of calcium, phosphorus, magnesium and potassium could cause downer cows or milk fever.

Sheep require very high quality forages in late pregnancy and after lambing. Lower quality forages such as overwintered cereal greenfeed or spring-threshed grain generally do not have the quality required to meet requirements. It is not recommended to use these types of feed.

Monogastric animals are very sensitive to mycotoxins, especially DON and Zearalenone. Levels of vomitoxin (DON) at 1 ppb will cause feed refusal in pigs.

Spring-threshed grains could contain waterfowl manure. With the significant risk of Avian Influenza being spread, spring-threshed grain should not be used in any poultry diet.

Ergot-contaminated grain is a concern for all types of livestock. Any feed containing ergot must be tested for mycotoxin levels before being included in rations.

Prepared by Alberta Agriculture and Forestry and Saskatchewan Agriculture
Website: agriculture.alberta.ca

SOIL SCHOOL

with Nicole Masters

Is my soil healthy? Am I getting the max yield from my land? How can I reduce my costs? How can I reduce weeds, pests, and disease?

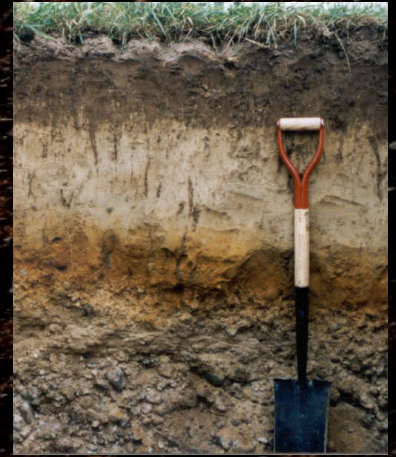
WHEN: May 23, 2017, 9am-4pm

WHERE: Claresholm Community Centre & Outdoor Field Site

REGISTRATION AND MORE

INFO: soilschools.eventbrite.ca

COST: \$65 for FFGA members, \$75 for non-members



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