



# The Blade

Monthly Newsletter of the  
*Grey Wooded Forage Association*

March, 2019





# COMING UP

April 17, 6 p.m. to 9 p.m.	Red Deer County, Weeds and Pasture Management Seminar	Spruce View Community Hall
April 18, 10 a.m. to 3 p.m.	Lacombe County, Funding for Producers workshop	Lacombe County Office, Hwy 12
June 13, 12:30 p.m. to 8 p.m.	GWFA Forage Technologies workshop and AGM Banquet	Heartland Room, Westerner Park

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Brenda Kossowan, editor & publisher  
Cover Photo: By Brenda Kossowan

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a member of the Agricultural Research  
and Extension Council of Alberta

## Office Report

By Brenda Kossowan

### There be drones

And there be all kinds of other fascinating ways that grass farmers can adapt new technologies to tweak their management plans. We're going to showcase some of our members' top picks—including the use of drones to monitor and manage cattle—at our 2019 AGM.

Mark your calendars for Thursday, June 13 in the Harvest Centre at Red Deer's Westerner Park.

We'll spend the afternoon exploring some of those options, and then sit down for the business portion of the meeting. The day will wrap up with an awesome dinner and an inspiring talk from a keynote speaker, yet to be named. The AGM committee has some great people in mind, but needed to confirm our date and site before asking them along—stay tuned.

Our hope this year is to offer an event that will bring progressive graziers together in a comfortable format where they can rub elbows and pick up some valuable information while earning a little money to help us in our research and educational efforts.

Sponsors are being invited to help defray costs and we are collecting donations for an auction to help raise money for our day-to-day operations. With luck and good management, we will have a little extra left over to share with a deserving charity—likely a food bank.

### Alberta Farm Animal Care

GWFA is among the livestock groups that support Alberta Farm Animal Care, a unique organization formed to help producers with issues involving the care and condition of their livestock.

Speakers for its annual conference, held March 20-21 in Olds, addressed some uncomfortable themes with the same compassion and understanding of animal husbandry that their audience shares. Next month, *The Blade* will reprint a *Prairie Hog Country* article discussing the perils and pitfalls of hauling livestock.



In the meantime I would like to share with you some of the questions raised by a Langley-area veterinarian whose practice includes a large number of geriatric horses.

Bettina Bobsien, who helped draft the most recent iteration of the Code of Practice for the Care and Handling of Horses, discussed some of the issues that have arisen with the

exponential increase in equine longevity since the early 1980s, the decimation of the slaughter industry in the United States and the drawbacks surrounding horse rescue.

Bobsien provided statistics showing that modern horses, which can survive into their 30s, outlive their athletic ability before they turn 20. That means large numbers of animals are being kept as pasture ornaments long past their ability to work or compete. At the same time, the costs of keeping an aged horse, including veterinary care and special feed, can be considerably higher than what is cost to keep them healthy while they were in their prime. The result is that owners who aren't prepared to bear those costs foist them onto others, said Bobsien.

She called on every horse owner to develop a retirement plan for their animals and be prepared, if keeping them at home, to spend a lot of money. This is the trap in which so many horse rescue groups are caught, she said, as they attempt to save horses from the meat buyer.

Bobsien advised anyone who wants to become involved with a rescue group to ask its operators if they have a 20-year plan for the animals they take home. She said people need to consider the story of Black Beauty and how that reality contrasts with modern horses as recreational and companion animals.



Turning our backs on winter: GWFA director Dallas Jensen provided this snapshot, taken from his pickup truck while moving his cows and heifers to a fresh site early in March. Good timing, Dallas—the snow cover on the road turned to mud a couple of days later.





**Please join us**

# **Weeds and Pasture Management**

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**Wednesday April 17, 2019**

**6:00pm to 9:00pm** (light supper included starting at 5:30pm)

**Spruce View Community Hall**

**Topics Include:**

- **How to ID weeds**
  - **Weed lifecycle and how they become established**
  - **How to prevent establishment**
  - **Pasture Management Fundamentals**
- 

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## Soil Health Tool Box

By Greg Paranych, Ag Field Specialist

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First, when we say, “soil health”, what does that mean? The best description I’ve heard is that it is “the continuous capacity of a soil to function as a living ecosystem.”

Using annual crops to achieve this is a practice that has generated a lot of interest. Annual “alternative forage” crops can be considered in three primary groups, each bringing specific roles to the cover crop “toolbox”. They are grasses, legumes, brassicas and varied mixtures of all of these.

Define your primary focus for your soil(s). Is it soil organic matter (grasses), or soil nutrients (legumes), or soil penetration (brassicas)? Are you looking for a return with additional livestock feed (grass/legume mixtures), or soil structural changes (legume/brassica mixtures)? There is a wide range of soil benefits we can get from these groups including:

- Nitrogen Fixation
- Scavenging micronutrients from deeper soil layers
- Enriching Soil Carbon (C) & Organic Matter (OM)
- Livestock Forage
- Prevention of soil erosion
- Conserving soil moisture
- Soil hydration and aeration
- Hardpan breakup
- Reduced soil compaction
- Habitat restoration
- Bee/Pollinator/Wildlife mixes
- Phytoremediation
- Biofumigant/nematode control

Let’s look at what is in each category for Western Canada.

### Grasses

As with perennials, the annuals fall into 2 main categories of warm and cool season grasses.

The most familiar **warm-season grasses** would be various Millet grasses and the Sorghum/Sudan grasses and their hybrids. They can be very productive; however, you need to be in some of the higher Growing Heat Unit areas of southern and eastern Alberta for consistent success.

**Cool-season grasses** that have given good success and adaptation are Italian rye grasses, Annual rye grass, and a relatively new hybrid grass (Italian ryegrass x Tall fescue) is Festulolium. All will deliver many of the above benefits, but primarily forage, annual grazing, added soil C and OM, erosion cover, and conserving soil moisture.

### Forage Brassicas

The **brassicas** are all part of the “cabbage family”. We are all familiar with the King of Brassicas being Canola. But for cover crop and alternate forage considerations we see collards, kale, radishes, and turnips, and sometimes sugar beets, being used. Particular soil contributions of this group include hardpan and compaction breakup (aggressive taproots), micronutrient scavenging, biofumigant and nematode control (for soybean rotations), forage grazing, and added soil C.

### Annual Legumes

There is very high interest in this group using various legume mixtures, as well as mixes with the other 2 groups. Most popular used in Western Canada are Hairy Vetch, Forage pea, crimson clover, and new interest in Balansa and Berseem clovers. They are desired primarily for soil Nitrogen fixation, forage, annual grazing

(in mixtures), cover for erosion control and moisture conservation, and added soil C and OM. They also contribute to hardpan penetration, micronutrient scavenging, and habitat/bee pollinator forage. The Balansa clovers have very high N fixation. Berseem clover not only fixes N but is a low bloat legume for grazing. Both have forage production slightly less than alfalfa. Berseem clover also has a high tolerance to alfalfa’s autotoxicity, making it a good establishing companion or interseed choice for winter-killed alfalfa stands.

### Other Annuals

In the cover crop discussion, you will also hear of other annuals such as chicory, buckwheat, phacelia, black sunflower, and brown mustard. Most of these are used in mixtures with each other for purposes of soil conservation, Eco restoration, and pollination plantings.

Blending combinations these annuals can be used for **specific needs**, with each component contributing their unique characteristic towards a targeted outcome. Every farm or ranch has their own priority as to what they want and expect from their “cover crop”. Common target uses include:

- Grazing: season long/relay/stockpile
- Enhanced cereal forage quality (silage/greenfeed/swath graze)
- Soil Building: nitrogen, OM, or green manure (organic programs)
- Pollinator and/or Wildlife benefits

If using cover crops and annual forages are new to you, I suggest that you minimize the level of challenges to ensure some learning success. For beginners, it is recommended that we take a low risk introduction to cover crops. Start with a size of acreage that gives your operation a comfortable risk level.

Use some simple blends to track specific crop performance. Have a long-term view for result expectations, especially if you want to see soil structure changes.

Be honest in your ability to include change in your operation. How does it fit your rotations for livestock feed, cropping rotations, use of equipment and seasonal timing with existing operations, and your willingness, personally, to experiment with new practices? Also, always use quality seed.

Nothing will dampen a new venture as a setback or failure from the start. Quality seed from reputable seed retailers will ensure that germination and seed purity will not be your limiting factors to success.

### Key Points

- Soil health improvement can contribute to better crop productivity and water quality
- Cover crops can be important components to improving soil health
- Details are important. Use the right cover for the right purpose. Select quality seed.
- Properly managed systems are needed for success.
- Learning: Be involved in educational and technical partnerships.

Resource as much knowledge and experience as you can. Find out what is working and what does not, for your circumstances. Share your experiences with others.

At Grey Wooded Forage Association, we can help guide you with shared technical knowledge and gathered experiences.

Give us a call if you want to learn more about soil health tools.



# WHAT'S HOLDING BACK YOUR CROP'S **FULL POTENTIAL?**

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Latshaw, 1924 Elemental composition of the corn plant. J. Agric. Res.

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## How to Identify a Crop-Related ALUS Project on Your Farm

By Ken Lewis, Red Deer County conservation co-ordinator



Do you have areas of your farm that are “hard to farm” or marginal for growing annual crops? In those areas, you might be better off growing ecosystem services.

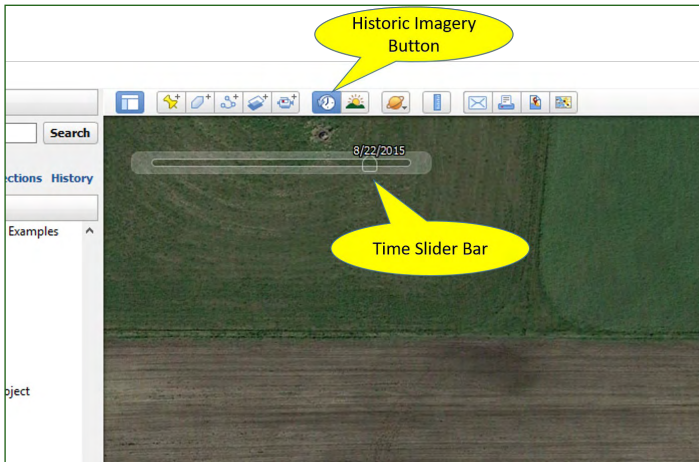
When you do, through the ALUS Program, you could get a guaranteed \$40 per acre per year from those areas.

Here’s a quick process for identifying potential ALUS Projects on your farm.

Keep in mind, in the end the choice is yours, to do something that *you* are comfortable doing. Also remember that the costs of doing things like this, can be shared with ALUS (ALUS can pay up to 85 per cent of “establishment costs”).

The bottom line is: You can turn a hard to manage, low-or-no-profit-yielding chunk of your cropland, into an area that produces increased ecosystem services, and get paid a contracted \$40 per acre per year.

To find out more, please call me at 403-505-9038 or call your closest Farmer Liaison for ALUS in Red Deer County: Kevin Ziola (West) at 403-352-0662, Tom Towers (Central) at 403-352-6901 or Stephen Smith (East) at 403-318-3371.



**Step 1:** Think about areas in your crop fields that are problems because they are often too wet. Maybe these are spots where once in a while you can seed through them, but often you’ve got to farm around them. Or, they are spots where you try to farm through and get stuck, or you can get the seed in but you can’t get the combine in, those sorts of areas. If you’ve got yield monitors and yield maps, these areas likely show up as low-yielding areas (or worse, no-yielding areas).

**Step 2:** Go to Google Earth, find your field, and turn on the “Historical Imagery” button. If you’ve not done that before, it’s a little button that looks like a clock with a counter-clockwise arrow on it. Here’s a screen shot showing where that button is.

[insert image “Historic Imagery How To”]

**Step 3:** Move that “time slider bar” (also shown in the screen-shot above), to go through the different air photos for your place. If there’s enough for your area, you’ll see some wet years, some dry years, and you can what you’ve had to deal with over the years.

In the example below, you see such an area from 2004, 2014, 2015 and 2018. Even if you don’t have yield maps, it’s pretty easy to see the marginal area. It seems safe to say that net profit from this area each year, was likely very low at best.

[insert image “4 Years Air Photos”]

**Step 4:** Give us ALUS folks a call, and we can talk about how you can turn that low-yielding, hard-to-manage area into an area that produces a different kind of crop: Ecosystem Services. The ALUS Program could pay you a guaranteed \$40 per acre per year for those acres.

Examples of things that could be done here include:

- Seeding it to native (or tame) forage, that is tolerant of the soil and moisture conditions found there.
- Seeding a buffer zone around it, to a native or tame forage.
- Planting larger native plants like willows and flowering plants.



## Is there a “beef” with Canada’s new Food Guide?

*Reprinted from the website of Livestock Gentec, a University of Alberta venture*

The 2019 update of Canada’s Food Guide has been out for about a month. In that time, it has been both praised as better reflecting today’s lifestyles and sustainability issues, and reviled as insufficiently reflecting Canada’s demographic diversity.

“Certainly, the new Food Guide has some great concepts,” says Tom Lynch-Staunton, Alberta Beef Producers’ Government Relations and Policy Manager. “The proportions of fruit and veg versus protein and grains... absolutely, that’s appropriate.”

Where the livestock sector differs is that the Guide over-emphasizes plant-based *protein*—on a plate that’s already three-quarters full of plant-based items.

“We think that could be misguided,” says Tom. “Plant proteins don’t have the same nutritional profile as animal protein. Meat contains all the essential amino acids; plants don’t. Vitamin B12 only comes from animal protein, unless supplemented in other foods. And iron from red meat is much more bioavailable than plant-based iron.”

The beef sector is concerned that animal protein and plant protein are made to look equal. However, certain demographics (children, seniors, pregnant women, athletes, etc.) need extra nutrients that they may be substituting out with plant protein without realizing that they may be inviting deficiencies. Milk is an obvious example.

“If you give your children soy milk instead of cow’s milk, thinking it is the same, they probably won’t grow the same way,” says Tom. “You have to compare the nutrient profile! That’s the missing piece.”

Tom would have preferred the Guide to recognize that milk, meat and eggs are highly nutritious but that if people don’t want to eat them... here (the missing piece, perhaps advice from a dietician) is how to get equivalent nutrition that meets their needs from alternatives. You can’t just tell people to replace meat with lentils and be done with it.”

Alberta Beef Producers isn’t really worried that Canadians will switch to tofu by the thousands and drive it out of business. True, Canadians are eating less beef, but the developing world is increasing its consumption as the quality of life in those countries improves.

Instead, it is positioning beef consumption as a complement to other foods in smaller amounts. A 180-degree shift from the more familiar steak. That might mean adding a few slices of beef to a salad high in Vitamin C to better absorb the iron from the beef, which can increase the bioavailability of the iron from the spinach as well. Alberta Beef Producers is also positioning beef as a nutrient-dense food to those demographics who need the extra nutrients, and trying to reconnect consumers back to where beef comes from... how it’s grown and the environmental benefits of raising livestock, especially on land that is not suitable to grow crops.

There are lots of misconceptions out there.

“Of course, we want people to eat beef and drink milk,” says Tom. “There’s an economic value that infers bias. And, of course, we wanted to be consulted on the Guide but Health Canada was trying to keep bias out of the mix. Bottom line? That’s irrelevant. What IS relevant is how the Guide improves the health of Canadians. So the question is: how much (nutritious) meat can you eat to complement other items on the plate. That’s the balance we’d like to see.”





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## Cow-based forage seeding

By Brenda Kossowan, editor

*Our office has received some inquiries about having cows reseed their own pastures by mixing forage seed in their mineral. A few local experts have weighed in on this notion, including Greg Paranich, Ag Field Specialist for GWFA and Olds-based Grant Lastiwka, a respected forages expert and recipient of the 2019 Leadership Award from the Alberta Forage Industry Association.*

### Greg Paranich:

There has been a lot of anecdotal references to using this method. However, results are the same – anecdotal. Having said that, it is something that has been done, but I really can't say how consistent or successful it has been.

Also, it depends on what you rate as success and what your expectations are. Typically, what I have heard is that placing salt or mineral laced with legume seed near areas where cows may loiter would have the seed deposited (via manure) in those areas.

Where the cows lounge, they are most likely to drop manure when they rise. Bush areas, where cows have access and equipment does not, would be the most targeted sites with success.

The success of the seeds in manure would first depend on getting into or onto the soil with good contact, and than packing (hoof action) from high stocking density.

Secondly, it would have to germinate and emerge among existing established forage competition. The better the forage stand, the more competitive the environment and more challenging for the emerging seedling to establish and compete for resources. Poorer, less competitive stands may allow more chances of new seedling establishment if there are no further grazing pressures that season or until very late in the season.

If you can provide the intensity of hoof action to ground cover, your success rate may be improved. Seed distribution via cow manure would be very sparse and sporadic and hard to track, but with animal density could give you reasonable distribution. If you have that level of management, maybe consider a seed broadcast and have the cows trample it in from there. It would give you a bit more assurance of seed distribution.

I would like to follow up, including pasture walks, with any producer who is trying this.

### Grant Lastiwka:

I've always wondered if it was put in a straight mineral with no salt if it would survive better for a longer period of time. I do use a 1:1 that has no salt just flavoring and then have TM salt separate.

We know salt is toxic to a seed coat (nitrogen fertilizer and seeds or maybe potassium, phosphorous and sulphur also), so slobbering or rain in it will hasten seed damage, I was told. Keeping it fresh frequently is probably a good idea.

Work this spring by Jane Thornton, one of our peers in forages from Manitoba with a lot of years of experience, is to spread seed around the mineral box so wet hooves may pick it up and move it and more soil action and suppression on areas where seed falls. The seed spots can become seed resources once established in a two-time-over grazing rotation for intake later with better establishment possibly from resulting manure distribution. Rumen passage takes 24-72 hours for distribution, depending on forage quality. The seed, I read somewhere, does not germinate until the manure starts to break down. That is what I have found at our place to be the case. If eaten in fall it still grows well in spring in that cow pie.

*W.P. McCaughey et al, in the September 2001 edition of The Journal of Range Management, found that*

Dissemination by cattle of hard seeded, or firm ungerminated species, such as Woods rose and snowberry, is a feasible method of delivering large numbers of viable seeds onto selected areas. If cattle were used to disseminate purple prairie clover, birdsfoot trefoil, western wheatgrass, green needles grass and yellow coneflower seeds, much smaller numbers of viable seeds would be disseminated. Results for the mechanically harvested and cleaned birdsfoot trefoil may be improved when animals graze seed heads as hard seed content will increase. It would be necessary to evaluate the benefits of this low cost seeding alternative in light of the expense of the seed lost to digestion. Consumption of seeds by cattle is not an effective method of increasing the viability of the Great Northern Plains native species that were tested in this study or birdsfoot trefoil.

*Further, a study performed by F. Gokbulak of Istanbul University and published Blackwell Science Ltd. in its journal, Grass and Forage Science (volume 57, 2002) acknowledges that "small and hard seed-coated seeds can pass undamaged through the digestive tract of animals."*

*The author therefore concluded that those species are likely to become dominant in grazed rangelands, where species with a larger seed may disappear over time:*

Depending on the diet selected, subsequent patterns of animal movement and on the amount of seed passage, germinable seeds could be distributed and deposited in moist dungpats over a large area for several days after seed ingestion. This seed dispersal strategy could result in the establishment of patches of desirable species that could be the source of seed production for surrounding areas, especially for degraded rangelands in arid and semi-arid regions. If ruminants are used as a seed disseminator on rangelands, the temporal pattern of seed passage and germinability of passed seeds should be considered. According to this study, 24 to 48 hours would be the best time after seed ingestion to disperse sufficient undamaged passed germinable seeds on rangelands.





# Agricultural Funding Workshop for Producers

## ***Considering an improvement on your operation?***

*Learn about provincial funding programs and receive application assistance for **Canadian Agricultural Partnership** applications and **Environmental Farm Plans**.*

**April 18, 2019**  
**Lacombe County Office**  
**10a.m. – 3p.m.**

### **10a.m. - 12p.m.**

- Canadian Agricultural Partnership Funding
- Environmental Farm Plan
- ALUS Program (Alternative Land Use Services)

**12-1p.m LUNCH**

### **1-3p.m**

One-on-one assistance with Environmental Farm Plans and CAP Funding applications

**Laptops will be available. Lunch is included. RSVP to 403.782.8959 (\$20 cost)**





## Drought Contingency Planning

From GWFA's Grazing Management Planning Guide, by Devin Knopp

Drought is a factor all livestock producers must manage for. It is of utmost importance to have a drought contingency plan in place when creating a grazing plan. A contingency plan allows a producer to make proactive changes to the grazing plan. It provides you with a detailed explanation of what you can do to decrease the effects of drought on you, your pastures, and your livestock. In order to create a contingency plan, you must first look at your pastures and the inventory. This will provide you with a few ideas of ways to help decrease the effects of drought. It is up to each producer to determine a plan to manage the effects of drought. Some may look at culling the herd early, others may choose to stockpile feed, or use a sacrifice pasture. The options I describe below are by no means the only options out there. Do some research, such as the [foragebeef.ca](http://foragebeef.ca) website, into what may work for you. These are just ideas that I have come up with to get you thinking about drought contingency planning.

Looking at plant inventory and determining what plants are in the pasture you can determine if you have some pastures more suitable for grazing during droughts. Deep rooted perennial plants can access water reserves much deeper into the soil and may be able to persist longer under drought conditions. Examples are tap rooted plants such as alfalfa. Shallow rooted plant species will be affected by drought much sooner and will be less suitable for grazing during a drought. Another factor to consider when drought planning is your utilization rate. Above there was a basic description of the use half, leave half theory around grazing. If you follow that sort of utilization plan there will be residue left on the surface of the pasture. That residue acts like a blanket, protecting the plants and the soil surface below. Having that residue helps prevent solar radiation from reaching the soil, which keeps the soil cooler, and prevents evaporation. The spring moisture, or any moisture from small rains that may occur during a drought year, will be preserved a little longer on the soil surface. As part of the contingency plan, a grazing manager may choose to reduce the utilization percentage, leave a bit more residue, and decrease the number of grazing days. This may be an option for a short-term drought, but it has to be managed appropriately because this will affect the other pastures and the rest periods they may require. Another option to consider is

having a "sacrifice" pasture. This is a pasture that you will ultimately choose to abuse through overgrazing. Sacrificing one pasture piece allows you to preserve the others. If you are reducing the number of grazing days but are unable to source more pasture you may need to run your livestock into this "sacrifice" paddock more often and disregard the rest period so the other pieces can rest longer. Using this method will damage one piece, but hopefully leave the others in a state where they can remain productive this year and in years to follow. The sacrifice pasture will ultimately be managed separately from all the others during that year of drought and successive years after to ensure it is brought back into a healthy state.

There are other management options available outside of a pasture plan that a manager may want to consider. Strategically culling livestock is often left to the last minute but having a culling plan allows you to move those animals before the effects of drought are fully felt on your operation and in the markets. Older animals will eat more forage than younger animals for little to no additional gain on the calves, and thus may be the first to be culled. If your herd is younger and smaller, the forage consumption rate will be less. Weaning calves early may also be an option. Lactating cows will consume a lot more forage to meet the requirements of the calf and themselves. Their forage consumption will decrease after their calves are weaned. Along with weaning calves, putting out a creep feeder will reduce the forage consumption of the calves, decreasing the overall impact on the pasture. Feeding hay on the sacrifice pasture. Feeding hay is an option many producers don't want to use, because usually during dry years feed prices are a premium. Also, sourcing more pasture. This can become costly and increase your management but may be necessary to help prevent culling any livestock.

There are many options that a grazing manager can take, but ultimately the plan needs to be in place since we don't know when a drought may be coming. If a plan is in place, a grazing manager will know what to do first and be ahead of the game. Constantly updating the drought contingency plan is important. There are no perfect plans to meet every scenario but having something in place and being flexible will allow you to react to changing situations.

### *Congratulations to* **Grant Lastiwka** **2019 Leadership Award** **Alberta Forage Industry Network**

*Presented March 5, 2019*  
*For his years of sharing and caring as a grazing and forage specialist with Alberta Agriculture*

"Grant is the mycorrhizal (fun guy)  
of the forage industry."  
-Doug Wray, rancher, Irricana





## Early Grazing

By Richard Kamchen, reprinted from *Ag Knowledge*, a Farm Credit Canada publication

Cattle producers low on feed may be more tempted to put their cattle out on pasture as soon as the snow melts, but experts warn that comes with repercussions to both plant and animal health. Feed is low and the snow is melting; how soon is too soon for early grazing?

"Livestock should go out on pasture when grasses have developed three to four new leaves," says Christine O'Reilly, Ontario Ministry of Agriculture, Food, and Rural Affairs' forage and grazing specialist. "Turning out earlier than this is very stressful on the plants."

### Grazing season

The rule of thumb is grazing a week too early will sacrifice three weeks of grazing in the fall.

"If livestock are turned out too early year after year, weeds that begin their growth later in spring than grasses may be able to out-compete the plants producers want in their pastures," adds O'Reilly.

It doesn't do the cattle much good either, as immature plants are mostly water, offering little nutritional value.

That's especially problematic for cows with calves, notes Alberta's forage and beef specialist, Karin Lindquist.

### Stressed pastures

Cattle in areas that experienced dryness and feed shortages last fall may have stayed on fields longer than ideal, meaning those pastures went into winter overgrazed, says Cedric MacLeod, executive director of the Canadian Forage and Grassland Association.

For those pastures, it will be that much more important to get adequate rest in the spring to reestablish their root reserves.

"In general, we're probably putting our cattle out too early even in the good years," MacLeod says.

### Shortages and cold

Winter hasn't been kind to producers with low supplies, and Alberta Agriculture's beef and forage specialist Barry Yaremci points out cold in his province has caused increased feed consumption.

Hay shortages and extreme cold have challenged many Prairie producers this winter. They worry if they'll have enough feed to hold their animals over till pastures are ready, says Lindquist.



### Options

Farmers may have to resort to buying more feed and/or custom feeding.

Alberta Agriculture's CowBytes software program can assist in ensuring livestock receive a balanced ration of nutrients.

Lindquist adds creep feeding can provide supplemental feed for calves. That can be one-third peas mixed with two-thirds oats and barley, or corn.

MacLeod says another option is reducing inventory.

"If guys are holding heavy calves, if there are cows out there that should be culled from the herd, now is the time to do it, as opposed to limiting your forage production into the future," he says.

The downside is depressed cull cow prices, but the risk of not selling is inadequately feeding your herd, MacLeod says.

### Bottom line

Cattle farmers are facing hard choices amid feed shortages but are urged to consider other options such as custom or creep feeding or even reducing inventory before early grazing. Putting livestock on pasture too early can damage both plant and animal health.



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## Ranching 2.0

By Andrea White, reprinted from *Farming for Tomorrow*, March-April edition

People are interested in how their food is raised, where it comes from and are considering external factors such as sustainability in their food choices.

What is sustainable beef? Sustainable beef is defined as an economically viable, socially responsible and environmentally sound product that prioritizes the planet, people, animals, and progress. The cornerstone of sustainability is continuous improvement.

The Canadian Roundtable for Sustainable Beef (CRSB) was formed in 2014 as a collaborative, multi-stakeholder organization focused on advancing sustainability from environmental, social and economic perspectives in the Canadian beef industry.

The CRSB works under three main pillars to demonstrate sustainability in Canada.

### Sustainability Benchmarking

First released in 2016, the National Beef Sustainability Assessment benchmarks the overall performance of the Canadian beef industry from environmental, social and economic perspectives. It shows where the industry is doing well and identifies areas for improvement. For example, from an environmental perspective, it showed that Canadian beef production contributes only 2.4 per cent of Canada's overall greenhouse gas emissions, and beef production land provides significant biodiversity habitats. It also highlighted areas such as food waste and producer economic viability for improvement. A sustainability strategy outlines key goals, and progress will be measured every five to seven years with the next assessment planned for release in 2023.

### Sustainability Certification

First of its kind in the world, the Certified Sustainable Beef Framework is an operation-level certification program developed to demonstrate sustainable practices, help companies meet sustainable sourcing commitments and provide consumers assurances about sustainable practices. Certification is awarded for achievement against sustainability standards for beef production and processing across all five principles of sustainability: Natural resources, people and community, animal health and welfare, food, efficiency and innovation. The standards are outcome-based, which allows for flexibility in different production practices. To provide the opportunity for end-user claims about beef sustainability, cattle and beef from certified operations are tracked through the supply chain according to Chain of Custody requirements, verified through a chain of custody audit. Sustainability claims and a CRSB certified logo are available to enable supply chain partners, including producers and processors, to provide consumers assurances they seek.

Currently, three certification bodies are approved to conduct audits for the program: Verified Beef Production Plus (VBP+), Where Food Comes From Inc. and IMI Global. VBP+ registered producers are credited with VBP+ and CRSB certification through a single-audit process. Where Food Comes From can conduct both producer and processor audits, and IMI Global provides Chain of Custody verification.

The National Cattle Feeders' Association Canadian Feedlot Animal Care Assessment Program is also recognized by CRSB with equivalency to the animal health and welfare indicators in the Sustainable Beef Production Standard, and Where Food Comes From provides certification for both CRSB's Production Standard and PAACO.

You may have heard about some of your fellow producers receiving

financial credits for sustainability certification. Supported by McDonald's, Loblaw's, Original Joe's, Swiss Chalet and Cactus Club Cafe, the Canadian Beef Sustainability Acceleration Pilot project has been working to connect the supply chain for more than one year. Spearheaded by Cargill in partnership with VBP+, Where Food Comes From and BIXS, the pilot has sourced 3.7 million pounds of beef from certified farms and ranches so far, and is rewarding producers on a per head basis for their participation. In 2018, credits for qualifying cattle moving through the supply chain averaged approximately \$18/head, and volume is continually building. This pilot has facilitated the supply chain sourcing infrastructure using CRSB's Framework as a guide, and in August 2018, McDonald's Canada was the first company to serve some of their beef from certified sustainable operations, showcasing the CRSB certification logo that consumers can now look for to provide assurances about sustainably raised beef.

There is increasing interest from retailers and food service companies in sustainable sourcing opportunities, but meeting that demand requires significant year-round supply of beef from certified operations. Producers already participating report that the process is simple and provides recognition for sustainable practices that you likely already have in place.

### Sustainability Projects

Finally, CRSB collaborates with projects to drive advancement of sustainability, guided by the goals of the National Sustainability Strategy. This helps us demonstrate the impact and continuous improvement of the whole beef supply chain across all principles of beef sustainability. For example, since 2016, CRSB has been partnering with the Canadian Cattlemen's Association, Alberta Beef Producers and conservation groups to work with beef producers in identifying and implementing projects to enhance habitat for species at risk in the grasslands region of southern Alberta.

CRSB also conducted its first consumer survey to evaluate attitudes about sustainability and gather feedback about its proposed logos and claims supporting the Certified Sustainable Beef Framework. Future annual surveys will continue to address consumer opinions and evaluate public trust for Canadian beef.

For more information, visit [crsb.ca](http://crsb.ca) or email [info@crsb.ca](mailto:info@crsb.ca)



[www.afac.ab.ca](http://www.afac.ab.ca)



## Pickled Forage

By Woody Lane, Lane Livestock Services, Roseburg, Oregon. Reprinted from *Progressive Forage*, Oct. 1, 2018 edition



When we have excess forage and want to preserve it for future use, we really have only three practical choices. We can let it remain in the field as standing dry vegetation.

Many farmers routinely do this by stockpiling late-summer grass, especially tall fescue, but this option doesn't work with earlier growth or corn plants.

If we store the forage, we must overcome two major enemies, mold and bacteria, which will grow on the forage and use up nutrients before our animals can get to it. We can prevent both if we dry the forage enough so nothing will grow on it. That's hay or one of its derivatives, like cubes or stacks.

Another technique is: We can enclose wet forage in airtight containers to prevent mold growth and let it rot so the low pH prevents bacterial growth. That's silage or one of its derivatives, like baleage, haylage or hay crop silage. We are all familiar with hay, but silage is a horse of a different color. Let's talk about it.

Making silage is really a process of fermentation, roughly analogous to the fermentation in a rumen, only different. The silage process occurs in five phases. (I know, I know, some publications list four phases or even six phases. But I'm not fazed – these categories overlap, and authors make arbitrary distinctions, so five is a perfectly good number).

In the first phase (which scientists predictably call "Phase I"), we cut green forage and stuff it into an airtight container. The plants still contain 30 to 70 percent moisture, depending on the type of vegetation and the type of silage. Initially, there may still be a bit of residual oxygen in the container.

Because the forage was green when we cut it, many plant cells are still alive and carrying out respiration. Which means that, for a short while, those cells are still using some sugar. Also, some oxygen-loving (aerobic) bacteria on the surfaces of the cut forage continue to live and metabolize during this period.

But within a few hours, all the oxygen has been used up, and all the plant cells and aerobic bacteria die, signaling the end of Phase I. The pH of this forage is 6.0 to 6.5.

In "Phase II," the forage begins to rot or, should I say, ferment. Since the container now contains little or no oxygen, the only life that can survive are bacteria that can live without oxygen. These are called anaerobic bacteria. In fact, oxygen may be toxic to some of them.

A valuable characteristic of silage is: All molds require oxygen, so by eliminating oxygen, we eliminate molds. Meanwhile, the anaerobic bacteria begin to ferment the soluble carbohydrates in the forage and produce acetic acid. Since a silo is a closed container, the acetic acid has no place to go, and it begins to build up in the forage. This increase in acidity is reflected in the silage pH, which begins to drop below 6.0.

We should remember: A silo, while it is a fermentation chamber, is not the same as a rumen, which is also a fermentation chamber. A rumen is actually a flow-through system. Things enter through the mouth and esophagus, ferment in the rumen and exit through the tube of the gastrointestinal tract to the true stomach (abomasum). In contrast, a silo is a tightly closed static system.

Once things are put into the silo, they stay there, and any fermentation products also stay there and build up over time.

This is an important concept because within three days, the buildup of acetic acid causes the silage pH to drop to around 5.0, which initiates "Phase III" of the ensiling process. The acetic acid-producing bacteria die off and are replaced by different bacteria that thrive at this lower pH, like lactobacillus and leuconostoc.

These anaerobic bacteria produce lactic acid. Lactic acid is a stronger acid than acetic and, as the lactic acid accumulates, the forage pH drops further. In approximately two weeks, the lactic acid accumulates to more than 60 percent of the organic acids in the silage, and the silage pH drops to below 4.5 and even below 4.2.

Which moves us to "Phase IV" – stability. The silage pH is now so low even the lactic acid-producing bacteria cannot survive. In effect, they produced so much acid they pickled themselves. But here's the bottom line: Nothing else can live in that environment. We have reached our goal. The forage is no longer losing nutrients to fermentation. The forage is stable and safe.

Unless things don't go quite right. Then the silage can slide into another phase: "Phase V." This occurs when the silage pH doesn't drop low enough. The silage may have contained too much water or not enough readily fermentable carbohydrates for the lactic acid bacteria. In any case, in Phase V, the fermentation shifts to favor a different type of bacteria: clostridia.

These bacteria are not our friends. Instead of fermenting carbohydrates like the well-behaved lactic-acid producers, these clostridial bacteria thrive by fermenting protein. This, of course,

*(continued from Page 14)*

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reduces the amount of protein in the forage. And as they break down protein, these bacteria produce a number of distinctive aromatic compounds. I say distinctive because here are some names: cadaverine and putrescine.

The term “stench” would be an understatement. Phase V indicates a poor silage – an unpalatable forage with significantly reduced nutritional value.

But these phases (I, II, III, IV and sometimes V) pretty much sum up the process of ensiling forage. Prevent the growth of molds and bacteria by making the container airtight, and reduce the pH to create an inhospitable, stable environment.

Which opens up lots of possible variations to exclude oxygen and drop the pH. A silo can be any airtight container, like the classic, tall Midwestern barn silo, which takes advantage of the forage weight to force out the air. Or those big blue metal silos, which can be made more airtight than traditional silos.

Or we can chop the forage into small pieces and stack it in a three-sided concrete bunker (a bunker silo) or a three-sided open trench (a trench silo). Then we run tractors back and forth over it to press it down and then cover it with plastic and old tires. Or we can blow the forage pieces into a long white plastic sleeve like a monstrous sausage.

Or we can cut the hay, let it wilt slightly and make large bales containing 50 percent moisture – far wetter than anyone would ever put into a barn – and wrap those bales in layers of white plastic, mummy-like. This is baleage – a good technique, particularly if we keep a supply of sturdy repair tape for holes in the plastic caused by moles and rocks and falling meteors.

We can also manipulate the silage pH. We can make sure the forage contains lots of rapidly fermentable carbohydrates for the bacteria.

We can include extra grain or dried whey or anything else with sugars and starch. We can also add commercial additives during loading to accelerate the fermentation process, like lots of extra bacteria, particularly lactobacillus.

Or enzymes to break down the large starch molecules into smaller soluble sugars these bacteria prefer. Or mold inhibitors to prevent, well, mold, in case a dry forage doesn't pack well or contains extra air pockets.

But here's another idea: If we want to make forage more acidic, why not just add acid? Like strong acid. Well, in the 1920s, someone developed a system to do just that. A Finnish scientist named Artturi Virtanen devised a way to drop the forage pH to under 4.0 very quickly and thus completely avoid the fermentation process and its associated nutrient losses.

He simply sprinkled mixtures of hydrochloric acid and sulfuric acid directly onto the forage as it was put into the silo. The system genuinely worked, and for a time it was used on farms throughout Scandinavia and elsewhere.

It was, however, rather hard on equipment – and I'm sure farm crews were not thrilled about handling jars of concentrated acid – but nonetheless, in its day, this method was widely known. I suspect, however, in today's world of seatbelts and roll bars, pouring concentrated acids into open silos would not be favored by most regulations.

Oh yes, Dr. Virtanen's middle name was Ilmari (Dr. Artturi Ilmari Virtanen) and he patented his process as the “A.I.V. Method” for making silage.

You might not want to try it at home, but you can safely look it up on Google.

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## Another Transplanted Grazing Idea

*By Kim Nielsen, reprinted from Grainews, April 1 edition*

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In my last article, I shared the trials of our swath-grazing attempts on our farm here in Australia compared to what we had done for many years up on 4-Clover Ranch near Rocky Mountain House, Alta. We felt the benefits of this cost-saving concept were worthwhile exploring in a season when we are hot and dry instead of feeding cattle in deep snow and cold temperatures in Canada.

While it is hard for the Canadian reader to imagine, most livestock feeding happens during the summer here in Australia and it will still be in full swing mid-March. Our experience with bale grazing from 4-Clover Ranch, which has similar desired outcomes, gave us the encouragement to give that a go here.

We took in some cows and calves on custom grazing this year and have been running them separately from our own heifers. While the heifers are swath grazing, the cows are on some tall fescue we had cut and baled for hay in early November. We just have a small pasture of Fletcha tall fescue, seeded more for its deep root system and ability to tolerate wet winter conditions. We seeded it into a part of Alcheringa Pastoral, where earlier oat crops showed signs of compaction and poor infiltration. The tall fescue established very well and has certainly corrected the compaction issue, with roots seemingly penetrating down through the heavy clay. The other benefit of tall fescue is excellent resilience and good sod-forming ability. The negative is not unlike phalaris (a type of reed canary

grass) where it also has tremendous growth in early spring but if allowed to head out, palatability declines rapidly.

I had tried to do a flail trim, mimicking skim grazing a year ago, but found it hard to get the cattle to graze below the dry, sharp stubble. So this year we made the decision to cut it for hay.

We have just started bale grazing the hay on fields where it was cut and are happy with the observations.

We put the heifers through the tall fescue regrowth after haying, but there was a bit of grazing left which had the cows wandering outside the area where the bales were placed, giving good manure distribution. The dry ground is also hard preventing pugging (feed not getting tramped and worked into soft soil) and resulted in excellent utilization of the bales. We of course don't have the challenges of the cattle wanting to lie down and spoil the hay as is common with cold and snow in Canada.

Bale grazing certainly has a place here, considering forage species that are compatible.

The tall fescue paddock might be used for this in the future. Grazing during the hot Australian summer creates new challenges and demands a new approach for us against our Alberta experience.

We feel some principles are shared and we are enjoying the journey.

*(Editor's Note: Kim is truly our man downunder, a long-time member of Grey Wooded Forage Association)*





# Grey Wooded Forage Association

*Creating an Awareness of Forages*

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