MANITOBA AGRICULTURE / DECEMBER 2024

Beef and Forage Technical Bulletin 16th Edition

The Importance of Feed Testing – Adapted from the Beef Cattle Research Council

With cattle feed being swathed, harvested, or silage in the bunk or bale, it is time to test your feed. Although it is best to feed test as close as possible to the day the animal will be consuming it, testing will help you determine if supplemental feed will be needed and provide time to source it.

A common question is, 'now that I have my feed test results, what do I do with it? What do all those numbers mean? And how do I make use of this information on my operation?' Recognizing this need for some general information to help producers better utilize their feed tests, please refer to www.beefresearch.ca/tools/feed-testing-analysis-for-beef-cattle. This tool allows you to input the results of your feed test along with the class of animal you intend to feed and it will give you a green light (OK to feed), yellow light (be cautious if feeding as a stand-alone feed source), or red light (don't feed this as a stand-alone feed source).

Note that this tool is not intended for use in ration balancing, but rather to alert you to potential issues with individual feed ingredients. It is strongly recommended that producers seek advice from a qualified professional to develop a balanced ration or familiarize themselves with ration balancing software like CowBytes.

Feed testing helps with understanding the nutritional quality of your feed and provides the details for ration formulation. There are ways this information can add value to your operation as you make day-to-day management decisions. Having a feed test can help you decide which class of cattle should receive certain feeds and which stages of production will require different quality feed sources, by identifying any excess or deficiencies in energy, protein and a selection of trace minerals.

Different classes of cattle have different nutrient requirements. This means that a feed source that would not work as a stand-alone feed for one group of cattle might meet or exceed another class of cattle's nutritional requirement. Understanding the nutrient content of your feed will help you match the feed source to the class of cattle being fed. For example, the hay in the following sample can be fed as a stand-alone feed to mature cows in mid-gestation, but, unsurprisingly, it does not have enough energy (total digestible nutrients, TDN) for backgrounding cattle that are targeting a 2.5 lb. per day gain.

Select Cattle Class

Backgrounding

Select Average Daily Gain (lbs/day)

2.5

Enter Weight (lbs)

** Enter weight between 500 and 1000 lbs.*

650

Enter Test Feed Data

Dry Matter (DM,%)	Total Digestible Nutrients (TDN, %)	Crude Protein (CP, %)	Calcium (Ca,%)	Phosphorus (P, %)	Ca:P Ratio	Potassium (K, %)	Magnesium (Mg, %)	Tetany Ratio
88 %	60 %	10 %	0.5 %	0.2 %	2.50:1	0.97 %	0.20 %	0.60:1

Calculate Single Feed Data

Having feed test results can help to identify if a feed source presents serious nutritional problems. Either excesses or deficiencies in minerals can cause reproductive problems in cattle. Depending on the feed source being tested, you may also want to include testing for nitrates or mycotoxins to determine if the feed is safe for cattle to consume. Deficiencies in most nutrients can be remedied by providing additional supplementation.

Testing feed doesn't take long and is cost-effective when considering the impact it can have in the prevention of reproductive wrecks, health issues, or even death. For more information on feed testing, including how to take samples, where to send them, contact one of the Manitoba Agriculture Beef and Forage Extension Specialists.

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Growing the Weaned Calf

This is a continuation of the Growing Your Weaned Calf article from the September edition of Stock Talk in Cattle Country. This article focuses on ration options and feed bunk management once your calves have adjusted and are on full feed.

In growing weaned calves, you must meet their requirements as outlined in the table. Energy is required for both maintenance and gain and protein develops muscle and grows frame. The amount of energy directly affects average daily gain (ADG) Remember that too much energy will result in excess fat. As well, cold weather requires more dietary energy and protecting animals from the wind will reduce the effects of cold stress on the animals.

Nutrient Requirements of Medium Steer Calves vs Average Feed Values

Weight (lbs)	Daily Gain (lbs)	TDN (%)	Crude Protein (%)
500	1.5	63.0	10.5
	2.0	67.5	11.4
	2.5	73.5	12.5
600	1.5	63.0	9.8
	2.0	67.5	10.5
	2.5	73.5	11.4
700	1.5	63.0	9.2
	2.0	67.5	9.8
	2.5	73.5	10.5
Alfalfa Grass Hay		57.6	13.7
Barley Silage		63.0	11.1
Corn Silage		65.2	8.7
Barley Grain		83	12.5
Corn/wheat DDG		77	34

Feed quality can vary from year to year and feed testing is key to properly balance rations. Feed testing also addresses moisture differences. Without knowing the moisture content, you could be shortchanging the animals on dry matter intake or you could be overfeeding and have increased wastage. In addition to routine feed testing for protein and energy, consider testing for mycotoxins in grains and nitrates in annual forages that were stressed during the growing season (e.g., drought or frost). Have the pH in silages measured to give an indication of fermentation and stability. With the diets largely forage-based, there are many different ration options available. Alfalfa grass hay, barley silage or corn silage are often used in backgrounding rations. When sourcing feed ingredients, price is usually first and foremost, but other factors such as storage, and equipment required to feed also often come into play.

Examples of daily ration options for a 500-600 lb. calf for an ADG of 2.5 lb. include:

- 11.25 lbs. of hay, 6.75 lbs. of barley grain and 0.25 lbs. of 1:1 premix for a cost of $1.51
- 23 lbs. of barley silage, 3 lbs. of alfalfa grass hay, 5 lbs. of barley grain, 0.25 lbs. of 1:1 premix, and 0.06 lbs. of limestone for a cost of $1.47
- 19 lbs. of corn silage, 5 lbs. of alfalfa grass hay, 4 lbs. of barley grain, 1 lb. of DDG, 0.25 lb. of 1:1 premix, and 0.065 lb. of limestone for a cost of $1.41

For additional ration examples and cost breakdown, please scan the QR code to access our 2025 Beef Backgrounding Cost of Production.

Feed bunk management by reading bunks and adjusting rations is an important part of backgrounding calves. Once we get the calves on full feed, it important to keep them on feed and minimize digestive upset. The goal is not only to consistently deliver the right amount of feed, but at the right time. Providing adequate space so they can all eat at the same time reduces the incidence of digestive upset. Accounting for weather changes is also necessary. With stormy and cold weather, they tend to eat more, but will they come up to the bunks if it is storming badly? When necessary, clean bunks to encourage dry matter intake. Producers have also found feeding at the same time every day to be beneficial.

When backgrounding calves, monitoring animal performance periodically is necessary. The scale will become your best friend! By weighing your animals, you'll know if you are on the right track to reach the average daily gain targets you set out in your marketing plan. Monitoring animal performance gives you a chance to adjust the rations if there has been a change in weight or in the weather.

Along with paying attention to rations and feed bunk management, explore risk management tools available to you, such as AgriStability and the Western Livestock Price Insurance Program. As well, do not forget to review your plan regularly, including cost of production and projections, as markets and costs can change.

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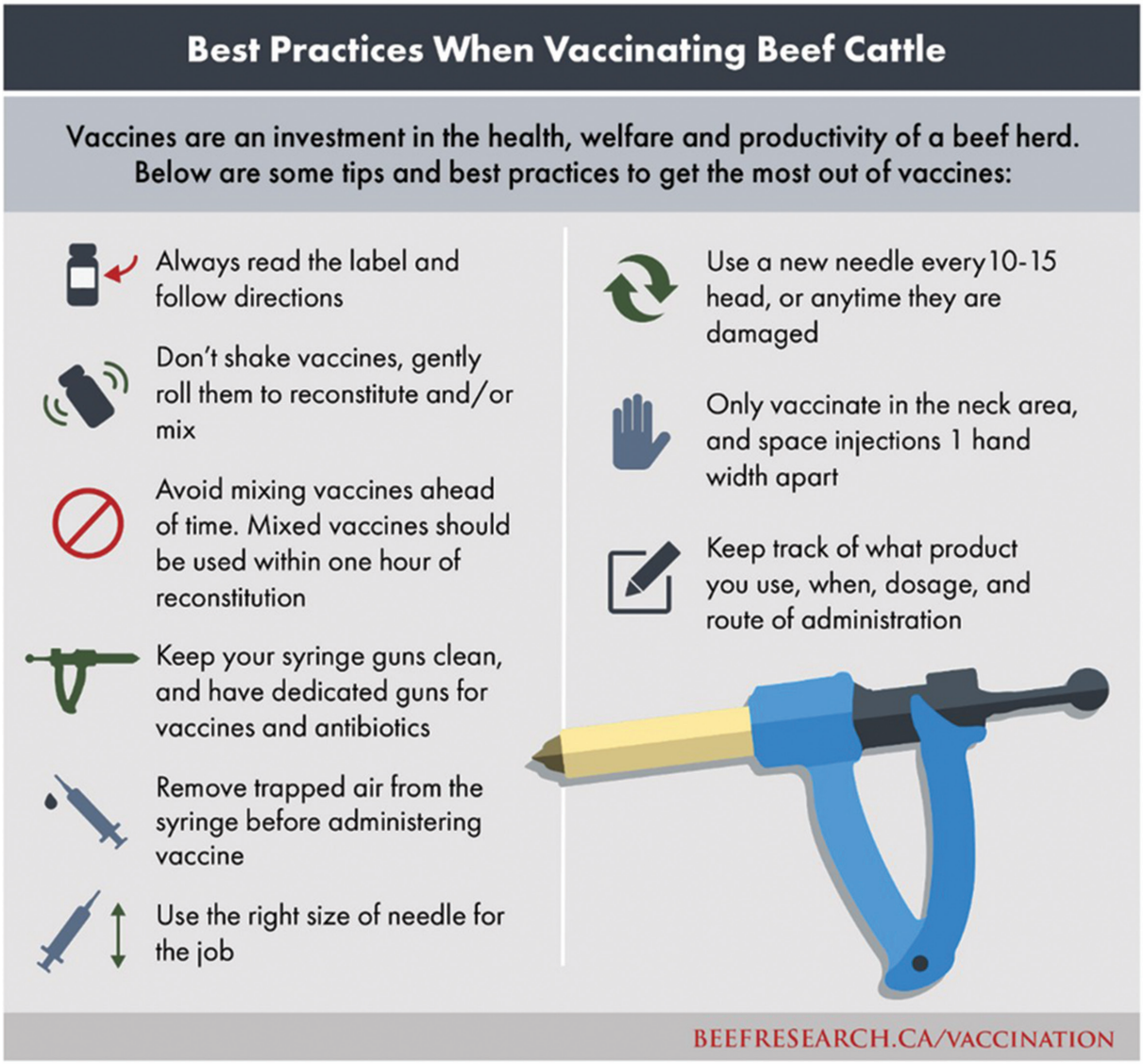
DID YOU KNOW?



Ivermectin and Cattle – Rethinking our Approach to Lice

By Deanne Wilkinson, DVM, MB Ag Extension Veterinarian

As winter approaches, producers will be reaching for antiparasitics to prevent external parasites, such as lice. With the most common products being generally efficacious and affordable, minimal changes have occurred in many lice protocols over the past few decades. As information becomes available, the optimal approach to dealing with parasites has evolved, meaning that reassessing treatments and their timing is important.

Ivermectin, one of the most commonly used products for lice treatment, belongs to the category of antiparasitics called macrocyclic lactones (MLs). Other products in this category include doramectin, eprinomectin and moxidectin. These antiparasitics have efficacy against several species of gastrointestinal (GI) nematode (roundworm), and arthropods (bugs), such as lice, mites and ticks. They are labeled for oral, injectable and topical (pour-on) administration in livestock and distribute throughout the body in the bloodstream. Depending on the route of administration and which ML is used, these treatments can persist in the body for up to 45 days, which can sometimes prevent reinfection by the parasite.

One of the main uses for MLs is to decrease the lice burden in a cow herd, as the hair loss and itching can lead to production losses and welfare concerns. Lice populations on animals increase in December or January, when the temperatures are much lower. They are more sensitive to warm temperatures and can remain an issue until early spring when the increased sunlight heats the animal's skin enough to decrease their numbers. The two main types of lice, chewing and sucking lice, are both susceptible to topical MLs, although injectable MLs are not effective against the chewing lice.

Cattle can also experience itching and hair loss due to other parasites or nutritional issues, such as copper deficiency. These other conditions require differing treatments, demonstrating the need to establish a proper diagnosis.

The issues with common current practices

Although protocols vary, topical MLs are commonly applied when cattle are in the chute for pregnancy diagnosis in the fall, which may be a month or two earlier than the most suitable time for ML treatment. This can result in lice issues emerging in the late winter, as the ML is effective against lice for less than two months.

The other significant issue with using a ML for whole-herd treatment in the fall is that MLs are also active against GI nematodes, resulting in the elimination of GI nematodes that are susceptible to that ML. Cattle will be left with a population of GI nematodes that are resistant to the ML and their eggs will be deposited on pasture when the cattle return to grass the following spring. This results in calves, our most susceptible age category, being exposed to a higher proportion of resistant GI nematodes while on pasture. The recommended approach to GI nematodes is to treat the animals that truly require treatment and avoid deworming the entire group. This includes treating younger cattle (cattle under four years of age) and cows with a lower body condition score, with the goal of leaving at least 20 per cent of the group untreated. By doing this, untreated cattle carry some susceptible GI nematodes (also known as refugia, worms that can be killed by the antiparasitic) that will compete against the resistant GI nematodes. This mixed population will be deposited on the grass, helping prevent the development of a completely resistant GI nematode population. Producers are also encouraged to have fecal egg counts (FECs) conducted to determine if the GI nematode count is high enough to even warrant deworming. It is important to note that conducting FECs in the fall may not give an accurate idea of the worm burden, as some worms are encysted (hibernating) during the fall and winter and will not be releasing eggs into the animal's manure.

Another important aspect of common ML protocols is that winter is not the optimal time to be deworming cattle due to some worms being in the encysted stage which can be resistant to antiparasitics. The topical route of administration of MLs may also be less effective due to cattle grooming themselves or their pen mates. They can consume enough ML to change the dose that they are receiving, resulting in some animals receiving sub-therapeutic doses which are less effective and aid parasites in developing ML resistance. Using treatments when they have decreased efficacy is less economical.

Other options for lice prevention

Other antiparasitics active against lice, but not GI nematodes, do exist and may be more suitable options for early winter lice prevention. Topical permethrin products are a convenient and economical choice, but still must be applied in an appropriate manner. They should not be used until the lice burden increases, which is usually in December or January, and label directions should be followed. Most permethrin product labels recommend retreating animals 3-4 weeks after the initial application because they are not effective against unhatched eggs. It may also be prudent to leave at least 20 per cent of the herd untreated to prevent resistance issues from developing.

As with all issues in cattle management, protocols should be developed in consultation with the herd veterinarian and need to be adapted to each operation. Producers also need to be responsible, keeping in mind that their choices can affect the efficacy of the limited products available for livestock production.

Manitoba Beef & Forage Days

ERIKSDALE, AUSTIN & ROBLIN

Eriksdale

Date: Tues., Jan. 7, 2025
Time: 1:00 p.m. to 5:00 p.m., supper to follow
Place: Eriksdale Community Centre, 21 Railway Ave., Eriksdale

Austin

Date: Wed., Jan. 8, 2025
Time: 8:45 a.m. to 3:15 p.m.
Place: Austin Community Centre, 60 – 1st Ave., Austin

Roblin

Date: Thurs., Jan. 9, 2025
Time: 10:00 a.m. to 3:30 p.m.
Place: Roblin Community Centre, 55 – 6th Avenue N.E., Roblin

Agenda

Coffee and registration

Pasture and Hay Production and Rejuvenation
Livestock and Forage Specialist, Manitoba Agriculture

Cattle Market Update and Outlook for 2025
Rick Wright Cattle Consulting

Forage Efficient Beef Cows (Eriksdale & Austin locations)
Greg Penner, University of Saskatchewan

Optimizing Greenfeed & Silage Production with Annual Crops (Roblin location)
Greg Penner, University of Saskatchewan

Ask the Vet – Animal Health Update - Local Veterinarian (Austin location)

Beef Cattle Nutrition- Copper & Mineral Supplementation
Dr. John Campbell, Western College of Veterinary Medicine, University of Saskatchewan

Extended Grazing Options with Fall Rye Plus Teff for Forage and Dual Purpose (Roblin location)
James Frey, Manitoba Agriculture

For more information, contact Manitoba Agriculture

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Roblin	204-247-0087 (please register in advance)
Portage	204-239-3353

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Stock Talk!

Manitoba Agriculture is offering a series of interesting livestock and forage presentations, packed with information and featuring innovative leading experts, aimed at helping Manitoba beef producers best manage their cattle operations. Find out the latest news on research and production for beef and forage management by participating in these virtual sessions.

Date: Nov. 14, Dec. 12, Jan. 16, Feb. 13, March 13 & April 10
Time: 12:30 p.m. - 1:30 p.m.
Place: Your computer, smartphone or tablet

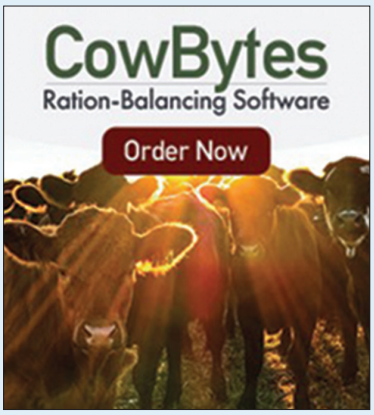
Register for StockTalk webinar: https://us06web.zoom.us/webinar/register/WN_GW020_TOTyO_YOi_R_DmvA

Please add the webinar series to your calendar once you are registered.

Agenda

Presentations and topics will cover Cattle Nutrition, Backgrounding Rations, Mineral and Vitamin Supplementation, Beef Cost of Production, Cattle Marketing, Beef and Forage Conference Highlights, MASC Forage & Livestock Insurance, Ask the Vet Calving Tips, Range and Pasture Health, Native Pasture Management, Forages to Improve Soil Health, and more.

For more information, call Manitoba Agriculture | 1-844-769-6224 or email shawn.cabak@gov.mb.ca
Or visit our website at manitoba.ca/agriculture/online-resources/stock-talk.html.



CowBytes ration-balancing software allows Canadian beef cattle producers to formulate their own feed rations. Producers can input various combinations of feed and byproducts at different prices to reduce feed costs while meeting animal production targets.

CowBytes was developed for Windows, but may work on a Mac with virtual machine software. Caution is advised for Apple users.

The software will be delivered on a USB flash drive via regular mail. The $60 fee includes GST/HST and shipping.

Version 5.4 contains no significant upgrades from the 2012 version. All proceeds will fund future CowBytes upgrades.

Current estimated delivery for Canadian orders: three weeks

Questions? Email cowbytes@beefresearch.ca.

If you would like to be added to our information-sharing list, please email or text Juanita Kopp (Juanita.Kopp@gov.mb.ca, 204-825-4302). Your input or topic ideas are always welcome.

Contact us

- Go to manitoba.ca/agriculture
- Email us at agriculture@gov.mb.ca
- Follow us on X @MBGovAg.
- Visit your local Manitoba Agriculture Service Office