

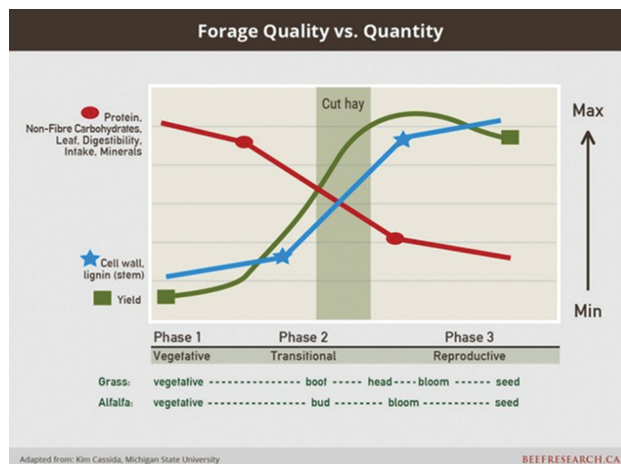


Making Hay while the Sun Shines!

“Make hay when the sun shines” is a phrase that cattle producers are all too familiar with. While good weather is an important aspect affecting hay quality, there are a few other contributing factors and tips to keep in mind.

1. Fertility - Like any crop, forages require nutrients to grow. In hay stands we witness a net export of these nutrients on a yearly basis, as almost all top growth is harvested and transported to other locations for storage and feeding. A stand of grass hay can remove approximately 16 kg of nitrogen (N), 5 kg of phosphorous (P), 24 kg of potassium (K) and 2 kg of Sulphur (S) per tonne of hay. Pure alfalfa can remove roughly 22 kg of N, 4 kg of P and 20 kg of K per tonne of hay produced. Soil fertility affects yield more than it does quality. While it is possible to grow high quality forage on poor soil, it's not likely to be a bumper crop. A comprehensive fertility plan will not only improve yields but also stand quality and longevity. For example, proper P and K levels help to keep beneficial legumes in a mixed seeding and also reduce weed problems. Soil sampling is the most accurate method for determining the fertilizer needs of a hay stand throughout its lifetime. For more information about fertilizer applications for hay, please refer to the Manitoba Soil Fertility Guide through Manitoba Agriculture. <https://www.gov.mb.ca/agriculture/crops/soil-fertility/soil-fertility-guide/index.html>

2. Stage of Growth at Cutting - Plant maturity is king when it comes to forage quality. This is because, as forages mature, the amount of stem is increased in total forage mass and the leaf to stem ratio is reduced. As the structural component of the plant, stems contain fiber for support whereas leaves contain less fiber since their main function is to produce food for the plant by way of photosynthesis. Plant fiber has three major components: cellulose, hemicellulose and lignin. Cellulose and hemicellulose are digestible to some extent by ruminant animals thanks to rumen microbes that break down these components into useable energy. Lignin on the other hand is indigestible and can't be used by ruminants. Delaying hay harvest tends to maximize forage yields, but the cost is a reduction in quality since fiber content increases while protein and digestibility decrease. The optimal compromise for higher forage quality and dry matter yield is to harvest the first cutting of alfalfa at the late-bud to first-flower stage and to mow grasses at seed head emergence or soon after.



3. Rapid Dry Down - Cut hay begins to lose quality immediately regardless of the weather. A large part of the reason for this is because plants continue to respire. Plant respiration is the process by which sugars produced during photosynthesis are broken down into “useable” energy. This energy is used by plant cells for growth, reproduction and other life processes. Respiration occurs in all living cells and because it doesn't require light energy, can be carried out at night or during the day. Respiration is highest at cutting and steadily declines until plant moisture levels fall below 40%. When forage is freshly cut, it has 75-80% moisture. While the end goal in hay production is to achieve a moisture content of 15-18% for baling (to prevent mold growth and heating), dry matter and TDN losses occurring from respiration can be significantly reduced by shortening the time it takes for cut forage to go from 80% to under 40% moisture. So how do we do this? Four steps for producing hay using practices that decrease drying time, reduce the likelihood of rain damage and improve quality include:

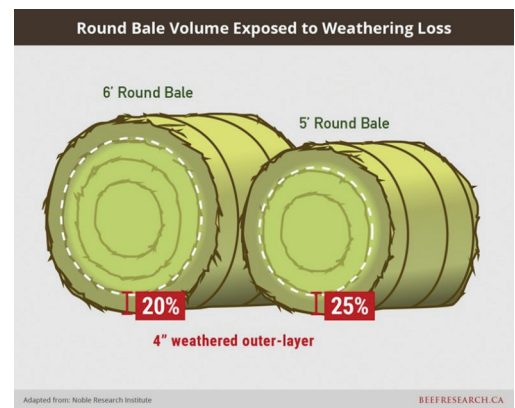
- Mow forages at a height of three to four inches to maximize yield, protect energy reserves in the lower stem for regrowth, and to keep swaths up off the ground. Keeping swaths off the ground enables airflow beneath the swath to enhance drying and prevents additional moisture from moving up into the swath through contact with damp soil.
- Proper conditioning of forages at cutting can nearly double your drying rate by creating new exits for water to leave plant stems. In general, roller conditioners are more effective for alfalfa stands whereas flail-type conditioners are better suited to grasses. With either type, correct adjustment is key to prevent excessive damage to plants or too much clearance. Forage is properly conditioned if the stems of legumes are scraped or broken every 2 to 4 inches and less than 5% of the leaves are bruised.

- Lay the cut forage in a wide swath. Wide swaths reduce swath density and increase exposure to sunlight resulting in higher surface temperatures and much faster drying times. Wide swaths also contribute to improved forage quality since they sit nicely on top of the crop's stubble, preventing soil from being picked up with the hay during baling.
- To minimize leaf loss, it is best to rake dry hay when moisture is approaching 40% for alfalfa and 25% for grasses. As swaths become dryer, plant leaves shatter easily when they are disturbed. Raking with a dew in the early morning or late evening can help minimize these losses and improve hay quality.

4. Storage - Storage is an important factor that is sometimes overlooked

during the hustle and bustle of haying season. However, it deserves consideration given that dry matter loss from large round bales stored outside can range from 5-25% depending on climate. If storing bales without any form of cover, strive to make larger bales that have less surface exposure to the elements as compared to smaller bales. Bale density is also important to note because densely packed bales have a greater ability to shed moisture. Using net-wrap over twine provides added protection against quality loss because it keeps bales bound more tightly and may physically block water from entering the bale. When selecting an actual storage site, choose the best drained surface you have available. If you have a designated "hay-yard", developing a 4- to 6-inch base of coarse rock will help to minimize moisture movement from the ground up into the bales. Large round bales are best placed end to end (as tightly as possible) in rows running north and south. Leave at least 3 feet of space between rows to encourage good air-circulation and avoid placing bales in shaded areas near trees.

High quality hay has a place in beef cattle rations, particularly during late gestation and early lactation. It is a convenient source of nutrition that can reduce the need for other, more expensive supplements when cattle's protein and energy requirements are at their highest.



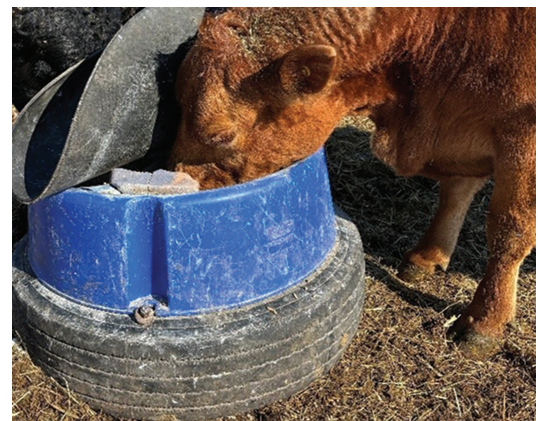
Manitoba Agriculture Pasture Forage and Water Testing Program

In 2024 & 2025, Manitoba Agriculture conducted a pasture forage and water survey with producers across Manitoba to assess the nutritional quality and mineral status of the sampled forages and water sources.

In 2024, 44 pastures were sampled between late August and mid September and in 2025, 43 pastures were sampled between late June and mid July. Pastures sampled represented continuous, stockpiled, and rotational grazing management systems.

In 2024, a total of 39 water samples were also collected from pastures across the province. The water samples came from 17 dugouts with direct livestock access, 4 fenced dugouts and 18 wells.

In 2025, a total of 49 water samples were collected from pastures across the province, and these samples came from 20 dugouts with direct livestock access, 2 fenced dugouts, 25 wells, 1 creek and 1 slough. All samples were analyzed by ALS Labs in Winnipeg.



Survey results have been shared throughout Manitoba via multiple extension events, and summary webinar videos are available on the Manitoba Agriculture YouTube channel.

Manitoba Agriculture plans to continue forage and water testing during the upcoming summer season to expand the dataset. Some costs are covered for testing and staff will come out to collect samples on pastures. Producers interested in participating are encouraged to contact one of the Livestock and Forage Extension Specialists listed at the bottom of this bulletin.

Ensuring Mineral Requirements are Met on Pasture

Beef cattle require at least 17 different minerals for numerous bodily functions, and for maintenance, growth, reproduction and lactation. Forages, including lush green grass, vary greatly in nutrient composition. As such, forages can be deficient in mineral levels and require supplementation.

Are you willing to accept limited growth or reproduction because a certain mineral was too low? For example, not meeting copper requirements can mean reduced reproduction.

In addition to copper being required for reproduction, phosphorus, zinc, manganese, selenium, and vitamins A are also required. With reproduction being the single most important factor for profitable beef production, sufficient vitamins and minerals must be supplied.

Providing minerals through trace mineral salt is one available option. Trace mineral salt (TM salt) provides copper, manganese and zinc, although at much lower levels than in a mineral product. Depending on the products, these levels can be 30 to 50 per cent lower. As well, TM salt does not provide macro minerals, such as calcium, phosphorus and magnesium or vitamins A and E which are supplied in a mineral product. In addition, with a large percentage of the TM salt being salt, consumption can be limited by the salt. This may result in inadequate trace mineral consumption.

When selecting a mineral product, spend time reading the product tag and examine the levels of each nutrient. Be aware of truckload sales because they may contain levels too low to meet the animal's requirements with normal daily consumption.

It's also important to choose the right mineral, based on the forage species in your animals' diet, to maintain the desired 2:1 Ca:P ratio. A pasture that is predominantly grass will require a 2:1 mineral, while a 1:1 mineral will work for a legume-based pasture.

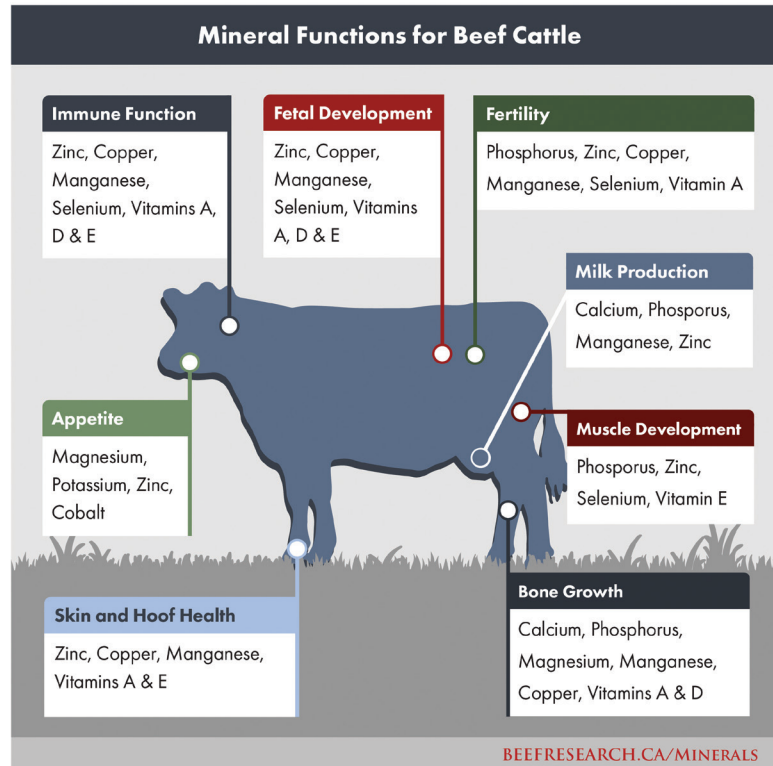
How much consumption is adequate? A general rule of thumb is a lactating cow should be consuming about two to three ounces, per head, per day, which calculates to a 55 pound bag of mineral lasting 100 cows about three days. Monitor mineral intake by your herd to guarantee adequate consumption.

If mineral consumption is lower than desired, mixing it with salt can encourage intake. However, this may not work in areas where higher salt levels are present in water or forages, so molasses and sweeteners can be mixed to increase palatability. Don't be afraid to try different brands, as they may have different palatability.

It is important to note that minerals interact with each other, which can cause nutrient deficiencies. One of the more common issues in Manitoba is copper deficiency, which can result from molybdenum in the forage or sulphates in the water binding to the copper, which make it less available to the animal. Symptoms of a copper deficiency include dull hair coats and reduced conception rates. If you suspect a deficiency, have your water and feed tested and be sure to consult your nutritionist and veterinarian.

Chelated minerals are worth considering in cases where minerals are being tied up, like in the interaction between copper, molybdenum and sulphate. The extra investment could pay off by supplying these at breeding time, particularly if conception rates have been less than ideal in the past.

Of the 30 nutritional diseases, over half of them are mineral related, seven are vitamin related and only four of them are protein or energy related. So supplementing minerals is good insurance against potential health and breeding problems.



Remote Drug Delivery - Another Tool in Your Summer Toolbox

On pastures, handling cattle isn't always realistic. Whether it's distance, labour, weather, or animal temperament, sometimes bringing an animal into a chute isn't practical or safe. In those situations, remote drug delivery (RDD) can be a useful option. RDD refers to administering measured doses of medications at a distance using tools such as dart guns, crossbows or pole syringes. However, RDD is not the preferred method of treatment. Whenever possible, proper handling and chute-side administration remain the gold standard for accurate dosing, diagnosis, and overall animal care. RDD should be viewed as one tool in the toolbox, used when proper handling is not feasible. Always consult your veterinarian to establish appropriate protocols, product selection and withdrawal times. When used appropriately, RDD can support animal welfare by allowing timely treatment and reducing the need for stressful or risky handling. But it's not a one-size-fits-all solution and improper use can lead to treatment failure, residue risks, or injury.

Appropriate Use (when other options are limited)

- ✓ Treating a single sick animal in a large group
- ✓ Lame cattle that won't travel or animals that cannot be safely handled
- ✓ Newly calved or protective cows
- ✓ Situations where gathering the herd would cause excessive stress

Situations to Avoid (when proper handling is feasible or necessary)

- ✗ Animals requiring precise dosing (such as small calves)
- ✗ Cases requiring full clinical assessment or restraint
- ✗ Drugs with strict administration requirements
- ✗ Situations where withdrawal times cannot be reliably tracked

RDD can reduce stress on cattle by avoiding full herd gathers and limiting handling pressure. It can also improve safety for producers and allow for more timely intervention. However, these benefits must be weighed against the limitations.

Challenges and Limitations

1. Dose Accuracy and Injection Site Issues

- Darts may not fully discharge, or product loss can occur
- Improper placement can reduce effectiveness, and poor placement can lead to abscesses, muscle damage or trim loss

Check darts after impact when possible and aim for the neck region. Treat animals' broadside when they are not moving. Ideal distance is 13-30 ft from the animal. Never shoot from less than a 45-degree angle as they can glance off the hide and fail to deliver medication.

2. Drug Selection Constraints

- Not all products are labeled for dart use

Always consult your veterinarian regarding extra-label use, withdrawal times, and residue risks. If two darts are necessary to deliver the prescribed medication, inject one on each side of the animal.

3. Weather and Distance Factors

- Wind and distance reduce accuracy
- Cold weather can impact equipment performance

Practice hitting targets with the RDD until consistently delivering accurate shots from the proper distance. Become familiar with the maintenance and cleaning guidelines

Best Practices: Develop a remote drug delivery protocol with your veterinarian, use only approved products, and ensure you're comfortable with the equipment before use. Keep detailed treatment records, avoid treating in poor conditions or at long distances, and regularly maintain and calibrate your equipment to ensure safe and effective use. Remote drug delivery isn't a replacement for proper cattle handling; it's a backup when handling isn't possible. Used appropriately, it allows for timely treatment while reducing stress and improving safety for both cattle and producers. Success depends on using it selectively, with the right guidance and technique. As part of a broader herd health strategy, not a go-to solution - RDD helps bridge the gap between doing nothing and bringing the whole herd in.



Meet the new provincial Livestock and Forage Extension Specialist!

Sabrina Kendall is joining the department as the Livestock and Forage Extension Specialist for the Interlake area, working out of the Arborg office. While working towards her Bachelor of Science in Agriculture with a major in Animal Systems, Sabrina discovered her passion for cattle and dove headfirst into independently raising a herd of commercial cow calf pairs, which she continues to grow year after year. During her time as a student, Sabrina also had the opportunity to work in crop and animal science research, including work on a study of best management practices for silage production on dairy farms. Upon graduating from the University of Manitoba in 2019, Sabrina took on a full time role at a modern dairy near Stonewall, where she has continued to hone her skills and knowledge across all aspects of animal husbandry, and crop and forage production, with a keen interest in calf health and management. When she's not working or tending to her cows, Sabrina enjoys helping out on the family grain farm near Stony Mountain, partaking in various agriculture conferences and webinars, trying new recipes, and riding her horse, Dolly.



Manitoba Agriculture Livestock and Forage Extension Staff List

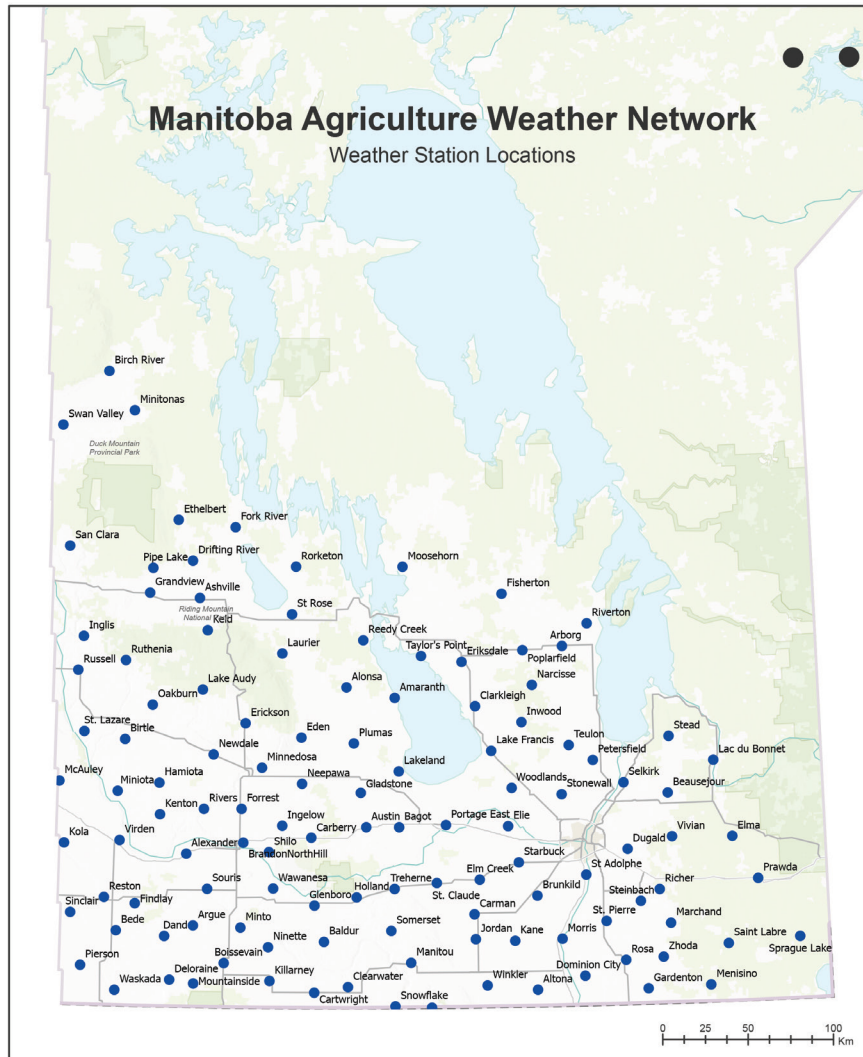
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Manitoba Agriculture Weather Stations

Weather is one of the primary factors affecting agricultural investments. Access to important weather information is critical to a farming operation. High quality weather data, forecasts and risk models can reduce production risk, increase profitability and environmental performance of the agriculture sector. Access current weather conditions and maps in Manitoba at:

<https://www.gov.mb.ca/agriculture/weather/weather-conditions-and-reports.html>

Manitoba Agriculture also operates a network of about 120 weather stations that can be found here: <https://www.gov.mb.ca/agriculture/weather/weather-stations.html> and is looking to expand the network across Manitoba. To learn more about the weather monitoring program, go to: <https://www.gov.mb.ca/agriculture/weather/manitoba-ag-weather.html>



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

- Manitoba Agriculture at: 1-844-769-6224
- Go to manitoba.ca/agriculture
- Email us at agriculture@gov.mb.ca
- Follow us on X @MBGovAg.
- Visit your local Manitoba Agriculture Service Office