



What's For Dinner?

A Recipe For Harvesting Forages

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FORAGES

It seems as though time has been flowing by particularly quickly, and it's hard to believe that it is time to think about putting up feed for the year. As we start to make our plans for harvesting forage, there are a few things that we can reflect on about last year's calf crop and the condition that our cows were in as they went out to grass this year. Nutrition plays a huge role in our cow herd's performance, and overall, the profitability of our operations. A few good indicators of how sound your nutrition program was over the past year include:

- How many open cows you had;
- The body condition score of your cows;
- How many cows calved within the first 60 days of calving;
- Calf health, size, vigor and growth rate.

This gives us a great chance to make a few decisions this year, as we prepare to harvest our forages, that could help to improve all of these areas for next year. The main ingredient in the diets of our cows is forage, and we can do our best to harvest it at the stages of maturity that will give us the required nutrient levels for each stage of production. Harvesting forages earlier in the season will give us a higher quality feed, which has the potential to save us money. If your forages are cut later and of low quality, the feed will likely not meet the nutrient requirements of your cows, which will mean supplementation and an extra cost will be required, or it will lead to the production problems mentioned above. Cutting forages at a later maturity will give you greater yield than cutting early; making a plan to harvest some high quality feed as well as some lower quality feed and then balancing your rations in the fall using a combination of feeds is an ideal way to feed a cow herd. There are things we can't control of course, namely, the weather, but there are also a few options that we can choose from for putting up our feed. One of the precautionary measures that can be taken is getting all feed sources tested for nutrient content. It is surprising how feed values can change year to year, and a little extra information is never a bad thing to have.

Making Hay While The Sun Shines The standard method for putting up feed in the Peace Country for cow-calf herds is making dry hay. There are multiple methods that producers use to decide when to cut their hay, and decisions are based on maturity of the forage, the weather, and the labour and equipment available. Nutritional quality will be highest when the plants are still growing and in the vegetative stage. During and after flowering, the protein and energy contents of a plant decrease.

One of the biggest challenges with making dry hay is getting it to dry down enough to bale. A few techniques are used to speed up the drying process, including making wider swaths so that the forage receives more sunlight. According to UNL Forage Specialist, Bruce Anderson, research has shown that important factors in hay dry-down are sunlight, temperature, humidity, wind speed and soil moisture. However, they are not nearly as important as solar radiation. Sun bleaching may occur, but this is only visual, and your overall forage quality won't be compromised. New research being done in Manitoba and eastern Canada looking at increasing the sugar content of forages for cattle has shown that sunny conditions increase the sugar content of harvested forage, making it more palatable and higher in energy. When the hay is cut in a wide swath, the sugars can be preserved, and to maximize the sugar content, cutting should be done in the afternoon (source: Western Producer 05/30/14, Berthiaume). Another method is to turn over or rake your hay, however, this should only be done if the moisture content is 40% or greater, otherwise the leaf loss will be between 10 and 25%, which will be a significant sacrifice of quality (source: extension.missouri.edu).

In A Rainy Season The year 2010 saw a painful drought for Peace Country producers; making dry hay was not a concern. However, fast forward through the next couple of years, and since 2011, we have seen a lot more moisture. The weather conditions were in our favor for producing large volumes of forage, however, drying it down and getting it baled up became the new challenge. In such conditions, alternative methods of putting up feed can be attractive, including silage and wrapping bales.

A Few Silaging Considerations The benefit of silaging your forage, especially in a wet year, is that you don't have to wait for it to dry down, which also translates into less field and harvest losses compared to dry hay. Silage must be put up properly in order to ensure that the ensiling process occurs. First, you must consider what stage to harvest it at, based on the protein and energy levels you hope to have in your feed. Especially with cereal silages like barley, protein content has been quite low in silage around the Peace Country the past few years, so if possible, try to harvest it a bit earlier, though this can be tricky if you rely on a custom silaging outfit. For barley silage, research has shown that protein is highest in barley from the boot-to-heademerged-stage, but yields are approximately half of what yield would be at the dough stage. For oats, total digestibility of the entire plant is highest at the milk stage, but protein content will continue to increase until the dough stage, where yields are maximized, so harvesting of oats in between these two stages is ideal (source: Sask Ministry of Ag). If protein content is a challenge each year in your cereal silage crop, consider putting in peas to help bump up the protein. Corn is also becoming more common across the Peace, and should be harvested for silage when the moisture content of the entire plant is between 60% and 70%, which should be the hard dough stage (source: Sask Ministry of Ag).

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The key to making good silage is keeping the oxygen out, so chopping the forage at the proper length, then filling the pit quickly, getting it packed tightly, and covered quickly are very important. The 'Knowledge Nugget' section on silage management on the www.foragebeef.ca website cites the importance of covering a pile and making sure it is properly sealed: "Half of the dry matter will be lost in the top three feet if a proper seal is not achieved and maintained. This loss costs two times more than the cost of a cover." When there is spoiled material in your silage pit, it will decrease animal consumption and performance, and mold and other mycotoxins could be found in the spoiled silage. A great resource for more information is www.foragebeef.ca, maintained by Alberta Agriculture.

Bale Silage Tips Bale silage, or balage as some refer to it, has advantages in that it helps to reduce field losses and gives us the chance to get a forage crop off the field even if it's not dried down, both resulting in increased nutritional value of the feed. In comparison to making silage in a pit, bale silage requires less labour and equipment; after the purchase of a wrapper, conventional haying and feeding equipment can be used. In comparison to dry hay, wrapping bales has more cost involved, but the potential gains in nutritional quality and feed quantity, could be worth it; each operation must pencil this out to make the decision. Wrapped bales can also be stored for longer than dry hay, without the waste, especially if they've been wrapped sufficiently.

When making bales for bale silage, it's important to note a few things, including that the moisture content of these bales will be higher than that of dry hay so it is a good idea to make the bales smaller for easier handling. Bale silage should be put up at 45-55% moisture; since we are making silage, we need adequate moisture for the ensiling process to occur, and if not, we could have issues with mold and yeast growth. If you do wrap bales that are less than 45% moisture, or if the forage is very mature, they won't go through the ensiling process properly, so it is best to feed these bales out right away and not store them for the next year (source: Bale Silage Agri Facts, AB Ag). Excess moisture is also not good, as you can have leaching as well as losses of protein and energy from an extended fermentation period. If you have hay or greenfeed that you meant to bale up for dry feed, but it got rained on, it is not a good idea to wrap the bales, as the water soluble carbohydrate levels have decreased, making the ensiling process not as effective (source: AB Ag, Ag-Info Center).

It is ideal to get the bales wrapped within 5 hours of baling to ensure good quality feed. In a study done at the University of Manitoba comparing differences in feed quality as a result of when the bales were wrapped, found that bales wrapped the next day after baling resulted in a temperature rise, and poor silage protein (Moshtaghi et al, Can. J. Anim. Sci.). Bales can be fed 12-20 days after they've been wrapped, giving them enough time to ensile. If the bales are wrapped after the 5 hour timeframe, it will take the bales longer to ensile so it's best to wait a bit longer than the 20 days. If wrapped bales are going to be stored for more than one winter, the bales should be wrapped more heavily; an Alberta Ag publication, 'Bale Silage Agri Facts' recommends that the wrapping or tubing be at a minimum of 4 ml, and if you're storing into the next feeding season, 8 ml is recommended. If the bales become exposed to air, they will not keep and need to be fed out as soon as possible. It is vital that the plastic is stretched and sealed so that oxygen doesn't get in; if oxygen gets in, respiration occurs and heat is produced, which can denature and damage the protein in the feed.

Other Methods for Gathering Your Annual Forage Supply

If you have other sources of feed besides those mentioned so far, some of the practices will still apply to feed management. For example, for swath grazing, you can time the swathing of your crop to match the nutrients levels required by your cows when you're planning to have them swath graze. It is then important to get feed tests done on the swath grazing, including testing for nitrates if there was a risk of frost damage. If you purchase feed, getting it tested is very important. Requesting a feed test from the seller can be a good idea, especially if they are asking a premium for good quality hay.

PCBFA is Harvesting Forage Too!

PCBFA staff will be busy over the next month harvesting some forage of our own at our forage plots. Feel free to stop by and take a look at our four plots across the Peace Country:

High Prairie: located south of town at the airport (head east past the airport, head right at the gate and around the compound. These plots were seeded in 2010.

Fairview: located west of Fairview (head east on Hwy 64A, then north on Range Road 35, plots will be on the right). These plots were also seeded in 2010.

Spirit River: located on Hwy 64 west of the Weaver Bros. auction site, right beside the highway. These plots were seeded in 2013, so this will be the first year that they are harvested.

Valleyview: coming soon! We will be seeding a plot of different forage varieties and mixes at a sight near the Ag Society buildings. Watch for updates!



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