

# Forage Facts

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## Low Energy in Beef Cattle Diets This Year in the Peace Country

Please consider getting your feed tested if you haven't already

By: Akim Omokanye

This year, several forage-type feed test results that PCBFA shipped out for producers have come back with very low energy content (total digestible nutrients, %TDN) - mostly below the levels of TDN needed by a dry gestating beef cow. Though, protein, carbohydrates, and fats serve as energy sources in beef cattle diets, it is still important to test your feed this winter to be sure they are able to meet the nutritional requirements of your cows.

As a reminder, energy gives the ability to use the building blocks for growth and other productive purposes. Cattle energy requirements vary with stage of production, the size of the animal, and expected performance. It's important to note that lighter cattle require higher quality feeds and forages at lesser quantities compared with heavier cattle

Feedstuff quality analyses and cattle nutrient requirements often use TDN to indicate energy levels. Using %TDN, the Rule of Thumb is 55-60-65. This rule says that for a mature beef cow to maintain her body condition score (BCS) through the winter, the ration must have a TDN energy reading of 55 per cent in mid pregnancy, 60 per cent in late pregnancy and 65 per cent after calving.

On forage and feed quality analysis test results, %TDN is the most often used measure of energy in beef cattle diets to assess forage and feed quality by PCBFA staff. Other forms of energy that

appear on forage and feed quality analysis test results are digestible energy, net energy for maintenance (NEM), net energy for gain (NEG), and net energy for lactation (NEL).

Several types of supplemental energy sources are available for beef cattle diets. Prices, forms, and TDN content of these supplements vary widely. Where necessary, purchase energy supplements based on price per unit of TDN. Cereal grains (e.g. from barley, oats, mixed grains) can be used in combination with your laboratory tested feeds using the Alberta Agriculture & Forestry CowBytes Ration Balancing Software. The use of CowBytes is recommended instead of guessing the amount of grain supplementation that may be needed. This will help avoid acidosis problems from feeding grains when trying to increase the energy content of the diet.

CowBytes is an easy-to-use, beef ration balancing software package. It allows you to balance all the major nutrients and micronutrients. The program calculates the nutrient content of your rations based on the amount and quality of each feed included in the ration. **PCBFA staff are available to help you balance your rations with your feed test results and energy supplement to be used.**

Energy supplements are available in many forms. These include high quality forages (from cover crop cocktails as noticed this year by PCBFA), protein blocks, and beef cattle supplements (including liquid supplements) are some examples. Supplement labels do not normally report %TDN or other energy values. The amount of energy provided by the supplement can be quite small. Call the company's representatives for the actual %TDN in a supplement.

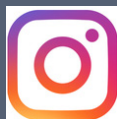
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### DID YOU KNOW?

Our High Prairie Office is back to Full Time Hours? Stop in and see us Monday-Friday, 8:30am-4:30pm

By: Katie McLachlan

We all have heard about how extending the grazing season saves you time and money - not having to make that extra feed, not needing to spend a couple hours every day packing feed to your herd, and bringing wintering costs down close to or under a dollar/day in some instances. All in all, it is a good news story for the rancher's pocketbook. In general, feed costs are something that we can do little about. However, the system we use to deliver feed can be changed to work for us relatively easy. Starting a tractor everyday, figuring in your fuel, time, and machinery cost are typically the largest contributors to a ranches yardage cost.

In a 2006 study completed by ARECA, with PCBFA as a co-investigator, it was found that extending the grazing season to 300+ days significantly decreased the total yearly cost of fuel, machinery, and labour compared to a system that had a 200 day feeding period. Below is a table breaking down the yardage savings of various extended grazing strategies compared to a 200 day feeding period. Please note that these costs are from 2006.

	Cost/Cow/Day	% Savings	Savings/Day	Savings/Cow
Traditional Hay/Straw	\$1.75	0	0	0
Straw/Chaff Buncher	\$0.72 or Less	59	\$1.03	\$206
Swath Grazing	\$0.91 More or Less	48	\$.84	\$168
Banked/Stockpiled Grazing	\$1.02 or Less	42	\$0.73	\$146
Bale Grazed	\$1.35	23	\$0.40	\$80
1 Body Condition Score		15	\$0.26	\$52

These are some impressive savings! One of the largest daily savings came from fuel consumption. The chaff bunching saw a 30% savings, bale grazing saw 50% fuel savings, swath grazing system saw 60% fuel savings, and stockpiled forages saw 70% winter fuel savings.

To bring these numbers up to current cost,



we pulled some numbers from Alberta Agriculture & Forestry's *Agri-Profit\$ 2013-2017 Economic, Production & Financial Performance of Alberta Cow/Calf Operations*. The average daily cost to winter a cow through a 200 day feeding period, feeding a hay/straw ration averaged over the years 2013-2017 in Alberta was \$3.80/cow/day. Over the same time range, average winter daily fuel cost was \$0.10/cow/day. The average herd size in Alberta between 2013-2017 was 181 head. So when we calculate that out, we are looking at a fuel cost of \$18.10/day for the average Alberta rancher. Multiply that by a 200 day feeding period, we are left with a total winter fuel cost of \$3,620.

If we assume similar fuel savings that we saw in the 2006 study, and apply that to the current fuel cost to feed 181 cows every day, that would work out to the following:

- Chaff Bunching = \$5.43 fuel savings/day
- Bale Grazing = \$9.05 fuel savings/day
- Swath Grazing = \$10.86 fuel savings/day
- Stockpiled Forages = \$14.48 fuel savings/day

Over time, those couple dollars/day can add up! When thinking about your plans for next year, consider trying extended grazing. It can save your pocketbook, and reduce your emissions! Get a hold of PCBFA staff to start making your crop plans today!

### Thank You to the PCBFA Board of Directors

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### Do You Have Project or Workshop Ideas?

We are always looking for ideas! Give us a call!

### PCBFA Member Perks:

- Two Free Feed Tests Per Year
- Ration Balancing Assistance
- CAP Application Assistance
- Environmental Farm Plans
- Scale & Tag Reader Available for Member Use
- Soil & Livestock Water Quality Testing

### Thank You to Our Municipal Partners

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# The Fifth Principle of Soil Health - Livestock



By Marianne Krahn

This month we are going to talk about the 5th soil health principle, livestock integration. Remember the first four principles: 1. Keep the ground covered, 2. Minimize soil disturbance, 3. Add diversity, 4. Keep a living root in the soil for as long as possible.

While applying the first four principles greatly improved soil health, producers have noticed a huge increase in soil organic matter when integrating livestock to their operations. Why?

## Livestock are part of the carbon cycle

- Like Dr. Kris Nichols explained at our recent workshop series, there is a lot more going on as far as microbiology goes in the soil when a cow or other ruminant grazes comparing to when the forage is cut. When a cow is grazing she pulls and tugs the grass blade causing some root hairs to shear off. These root hairs become food for microbes.
- The pulling of leaf blades also provides larger wounds than when it's simply cut. In order to heal, the plant needs more energy. To get that energy, the plants photosynthesize more. More carbon goes into the ground, and more biomass is created.
- Grazing livestock recycle nutrients to the soil through their urine and manure.

More carbon means more water holding capacity. Soil scientists report that for every 1 percent of organic matter content, the soil can hold 20,000 gallons of water per acre. With increasingly fluctuating weather patterns, marked with an increase of severe droughts and/or near-flood events, increasing water holding capacity means the soil

is a lot more resilient. It acts like a sponge. Healthy soil can absorb a large amount of water making it available to plants. In the case of drought, water will be retained in the soil for a longer period of time.

Soils with poor water holding capacity will let rainfall run off, taking valuable topsoil and nutrients with it. Poor water holding capacity also means there is very little moisture left in the soil. Plants depend a lot more on getting rainfall in the right amount at the right time. How likely is that going to happen? Not very likely. Farming becomes a very risky business by depending on elements we can't control.

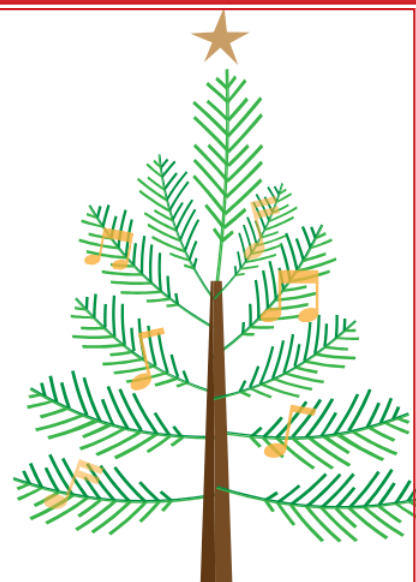
## How do you integrate livestock?

The longer the livestock is left out on pasture, the more soil organic matter is being added to your soil, the more water holding capacity you have. Adaptive grazing in summer, extended grazing strategies in fall/winter like corn grazing, cover crops or crop residues grazing, swath or bale grazing on hay land fields are all great ways to integrate livestock.

This was the last article of our Soil Health Principle series. We hope you enjoyed it and learnt something new. If you have comments or suggestions for other topics, please let us know. We love to hear your feedback! Email [info@pcbfa.ca](mailto:info@pcbfa.ca) or call the Fairview Office at 780-835-6799 or the High Prairie Office at 780-523-4033.

# Happy Holidays!

Please note that PCBFA Offices will be closed for the holidays December 25th-January 1st. We will be back in the office January 2nd!





# Upcoming Events

Event	Date	Location
Peace Country Beef Congress	January 10th & 11th	Lakota Center, Dawson Creek
Peace Agronomy Update	January 14th	Dunvegan Inn & Suites, Fairview
You Can Get There From Here: Farm Business Planning Seminar	January 23rd & 24th	Debolt Community Center
Designing Your 2020 Cocktail & Intercrop	February 6th	St. Isidore Community Center
Peace Country Beef Cattle Day	February 12th	Legion Hall, Grimshaw
PCBFA Annual General Meeting	February 22nd	Dunvegan Inn & Suites, Fairview
Soil Health Mini Conference	February 24th	GPRC Fairview Campus

**For More Information or to Register for any of these Events, Visit [peacecountrybeef.ca/upcoming-events](http://peacecountrybeef.ca/upcoming-events) Email [info@pcbfa.ca](mailto:info@pcbfa.ca) or Call 780-835-6799 ext. 3**

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PCBFA receives funding from the Government of Alberta



*Congratulations to Liisa & Tyler on the birth of Rein Thomas Jeffrey on November 22nd! He was 9lbs, 1oz. Mom & Rein are Happy & Healthy!*

## Connect with Us!

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