# Forage Facts

PCBFA
PEACE COUNTRY BEEF & FORAGE ASSOCIATION
APPLIED RESEARCH

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*In This Issue:*




**The Western Canada Conference on Soil Heath & Grazing is back in 2022!**

**Registration opens Friday, July 8th at absoilgrazing.com/registration**

## How to Get the Most Out of Your Electric Fence

By Johanna Murray

There are many ways to build an electric fence, from permanent six-wire options to deter predators to single-strand temporary fences for mob grazing and every possibility in between.

Once animals are trained to electric fence, they aren't too inclined to test the wires. Training livestock to an electric fence is, in theory, a simple affair; all you need is a fence with a lot of volts running through it and then to let the animals touch it and get zapped. (https://fieldcropnews.com/2018/05/selecting-an-energizer-for-your-electric-fence/)

Most grazers who use electric fences, especially custom grazers, recommend introducing the electricity by stringing a wire a few inches inside a solid perimeter fence and tying ribbon or tinfoil to the fence to attract the animals. Some grazers run a strand perpendicular to the perimeter fence near water or salt to increase the likelihood of contact. This is especially useful for the pen where you receive new animals, as new animals often walk fencelines after being moved.

However, whether you're grazing yearlings, pigs, or cow/calf pairs, there are three components to consider when building an electric fence.

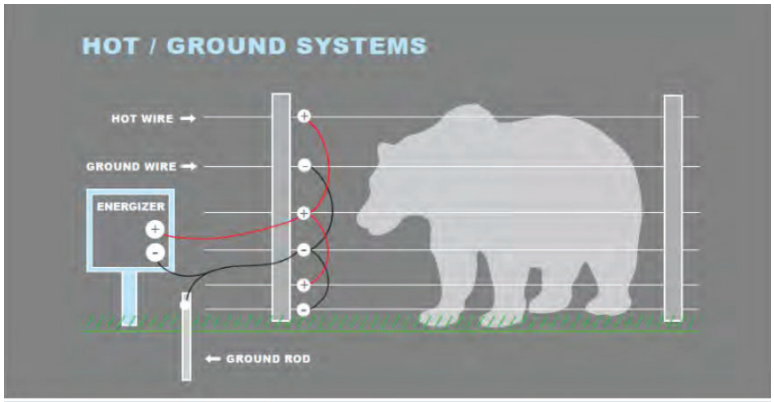
Arguably the most important component of an electric fence is good grounding. Electricity works in a circuit; an animal must complete the circuit between the energizer and the ground in order to be shocked. The electricity travels from the energizer, through the wire, into the animal, and then to the ground and back to the energizer. In situations where there isn't much moisture in the soil, or all that moisture is frozen, the current can't complete through the animal's feet.

One way to get around this issue is to alternate hot and cold - or ground - wires in the fence. In this method, the current travels from the energizer, through the hot wire to the animal and back through the cold wire. This setup is often used in permanent fences and fences aimed at predator exclusion. But it can also be useful in dry areas or situations with a winter fence since it doesn't rely on consistent soil moisture along the whole fence.

Whether you use alternating hot &

cold wires or all hot wires, ground rods are still required to ensure a good zap.

Ideally, ground rods should be solid steel and free of rust and paint that will interfere with conductivity. The more of the ground rod that is in direct contact with the soil, the better the conductivity. Generally, you should start with 3, 6-foot-long ground rods spaced about 10 feet apart for a permanent fence. For every additional 1500 - 3000 ft of fence, more ground rods can be added, depending on the soil moisture. If you are fencing wetter soil, you can get away with the longer intervals.




ALTERNATING HOT/GROUND WIRES FOR ELECTRIC FENCES ARE RECOMMENDED FOR SOUTHWESTERN ALBERTA'S DRY AND ROCKY SOILS. THE BOTTOM WIRE SHOULD ALWAYS BE COLD; THIS DECREASES THE RISK OF A HOT WIRE GROUNDING OUT ON VEGETATION.

*Image from Waterton Biosphere Reserve's Electric Fencing Guide;*

Energizers are the next consideration, and they come in various sizes and qualities. The number of Joules required for a fence is determined by how much fence there is to energize. It's generally better to buy a few more Joules than you need in case you need to expand the fence later. Comparing price per joule is a good way to ensure you're getting your money's worth when purchasing a new energizer. (Price of energizer, divided by the # of Joules = price per Joule)

The Joules of an energizer determine how much voltage you can reasonably expect in your fence. The amount of juice you need in your fence depends on what you plan to keep in (or out). Generally, if you want to keep bears out, your fence is recommended to run at 7000 volts because of their thick insulating fur. Sheep are also well insulated, so the minimum voltage is 4000-5000 volts. Cattle don't have the insulating wool, and quieter herds might only need 3000 to 4000 volts. Of course, this is a minimum, and hotter wires are generally better, especially when introducing animals to an electric fence.

The other key consideration of energizers is the pulses and impedance. A good energizer has a pulse that lasts 0.0003 seconds. Generally speaking, shorter pulses and lower voltage energizers are less susceptible to energy leakage or impedance, meaning they are more efficient. Longer pulses (0.003 to 0.3 seconds) can cause sparking and heat to build up in the wire, which is a fire risk; the sparks and heat can also melt poly wire and shorten the life of your fence.

Speaking of leakage, maintenance is the other primary consideration of electric fencing. In permanent fences, insulators may slip out from their place and allow hot wires to ground on steel staples or posts. On a temporary fence, the wire may wear through the insulative coating on temporary fence posts and ground out on the metal structure underneath the poly coating. Some of the internal wires woven into poly wire can also snap as the wire gets rolled and unrolled, which may eventually interfere with the current.

The most reliable way to address these issues is to invest in good quality materials and a good tester that can direct you towards any leaks in the fence. There is unfortunately no way around checking your electric fences frequently for faults.

Electric fencing is a useful tool for many applications on the farm but requires some thought to install and use effectively. For more discussion about electric fencing and using it on grazing operations, come chat with Jim Bauer at the Field day at the Research Farm on August 4th.

# PCBFA's Pasture Rejuvenation Series

By Johanna Murray

In this continuation from our June Newsletter, we will be focusing this month on the forage yield results of some of PCBFA's past pasture rejuvenation research projects.

Maintaining perennial pasture yield and quality is key to efficiency in many livestock operations. Perennial pasture is one of the least expensive sources of forage since it needs minimal maintenance year over year. However, as pastures age, rejuvenation or renovation is often required to improve and maintain yield.

Between 2016 and 2021 PCBFA has studied several pasture rejuvenation methods including:

- Breaking & reseeding
- Aerating & subsoiling
- Pasture rest
- Herbicide appliction
- Mob grazing
- Broadcast seeding
- Direct seeding
- Bale grazing
- Application of manure & fertilizer
- Combinations of the above

The biggest challenge of dry matter production is that any number of factors can influence total yield. This makes it difficult to compare rejuvenation methods completed in different areas of the peace, in different years, and different growing conditions. The best sign of success is comparing to a control in the same location at the same time.

Too this end, each chart on pages 5 & 7, compares the dry matter yield of each treatment to the dry matter yield of the check strip from that trial.

(*Note; the data for the Rycroft Grovedale trial is an amalgamation from both sites. The variation in check strip values is because some treatments; Rest, Fertilizer, and Manure Application, were only tested at one site.)

Many of the top yields in all these studies added fertility, whether by manure, feed waste, or inorganic fertilizer, either broadcast or applied with seed.

Establishing new perennial stands is always risky, as shown by treatment results. Direct seeding treatments yielded between 32 and 123% more than their check strips. The higher yields generally came from treatments with mob grazing or sprays used to set the existing plants back before seeding.  Breaking and re-seeding pasture increased yield by approximately %60, but lack of moisture and high grasshopper numbers hurt plant establishment in some parts of the field.

Results from Mob Grazing are similarly variable increasing yield by 71% in Grovedale, 40% in Teepee Creek, and 30% in Rycroft. This may be because, as a grazing treatment, this success of this method is highly dependent on the timing, duration, and type of grazing that is used as well as the amount of forage that is present to begin with, and the weather each year.

Compared to other treatments, Bale Grazing improves yield consistently, doubling and tripling yield in Rycroft and Grovedale respectively. However, Bale grazing does usually take a year or two to significantly increase yield.

Teepee Creek for example, had very low forage yield under bale grazing in year one, since the forage data was collected about 2 months after the bale grazing was completed. Unfortunately, no second-year data was collected because of severe drought.

### Forage Quality

The nutrition value of pasture forage is a key part of yield as well, both legumes and forbs have been shown to improve feed quality in a

# Upcoming Events

| Event | Date & Time | Location |
|---|---|---|
| Teepee Creek Plot Tour | Thursday, July 21st 9:30am - Noon | PCBFA's Teepee Creek Plot Site |
| Kinuso Pasture, Soil & Water Tour | Thursday, July 28th 10am-3pm | Meet at Kinuso Ag Hall |
| 8th Annual Field Day at the Research Farm | Thursday, August 4th 2:00-8:00pm | PCBFA's Fairview Research Farm |
| Western Stock Growers Summer Pasture Tour | Wednesday, August 10th | Valleyview |
| Western Canada Conference on Soil Health & Grazing | December 13-15th | Edmonton |

For More Information or to Register:

peacecountrybeef.ca | 780-523-4033 | info@pcbfa.ca

# Pasture Rejuvenation Forage Yield Results

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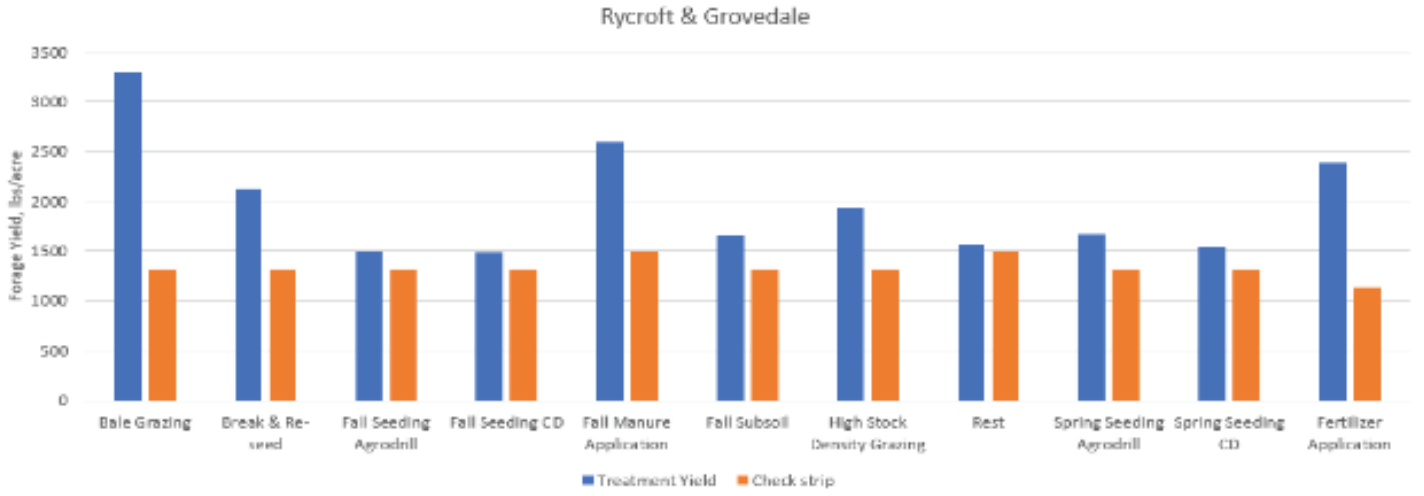


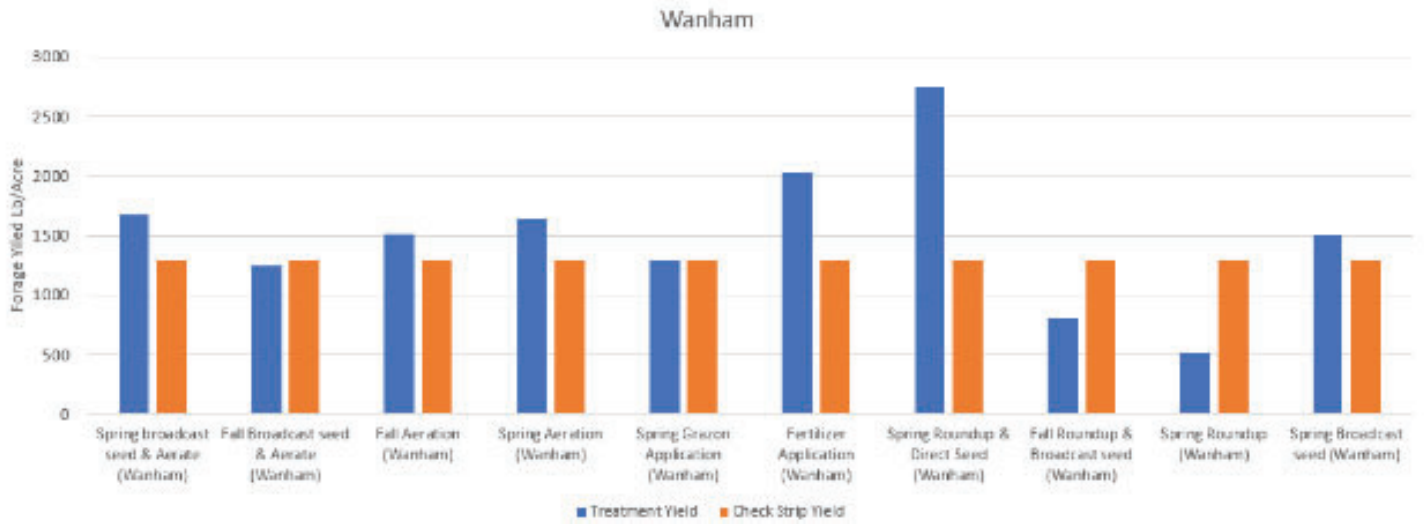


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# Soil Health Conferece Registration is Open!

# WESTERN CANADA CONFERENCE ON SOIL HEALTH & GRAZING

Western Canada Conference on Soil Health

Western Canadian Grazing Conference

***Presented by 10 Alberta Forage & Research Associations***

## FEATURING

Dr. Bobbi Helgason, Dave Sauchyn, Dr. Ed Bork, Greg Judy, Dr.Kris Nichols, Jay Fuhrer, Dr. Tim McAllister, Dr. Yamily Zavala, Dr. Monika Gorzelak, Daryl Chubb, Kim Cornish, Stuart Schutter, Dr. Yvonne Lawley, Kristine Tapley, Producer Panelists and More

**BANQUET & KEYNOTE SPEAKER:**

James Rebanks, an English sheep farmer and award-winning author from the UK.

**Early Bird Pricing until October 31, 2022**

| | |
|---|---|
| Producer | $475.00 |
| Farm Unit (2 people) | $900.00 |
| Producer One Day | $250.00 |
| Student | $375.00 |
| Student One Day | $175.00 |
| Banquet Ticket | $60.00 |

Tickets do not include Banquet Ticket which MUST be purchased separately

## SOIL & GRAZING: BIOLOGY NOT GEOLOGY

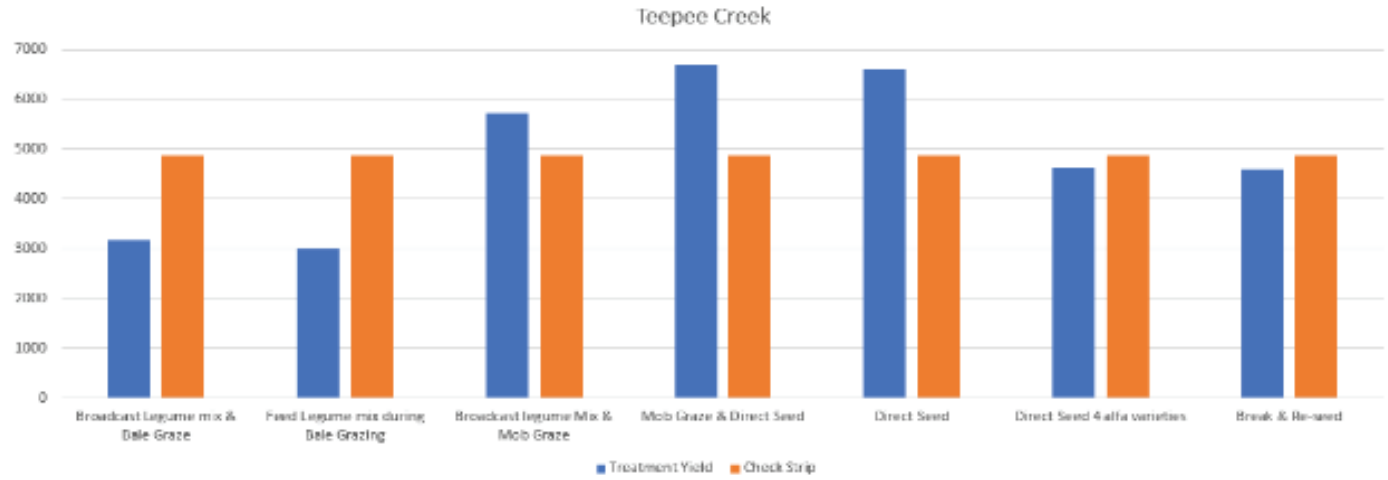
**DECEMBER 13, 14 & 15, 2022**

**DOUBLE TREE BY HILTON WEST EDMONTON**

16615 109 Ave NW
Edmonton, AB
T5P 4K8

**REGISTRATION & DETAILS VISIT:**

https://www.absoilgrazing.com/registration




pasture. While weather certainly plays a role in the community of a pasture, seeding new species into the pasture, and herbicide treatments can provide some control over changes in community and hopefully, nutrition.

Despite changes in plant communities though, crude protein is the only nutrient that seems to be directly affected by rejuvenation practices. Energy and macro mineral levels fluctuate year over year rather than treatment by treatment. In the Wanham Trial, Roundup and Spring seeding, had the highest crude protein levels two years in a row, followed closely by Roundup and spring broadcast seed.

In the Rycroft/Grovedale trial, the Bale grazing treatment increased the Crude protein of the forage significantly in year 2, despite decreases in legumes for that plot site. However, since the Fertilizer application, Mob grazing, and Manure application also show increased CP, the change may be related to improved nitrogen availability or plant nutrition in general.

The variability in mineral content of each rejuvenation method might indicate that many of these factors are more dependent on the weather, rainfall and general plant community than the health or vigor of a given plant stand. It's also a strong argument for providing a good mineral to grazing cows and calves.

# Member Information

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Peace Country Beef & Forage Association

## Member Soil Testing Service

PCBFA Members recieve 1 free basic soil test or 2 free feed tests with their membership.

All soil tests are sent to Element Materials Technology in Grande Prairie and tested for macro & micro nutrients, organic matter, acidity, and cations.

**Soil Test Pricing:**
After 1 Free Sample
$50/sample

**Soil Test Drop Off Site:**
Call to arrange soil sample drop off

## 2022-23 Board of Directors

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