

# OVER THE FENCELINE

Summer 2023

Battle River  
Research Group

[www.battleriverresearch.com](http://www.battleriverresearch.com)



"Summer in Canada's fields, a symphony of growth and harvest"



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# UPCOMING EVENT

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FIELD DAY ON GRAZING MANAGEMENT  
BY  
GREG JUDY  
FROM GREEN PASTURE FARM



Greg Judy live in Rucker, Missouri, 24 miles northwest of Columbia. Their grazing operation includes 16 farms, four owned and 12 leased. They graze grass genetic South Poll cows, cow/calf pairs, bred heifers, bulls, stockers and a parasite resistant St. Croix hair sheep flock. Their emphasis is on working in balance with nature and keeping inputs low

JUNE 23 9 AM

CORONATION  
COMMUNITY  
HALL

REGISTER NOW

OR

CALL - 780-582-7308/403-664-3777 FOR INQUIRIES



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# PRESIDENT'S NOTE



## DONALD KROETCH

**At the start of another growing season, it is a great time to look back on the successes and challenges of 2022, but more importantly, to look forward to continued success and strategic growth, so we can continue to be a leader in applied agriculture and research and knowledge transfer to our agricultural community. Over the past five years, we have been increasing our positive impact on our region's producers. In 2022, we were able to have 51 diverse and producer-driven projects at six different locations. Within these projects, we had over 2500 plots, encompassing many of the challenges faced by producers today, and finding local solutions for these challenges.**

**As exciting as 2022 was, the Battle River Research Group (BRRG) team knows that we continue to strive to have strategic growth and long-term sustainability and viability to remain relevant in the ever-changing agriculture industry.**

**Regarding fiscal sustainability, all applied research groups in Alberta have been identified as an essential resource for the entire agricultural economy. Results Driven Agricultural Research (RDAR), has increased our base funding so all ARAs can continue our great work for our producers.**

**Our municipal partners have also believed in the value of BRRG to our region. The counties of Stetter, Flagstaff, Beaver, and Paintearth have renewed their commitment to BRRG. We are also very excited to have Camrose County become a partner in 2023. Having Camrose County as a team member of BRRG gives us a larger footprint in the region, and BRRG is looking forward to providing producers in Camrose County the tools needed to make informed profitable decisions in their operation.**

**In regard to operational sustainability, the greatest asset to BRRG is our remarkable staff. We can provide some of the best research and knowledge-transfer with a very small, but extremely professional staff. New in 2023, we are creating a unique position at BRRG. In the role of “Knowledge-transfer and Outreach Coordinator”, the board is proud to welcome Kabir Makan to our team at BRRG. One producer to ensure our programming is for today’s challenges in agriculture and finding solutions to challenges faced daily by our producers. With his skill set to strengthen relationships with our municipal partners through strong communication and collaboration, our entire region will be better served.**

**As a team, we will continue to engage industry, grain commissions, and both the federal and provincial governments in providing current and future programming and knowledge-transfer to our producers to ensure our region’s producers have the most current information needed to continue to feed the world.**

**Our team at Battle River Research Group looks forward to serving our producers for generations to come.**

# THANKS TO OUTGOING BOARD MEMBERS!



**ROB  
SOMMERVILLE**



**HENRY  
MICHIELSEN**



**INGRID BADRY**



**DOREEN  
BLUMHAGEN**

# NEW BOARD MEMBERS



**CARL  
BERGSTROM**



**KIRK  
SORENSEN**



**SHAWN CHARBONNEAU**

# NEW BOARD MEMBERS



**BRYAN  
ZWACK**



**TERRY  
MAGNESON**



**STUART MCMAHON**

# OUR NEW HIRE



## KABIR MAKAN

EXTENSION COORDINATOR

**Kabir Makan has always been passionate about food and is now learning how that food is grown. Born and raised in India and in a family that runs a fruit & vegetable business, Kabir has dedicated his life to education and now agriculture. He has a bachelor's degree in management and his culinary PG diploma from Medicine Hat College. He has lived in quite a few different countries and learned about their food. He aspires to make significant contributions to Alberta Agriculture. Outside of work, he loves spending time with his family and friends outdoors and exploring new places.**



# SUMMER STAFF 2023



## Jacqueline Kublik

I'm Jacqueline! I'm from Beaumont, AB and I just graduated with a B.Sc. in Biology from the University of Alberta's Augustana Campus. I joined BRRG for the first time this summer in the hopes of learning more about the research process and to also learn about agricultural practices. So far I'm really enjoying my time and am looking forward to driving a mini combine for the first time!



## Dayna Everson

I'm Dayna from Leduc Alberta. I am currently a student taking a crop technology program at Lakeland College. I come from a mixed farm and enjoy all the parts that come along with it. I Joined BRRG as a summer student to learn more of how the research side of things goes. My first month being here has been a blast and I have learned so much and I can't wait to see how the rest of the summer goes!



## Ryan Kientz

I grew up on a mixed cow-crop family farm southwest of Okotoks. I completed the Bachelor's of Biological Sciences program at St. Mary's University in Calgary in April 2020. I enjoy working in agriculture because it allows me to work outside and use my education to advance my career in the sciences. My interests include reading, hiking and raising farm animals.

# ANNOUNCEMENT

Battle River  
Research Group

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JOIN US

## BRRG FIELD DAY 2023

WEDNESDAY  
JULY 26, 2023

9 AM

GALAHAD  
SE-18-41-14-W4  
(52.522503, -112.007512)

Free lunch at 12PM  
and no entry fee



**Wheat Midge Resistant Spring Wheat Varieties**  
BY  
**Harpinder Randhawa Singh (AAFC/AAC)**

**Hybrid Fall Rye**  
BY  
**Matthew Enright**



**Full Season Cover**  
BY  
**Adam Smith**



**Live Spray Drone Demo**  
BY  
**Markus Weber From Landview Drones**



**COME CHECK OUT OUR RESEARCH PLOTS FOR 2023 (LUPIN DEMO, PERENNIAL WHEAT & RYE, ALFAFA, WHITE CLOVER & SAINFOIN)**

REGISTER NOW  
OR  
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# CLICK HERE TO REGISTER

# THE DEVASTATING IMPACTS OF ALBERTA'S FOREST FIRES ON AGRICULTURE

Alberta, a province known for its stunning natural landscapes and thriving agricultural industry, has been grappling with the destructive force of forest fires. These relentless infernos not only wreak havoc on the environment and wildlife but also have far-reaching consequences for the province's vital agricultural sector. The interdependence between forests and agriculture highlights the urgent need to address the profound impacts of these fires on the farming community. In this article, we will explore the detrimental effects of forest fires in Alberta and their profound implications for agriculture.

## Loss of Farmland

One of the most immediate and visible impacts of forest fires on

agriculture is the loss of farmland. As fires rage through forests and nearby areas, they can encroach upon agricultural lands, destroying crops, infrastructure, and fencing. The intensity and speed of these fires make it challenging for farmers to salvage their produce or protect their livestock, leading to significant economic losses for agricultural operations.

## Crop Losses

Forest fires release massive amounts of smoke, ash, and airborne pollutants, which can travel significant distances and settle on agricultural lands. These contaminants can harm crops, leading to reduced

yields and compromised quality. Airborne pollutants, such as carbon monoxide and nitrogen dioxide, can negatively affect photosynthesis and plant growth. Additionally, the deposition of ash can hinder sunlight penetration and nutrient absorption, further impairing crop development.

## **Soil Degradation**

The intense heat generated by forest fires can cause irreversible damage to the soil. High temperatures can alter the soil's physical structure, reducing its ability to hold water and nutrients. This results in increased erosion and reduced fertility, affecting the long-term productivity of agricultural lands. Moreover, the combustion of organic matter during forest fires releases large amounts of carbon dioxide, exacerbating climate change and further degrading soil health.

## **Livestock and Animal Welfare**

Alberta's agriculture sector is not limited to crop production; it also encompasses livestock rearing. Forest fires pose significant threats to livestock, both directly and indirectly. The loss of grazing lands and forage due to fires can lead to food shortages for livestock, resulting in malnutrition and compromised health. The inhalation of smoke and poor air quality can also cause respiratory problems and distress in animals. Moreover, the destruction of infrastructure, such as barns and fences, further disrupts animal welfare and management.

## **Disrupted Supply Chains**

Forest fires can cause widespread disruptions in transportation networks and infrastructure, hindering the

efficient movement of agricultural products from farms to markets. Road closures, damaged bridges, and compromised railway lines can delay shipments and increase transportation costs. This not only affects farmers but also impacts consumers who rely on a steady supply of fresh produce and other agricultural commodities.

## **Economic Consequences**

The ramifications of forest fires extend beyond the immediate agricultural losses. The agricultural sector is a significant contributor to Alberta's economy, and any disruption has a ripple effect throughout the province. Reduced crop yields and livestock losses can lead to financial strain for farmers, with decreased incomes and potential job losses. Additionally, the damaged reputation of agricultural products from fire-affected regions can lead to

diminished consumer trust and market demand.

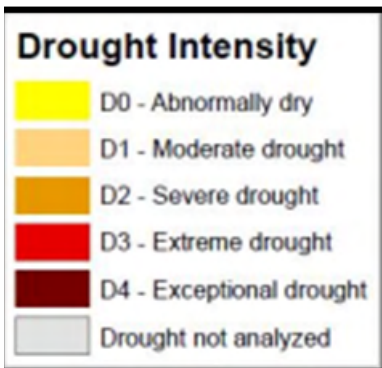
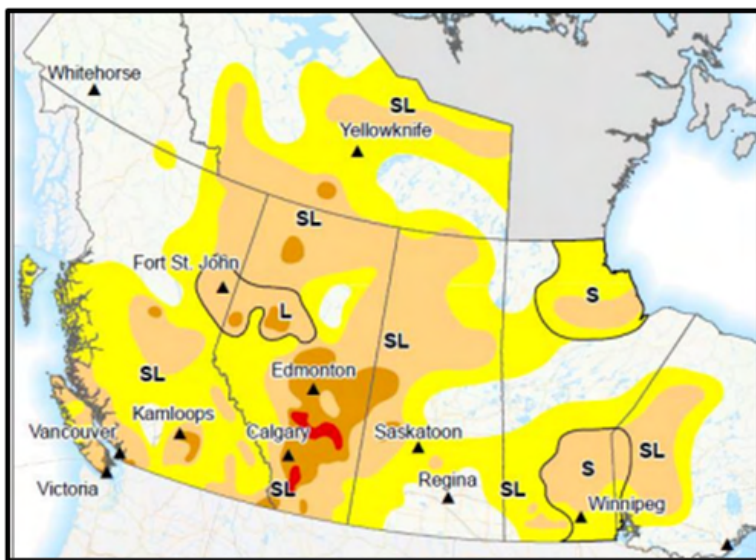
## **Conclusion**

The forest fires that have ravaged Alberta in recent years have had severe implications for the province's agricultural sector. Crop losses, soil degradation, livestock welfare issues, disrupted supply chains, and economic setbacks are just some of the challenges faced by farmers in the aftermath of these devastating fires. Addressing the long-term effects requires a collaborative effort, involving government agencies, agricultural organizations, and communities to implement measures such as improved fire prevention strategies, soil conservation practices, and support systems for affected farmers. Protecting the delicate balance between Alberta's forests and agriculture is crucial for the resilience and sustainability of the province's food system and economy.

**By Kabir Makan, BRRG**

# SHORT OF PASTURE AND HAY? WHAT TO CONSIDER

Hot, windy, dry conditions this spring have injured perennial forages. Growth is stunted, plants are shorter than normal, and maturing rapidly. This problem is occurring across large areas of western Canada, not just east central Alberta.



<https://agriculture.canada.ca/en/agricultural-production/weather/canadian-drought-monitor/current-drought-conditions>

The priority of plants is to grow and produce seed to keep the stand viable. Once they head out and develop seed, their growth cycle is almost complete. The plants will not develop new tillers or grow taller. Quality starts to decline. Protein decreases by 1 to 2% per week (i.e., 14 to 12%) and TDN (Total Digestible Nutrients) by 1 to 1.5% (i.e., 64 to 62.5%). Acid detergent fibre (ADF) and neutral detergent fibre (NDF) increase making the plants less desirable to animals. Uneven grazing occurs. Delaying cutting to get more bales per acre is not recommended.

Preventing seed head development by a short intensive grazing period or mechanical clipping keeps the plants in a vegetative stage. Leave at least 50% of the plant to promote new growth when moisture becomes available.

# How to extend available forage?

**Rotational grazing** is more efficient than continual grazing. A 30 to 60-day rest period is recommended between grazing events to allow the plants to extend the root system and develop new top growth.

**Provide creep feed** to calves that are more than 40 days of age. Their digestive system has developed sufficiently to digest grains. The recommended minimum protein content is 16% for calves under 300 pounds. Feeding straight oats will provide energy, but not enough protein to allow the animals to grow muscle and bone to frame out properly. A home mix of equal weights of oats, barley, and peas make a 16% protein mix. Calves under 700 pounds do a good job of chewing, therefore no need to roll or process the grains. There are many by-product feeds such as wheat midds, wheat shorts, distillers'

grains, lentil, and pea screenings that can be substituted into the ration. As the animals grow and eat more creep feed, protein content can be reduced

**Providing supplemental feed** to cows on pasture reduces forage consumption. Feeding five pounds of hay, grain, or a pellet reduces fresh grass consumption by 22 to 25 pounds. Concentrates are preferred to hay or silage because of they are higher in energy on a pound for pound basis.

**Weaning calves** early reduces nutrient requirements of the cow. The digestive system of a calf is fully developed by 140 to 150 days of age. Putting calves into drylot reduces the amount of pasture grass that is required. Calves should be able to maintain a two pound a day gain on a mixed forage and grain ration. The cows' nutrient requirements are reduced by roughly 25% once the calves are weaned. Cows can be



maintained on a lower-quality forage.

## **Increasing forage supplies is another option**

**Seeding winter cereals** in early August to provide late-season grazing can reduce winter feed requirements. Fall rye, winter wheat, and winter triticale can be used. Grazing new growth in September and October is a common practice. Quality is very high. Cows and calves will gain weight while consuming this feed. If cows are weaned and thin, this is a very good way to improve animal conditions before winter. These crops can over winter and start growing early the following spring. These crops can be grazed well before pastures are growing. This allows more time for the existing pastures to recover and grow before cattle are turned in.

**Annual crops** that are under heat and drought stress can be grazed, cut for greenfeed or silage. Various cereals, pea, and canola crops can be used. These feeds must be tested before they are included in rations. Canola plants are known to accumulate sulfur. If total sulfur content exceeds 0.4% in the ration, polio can occur resulting in death. Annual crops, both cereals and canola are usually fertilized with significant amounts of nitrogen. Plants do not grow as vigorously under drought conditions and nitrogen levels in the soil remain high for a longer period. Without sufficient moisture, plants cannot convert nitrate to protein as efficiently and nitrate can accumulate. If levels exceed 1% nitrate in the forage, animals can die from nitrate poisoning.

**Slough hay** can be harvested and used as part of the winter feed supply. Slough hay can have many different species in the mix. Quality can be variable. If cut

when more mature, protein and energy content could be no different than cereal straws. A good filler in many cases. If sedges are in the hay, do not tub grind and feed as part of a total mixed ration. Provide as a separate feed so the cows can sort through and consume what they wish. Poisonous plants such as water hemlock tend to grow in wetter areas. Slough edges should be rogued prior to cutting.

**Ditch hay** quality can be variable as well. Some areas will be pure grass whereas other areas may contain legumes which improves quality. Higher moisture in the ditches can improve growth but there is the risk of the grasses containing ergot. When the seed head is exposed, the presence of a yellow liquid (honeydew stage) indicates that ergot is present. Even at this stage, alkaloids are present contain the toxins which can cause problems with ergot toxicity.

**Chaff piles** collected at harvest are a good energy and protein supplement when stubble grazing. In a good growing year, up to 60 animal days of grazing per acre is possible.

**Secure non-traditional** feeds to be included in the winter rations. Cull potatoes, wet brewers' grains from breweries, stale cookies, bread, and other pastries can all replace some of the grain in a ration.

**Purchase light weight barley** if possible. Bushel weights between 42 and 54 pounds have the same feed efficiency and average daily gain. Below 42 pounds, there is a 1% reduction in performance for every pound reduction in bushel weight. Price discounts for lightweight grains reduce feeding costs.

## **Planning for a limited feed supply**

Many producers have minimal

amounts of feed carried over from last year. With limited forage growth, it will be a challenge to harvest enough feed for a 200 to 220-day feeding period. Feeding only hay throughout the winter to pregnant cows and replacement heifers is not an option. Greenfeed yields will be lower because crops are short. The straw will be very limited.

**Cull old cows** that are less productive, have feet or udder problems or a bad temperament. It is better to keep younger cows that could be in the herd for many years.

**Custom feed** a portion of, or the entire cow herd at a commercial feedlot. Moving cows to feed is usually less expensive than moving feed to the cows. Some feedlots will feed the pregnant cows but require that they be taken home prior to calving. There is limited space at feedlots to feed cows, so plan early to lock in space.

Analyze all feeds and water that are available for the winter. Once the results are back, balance the cow rations according to stage of pregnancy and lactation. Blend straw, slough hay, and ditch hay with better quality forages and grain to meet animal requirements. Cows in mid pregnancy require 7% protein and 55% TDN. In late pregnancy; 9% protein and 60% TDN. Lactating cows require 11% protein and 65% TDN. Mid pregnancy cows can do well on a straw (slough hay or ditch hay) and grain ration when nutrient requirements are met.

## Get Help

When working with and evaluating cows daily, it is difficult to notice a gradual change in body condition. Have an someone from outside the farm/ranch unit to look at the animals every four to six weeks. They may notice something that you don't.

Use a nutritionist to balance the rations. If possible have them look at the animals and evaluate them at the start of the feeding period. Adjustments can be made when considering cow condition and stage of production.

The straw will be at a premium – both in price and availability. Provide proper windbreaks to reduce heat loss from the animals. Use the straw when the snow is wet and after calving to reduce heat losses and keep animals dry.

## **Closing thoughts**

70% of perennial forage growth occurs before June 15. Legumes continue to grow longer than some grass species. Even with the moisture that was received June 14 and 15, pastures that were grazed earlier this spring may not rejuvenate because of the stress the plants are under. If possible,

let these pastures rest for the remainder of the growing season. This will allow them to rebuild the root system and prepare for next year. If the pastures need to be grazed, wait until the plants are dormant, usually after a couple good frosts.

Develop a couple plans to get through to next spring. Additional feed supplies may become available after a hailstorm or early frost. The feeding period may be 200 days or longer this winter. Adjust feed requirements accordingly.

This years' small hay crop will not provide a surplus. Opportunities to purchase forage in January or later in the winter will be few and far between. Lock in what is needed sooner than later.

**By Barry Yaremicio**  
**Ruminant Nutritionist**

# BRRG PROJECTS 2023

## Innovative Use of Deep-rooted Cover Crops to Improve Soil Infiltration and Water Holding Capacity (NPARA)

2023 is the second year of this project. In the first year cover crops were planted and a baseline water holding capacity and soil infiltration were established. This year wheat, peas, and canola are growing on the stubble to see the impact on yield.



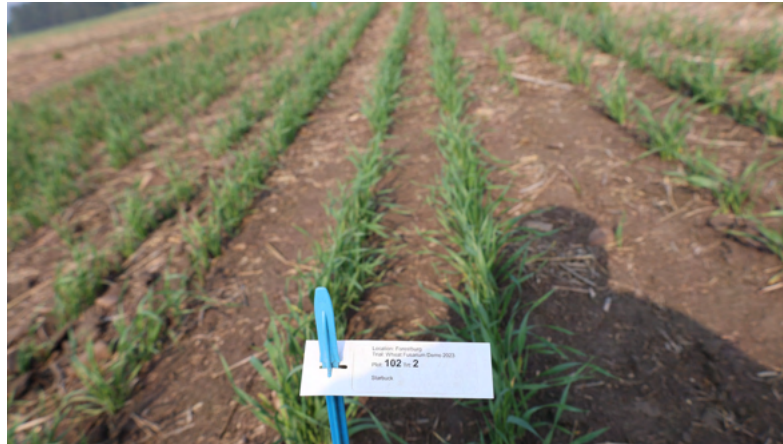
## Wheat Midge Demo

This Demo is showcasing the midge resistant varietal blend Wheatland against a midge susceptible wheat variety Brandon.



## Fusarium Wheat Demo

This Demo compares Starbuck Wheat, a variety with resistance to fusarium head blight to Elie Wheat, a variety with no resistance.



## Perennial Grain and Cereal Trial (PCBFA)

This trial looks at the performance of perennial cereals, Kernza Wheat and rye, intercropped with various legumes as forage and grain crops. In this, the second year of the trial forage and grain yields will be taken. Spring forage and Fall grain will be compared to a Summer grain Fall forage schedule.



## Humalite Trial

In collaboration with the U of A we are testing the benefits of Humic acid as a supplement to other nitrogen fertilizers. The product applied is humalite, a bi-product of coal mining which is locally available in our area. 2023 is the third year of this project and wheat is the crop in rotation.



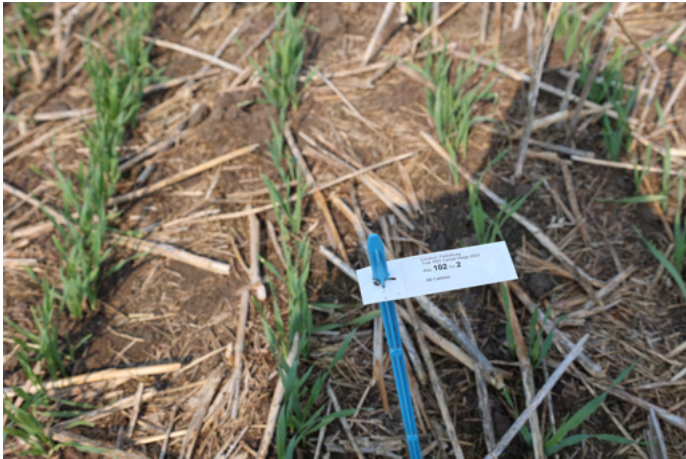
## Pulse RVTs

Data from our pulse regional variety trials (RVT) is used in the Alberta Seed Guide to give farmers good information when they are looking for how different crops perform in our area. This year we have yellow peas, green peas, lentils, and faba beans.



## RSTs Cereal Mix

Silage variety trials look at the yield of different mixes or varieties. This trial has spring and fall cereal varieties seeded together in the spring as a mix. The spring cereals fill heads and add energy and protein while the fall varieties are vegetative at harvest so they add leaf material.



## Cover Crop mixes

This trial compares the forage yield of different cover crop mixes.

## Wheat RVT

This trial is to provide farmers in our local area with yield data from different varieties so they can have local information for their seed choices.





## Alternatives

This trail displays some alternatives to cereal silage. Crops such as millet, radishes, and plantain are compared to more traditional silages such as barley.



## Cereal silages

This year we have a few different oat, triticale, and barley varieties to compare their silage yield.



## Cereal Pulses

Intercropping cereals and pulses can create a more balanced ration and reduce fertilizer requirements. These treatments include a cereal, such as triticale or oats, with a pulse like peas or faba beans to compare yields.

# THANK YOU SPONSORS

