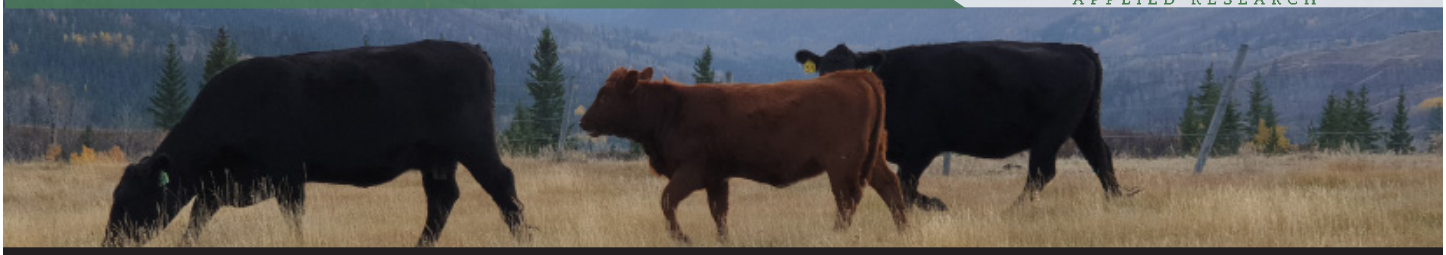
Forage Facts

PCBFA
PEACE COUNTRY BEEF & FORAGE ASSOCIATION
APPLIED RESEARCH



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In This Issue:

DID YOU KNOW?

Canada is the largest Oat exporter in the world, and has the 2nd most land dedicated to oat production.

Perennial Forage Mixes: Productivity, Nutrition and Water use

By Hayford Gyamfi

Introduction

Forages serve as the largest (80%) source of feed for beef cattle producers in Northern Western Alberta. Across the region, the decision by producers about which combinations of grass-legume mixtures could improve their forage-livestock systems and ensure sustainability is a challenge. Based on this premise, this study was undertaken to determine; dry matter yield, nutritional qualities, and water use efficiencies of perennial forage mixtures over their monoculture counterparts.

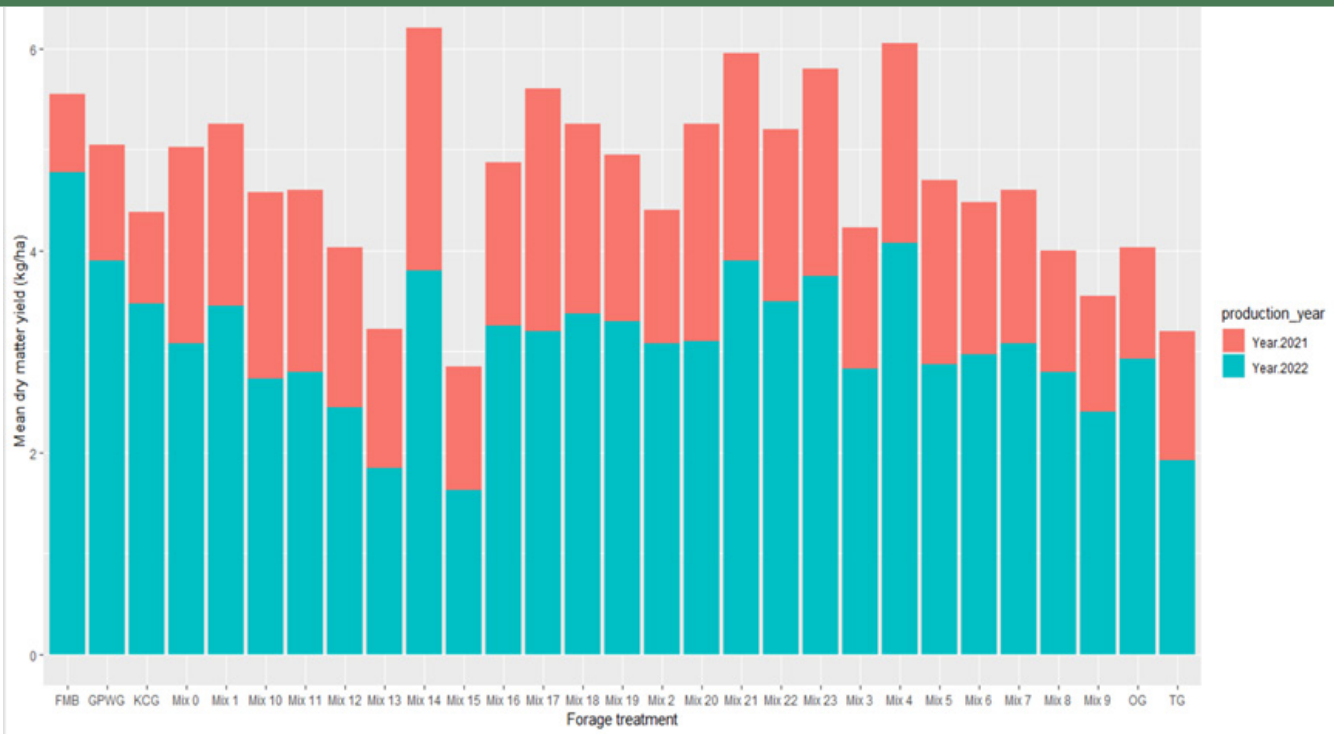
Establishment of stands and harvest.

Perennial forage stands were established in June 2020 at the PCBFA Research Farm in Fairview. One hundred and sixteen (116) plots were seeded to 24 mixtures and 5 pure monoculture grasses. These mixtures consisted of simple (1 grass:1 legume) and complex (3 or more grass-legume species). Following the establishment year, forage harvest was undertaken in July 2021 and 2022 respectively. Plants were harvested on 3m2 of each plot for biomass determination.

AAC Mountainview Sainfoin growth in mixtures (2022)

Complete grass mix, mid May (2022)

Perennial Forage Mixtures



Dry Matter Yeild

Dry matter yield for 2021 was highest for mix 14 (55% Mountain sainfoin, 25% cicer milk vetch, 20% Spredor 5 alfalfa) and mix 17 (AC success grass, AC Yellowhead alfalfa, Mountain sainfoin), these had 70% of legumes and 30% grasses. The lowest production came from the monoculture grasses and grass-alone mixtures. However, there was a significant increase in all treatments in 2022. Here, mix 4 (Fleet meadow bromegrass, AC Yellowhead alfalfa) was the highest among the mixtures while Fleet meadow bromegrass was the highest among all treatments (4193.2lb/ac). Conclusively grass-legume mixtures outyielded monocultures grasses and grass-alone mixtures.

Nutritional Quality

Crude protein (CP) levels were higher in most legume dominated mixtures in comparison to monoculture grass or grass dominated mixtures. In 2021, mix 21 recorded the highest CP levels, followed by mix 12. However, higher levels were observed in mixes 1 and 14 during the 2022 production year. Furthermore, mix 21 produced the greatest level of energy (i.e., total digestible nutrients), but this was outperformed by mix 13 (complete blend of grasses) in the subsequent year of production (2022).

ADF, NDF and Digestibility

In 2021, the best neutral detergent fiber (NDF) was recorded for mixes 3,16,21, and 22. This decreased by at least 1% in 2022 for mixes 21 and 16. Lower acid detergent fiber was also reported for mixes 12,13,21, and 22 in 2021 but increased by 1.2 % for mix 13 in 2022.

Treatment	2021 TDN (%)	Treatment	2022 TDN (%)
Mix 21	64.9	Mix 13	67.6
Mix 16	63.8	AC Success HBG	67.0
Mix 22	64.1	Orchard grass	67.1
Mix 12	63.5	Mix 15	66.5
Mix 0	63.0	Mix 0	65.8

Treatment	2021 CP (%)	Treatment	2022 CP (%)
Mix 21	15.1	Mix 1	17.0
Mix 12	14.8	Mix 12	16.7
Mix 16	14.8	Mix 14	17.0
Mix 1	14.1	Mix 21	16.6
Mix 3	14.2	Mix 16	16.6

In a dry year

(2021), digestibility over 48 hours was higher in most dominated legume mixtures in comparison to monoculture grass/mixtures. In 2022 all grass monoculture and mixtures recorded better values for digestibility.

Water Use Efficiency:

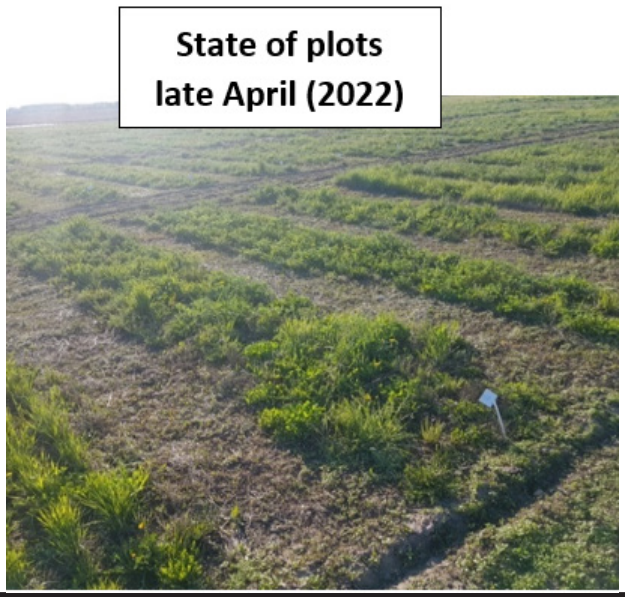
Water Use Efficiency refers to how plants make use of water to optimize biomass production while minimizing loss of moisture.

Mix 14, 17, and 20 demonstrated maximum water-efficiencies in comparison to the monoculture grasses or mixtures. This means that, these two mixtures use water "wisely" to produce biomass. This is significant because of unpredictable weather conditions (particularly rainfall). However, in 2022, some monoculture grasses (eg: hybrid brome grass) were more water use efficient than mixtures dominated by legumes or grass mixtures.

Key facts about 2021 vs 2022 Perennial Trials

- Grass/legume mixtures produced higher biomass in 2021 compared to monoculture grasses/mixtures.
- In 2022, brome grasses (Fleet and AC success) produced greater dry matter yield.
- Considering the combined effect for both years (2021-2022) in terms of productivity, majority of grass-legume mixtures outyielded the monoculture grasses and mixtures.
- In 2021, biomass production ranged between 750 lb/ac to 2141 lb/ac while in 2022 dry matter was between 1650 lb/ac to 4100 lb/ac.
- Crude protein levels increased by at least 1.5% during the second year of production (2022).
- All mixtures met the CP, energy, and minerals (Ca, P, K, Mg, S) requirement needs of dry gestation beef cattle in both years.
- More water was utilized in 2021 by plants to produce their biomass while in 2022 less water was used to produce more biomass.

A complete list of mixtures and a summary of project results can be found in the 2021 PCBFA Annual Report on page 51. The report is available on our website or in the Fairview office.


State of plots late April (2022)


Plot stands prior to harvest (2022)

PEACE COUNTRY BEEF & FORAGE ASSOCIATION
APPLIED RESEARCH

We're Hiring!

Research Technician Lead

Full Time, Permanent Position

Salary: $50,000 - $70,000

Location: Fairview, AB

The Peace Country Beef & Forage Association is a non-profit, producer led group that strives to provide leading edge, credible, and locally viable information to Peace Country producers, through our applied research and extension programs. We inspire and empower innovation in agriculture, and move forward the agriculture industry in the Peace, by enhancing its environmental, social, and economic sustainability.

PCBFA is looking for a diligent and determined Research Technician Lead with a genuine desire to enrich the agriculture industry, to lead our fieldwork team.

As the Research Technician Lead, you will have the opportunity to provide input on the development of agriculture research projects, and will gain practical experience in many aspects of the applied research process. You will coordinate and lead the activities of our summer research team in the field, assist with the development and maintenance of safety protocols and orientations, prepare supplies and equipment for the field, and maintain vehicles and equipment in good working order.

In the summer months, you will get to spend lots of time outside, and gain some spectacular hands-on skills, such as how to collect a soil sample, formulate fertilizer, layout plots, operate a plot-sized seed drill, take field notes, prepare samples for the lab, and so much more.

You will also get to attend schools and field days put on by PCBFA for local farmers and agronomists, and listen to some great speakers!

The job will be fast-paced and diverse, and offers extensive opportunities for on-the-job education and networking. We offer custom benefits packages, tailored to each employee, as well as a flexible work environment. The starting salary range is $50,000 - $70,000, based on experience and skill level.

Must have a valid driver's license. Experience operating and maintaining equipment such as tractors, ATVs, and zero-turn mowers, as well as hauling such equipment with pick-up truck and trailer would be considered a significant asset. Experience with agriculture and/or research would also be considered an asset, but is not necessary.

If you're interested in joining our dynamic team, please send a resume to liisa@pcbfa.ca, along with a short description (350 words or less) of why you think you would be a good fit for the role.

Mark Your Calendar!

PEACE COUNTRY BEEF & FORAGE ASSOCIATION
APPLIED RESEARCH

Save the Date for Greg Judy!

Tuesday June 13th in Valleyview
Saturday June 17th in Bonanza

Thank You to Our Municipal Partners!

BIG LAKES COUNTY
MUNICIPAL DISTRICT of Peace NO. 135
MD133 SPIRIT RIVER 780 864-3500
CLEAR HILLS COUNTY
County of Grande Prairie No. 1 Alberta, Canada
MUNICIPAL DISTRICT OF GREENVIEW No. 16
Saddle Hills COUNTY
NORTHERN SUNRISE COUNTY
MUNICIPAL DISTRICT OF FAIRVIEW No. 136
Birch Hills County

Supporting Sustainability in Agriculture

Adapted from AB Government Annoucement

The new Sustainable Canadian Agricultural Partnership will support the continued growth and prosperity of Alberta's agriculture sector.

In Alberta, this partnership represents $508 million in funding over five years that will provide grants to programs that support the needs of Alberta's agriculture and agri-food sector. Alberta's programs will aim to create new jobs and spur growth in the agriculture sector by supporting value-added processing competitiveness, attracting new investment and expanding irrigation capacity that will boost crop production.

In total, the Sustainable Canadian Agricultural Partnership (Sustainable CAP) is a five-year, $3.5-billion investment by Canada's federal, provincial and territorial governments that supports Canada's agri-food and agri-products sectors. This includes $1 billion in federal programs and activities and a $2.5-billion commitment that is cost-shared 60 per cent federally and 40 per cent provincially/territorially for programs that are designed and delivered by provinces and territories. Compared with the current partnership, which expires at the end of the month, there is a $500-million increase in cost-shared funding.

Half of this additional funding will help develop and implement the Resilient Agricultural Landscape Program (RALP), which will support carbon sequestration, and protect grasslands and wetlands on agricultural lands.

The Sustainable CAP framework provides flexibility for Alberta to develop and deliver programs that are aligned with the needs of Alberta's agriculture and agri-food sector and Government of

Quick Facts

- Sustainable CAP replaces CAP (2018-2023), Growing Forward 2 (2013-2018), Growing Forward (2008-2013) and the Agriculture Policy Framework (2003-2008).
- Farm Security Funding Is Available & includes:
  - Remote Monitoring for Fixed cameras,
  - Remote fuel tank monitors
  - Motion Detectors & Driveway Alert Systems

Alberta priorities. Programs will align with five priority areas:

- building sector capacity, growth and competitiveness
- climate change and environmental protection
- science, research and innovation
- market development and trade
- resiliency and public trust

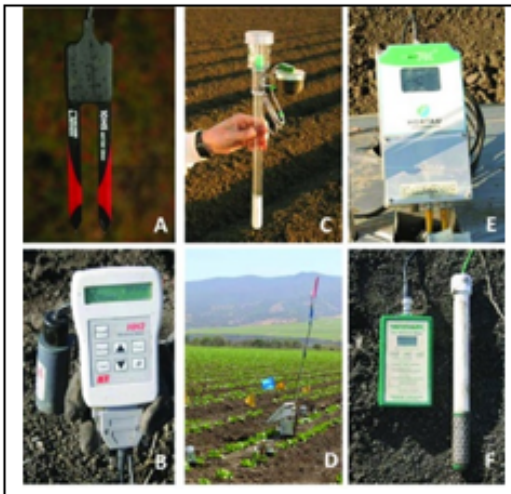
Resilient Agricultural Landscape Program

The goal of the Resilient Agricultural Landscape Program is to increase environmental resiliency of agricultural landscapes by accelerating adoption of Beneficial Management Practices (BMPs) that maximize provision of Ecological Goods & Services (EG&S), such as carbon sequestration, improved water quality and biodiversity enhancement. Funding is offered on a per-acre payment basis for a term of three years. Funding of up to $150,000 for Primary Producers, and up to

$300,000 for Indigenous applicants or groups

New SCAP Framework

Examples of Farm Technologies supported by the Program



Soil Monitoring Options (Source)

Herd Management Handheld Devices (Source)

such as Grazing Reserve Associations and Community Pastures is available for select BMP projects. The Program opens for applications on April 3, 2023. To review the BMP funding list and other program details visit, SCAP website for RALP.

Farm Technology Program (FTP)

The Farm Technology Program supports the adoption of innovative technology that minimizes agricultural waste, optimizes farm efficiency, or improves the security of farming operations. Funding of up to $48,000/applicant is available for items that fall under the Farm Technology Stream, and up to $2,000/applicant for items in the Farm Security Stream. Program funding is retroactive to April 1, 2023. To review the funding list and other program details, visit SCAP website for FTP.

PCBFA staff can help with questions regarding the program, however we encourage you to contact the program coordinators directly at s-cap.ftp@gov.ab.ca for eligibility requirements and application processing.

Member Information

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peacecountrybeef.ca

Member Feed Testing Service

PCBFA Members recieve 2 free feed tests with their membership.

All feed tests are sent to Central Testing Labs in Winnipeg. Nutrients and minerals are tested by wet chemistry.

Nitrate, Mould, and Mycotoxin tests can be completed and will be invoiced at lab cost.

Feed Test Pricing:

Feed Tests for Members (after 2 free) - $45/sample

Feed Tests for Non-Members - Billed at Lab Cost

Nitrate Testing - $15/sample

Rush Shipping - $50

Hay Probe Deposit for Non-Members - $100

Feed Test Drop Off Sites:

Fairview Research Farm, County of Grande Prairie's Clairmont Office, MD of Greenview's Valleyview Office, Saddle Hills County Office, and the Lesser Slave Watershed Council Office in High Prairie

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