

Clean Resources

Smart Agriculture and Food

Evaluation of technologies for improving productivity and regenerating soil health of grazing land in Western Canada

Finding the optimal balance between pasture growth and animal forage intake is a challenge for producers in Alberta. The ability to remotely monitor cattle activity, water availability, forage stand health and availability, and to manage livestock at longer intervals without an on-site operator could provide an opportunity for cost reduction and net revenue increase. Digital technologies that allow for remote grazing management are generally unproven under Western Canadian conditions. Ideal options and associated costs for each situation are unknown, and ranchers have little trust in systems that rely on solar power or wireless network connectivity. This project aims to evaluate the use of remote grazing control technologies in Western Canada. It also intends to provide producers with operational information on the performance of remote grazing control technologies.



FUNDING DETAILS



RECIPIENT:
Olds College



PARTNERS:
AllFlex
METOS by Pessi Instruments
Union Forage
Prairies Economic Development Canada



TOTAL BUDGET:
\$260,900



AI FUNDING:
\$99,525



PROJECT DATES:
March 2020 –
March 2022



PROJECT TRL:
Start: 7
End: 8

APPLICATION

Olds College will acquire detailed operational information (e.g., animal performance and health measures, forage production and soil health measurements) related to the benefits and limitations of using remote grazing control technologies in Alberta. The college will also provide access to emerging smart agriculture technologies, testing services, research expertise and training opportunities for livestock producers, digital technology developers and small- and medium-sized enterprises (SMEs) in Alberta.

PROJECT GOALS

- Help producers and technology developers better understand the value, capabilities and limitations of digital technologies for remote grazing management.
- Quantify the benefits of intensive, remote grazing management compared to conventional grazing management.
- Quantify the effect of different grazing management strategies on forage production, animal performance, and overall grazing productivity over two years.
- Evaluate the performance, ability to access from a remote (off-site) location, ease of use, cost, labour requirements, and challenges of remote grazing technologies.
- Compile a summary of currently available and emerging technology options for remote grazing management including costs (capital and operating), methodology, accuracy, reliability, suitability and other qualifiers.

BENEFITS TO ALBERTA

- Demonstrate that remote grazing control technologies can improve the economics of ranches in Alberta. These technologies can help reduce operational costs, a significant financial investment, and factor in ranching profitability. They can also foster increased forage production and extend the grazing season, thereby reducing the amount of preserved feed ranchers are required to provide or purchase.
- Increase forage availability and quality. These technologies can increase forage production by optimizing the timing of grazing rotations so that it improves forage utilization while ensuring adequate rest for plant regrowth.
- Increase soil health and nutrient density of feed. This will result in improved environmental stewardship, including managing climate change impacts.



1 Publication



>100 Students
Trained



2 Project Jobs



4 New
Products/Services

CURRENT STATUS

November 2021

The 2020 grazing season provided preliminary data on animal performance and functionality of technologies that can be used to assist ranchers willing to adopt technologies to remotely manage grazing and to make well-informed management decisions. The 2021 grazing season continued to provide information on soil health, pasture health, pasture quality and productivity, and animal performance. The equipment and devices are continuing to be assessed, in addition to new technologies with potential to facilitate remote management of rotational grazing. Olds College continues to analyze the data from the technologies and compare remote and conventional grazing systems.