FUNDING DETAILS

An analytic app for arm-chair ranching

This project aims to bring digital innovation to Alberta beef ranchers by developing a comprehensive mobile app, "Arm-Chair Rancher." The app will utilize artificial intelligence to mine extensive information about Alberta's beef herd and beef industry such as phenotypic and genotypic data, breeding data, feedlot data, market and economic data and culling data, as well as climate and market data. These industry level data will be combined with farm-specific data to allow Alberta beef producers to build scenarios, predict future outcomes, and make optimal herd and animal management decisions specific to their farm operation to help address sustainability while at the same time minimizing costs.

RECIPIENT:
University of Alberta
PI: Graham Plastow

PARTNERS:
Beefbooster
Herdly

TOTAL BUDGET:
$4,847,000

AI FUNDING:
$481,000

PROJECT DATES:
Mar 2021 - Dec 2023

PROJECT TRL:
Start: 3
End: 7

APPLICATION

The central challenge for today's rancher is how to effectively make use of the vast data that is available on beef genetics, cattle breeding values, herd health, pasture status, feed costs, market effects, finances, environment and weather, so as to maximize their farm's sustainability, efficiency and profitability. The Arm-Chair Rancher app will provide data-driven, artificial intelligence tools to support customized, farm-specific planning, prediction and forecasting to optimize individual beef cattle ranch operations in Alberta.

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PROJECT GOALS

- Develop a user-friendly app to provide farm-specific options and farm-specific solutions for every day challenges facing beef producers across Alberta.
- Supporting Alberta beef producers to be world leaders in precision livestock farming.
- Develop the Alberta Beef Industry Database (ABID) resource.
- Develop machine learning, modeling and predictive tools using the data in ABID and the data provided by farmers. This will enable improved modeling, better identification, and enhanced understanding of relationships between beef cattle traits across the production chain. This software will help end-users achieve breeding and management goals.
- Develop an integrated farm-specific data capture system and the Arm-Chair Rancher data extraction system, to ensure long term sustainability of ABID and keep data in ABID current and relevant. These data capture and extraction tools will also encourage connectivity and data sharing.

BENEFITS TO ALBERTA

- Improved competitiveness of Alberta ranching will help retain jobs and support the rural economy.
- New jobs from a sustainable beef software industry that could employ a number of highly skilled software developers and data scientists who would continue to evolve and develop Arm-Chair Rancher for future generations of Alberta beef producers.
- Commercial uses of Arm-Chair Rancher could lead to improved feeding practices, improved feed efficiency, smarter culling decisions, better breeding choices for economic return, all of which could lead to multimillion-dollar savings or improved efficiencies and health among Alberta beef cattle.
- Reduced greenhouse emissions if beef farmers select and breed cattle that have better production and feed efficiency.
- Arm-Chair Rancher will facilitate data sharing and data consolidation among Alberta beef producers to improve data connectivity and data access for improved modeling and forecasting.

1 New Product, Arm-Chair Rancher

1 New Database, ABID

3 Scientific Papers & 6 Industry Presentations

5 Project HQP & 8-15 Future Jobs

CURRENT STATUS

MAY 2021

The Arm-Chair Rancher app is being built on data and from software components that already exist or have been developed by collaborators, Beefbooster and Herdly. Data mining and analytics has commenced, helping to build the structure of an Alberta-specific Beef Industry Database (ABID). From this database, the project team will develop a set of machine learning tools, computer-based predictors, and data mining tools to analyze the data from ABID.