Canadian Cattle Association
#180, 6815- 8th Street N.E.
Calgary, Alberta T2E 7H7
Phone: (403) 275-8558
Email: proposals@beefresearch.ca

CALL FOR LETTERS OF INTENT
RESEARCH PROJECT

The Beef Cattle Research Council's (BCRC) mandate is to determine research and development priorities for the Canadian beef cattle industry and to administer national check-off funds allocated to research. The BCRC invites letters of intent for research aimed at achieving specific priority outcomes in identified program areas.

The deadline to submit letters of intent is March 11, 2024 at 11:59 PM MT.

Application Forms and Information
Letters of intent must be prepared using the file entitled 'BCRC Letter of Intent Form - Research' provided by the BCRC and submitted electronically to proposals@beefresearch.ca. The form, as well as instructions and guidelines for submission, must be downloaded from beefresearch.ca and viewed with Adobe Acrobat Reader. In the interests of improved funding efficiency, the BCRC reserves the right to share letters of intent with other research funders.

Project Timeframe
Preference will be given to projects that are up to three years in duration; if the need for a longer timeframe can be clearly demonstrated, four or five-year projects may be considered. Projects will commence no earlier than November 1, 2024, with flexibility available after November 1st to ensure start dates work for with the project workplan. An approved project cannot start until confirmation of matching funds has been received.

Timelines
March 11, 2024 – deadline to submit letters of intent
Mid April 2024 – applicants will be notified if they have been invited to submit a full proposal
June 17, 2024 – deadline to submit invited full proposals
Late September 2024 – researchers will be notified of the funding decision

Research Outcomes
The BCRC has established clearly defined research objectives. **Please refer to the detailed research outcomes listed** before deciding to submit a letter of intent.

RESEARCH OUTCOMES
DRAWN FROM THE CANADIAN BEEF RESEARCH AND TECHNOLOGY TRANSFER STRATEGY

Through the Canadian Beef Research and Technology Transfer Strategy, the beef industry has defined several core principles under which more specific priorities and research outcomes are established.

For the competition, the BCRC welcomes any letters of intent that work towards the achievement of one or more of the ***specific research outcomes listed below*** by priority area.

Priority: Feed Efficiency and Utilization

Outcome 1: *Improve feed grain and silage yields through agronomic practices and harvest strategies*

1. Investigate agronomic, harvest, and ensiling practices for annual forages and forage mixes to optimize feed and silage yield, nutritional quality and animal health and performance

Outcome 2: *Investigate feed processing, by-products, additives, supplements or other feeding strategies that optimize productivity and profitability*

1. Develop rapid and cost-effective ways to precisely assess potential toxins, nutritional value, digestibility and optimal processing of feedstuffs and by-products
2. Develop cost-effective strategies to ensure optimal and uniform supplement intake on pasture
3. Re-investigate and update nutritional recommendations to maintain optimal animal health and performance during the transition of high risk, newly weaned calves to feed
4. Investigate the additive effects and interactions between feed processing methods and practices, additives, and management systems to improve digestibility, animal maintenance costs, and cost of gain

Outcome 3: *Improved feed efficiency through identification of genetic differences and animal breeding*

1. Validate and demonstrate the cost effectiveness of genetic markers for feed efficiency in crossbred cattle in commercial feedlots

Priority: Forage & Grassland Productivity

Outcome 1: *Improve the management and productivity of native/naturalized pastures to enhance profitability and discourage land conversion*

1. Identify management practices that optimize utilization and resilience of pastures (e.g., mob grazing, integration of native grasslands into the whole grazing system and drought resiliency)
2. Identify or develop cost effective management strategies to control the spread of invasive and woody plant species on native/naturalized pastures

Outcome 2: *Better understand the impact of grazing management on plant, animal, and soil interactions and how the overall system contributes to plant and animal health and productivity*

1. Validate technology to simply and cost-effectively manage grazing systems and quantify improvements in forage productivity

Outcome 3: *Cost-effectively improve the agronomic performance, yields, nutritional quality, and palatability of annual and perennial tame species for grazing or stored forages*

1. Develop and/or validate strategies and best management practices to promote stand establishment (for example seeding coatings, inoculants), productivity and longevity, preserve forage quality for late season grazing and prevent waste in stored forages

Priority: Environmental Sustainability

Outcome: ***Develop cost-effective ways to reduce greenhouse gas emissions, maintain or improve biodiversity, increase soil carbon, or improve water quality in beef production environments***

1. Quantify N and P excretion rates in grazing animals, N impacts on GHG emissions, P runoff and leaching impacts on water quality/eutrophication, and the effectiveness of forages to mitigate the nutrient mobility associated with extended wintering practices.
2. Develop technologies and identify practices to reduce odors associated with feedlot collection ponds.

Priority: Animal Health & Welfare

Outcome 1: 92% of cows wean a calf each year through cost-effective improvements in nutritional and overall management

1. Refine nutritional and related management strategies to improve rebreeding success, calf survival and herd retention in replacement females
2. More precisely define optimal micronutrient requirements and develop regionally appropriate supplementation recommendations for breeding cattle of different ages throughout the production cycle in extensive winter feeding systems

Outcome 2: ***Develop and promote the adoption of cost-effective management practices and technologies that reduce the need for and preserve the effectiveness of antibiotics***

1. Continued development of alternative health products and management practices to maintain animal health and reduce the need for antibiotic treatment
2. Controlled trials to independently assess or validate the cost-effectiveness of promising traditional or alternative animal health products and/or management strategies
3. Assess how nutritional and health management (e.g., vaccination) of the cow herd impacts calf health pre- and post-weaning

Outcome 3: ***Effective surveillance of production limiting diseases, production practices, and antimicrobial use and antimicrobial resistance***

1. Support the ongoing collection of antimicrobial use and resistance information to improve cattle health outcomes

Outcome 4: ***Improved prevention and mitigation of animal disease issues***

1. Develop and validate management strategies and approaches to cost-effectively maintain calf health through the weaning process into the feedlot
2. Develop point-of-care and other diagnostic tools that rapidly, accurately, and cost-effectively identify infectious disease, immune/vaccination status, antimicrobial susceptibility/resistance or nutritional status

3. Use new techniques and traditional microbiology to understand the role of the microbiome(s), their development and interactions, and learn how they can be manipulated to help prevent, mitigate, and manage major diseases
4. Identify and quantify biosecurity and animal health risks associated with transport rest stops and other commingling sites

Outcome 5: ***Improved prevention and mitigation of animal welfare issues***

1. Develop cost-effective and easily administered options to alleviate procedural pain associated with castration, branding, and dehorning
2. Develop cost-effective chronic pain management strategies
3. Identify factors contributing to lameness, develop cost-effective preventions, treatment options, and methods to control or limit environmental spread of the pathogens involved

Priority: Beef Quality

Outcome: ***Improved customer satisfaction with Canadian Beef***

1. Modernize and conduct a National Beef Quality Audit that reflects the industry's evolution from carcass-based to cut-based marketing, quantifies opportunities to reduce tag in fed cattle, and audits cold-chain management practices to identify critical control points and develop best practices enabling processors, transporters, customers and importers to ensure maximum shelf life of Canadian beef, ensure food safety and quality and reduce food waste
2. Develop and implement processes and technology to assess and report carcass and offal quality defects at processing plants in real-time

Priority: Food Safety

Outcome 1: ***Ensured food safety along the beef supply chain***

1. Develop and implement cost-effective technologies targeting multiple pathogens in cattle and beef production and processing facilities, including heat- and acid-resistant E. coli and biofilm forming bacteria
2. Identify key spots in processing plants that are prone to contamination and difficult to clean, and develop alternative designs, surfaces, and strategies to facilitate effective cleaning and identification and removal of biofilms
3. Proactively (re)assess the prevalence of Salmonella in Canadian slaughter cattle, carcasses and beef, and develop strategies to effectively reduce food safety risks

Outcome 2: ***Validate the efficacy and safety of new technologies in support of the rational regulatory approval and adoption of improved food safety interventions and environmental management practices in the beef processing sector***

1. Develop cost-effective cleaning technologies that reduce the need for (hot) water, sanitizers, and labor in large and small processing facilities
2. Develop technologies and identify practices to reduce odors associated with packing plants, renderers and settling ponds.