



Canadian Cattlemen's Association
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CALL FOR LETTERS OF INTENT

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, along with Alberta Beef Producers (ABP) invites letters of intent for research aimed at achieving specific priority outcomes in identified program areas.

The deadline to submit letters of intent is August 9, 2019 at 11:59 PM MT.

Research outcomes

The BCRC and ABP have established clearly defined research outcomes through a comprehensive stakeholder engagement process. Please refer to the detailed research outcomes listed below before deciding to submit a letter of intent.

Application forms and information

Letters of intent must be prepared on the form provided by the BCRC. The form, together with instructions, can be downloaded from www.beefresearch.ca. 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 April 1, 2020, subject to confirmation of matching funds.

Timelines for submission of Letters of Intent for Research

August 9, 2019 - deadline for submitting letters of intent in electronic format to proposals@beefresearch.ca

September 13, 2019 - researchers will be notified by if they have been invited to submit a full proposal

November 8, 2019 - deadline for submitting invited full proposals

Early February 2020 – researchers will be notified of the funding decision

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

For the competition, the Beef Cattle Research Council welcomes any letters of intent that work towards the achievement of the research outcomes outlined below.

The beef industry has defined three core research objectives under which more specific priorities and research outcomes are established:

1. To *enhance industry competitiveness and reduce production costs*, priority outcomes are to enhance feed and forage production, increase feed efficiency, and decrease the impact of animal health issues and production limiting diseases.
2. To *improve beef demand and quality*, priority outcomes are to reduce food safety incidences, define quality and yield benchmarks supporting the Canadian Beef Advantage, and improve beef quality through primary production improvements and the development and application of technologies to optimize cutout values and beef demand.
3. To improve *public confidence in Canadian beef*, outcomes are to improve food safety, strengthen the surveillance of antimicrobial use and resistance, develop effective antimicrobial alternatives, ensure animal care, demonstrate the safety and efficacy of new production technologies, improve environmental sustainability and measure the beef industry's environmental benefits.

For all Priority Areas, proposed research needs to give strong consideration to the following overarching aims:

1. Improved communication, collaboration and understanding between researchers and industry, with research/industry collaborations increasing to account for 25% of research activities.
2. Cost-benefit analysis completed to support recommendations and knowledge transfer from research projects that impact production profitability.
3. Encouragement of interdisciplinary teams undertaking systems-based approaches integrating appropriate parts of the value chain.
4. Investigate technologies with the potential to reduce labor and improve production efficiencies throughout the forage, cattle and beef production chain.
5. Enhanced awareness and consideration of relevant international research and development activities to avoid duplication and identify opportunities for collaboration.

Specific outcomes are listed below.

Specific Outcomes by Priority Area

Priority: Beef Quality

Outcome 1: Improved Consumer Satisfaction with Canadian Beef; detailed outcomes include:

Note – any letter of intent submitted for these outcomes will require the clear involvement and collaboration of a commercial feedlot and/or packing plant.

- Validate objective in-plant measures of tenderness that can be used at line speed
- Demonstrate the cost-effectiveness and value of genetic markers for tenderness in commercial cattle
- Identify potential interactions between tenderness genotype and animal management (e.g. implants, backgrounding, grassing, finishing, etc.) and develop appropriate breeding and management recommendations

Outcome 2: Validate and Support the Canadian Beef Advantage; detailed outcomes include:

- Develop packaging and other technologies to improve shelf life and appearance for export
- Demonstrate the commercial effectiveness of current and novel packaging to inform industry practice and customer/market acceptance

Priority: Food Safety

Outcome 1: Improved Food Safety along the Beef Supply Chain; detailed outcomes include:

- Develop and implement cost-effective technologies to rapidly and effectively detect STEC (e.g. *E. coli* O157) contamination in beef and trim
- Develop objective, cost-effective approaches for verifying effectiveness of packing plant equipment cleaning processes, and adopt them for 85% of processed cattle

Priority: Animal Health and Welfare

Outcome 1: Improved Prevention of Animal Disease and Welfare Issues; detailed outcomes include:

- Conduct clinical trials to identify commercially available vaccines that stimulate an effective immune response and reduce the incidence of disease in calves pre- and post-weaning
- Develop and promote cost-effective vaccination and management strategies that can be widely adopted throughout the beef production system to improve health, reproductive and performance outcomes
- Determine which carcass bruises identified in the Beef Quality Audit may be related to transport trailer construction, and identify potential design modifications to minimize bruising and injury

Priority: Antimicrobial Use, Resistance and Alternatives

Outcome 1: Evidence-based antimicrobial resistance decision making and communication to the veterinary, producer and medical communities; detailed outcomes include:

- Conduct pilot projects to identify whether the prevalence of antimicrobial resistance in market beef cows, dairy cows and bob/veal calves differ from fed cattle

Outcome 2: Develop a broader toolbox for disease management; detailed outcomes

include:

- Develop cost-effective nutritional and other management strategies to effectively reduce the need for antimicrobials to control liver abscesses

Priority: Feed Grains and Feed Efficiency

Outcome 1: Improved feed efficiency through animal breeding; detailed outcomes include:

- Determine the impact of cow-calf management practices on feed intake and efficiency in feedlot calves
- Develop a cost-effective method to easily and accurately quantify forage intake in grazing cattle

Outcome 2: Improved feed supply and utilization; specifically:

- Identify cost-effective agronomic strategies to increase feed grain energy yield per acre
- Develop new feed grain varieties with improved feed grain energy yield per acre, N and water use efficiency
- Develop feeding strategies to optimize animal performance, nutritional value and cost of gain (e.g. ideal forage inclusion rates, grain processing/blending, high moisture corn, wheat, etc.)

Priority: Forage and Grassland Productivity

Outcome 1: 15% Improvement in Yields and Nutritional Quality of tame, native and annual species through improved pasture, forage and grazing management and plant breeding; detailed outcomes include:

- Develop new annual and perennial grass and legume varieties with improved stand longevity, quality, yield, and adaptability (e.g. flood and drought resistance) through traditional and/or advanced plant breeding techniques
- Characterize corn and cereal forage variety differences in nutrient profile and ensiling potential
- Identify or develop improved grazing and range management strategies that optimize forage and beef production from native range and tame perennial pastures
- Investigate and refine regionally-appropriate methods of combining native, tame (annual and/or perennial) species and extended winter grazing practices to lengthen the grazing season and reduce winter feed costs, while meeting animal requirements

Priority: Environmental Sustainability

Outcome: Science-based information to inform the development of effective public communication and policy development regarding environmental goods and services provided by the beef industry; detailed outcomes include:

- Quantify factors impacting the rate and extent of C sequestration in tame and native pastures across Canada
- Quantify the impacts of native and tame pasture management on water use, cycles and watersheds across Canada
- Quantify N and P excretion rates in grazing animals, and N impacts on GHG emissions and P runoff and leaching impacts on water quality / eutrophication