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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 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 31, 2018 at 11:59 PM MT.**

### Research outcomes

The BCRC has established clearly defined research outcomes through a comprehensive stakeholder engagement process. Please refer to the research outcomes highlighted 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](http://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, 2019.

### Timelines for submission of Letters of Intent for Research

**August 31, 2018** - deadline for submitting letters of intent in electronic format to [proposals@beefresearch.ca](mailto:proposals@beefresearch.ca)

**October 1, 2018** - researchers will be notified if they have been invited to submit a full proposal

**November 20, 2018** - deadline for submitting invited full proposals

**Early February 2019** – 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

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

- Re-evaluate electrical stimulation recommendations in commercial environments to reflect increased carcass weights
- Validate objective in-plant measures of tenderness that can be used at line speed

**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

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**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

**Outcome 2: Extension, Outreach and Policy**

- Generate science-based information to inform the regulatory approval of effective food safety interventions in key international markets (e.g. European Food Safety Authority approval of peroxyacetic and citric acid interventions for beef)

### Priority: Animal Health and Welfare

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**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
- Develop revised feed mycotoxin levels to avoid adverse animal health and welfare impacts

### Priority: Antimicrobial Use, Resistance and Alternatives

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

- Implement ongoing surveillance of antimicrobial resistance through sampling of live animals at feedyards, focusing on BRD pathogens and enteric bacteria

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

- Investigate and develop simple, cost-effective alternative vaccine delivery methods to improve vaccination rates in the cow-calf sector
- Develop rapid, accurate, cost-effective chute-side diagnostic tests to evaluate whether cattle have been effectively vaccinated against specific pathogens
- Develop rapid, accurate, cost-effective diagnostic tools to detect disease before symptoms become apparent

**Priority: Feed Grains and Feed Efficiency**

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**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:**

- Develop new feed grain varieties with improved feed grain energy yield per acre, N and water use efficiency

**Priority: Forage and Grassland Productivity**

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**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:**

- Quantify varietal and species differences in the nutritional profile of grasses, legumes and/or annual forages, and their ability to maintain nutritional quality and meet animal requirements throughout the grazing season and in extended stockpiled or swath grazing systems to help inform producers' seed selection decisions
- 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
- Quantify the economic and agronomic and environmental benefits of integrated annual crop, forage and beef production systems

**Priority: Environmental Sustainability**

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**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 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