



## **2009-10 Business Plan**

## Research Strategy

### Introduction

A portion of the funds collected by the Beef Cattle Research, Market Development and Promotion Agency are directed towards the Beef Cattle Research Council (BCRC). Canada's beef cattle industry recognizes that research and innovation is key to moving forward in addressing many of the competitiveness issues facing the industry. In 1999, the Beef Cattle Research Council (BCRC) was established as a division of the Canadian Cattlemen's Association, to determine research and development priorities for the beef cattle industry, and to administrate the research funding allocation of the national check-off. Since inception, the BCRC has contributed \$4.08 million in funding to 59 different research projects and initiatives. The total estimated investment in these research initiatives, including BCRC's contribution, is over \$18.8 million.

The BCRC:

1. Identifies, funds, and manages beef research and technology development in strategically focused priority areas of national significance as defined by industry stakeholders from across the national value chain.
2. Promotes excellence in Canadian beef research and technology development by facilitating the exchange of information and expertise to encourage collaboration, discourage duplication, and to advocate the adoption of high standards.
3. Supports and encourage the rapid commercial adoption of new technologies to sustain competitive advantage.

The BCRC's overall objectives and priorities are to:

- To continue to enhance the safety and quality of Canadian beef
- To ensure the integrity and high standards of animal health in the Canadian herd
- To improve and ensure the dissemination of knowledge throughout the industry
- To ensure that sound scientific principals and risk assessment are utilized in developing good production practices, industry and government policy and standards
- To support innovative projects designed to improve industry competitiveness
- To enhance international acceptance of Canadian beef quality and safety standards

### National Beef Research Strategy and Growing Forward Agri-Science Clusters

A recent review of the beef research situation in Canada initiated by the Canadian Cattlemen's Association and Beef Value Chain Roundtable found that while research and innovation must play an important role in addressing many of the competitiveness issues facing the Canadian beef industry – overall research funding and infrastructure, human capital, and technology transfer to support beef and cattle research have fragmented and declined significantly in Canada. Out of the review, a national beef research strategy has been developed which focuses on the opportunity to position research as a supporting driver of the industry's sustained success, and provides a framework towards achieving national coordination of beef research priorities, funding and technology transfer efforts.

In tandem with the development of the national beef research strategy, Agriculture and Agri-Food Canada is implementing the Agri-Science Cluster Initiative program under the new Growing Forward Strategy. The Agri-Science Cluster Initiative is a significant opportunity to strengthen research and development to address current and future competitive challenges through the development of a Beef Science Cluster. The development of a Beef Science Cluster will be an important first step in the implementation of the broader national beef research strategy, accelerating the process to help industry more formally coordinate with all stakeholders and direct funding more effectively to an outcome-based research program that is more directly aligned with industry's vision and priorities.

With the support of the Canadian Cattlemen's Association, the Beef Value Chain Roundtable, and provincial industry organizations the BCRC has committed to developing a Beef Science Cluster and acting as the transition point for the implementation of the broader national beef research framework. The BCRC has a solid track record – with scientific review and business management systems in place. These systems will be further adapted and enhanced to effectively manage Beef Science Cluster activities, implementing near and medium-term projects during the next four years.

## **Research Program Implementation**

### Governance and Board

The BCRC is an operating division of the Canadian Cattlemen's Association (CCA) and is overseen by an operating committee comprised of (industry) representatives appointed by provincial associations contributing to the BCRC through the national check-off. There are currently 11 members on the BCRC committee – including one representative from B.C., four from Alberta (one is vice chair), two from Saskatchewan, one from Manitoba, two from Ontario, and one from the Atlantic region (also the chair). The committee is responsible for the direction of all aspects of the BCRC program, reporting semi-annually to the Canadian Cattlemen's Association Board. Voting representation on the committee is proportionate to the level of funding contributed through the National Check-off Agency, and each funding member has the right to appoint at least one representative to the BCRC committee. Other organizations may become contributors to and members of the BCRC if approved by the committee and the CCA Board. Such new members have the opportunity to appoint voting members to the BCRC committee. Non-members may be invited as observers to the committee, but there may be no "permanent" non-voting members.

The BCRC oversees research program development and implementation, playing a key role in establishing and refining industry research priorities in consultation with other stakeholders. Annual business and program plans and budgets are recommended by the BCRC committee for consideration and approval by the CCA Executive and Board.

### Operational Management

The BCRC is currently overseen by a manager, appointed by the CCA management, who takes direction from the BCRC committee and reports to the CCA Executive. This role includes

developing and managing the implementation of annual business and program plans and budgets, organizing and facilitating meetings on behalf of the committee, and providing the committee with advice and input as requested. In addition the manager acts as a liaison and facilitation link among the BCRC committee, CCA and BCRC staff, technical advisors, and national and provincial interest groups with similar research objectives.

In managing the national research strategy and Science Cluster, an enhanced role for the manager will be to work even more closely with other government and industry funders. The manager will lead the process to establish comprehensive national beef research priorities, aligned with the national industry strategy, and encourage coordination of priorities and funding allocations between agencies. Focus will also be placed on improving communication and coordination between funders and to government regarding industry's priorities and funding allocations, as well as minimizing duplicative administrative and research efforts.

The BCRC's current research funding process is supported by a technical administrator with a scientific research background. This position is responsible for overseeing the research program development process including facilitating call for proposals or directed research requests, coordinating the review of research proposals including the BCRC's internal and peer review process, tracking and monitoring research progress, and working with the science advisory panel and the BCRC committee to aid in research program development.

To support current resources to properly manage the scope of projects that will be undertaken within the Science Cluster, the BCRC intends to hire a science director. Responsibilities will include oversight of program development and administration, preparation of contracts and agreements, maintaining program and project files, managing the flow of funds, and maintaining accurate records of expenditure. The science director will be responsible for working with the technical administrator, overseeing annual research plan development, reviewing and critiquing project proposals and interim and final reports. A major role of the science director will be to develop and implement a comprehensive prescribed technology transfer and knowledge dissemination process and enhanced communication program, which are outlined below.

To support the research program development process within the science cluster and ensure the delivery of research plans that are directed towards industry's research objectives and achieve the outcomes desired by industry, a Science Advisory Panel has been created. The panel is comprised of industry, academic and government scientific expertise, all considered to be leaders in their field and broad thinkers, and committed to evolving beef research in Canada. It is the expectation that additional members will be appointed to the Science Advisory Panel on an ongoing basis in order to engage individuals with specific research expertise and specialties where deficiencies have been identified to strengthen the panel.

The Science Advisory Panel will be engaged on an ongoing basis by the BCRC and will serve an important function, bringing past experience and understanding to the table and linking industry priorities with research that is most likely to achieve outcomes aligned with those priorities. The Science Advisory Panel will also assist with technology transfer and knowledge dissemination process and identification of commercialization opportunities.

### Stakeholder Engagement and Annual Funding Process

The BCRC believes it is important to review and adjust research and technology development priorities to respond to future industry needs and as a result conducts priority setting workshops on an ongoing basis. Input is obtained from all areas of industry, researchers, and funding organizations to ensure the industry and its stakeholders obtain the maximum benefit from research funded by the BCRC. The results of the workshops, along with input received from more focused stakeholder engagement where necessary, is collected and further developed by staff to facilitate the provision of recommendations on research priorities to be presented for review and approval by the BCRC committee.

Upon the determination of research priorities, the research program development process includes both direct program development, where researchers with expertise are directly engaged to develop proposals that address areas of priority as identified by industry. Open call for proposals are also solicited on at a minimum an annual basis or more frequently as required. More focused call for proposals are also be utilized to address specific issues or priorities where gaps have been identified.

In order to ensure timely delivery of a research plan that can be implemented immediately through the Beef Science Cluster, the BCRC program development process has been broken into two areas Year One and Year Two-Four. Based on identified priorities from stakeholder engagement through the Beef Value Chain Roundtable and industry, the BCRC in consultation with the Science Advisory Panel has further refined objectives and focus on what can be implemented immediately and what should be focused on in successive years (Year Two-FOUR), based upon gaps identified and further refinement of priorities.

#### *Year One Program Development Process (2009/10)*

The BCRC worked with the Science Advisory Panel to identify research that needs to be expanded to accelerate timing of research outcomes; the incorporation and enhancement of relevant letters of intent that were submitted in response to the BCRC's 2009 call for proposals that occurred in the first quarter; and the development of projects with expert research teams where gaps have been identified (i.e. beef quality audit). Pre-proposals have been developed with preliminary budgets, objectives, deliverables, and project description and are included in the Project Work Plan section. Full proposals will then be developed and carried through the BCRC peer review process. The intention is that a follow up submission will be provided to refine and enhance projects under the priority areas to ensure delivery of outcomes aligned with industry research objectives. It is expected that proposal development, review, and subsequent approval would be completed in July 2009.

#### *Year Two to Four Program Development Process:*

For Year Two-Four, refinement and expansion of programs based on identified gaps and review of existing and ongoing research will be conducted. This will involve ongoing stakeholder and researcher engagement in the first year of the Cluster to further define research objectives, plans, and deliverables under the priority areas identified in the proposed research plan. Research programs will then be further enhanced through direct research engagement and call for proposals soliciting research in priority areas.

### Project Submission, Evaluation, Peer Review Process

Project submission and evaluation is a three-part process:

*Call for proposals to address industry priorities-* Proposals of the proposed research are submitted based on specific and/or annual call for proposals or a direct request to a research team to develop a project in a specific area. Researchers who submit letters of intent that are clearly aligned with established industry priorities and that will, in the view of the BCRC committee and the Science Advisory Panel make a valuable contribution to achieving the desired research outcomes, will be requested to develop these letters of intent into full research proposals including additional background, detailed methodology, and technology transfer plans.

*Independent peer review of full proposals -* To ensure that funding is preferentially allocated to research that will make the greatest scientific contribution to meeting the desired research outcomes of the Cluster, full proposals will be reviewed by the Science Advisory Panel and also sent for confidential and expert scientific review. At a minimum two reviews will be solicited from scientists who are independent of the Science Advisory Panel, and who are also nationally and/or internationally recognized as having current expertise in the relevant field(s). Research proposals are reviewed for scientific novelty, likelihood of success in achieving the desired research outcome, soundness of the experimental design, appropriateness of the budget, team credentials, publication and technology transfer record, and a demonstrated ability to train highly qualified personnel to position Canada as a leader in beef science.

*Funding decisions-* The full proposals and independent peer reviews are evaluated and recommendations will be made by the Science Advisory Panel, based on the scientific merit of proposals and likelihood of them making a meaningful and valuable contribution to achieving the outcomes identified by industry stakeholders. Comprehensive research plans are then submitted to the BCRC committee for funding approval on an annual basis at a minimum, and more frequently where necessary, based on the recommendations of the Science Advisory Panel and BCRC staff.

### **BCRC Operational Goals**

#### Knowledge Dissemination & Technology Transfer

To support the industry's value proposition, results from research funded by the BCRC must find their way back to value chain participants to affect management decisions concerning beef production and to improve beef products for all customer segments and markets. The science director for the BCRC will assume responsibility for the development and delivery of a technology transfer and knowledge dissemination plan. A comprehensive communication program utilizing outreach tools such as website, fact sheets, and presentations was initiated by the BCRC in 2006 and will be enhanced to extend communications through existing industry communication channels and other means identified to be of value.

With the continued growth and expansion of the national Quality Starts Here – Verified Beef Production on-farm food safety program, the opportunity exists to use this program as a direct channel of communicating research outcomes and disseminating knowledge related to food

safety, quality, animal health, and production efficiencies with program participants. In addition, a focus will be placed on utilizing provincial industry and government capacity to encourage knowledge dissemination and technology transfer.

#### Stakeholder Engagement and Priority Setting Process

BCRC has and will continue to commit to undertaking a comprehensive stakeholder engagement and priority setting process, to collaborate with all stakeholders through workshops and ongoing relationship development and liaison by BCRC's manager. As well, the national Beef Value Chain Roundtable will continue to be fully engaged on the national research strategy and will help facilitate this process through its role as conduit in bringing together all industry sectors and government.

To assist in the refinement of research priorities for the BCRC and also encourage alignment of priorities across funding organizations, a formal stakeholder consultation process will be initiated in the latter part of 2009. The goal is to identify national priorities in the context of a broader industry-focused research strategy. The focus will be on tangible and measurable industry outcomes that address problems and issues that industry needs to solve, and translate these industry outcomes into specific research outcomes. It will be an inclusive process that involves industry and government funders and representatives of the research community, with the intention of building buy-in to the priorities and ensuring that the priorities reflect broader community interests. This process will assist in the further refinement of research plans delivered through the BCRC and will also be integral in enhancing the alignment of research priority setting processes across other industry and government organizations.

The formal stakeholder engagement and priority setting process will be held every three years. With Growing Forward coming up for renewal in 2013, consultation and stakeholder engagement in the research priority and planning process in 2012 will complement the renewal and enhancement of the BCRC's Beef Science Cluster under a new Growing Forward Strategy.

#### **Program Objectives & Priorities**

Based on stakeholder engagement and BCRC's priority setting process, the beef industry has defined two core research objectives under which more specific priorities are established:

- *To reduce costs of production*, priority areas are to enhance feed and forage production, increase feed efficiency, decrease impact of animal health issues and production limiting diseases, improve utilization of specified risk materials, and animal care.
- *To improve beef demand and quality*, priority areas are to reduce food safety incidences; define quality and yield benchmarks supporting the Canadian Beef Advantage; and improve beef quality through an audit program and primary production improvements, and the development and application of post processing technologies to optimize cutout values.

In support of achieving the above objectives specific priority areas of focus have been identified and include:

- Beef Quality
- Food Safety
- Specified Risk Material Utilization & Disposal
- Feed Efficiency
- Forage and Grassland Productivity
- Animal Health & Production Limiting Diseases

### Expected Deliverables

The following highlights some of the research program outcomes expected to be delivered on by the BCRC in each priority area over the next four years:

#### *Beef Quality*

- Conduct a beef quality audit – consumer satisfaction survey and carcass quality audit and utilize information to support industry’s efforts to market Canadian beef advantages, develop applied research plans to correct deficiencies, and develop communication and education programs to promote change, where necessary, within industry.
- Determine optimal feeding strategies to enhance healthy fatty acid production in mature and youthful animals to support the development of value-added omega-3 products
- Development of new intervention strategies to increase the quality and add value to underutilized muscle cuts

#### *Food Safety*

- Identification of alternative economical treatment strategies for trim to reduce E.coli 0157:H7 contamination
- Determine the effect of feeding different levels of wheat based distillers grains on shedding levels of E.coli 0157:H7 and identify the optimal levels of wheat based distillers grains that can be safely added to feedlot cattle diets
- Facilitate the transition of important food safety scientific capacity and ensure the continued deliver of applied food safety research for industry benefit

#### *SRM Utilization*

- Assess the fate of BSE prions during composting and identify optimal composting conditions for SRM materials to provide an economical and effective means of disposing SRMs

#### *Forage*

- Development of drought adapted forages to improve productivity and increase water use efficiency
- Identification of new sainfoin cultivars and alfalfa/sainfoin mixtures that eliminate bloat risk and demonstrate stand longevity
- Provide new agronomic recommendations for swath grazing to improve economic efficiency by increasing carrying capacity, yield and yield stability of alternative swath grazed crops

### *Feed Efficiency*

- Development of alternative feeding strategies that identify the optimal use of distillers grains to maximize performance, while minimizing carcass and meat quality impacts and monitoring shifts in nutrient (N&P) release in manure derived from animals fed DDGs
- Advance the development of a SNP panel to facilitate validation of genetic markers
- Development of marker assisted EPDs and indexes to assist beef producers in the selection of economically relevant traits
- Identification of biological predictors to predict/select cattle for improved feed efficiency

### *Animal Health and Production Limiting Diseases*

- Development and evaluation of potential diagnostic tests that aid in control programs for Johne's disease
- Development and evaluation of potential new control strategies for Johne's disease including vaccination tools
- Identification of animal health and performance concerns associated with feeding distillers grains and development of best management practices that optimize performance while minimizing animal health concerns
- Identification of methods of modifying eating behavior and ruminal fermentation to influence production and animal health

## **Quality Starts Here<sup>✓</sup><sup>®</sup> – Verified Beef Production**

In addition to sponsoring research and technology development in support of the Canadian beef industry, in 2001 the Quality Starts Here<sup>✓</sup><sup>®</sup> program was brought under the auspices of the BCRC. The Quality Starts Here<sup>✓</sup><sup>®</sup> program further supports the industry's vision to have high quality Canadian beef products recognized as the most outstanding by Canadian and world customers. Bringing it under the auspices of the BCRC provides a practical means for efficient administration and access to development and implementation resources for the program. It also provides an appropriate forum for policy development to then be taken forward to the Canadian Cattlemen's Association Board.

The Quality Starts Here-Verified Beef Production (VBP) program continues to gain momentum and holds potential to contribute significantly to the marketing of Canadian beef. Since program introduction in 2003, provincial cattle associations have committed significant resources to build delivery capacity and integrate coordinators within their provincial plans. The existence of credible people in each province has enhanced program profile, and influenced producer interest in the VBP program as producers know where to source assistance.

Provincial coordinators are responsible for program promotion, delivering workshops, and providing access to audit services should producers want to become fully registered with program. They also provide advisory capacity for national program development and technical expertise. Overall program policy and direction is set by a producer advisory committee called the QSH Management Group, which reports back to the BCRC. A national manager rounds out program implementation and assists in building delivery capacity in the regions.

The VBP program has a strong role within responsible food animal production. Over the past years we have demonstrated program principles to various government departments as they consult with industry on enhancing the food safety continuum. Many times this program has shown other stakeholders that the cattle industry is a responsible sector with a program based in sound science.

Verified Beef Production program is based on five elements, described as standard operating procedures in its Producer Manual (available at [www.verifiedbeef.org](http://www.verifiedbeef.org)). These elements are based on an internationally recognized approach to food safety called Hazard Analysis Critical Control Point (HACCP). Since its first technical review with the Canadian Food Inspection Agency in 2004, the procedures have been simplified into the following areas that include animal health management, medicated feed and water, cattle shipping, pesticide control and manure, and training and communication.

## **Conclusion**

Given current revenues and allocations through the national check-off, the BCRC has been challenged to implement a comprehensive research strategy which addresses multiple industry priorities while remaining fiscally prudent. The BCRC has drawn on reserve funds (which were based on an initial grant to the BCRC) on an annual basis to supplement revenues received from the national check-off.

The BCRC is committed to funding leading-edge research to position the Canadian beef cattle industry as a global leader in beef quality, animal health, food safety and environmental stewardship. Research and technology transfer is a dynamic process with unique challenges and vast opportunities. The Beef Cattle Research Council will strive to ensure that an efficient and effective process of evaluating the research needs of the beef and beef cattle industry is maintained on a continual and productive basis. New priorities, strategies, and opportunities will be continually evaluated and implemented to ensure the needs of the industry and its most important customer, the consumer, are addressed in a timely manner.

The BCRC is dedicated to ensuring that this process is transparent, provides all stakeholders with the opportunity for input and the outcomes are such that the advancement and growth of the Canadian industry is the highest priority.

## BEEF CATTLE RESEARCH COUNCIL

### 2009/10 BUDGET

<b>Net Assets, beginning of year</b>	<b>1,567,776</b>
<b>Projected excess (deficiency of revenue over expenditure)</b>	<b>317,387</b>
<b>Projected Net Assets, June 30, 2009</b>	<b>1,250,389</b>
<b>2010 Revenue</b>	
National Check-off	616,644
Interest Earned	21,600
Misc. Revenue	-
On Farm Food Safety	151,500
<b>Total Revenue</b>	<b>789,744</b>
<b>2010 Expenses</b>	
BCRC Division Services	148,275
Projects	464,021
Quality Starts Here	119,080
On Farm Food Safety	151,500
<b>Total Expenses</b>	<b>882,876</b>
<b>Excess (deficiency) of revenue over expenditure</b>	<b>(93,132)</b>
<b>Projected Net Assets, June 30, 2010</b>	<b>1,157,257</b>