BCRC

BEEF CATTLE RESEARCH COUNCIL

2024/25 Results Report

Submitted to the Canadian Beef Cattle Research, Market Development and Promotion Agency

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I. Executive Summary

The Beef Cattle Research Council (BCRC) is a producer-led council that leads the Canadian beef industry by investing producer funds into beef and forage research and technology transfer to increase productivity, support growth in beef demand and earn public trust. To advance a transparent, competitive, resilient and sustainable Canadian beef industry, the BCRC works closely with other industry and government funding agencies and extension teams to support strategic and effective research, technology transfer and innovation.

A division of the Canadian Cattle Association, the BCRC is directed by a committee of 16 beef producers from across the country. The BCRC is funded in part through a portion of a producer-paid national levy, the Canadian Beef Cattle Check-Off. In 2024/25, the BCRC received on average $0.66 (unaudited) of every $2.50 of the Canadian Beef Cattle Check-Off collected by the provinces. This funding was leveraged under the Beef Science Cluster program with Agriculture and Agri-Food Canada Sustainable Canadian Agricultural Partnership funding, where industry contributed 43% ($2.08 million) and AAFC contributed 57% ($2.71 million) in 2024/25. In addition, the BCRC leveraged the Canadian Beef Cattle Check-Off for an additional $5.5 million in research funding and $103,800 in-kind from government and industry partners through initiatives outside of the Beef Science Cluster.

This report covers the period April 1, 2024 to March 31, 2025. Programming during this period was centered around the following areas:

- Increase producer profitability by increasing productivity or decreasing costs of production and risks.
- Develop, enhance and encourage adoption of beneficial practices and innovations that maximize the environmental benefits industry provides and continue to reduce our environmental footprint, while supporting industry competitiveness.
- Support continuous improvements in Canadian beef demand through advancements in the quality and safety of Canadian beef.
- Generate science to inform decision makers, policy and best management practices and to support consumer confidence and public trust.
- Develop, enhance and encourage adoption of leading-edge technologies that support industry competitiveness, automation and sustainability.
- Ensure the maintenance and rejuvenation of critical research capacity and infrastructure that facilitate proactive inquiry and innovation to support industry advancement.

Section III (ii) of this report covers projects managed by the BCRC and funded under the fourth Beef Science Cluster. There were 23 research, extension and science coordination Cluster projects reporting activities between April 1, 2024 and March 31, 2025. The second year of the five-year Cluster IV program has now been completed, with second year activities currently under review.

Section III (iii) of this report covers BCRC priority research projects funded by Canadian Beef Cattle Check-Off dollars and other industry investments through the BCRC's annual call for proposals. In 2024/25, the BCRC received 59 letters of intent from research teams across Canada. Of these, 21 teams were invited to submit full proposals and $1.4 million in funding was approved for 9 projects in September 2024. Successful applicants were required to secure funding from other sources (government and industry), matching the Canadian Beef Cattle Check-Off dollars at a minimum of 1:1.

Several projects approved in previous calls (2018 – 2023) are still underway or nearing completion. In one such project, researchers found that hybrid rye seed's higher yields and early harvest time make it comparable to other less expensive forage cereals in terms of cost of feed produced. In another, researchers were able to advance knowledge of plant breeding while also developing three new varieties. Researchers in Saskatchewan found that different clinical signs observed by pen checkers may be related to different stages of bovine respiratory disease. Another project found that even very low levels of ergot can impair intake, performance and carcass quality. A summary of BCRC research projects, including the project title, factsheet link and budget is included in Section III (iii) and Appendix III.

Funding was approved for six new Proof of Concept (POC) projects in 2024/25. These are short-term (one to two year) projects to help inform whether it is worth pursuing a larger, more defined research investment. In 2024/25 the BCRC also provided funding for sixteen ongoing POC projects. One such project found that good vaccine practices and booster vaccinations prior to weaning are vital to generate protective immune responses. Another project found that soil microbial profiles differed between older vs newer pasture stands and can impact alfalfa performance. Researchers also found that necropsies conducted by veterinarians on a video call with a trained pathologist had a 46% higher chance of reaching a diagnosis. See section III (iv) and Appendix IV for a complete list of the POC projects and preliminary research highlights.

The BCRC continued to support the implementation of long-term research capacity in 2024/25. Three Chairs are currently supported under this program to address industry identified gaps in research capacity: Dr. Flavia van Cleef, Beef Industry Integrated Forage Management and Utilization Chair (University of Saskatchewan); Dr. Cheryl Waldner, NSERC/BCRC Industrial Research Chair in One Health and Production-Limiting Diseases (Western College of Veterinary Medicine); and Dr. Gleise da Silva, BCRC-Hays Chair in Beef Production Systems (University of Alberta). In 2024/25, two additional start-up funding streams were approved for new researchers at the University of Saskatchewan which have yet to be filled. See section III (v) for additional details on research capacity investments.

Knowledge and Technology Transfer (KTT), now referred to as Knowledge Mobilization (KMb), activities continue to advance through the Beef Science Cluster, internal initiatives, the Canadian Beef Technology Transfer Network, and regional extension event funding. The Beef Science Cluster KTT program develops and distributes articles, decision tools, videos, blog posts and webinars. In 2024/25, the Canadian Beef Knowledge Mobilization Network contributed to three collaborative projects: a collaboration with Animal Health Canada to prevent and mitigate the spread of foreign animal diseases including Foot and Mouth Disease, a water quality management initiative and an initiative to improve genetic literacy of producers. Eighteen regional KMb activities were active or completed in 2024/25 and included topics such as water quality and ration balancing with CowBytes, encouraging the adoption of new technologies, and beneficial management practices to improve the cost of production. Internal KMb programming continues to focus on mobilization and knowledge transfer of key priority topics and ongoing communication with stakeholder groups. In 2024/25, the BCRC also continued distribution and enhancement of the CowBytes software which has been in high demand since it was transitioned to the BCRC in 2023. See section III (vi) and Appendix V for details on the KTT program and project highlights.

In 2024/25, funding continued for the Canadian Cow-Calf Cost of Production Network which supports industry competitiveness by having Canadian beef cattle cost of production data in every province/ecoregion to guide technology transfer and research priorities. See Section III (vii) for additional details.

The BCRC oversees the delivery of the Verified Beef Production Plus (VBP+) program. VBP+ advances producer training objectives and the delivery of on-farm certification services through VBP+ Delivery Services Inc. See Section IV for an update on the progression of VBP+ programming.

The fiscal year for the BCRC is July 1 to June 30, therefore the BCRC audited financial statements are not included in this report and are available upon request after August 31, 2025. The Canadian Beef Cattle Check-Off funding allocated to research programming in 2024/25 is highlighted in various sections of this report and is projected at **$6,470,898.**

II. Background

The Beef Cattle Research Council (BCRC) funds leading-edge research and technology transfer activities to advance the competitiveness and sustainability of the Canadian beef cattle industry. In 2024/25, the BCRC received on average $0.66 (unaudited) of every $2.50 of the Canadian Beef Cattle Check-Off. This funding is leveraged under various programs to maximize producer returns on their check-off investment. The BCRC leveraged the industry Check-Off dollars with Agriculture and Agri-Food Canada (AAFC) Sustainable Canadian Agricultural Partnership (SCAP) Science Cluster funding in 2024/25, where industry contributed 43% ($2.08 million) and AAFC contributed 57% ($2.71 million). Through initiatives outside of the Beef Science Cluster, the BCRC leveraged the Canadian Beef Cattle Check-Off for an additional $5.5 million in research funding and $103,800 in-kind from government and industry partners.

As the national beef cattle industry research agency, the BCRC plays an important role in identifying the industry's research and development priorities and subsequently influencing and maximizing the benefits of public sector investment in beef cattle research. The BCRC facilitates and encourages collaboration and coordination among researchers, other funding agencies and industry on provincial and national levels. In July 2021, the BCRC released the updated five-year *Canadian Beef Research Strategy and Technology Transfer Strategy*. This Strategy allows the BCRC, working in partnership with other beef research funding agencies across Canada, to address key research, capacity and extension priorities as identified by producers and industry partners.

In addition to funding research, the BCRC plays a leading role in increasing industry uptake of relevant technologies through the delivery of its knowledge dissemination and technology transfer program. This information is shared across a broad audience of producers, researchers, funders, policy makers and communication networks across the country.

The BCRC is also responsible for the delivery of the Verified Beef Production Plus (VBP+) program, a program developed to educate producers and facilitate on-farm certification of practices related to food safety, animal care, biosecurity and environmental sustainability. VBP+ training and certification are important in supporting industry efforts to demonstrate to downstream supply chain stakeholders and consumers that Canadian beef is produced in a sustainable manner and that maintaining public trust is a priority.

This report covers the period April 1, 2024 to March 31, 2025. During this period, the BCRC's research and extension programming was funded through the Canadian Beef Cattle Check-Off, AAFC under SCAP and other national and provincial industry partners. Programs were centered around the following areas:

- Increase producer profitability by increasing productivity or decreasing costs of production and risks.

- Develop, enhance and encourage adoption of beneficial practices and innovations that maximize the environmental benefits industry provides and continue to reduce our environmental footprint, while supporting industry competitiveness.
- Support continuous improvements in Canadian beef demand through advancements in the quality and safety of Canadian beef.
- Generate science to inform decision makers, policy and best management practices and to support consumer confidence and public trust.
- Develop, enhance and encourage adoption of leading-edge technologies that support industry competitiveness, automation and sustainability.
- Ensure the maintenance and rejuvenation of critical research capacity and infrastructure that facilitate proactive inquiry and innovation to support industry advancement.

III. Research Activities

i. Introduction

BCRC research activities supported by the Canadian Beef Cattle Check-Off and other industry and government partners for the period April 1, 2024 to March 31, 2025 are highlighted in this report. During this period, the BCRC provided funding to beef research projects under the Agriculture and Agri-Food Canada (AAFC) Beef Science Cluster program as well as projects in under other BCRC funding streams, including Priority Research, Proof of Concept & Validation Trials, Research Capacity, and Knowledge and Technology Transfer. All research funded by the BCRC is based on specific needs and opportunities identified by the beef industry and addresses priority outcomes from the *Canadian Beef Research Strategy and Technology Transfer Strategy* under program areas relating to Animal Health & Welfare and Antimicrobial Use & Resistance, Beef Quality, Food Safety, Feed Efficiency & Utilization, Forage & Grassland Productivity and/or Environmental Sustainability. The BCRC engages internal and external peer reviewers in the process of selecting projects to fund with final funding decisions made by the producer council. All research funded by the BCRC requires that researchers leverage the Canadian Beef Cattle Check-Off by securing funding from other federal, provincial, and/or other industry funding programs on a minimum 1:1 ratio.

As the BCRC's funding profile has grown, researchers often look to secure BCRC funding prior to applying for matching funding as confirmed BCRC funding often provides a higher chance of approval through other research funding agencies. This results in a gap of at least 6-12 months from the time BCRC funding is approved to when BCRC funding is granted to the researcher and the project is started, as matching funding must be in place before a project proceeds. This has resulted in BCRC cashflows being impacted due to the delay between when funds are committed and when funds are spent. Reflecting this in the BCRC budget is difficult due to uncertainty as to when all approved projects will start. As a result, BCRC carefully manages funding so that Check-off dollars are neither overcommitted nor underutilized. At the time of writing, there are 10 projects approved that are not yet fully contracted. These projects have been included for clarity in Appendix III and IV and have been labelled as approved but with a funding agreement pending. A portion of these will be started before the end of the current fiscal year, but a larger portion will be carried over and initiated in the next fiscal year. Importantly, this does not include already contracted multi-year commitments through the Science

Cluster, Research Chairs, or Priority Research Projects. All of these commitments will heavily draw on the BCRC reserve moving forward based upon the BCRC 5-year cashflow projections.

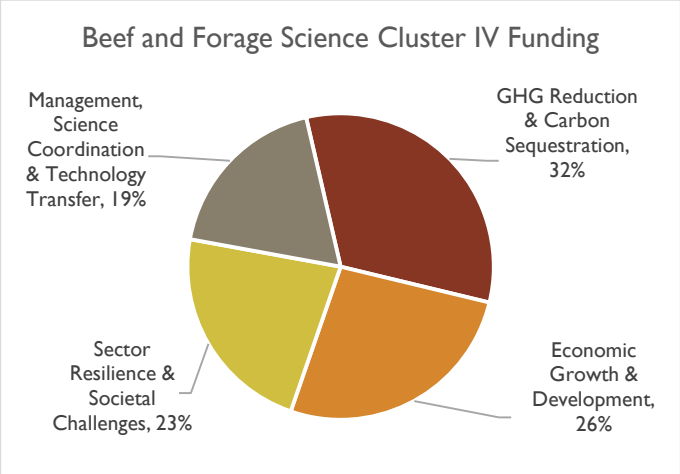
The tables in Appendix II, III, IV, and IV summarize the BCRC funded research projects by program area. The project title, timelines, budget and link to each available project factsheet are listed. Project factsheets, which are available on the BCRC website (*BeefResearch.ca*), provide background, objectives and anticipated project activities and are updated with a summary of results upon project completion. The Research Highlights sections highlight selected research results and benefits to the Canadian beef industry. More detailed results on all projects are available from the BCRC upon request.

ii. Beef Science Cluster IV

a. Cluster Program Overview

Beef Cluster IV, titled 'Canada's Beef and Forage Cluster: Driving environmental, economic, and social sustainability', focuses on driving the growth of Canada's beef industry and the overall economy by sustainably advancing Canadian beef and forage production while reducing the industry's environmental footprint.

In 2023, 23 projects were approved for a total Cluster size of $21.42 million ($9.28 million from industry and $12.15 million from AAFC). Under the Cluster IV framework, every activity aligns with AAFC key priority areas: 1) Climate Change & Environment (Greenhouse Gas Reduction & Carbon Sequestration), 2) Economic Growth & Development and 3) Sector Resilience & Societal Challenges. The BCRC was able to ensure that research outcomes identified for the Cluster aligned with these priorities, while building upon research in previous Clusters and addressing industry priorities. While many activities will have impacts across multiple priorities, each approved project has been categorized under one of the AAFC key priority areas: Greenhouse Gas Reduction & Carbon Sequestration (accounting for 32% of the budget), Economic Growth and Development (26%) and Sector Resilience & Societal Challenges (23%). Mandatory activities under the Cluster IV framework (management, science co-ordination, knowledge and technology transfer and impact assessment) account for the remaining 19% of the budget.



Research Highlights

Beef Cluster IV projects began in 2023/24 and have been collecting data for the first two years. Interim and final results will be reported as they become available. The linked fact sheets found in Appendix II discuss each project in more detail.

b. Cluster IV Budget Overview

At the time of writing, most Cluster IV projects are fully spent for 2024/25. The actual expenditures for 2024/25 will be finalized by mid-June 2025.

A full list of Beef Science Cluster IV Projects can be found in Appendix II, including the total 5-year budget and 2024/25 yearly budget for each project.

Summary of 2024/25 investments in Cluster IV projects:

Fund Recipients	AAFC $'s	Industry $'s	Total $'s
AAFC researchers	979,758	832,695	1,812,453
Non-AAFC researchers/Universities	1,726,843	1,245,459	2,972,302
Total funding for Cluster IV projects	**2,706,601**	**2,078,154***	**4,784,755**

** Includes funding provided directly to the BCRC from the following organizations:*
Les Producteurs de bovins du Québec = $30,000; Alberta Cattle Feeders' Association = $30,000; Dairy Farmers of Newfoundland and Labrador = $10,000; Fondation de l'Université du Québec en Abitibi-Témiscamingue = $10,000
** varies from value presented in annual budget; this total reflects net project funding excluding the BCRC project management expenses or management reimbursements from AAFC.*

Total 2024/25 projected National Check-Off funding for Cluster IV projects = $1,998,154

Provincial cattle association Cluster IV project investment in 2024/25 = $30,000

iii. Priority Research Projects

a. Priority Research Program Overview

Priority research includes projects that fall outside of the Cluster program requirement or timeline but are important to the beef industry. All projects are funded jointly by Canadian Beef Cattle Check-Off dollars leveraged with at least 1:1 funding from government and/or industry partners. This funding is made available to researchers through competitive calls for proposals aimed at achieving specific priority outcomes in identified program areas aligned with the *Canadian Beef Research & Technology Transfer Strategy*.

b. 2024 Call for Proposals

Due to higher funding requirements under Science Cluster IV, the BCRC moved from an annual call for proposals to completing a call every 18 months. In addition to offsetting cluster funding requirements, this allows for larger funding calls that attract stronger research proposals and increases efficiency within the proposal evaluation process.

A call for Letters of Intent was launched in January 2024 and received 59 letters of intent. Of these, 21 research teams were invited to submit a full proposal. All proposals addressed priority outcomes as defined by the BCRC under program areas relating to Animal Health & Welfare, Beef Quality, Food Safety, Feed Grains & Feed Efficiency, and/or Forages & Grassland Productivity. The BCRC engaged internal and external peer reviewers in the proposal selection process, and $1.4 million in funding was approved for 9 projects in September 2024.

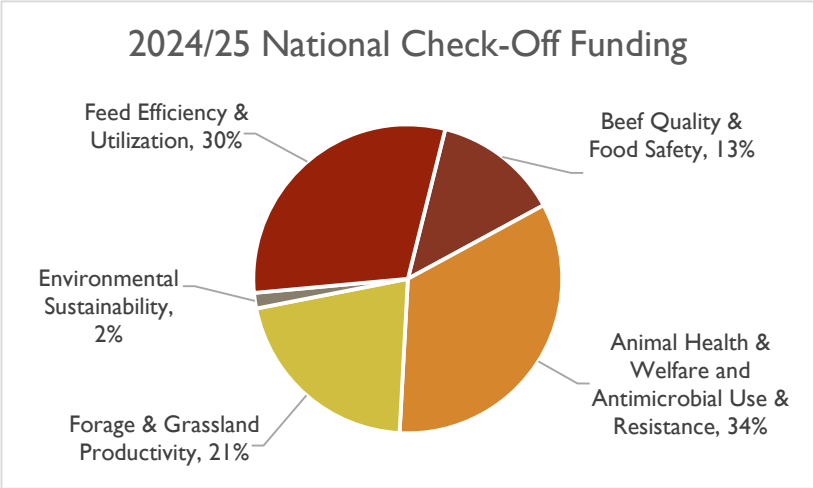
A full list of Priority Research Projects including those approved through the 2024 call can be found in Appendix III. Projects approved through the 2024 call will have a project number ending in '.24'.

c. Current Priority Research

The BCRC identifies six priority areas for proposals in the *Canadian Beef Research & Technology Transfer Strategy*. These priority areas are: 1) Feed Efficiency & Utilization, 2) Forage & Grassland Productivity,

3) Environmental Sustainability, 4) Animal Health, Welfare, & Antimicrobial Resistance, 5) Beef Quality and 6) Food Safety.

In 2024/25, the BCRC managed 70 Priority Research Projects with funding made available to researchers through previous open calls for proposals. National Check-Off funding in 2024/25 was allocated to Forage & Grassland Productivity (21%), Animal Health & Welfare and Antimicrobial Use & Resistance (34%), Feed Efficiency & Utilization (30%), Beef Quality & Food Safety (13%) and Environmental Sustainability (2%).



A full list of Priority Research Projects can be found in Appendix III, including the Canadian Beef Cattle Check-Off allocation to each project.

Total 2024/25 projected National Check-Off funding for ongoing Priority Research projects = $1,739,303

Provincial cattle association priority research project investment in 2024/25 = $0

Project Highlights:

FRG.08.19: Forage Potential of Hybrid Fall Rye (HR) in Alberta and Saskatchewan - Factsheet

Dr. Vern Baron (AAFC Lacombe) found that hybrid rye seed is more expensive than other forage cereals such as barley, triticale and wheat, but consistently higher yields and earlier harvest time made it comparable in terms of cost of feed produced.

FDE.06.19: Evaluating new next-generation strategies to boost breeding efficiency for Feed and Forage Production in Barley and Triticale - Factsheet

Drs. Flavio Capettini and Jennifer Zantinge (Olds College) were not only able to advance the knowledge of plant breeding resulting in improved methodologies for future breeding projects but also developed three new varieties: FB22816 (feed barley), TR21665 (malting barley) and T301 (spring triticale).

ANH.19.18: Characterization and optimization of visual pen checking criteria to improve BRD treatment outcomes in feedlot cattle - Factsheet

Dr. Diego Moya (WCVM, University of Saskatchewan) found that the different clinical signs observed by pen checkers may be related to different stages of bovine respiratory disease (BRD); nasal secretions appear to be an under-emphasized predictor of fever (but not all cattle with fever go on to develop BRD). More data is needed to confirm these results, but suggests that pen checker's practical experience has been an overlooked weapon in the battle against BRD.

ANH.07.18: Effect of feeding ergot alkaloids on ruminal metabolism, growth performance, health and welfare of beef cattle: How much is too much? - Factsheet

Dr. Gabriel Ribeiro (University of Calgary) found that even very low levels of ergot can impair intake, performance and carcass quality. While feed processing like pelleting does not reduce ergot toxicity, the mycotoxin binder showed promising preliminary results in an artificial rumen study in curbing negative production factors.

iv. Proof of Concept & Validation Trials

The BCRC's Proof of Concept (POC) & Validation Trial program has been very successful since its launch in 2018/19. This program supports short-term (six months to one year) proof of concept-based research in an emerging area of research or technology development to determine whether the concept should be pursued as a larger, more defined research program. It is also intended to support clinical trials to validate practices or technologies discovered through research projects and/or to facilitate the adaptation of technologies that have been utilized in other sectors, commodities, or countries. Projects funded to date have achieved what was intended under this program. Some projects supported under the POC program have provided preliminary data to demonstrate value in further investment in research in an area. Likewise, some projects have found that further research should not be pursued at a larger scale, saving money and encouraging the redirection of research to more promising concepts.

In 2024/25, the BCRC provided funding to sixteen proof of concept (POC) projects, including six new projects approved for funding in 2024.

A full list of Proof of Concept Projects can be found in Appendix IV, including the Canadian Beef Cattle Check-Off allocation to each project.

> **Total 2024/25 projected National Check-Off funding for Proof of Concept projects = $210,627.**

Project Highlights:

POC.11.22: Impact of good vaccine practices at field on vaccine effectiveness - Factsheet

Dr. Nilusha Malmuthuge (AAFC Lethbridge) and her team found that good vaccine practices are vital to generate protective immune responses and increase herd immunity. While the impact of good vaccine practices varies by pathogen, shorter mixing times and storing the mixed vaccine in a cooler at the correct temperature (2 to 8°C) increased the number of calves showing higher immunity to bovine viral diarrhea virus. The booster vaccination prior to weaning was also essential for provoking an immune response in weaned beef calves.

POC.08.21: Assessing the viability of real-time pathologist assisted field necropsies to improve diagnostic outcomes of beef cattle cases submitted to UCVM's Diagnostics Services Unit - Factsheet

Dr. Jennifer Davies (University of Calgary) found that necropsies conducted by veterinarians while on a video call with a trained pathologist had a 46% higher chance of reaching a diagnosis than unassisted video necropsies. Having this service available to veterinarians would strengthen disease surveillance, support the Vet-Client-

Patient-Relationship and allow producers to make more informed and cost-effective choices regarding herd health and welfare.

POC.17.21: Identifying alfalfa varieties best suited to pasture rejuvenation - Factsheet

Dr. Jonathan Bennett (University of Saskatchewan) found that soil microbial profiles in older vs. newer pasture stands are noticeably different. These soil microbes can influence the performance of alfalfa, meaning some varieties are better suited to pasture rejuvenation than others.

v. Research Capacity

a. Research Chairs

The BCRC is committed to developing and maintaining critical research capacity to facilitate proactive inquiry and innovation and support the advancement of the beef industry. The BCRC began developing Research Chairs in partnership with key research institutions in 2018/19 to address industry-identified gaps in research capacity. The evaluation of Research Capacity concepts by the BCRC considers the incremental nature of the proposed research capacity, institutional investments, program support and capacity priorities identified by industry.

The BCRC has held three successful Research Chair calls for proposals with the first two Research Chairs approved by the Council in 2019, a third in December 2020, and a fourth approved in September 2024. The Chairs include:

- **Beef Production Systems Chair** "*to increase the competitiveness of those sectors of the Canadian beef industry that rely heavily on grazing-based forage resources, while maintaining a strong focus on beef production and market outcomes*", University of Alberta. Dr. Gleise da Silva was hired in April 2021 to fill this position.
- **Chair in One Health and Production-Limiting Diseases** with the goal "*to increase capacity for applied field research and surveillance in specific priority areas outlined by the beef industry including: animal health and welfare, antimicrobial use, resistance and alternatives and on-farm food safety*", Western College of Veterinary Medicine, University of Saskatchewan. Dr. Cheryl Waldner was hired in January 2021 to fill this position.
- **Beef Industry Forage Management and Utilization Chair** with the goal "*to develop and evaluate agronomic strategies to optimize forage establishment, yield, quality and stand longevity and identify feeding and grazing strategies that optimize animal performance while contributing to improved soil health and environmental sustainability*", University of Saskatchewan. Dr. Bree Kelln left this position in November 2023 and was replaced by Dr. Flavia van Cleef in March 2025.
- **Research Chair in Beef Cattle Economic Sustainability** with the goal "*to improve financial literacy through an improved understanding of differences in risk management and financial returns, as well as the value of programs/policies necessary to mitigate future risk and improve profitability in Canadian cow-calf operations*", University of Manitoba. This position was approved in 2024/25 but hiring and funding will occur in 2025/26.

Institution	Chair		Chair Term	Total NCO funding ($)	2024/25 NCO funding ($)
University of Saskatchewan (WCVM)	BCRC Chair in One Health and Production-Limiting Disease	Dr. Cheryl Waldner	2020 - 2030	1,500,000	200,000[1]
University of Alberta	BCRC - Hays Chair in Beef Production Systems	Dr. Gleise da Silva	2020 - 2030	1,500,000	150,000
University of Saskatchewan	Integrated Forage Management & Utilization Chair	Dr. Flavia van Cleef	2021 – 2051[2]	2,500,000	250,000[1]
University of Manitoba	Research Chair in Beef Cattle Economic Sustainability	Position not yet filled	2025 - 2035	1,500,000	0

[1] Payment has not been made at time of writing but is projected to be made prior to June 30, 2025.

[2] The Integrated Forage Management & Utilization Chair is structured to be a long-term (~30 year) investment where the BCRC's investment, along with matching industry and government funds, are invested in the first five years. The interest earned from those investments will be utilized to extend the chair beyond the typical 10-year format to ideally 30 or more years depending on interest rates and investment performance.

Total 2024/25 projected National Check-Off funding for Research Chair Positions = $600,000.

b. Start-Up Funding

In 2023/24, the BCRC approved start-up funding for two new positions at the University of Alberta and the University of Guelph.

In 2024/25, the BCRC was approached by the University of Saskatchewan to provide start-up and transition funds to replace two retiring researchers. Start-up funds are used by researchers in new positions to build their research program. Transition funds allow for a new researcher to be hired prior to a researcher retiring from their position allowing for crossover and improved training and transition of duties. The two positions approved for funding in 2024/25 are:

- **CAP.02.24 - Dr. J. Campbell**, the WCVM's longest serving beef cattle researcher, is due to retire before the end of 2025. Dr. Campbell is a leading beef cattle researcher, heads the Disease Investigation Unit, is actively engaged in extension activities, and is an educator of WCVM students. Given the competitiveness of this space, an enhanced startup funding package is a prerequisite to hiring the best possible candidate with a proven track record in beef cattle research and extension.
- **CAP.01.24 - Dr. M. Jelinski** will begin a 1-year sabbatical leave from his position as the Alberta Chair in Beef Cattle and Production Medicine in July 2025, followed by 1 to 2 years on reduced appointment before retirement. To ensure a smooth succession, transition funding is needed for the pre-emptive hiring of a beef cattle researcher spanning up to 2 years prior to Dr. Jelinski's retirement. During the transition, Dr. Jelinski will provide mentoring while assisting with developing an enhanced research program.

All positions were deemed of high importance to Canada's beef & forage research capacity and consequently committing funds to support the recruitment of qualified individuals was considered a high impact investment for BCRC.

Institution	Position		Total NCO funding ($)	2024/25 NCO funding ($)
University of Alberta	Assistant Professor of Forage Production and Management Science Start-Up Funds	Dr. Erick da Silva Santos	250,000	20,000
University of Guelph	Professor in Ruminant Health Management Start-Up Funds	Dr. Kristen Edwards	50,000	25,000
University of Saskatchewan	Start-up Funds to fill Dr. Campbell's position	Position not yet filled	50,000	0
University of Saskatchewan	Transition Funds to fill Dr. Jelinski's position	Position not yet filled	200,000	0

Total 2024/25 projected National Check-Off funding for Start-Up Funding = $45,000.

vi. Knowledge & Technology Transfer

Enhancing Knowledge and Technology Transfer (KTT) in the Canadian beef industry requires an evolving strategy which will increase collaboration between the sector's stakeholders. This evolution includes refining terminology to better encompass the broad scope and mandate of increasing adoption of innovation to support the beef sector's goals. The term Knowledge Mobilization (KMb) has been adopted by the BCRC which describes the process of moving evidence into action through building awareness, disseminating findings and enabling the use of research knowledge to create a desired impact.

The transfer of technology and innovation to industry is essential in driving the timely adoption and uptake of research. Industry has been tasked with taking a leadership role in Knowledge Mobilization. The BCRC is supporting this through several different programs and initiatives outlined below.

a. Beef Science Cluster IV

Under the Cluster IV program, activities completed in 2024/25 were associated with topics of interest including early calf life survival, management practices for breeding cows, bulls and winter feeding, beneficial practices for feed sampling and testing, farm biosecurity and prevention strategies for Foot and Mouth Disease, water quality and management for beef cattle, and genetic literacy and record keeping. Significant emphasis was placed on communication of results of the 2022/23 Canadian Cow-Calf Survey to empower knowledge mobilization efforts throughout the industry with respect to motivating producers to use resources created in topically relevant areas including feed testing, body condition scoring, calf resuscitation, and pain management.

Resources created in 2024/25

Both English and French resources were created in 2024/25. Content prioritized for translation was selected based on popularity of the English resource in French-speaking regions. New and innovative resources included: 2 videos highlighting Foot and Mouth Disease prevention and injection best practices for beef cattle; 3 webinars featuring parasite management and targeted information for veterinarians and producers on Foot and Mouth Disease; 50 podcast episodes delivering the most popular content from BeefResearch.ca in audio format while seasonally relevant; 38 infographics resulting from 9 topical series (grazing, parasites, nutrition and production, feed sampling, genetic literacy, trace mineral deficiencies, mycotoxins, animal health, and cold weather management) as well as 21 infographics translated to French; 6 interactive calculators with downloadable excel versions including cow calf yardage, preconditioning and backgrounding, cow-calf

production indicators, economics of water systems, evaluating feed test results and forage cost of production as well as 3 interactive calculators translated to French; 1 record keeping course for tracking genetic improvements and 3 topic webpages with curated resources for cow management, bull management, and winter management with 18 topic webpages translated to French.

Engagement with new resources continues to be high and increasing with almost 60,000 views on new videos in 2024/25. In addition, 18,546 infographics and pdfs were downloaded from BeefResearch.ca and there were almost 10,000 views on new interactive calculators. There have been 578 completions of the Online Records for Tracking Genetic Improvements Course, with 853 individuals currently enrolled and almost 5,500 views of newly created topic webpages. Webinar registrants increased from 1,120 in 2023/24 to 1,357 in 2024/25, with 673 live attendees over three webinars. The Canadian Beef Cattle Podcast has gained significant subscribership, with 11,384 podcast listeners and 18,135 downloads. Resource development in 2024/25 was expanded with the number of new and updated resources growing substantially from the previous year. This growing library of tools available to producers and other industry professionals allows for greater responsiveness and flexibility as beef sector needs, industry conditions, or other factors change.

Regular communication with industry stakeholders

Communication strategies aimed at increasing viewership, readership, and comprehension of beneficial practices include a variety of platforms. In 2024/25, resources were communicated to industry stakeholders including French-speaking audience members through: 57 research fact sheets with 5 translated to French; 65 blog posts with 43 new and past blogs translated to French; 12 articles in Canadian Cattlemen's Magazine and several others in provincial beef organization magazines; 12 issues of The Wire E-Newsletter and 26 virtual and in-person presentations by BCRC staff.

E-Newsletter subscription has increased with over 10,000 total subscribers spread over 8 subscription lists. Average open rates in 2024/25 for regularly published articles was almost 54%, an increase from 41% in the previous reporting period. Average open rate on all subscription lists is substantially higher than MailChimp's average for all users of 36%.

Resources are further amplified through the BCRC's social media channels. Social media subscribers have increased on all platforms in 2024/25. The BCRC Facebook page has 41,000 followers with 15,000 page likes, and the most popular organic social media post, Checking the Cervix and Calf Position, reached over 2.5 million individuals with 34,374 interactions, a significant increase compared to the most popular post in 2023/24 with a reach of 56,000 individuals and receiving 198 clicks. Instagram, "X" and LinkedIn followers have also increased to 1,388, 9,085 and 1,157 respectively for a total social media presence of almost 53,000 followers. YouTube subscriptions have increased from 5,450 in 2023/24 to 8,870. Articles and other resources developed through this project are frequently redistributed by veterinary clinics, industry groups, trade magazines and other media, as well as by producers on social media.

The budget for this program is included in Section III (ii) above.

b. Canadian Beef Knowledge Mobilization Network Program

Program Overview

Awareness and distribution of resources for beef producers continues to be expanded through the BCRC-led Canadian Beef Knowledge Mobilization Network (KMb Network), which has grown to 286 members across

Canada. Members are encouraged to share resources, events and strategies for knowledge transfer virtually via the TEAMS platform and continued participation and collaboration through in-person and virtual presentations and workshops. Network activities in 2024/25 included 4 issues of The Transfer E-Newsletter and three meetings, 2 virtually and one in-person, as part of the Canadian Beef Industry Conference. Through these collaborative channels, resources and expertise continue to be shared and duplication avoided such that resources are developed effectively and in response to regional and industry needs. Funding for KMb Network projects is allocated to two streams: 1) Resource development and distribution in key priority areas, and 2) Call for proposals for regionally focused extension activities.

Current Knowledge Mobilization Projects (Key Priority Areas)

Consultations with beef producers and KMb Network members alongside direction from the Canadian Beef Research and Technology Transfer Strategy informed decision making in early 2024 to determine key priority areas to focus knowledge mobilization efforts in 2024/25. Three key areas were prioritized including development and distribution of biosecurity and Foot and Mouth Disease resources for beef producers, continuation of the Water Quality and Management Collaborative initiative, and continuation of the Genetic Literacy for Beef Producers Collaborative initiative.

Animal Health Canada and BCRC Collaborative Extension Initiative

The BCRC partnered with Animal Health Canada (AHC) in fall 2024to develop and distribute biosecurity resources to Canadian beef producers. The goal of this collaboration is to prevent and mitigate the spread of foreign animal diseases including Foot and Mouth Disease (FMD), which present a serious threat to the Canadian beef cattle sector by impacting economic stability, cattle welfare and industry operations. BCRC invested $$24,750 of the Network budget to leverage an additional $74,250 from AHC for a total of $99,000 towards this initiative (Project KTT.23.24). Draft resources are now developed and the project will be ongoing through summer 2025 with promotion and distribution of resources on BeefResearch.ca and social media.

Resources resulting from this initiative currently available include:

- Biosecurity Superhero (comic series available in English, French, Spanish)
- Travel Guidelines for Beef Cattle producers (brochure and digital pdf available in English)
- FMD Signs and Symptoms (poster available in English and French)
- Protecting Canadian Livestock from Foot and Mouth Disease (video and reels available in English and French)
- How to Spot the Signs of Foot and Mouth Disease in Livestock (video and reels available in English and French)
- How to Stop the Spread of Foot and Mouth Disease in Livestock (video and reels available in English and French)
- Foot and Mouth Disease: Don't be a Richard (webinar for Beef Producers available in English)
- The Inside Scoop on Foot and Mouth Disease (webinar for Veterinary Teams available in English)

Resources resulting from this initiative in production include:

- Mission Possible: Protect the Herd (Emergency Preparedness and Response digital interactive gameboard graphic and pdf available in English)

Water Quality and Management Collaborative Initiative

Building on momentum and planning exercises initiated in 2023/24, ACER Consulting was contracted to complete priority resources identified by the Water Quality collaborative working group in 2024 and is scheduled to complete current work items by May 2025.

Resources resulting from this initiative include:

- Water Systems online calculator update and promotional video
- Updated Water Systems for Beef Cattle Topic Page
- Importance of Water Infographic and social media graphic series
- Water Testing Infographic series
- Impact of Water on Beef Cattle Health and Performance Bulletin
- Case Study Series (4 producers, 4 water quality stories)
- Water Analysis Interpretation Guide and Laboratory List for Beef Producers
- Water Systems Handbook for Beef Producers

Associations represented by working group members include:

- Manitoba Beef and Forage Initiatives
- BC Ministry of Agriculture and Food
- Beef Farmers of Ontario
- Saskatchewan Ministry of Agriculture
- Alberta Beef Producers
- Ducks Unlimited Canada
- Agri-Commodity Management Association
- Perennia Food and Agriculture

Improving Genetic Literacy for Beef Producers Collaborative Initiative

Work is ongoing to create resources to increase genetic literacy for producers across Canada, with a focus on improving genetic selection by cow-calf producers. As part of this work, a new tool was created showcasing a comprehensive summary of trait heritability with an accompanying infographic style table and blog post in production. Also, as part of this project an updated Cow-Calf Record Keeping Course for tracking genetic improvements was released in December 2024. Revised course materials include a suite of learning tools designed to benefit producers in acquiring knowledge and skills to improve genetic record keeping and selection on their operations. Working group members included the Canadian Beef Breeds Council, Saskatchewan Ministry of Agriculture, Alberta Beef Producers, Maritime Beef Test Station, and the Livestock Research Innovation Corporation.

External Projects & Regional Activities

The 2024 Regional Knowledge Mobilization Initiatives call for proposals received a high number of applications within the two-week period while the call was open. Applicants could apply to receive up to a maximum of $5,000 in funding per activity. Preference was given to regional knowledge mobilization activities that were new and innovative engagement ideas, CowBytes training sessions, and workshops related to water quality and management.

All regional knowledge mobilization projects are short term and will be completed by July 31, 2025. Eighteen activities are ongoing or complete, including extension meetings, field days, workshops, video production, peer group coordination and veterinary student engagement.

A full list of Knowledge Mobilization Network Projects can be found in Appendix V, including the Canadian Beef Cattle Check-Off allocation to each project. Several projects from previous knowledge and technology transfer calls are ongoing. They are included in Appendix V with the regional extension activities.

Project Highlights:

KTT.03.24 – Water Quality and Ration Balancing with CowBytes

Feed represents the largest cost per cow per year on Canadian beef farms. *CowBytes Ration Balancing Software* is a tool available to assist producers in preparing feed rations that reduce costs while meeting animal production targets. Lakeland Agricultural Research Association in St. Paul, Alberta, organized two training sessions for producers focused on using CowBytes to prepare low-cost, balanced rations while incorporating on-farm feed and water test results.

KTT.14.24 – Ranchers University

It is understood that motivations for technology adoption vary and knowledge transfer between peers is invaluable. The Saskatchewan Ministry of Agriculture, in collaboration with AgWest Bio, organized this two-day event incorporating several strategies to motivate learning and encourage adoption of new technologies. These strategies included traditional lectures from industry experts and academia, peer to peer learning through a producer panel, and practical application of knowledge through facilitated sessions.

KTT.16.24 – Back to Basics: Cost of Production Workshops

The Beef Farmers of Ontario hosted two workshops for beef producers focused on beneficial management practices to improve the cost of production. Areas of discussion included genetic improvement and bull selection, water and feed testing, body condition scoring, weaning methods, vaccination protocols, and value-added programs such as Verified Beef Production Plus.

Total 2024/25 projected National Check-Off funding for Knowledge Mobilization Network activities = $138,851

c. BCRC Internal Knowledge Mobilization Programming

Internal activities that support mobilization and knowledge transfer of key priority topics and ongoing communication with critical stakeholder groups continues to be a focus for the BCRC. Building capacity for further reach to Veterinary Teams is part of this strategy as front-line and producer-facing personnel who advocate for and promote research-based tools for beef production. Support from the veterinary community continues to be high and promotion of BeefResearch.ca and resource topics including Calf 911, Remote Drug Delivery, Vaccine Best Practices, and Injection Techniques continues to grow. Across all BCRC newsletter groups, the Vet Tools Newsletter grew the most in 2024/25, increasing by over 900 subscribers. Work is ongoing to ensure that key resources are available to veterinarians and their teams as well as extension agents working in nutrition, genetics and other industry sectors where beneficial management practices can be encouraged and adopted. To this end, significant budget in 2024/25 has been allocated to increase capacity with additional contract support for creation and promotion of resources including videos and infographics in

key priority areas and to enhance and strengthen relationships with key stakeholders including veterinary teams and extension agents.

Total 2024/25 projected National Check-Off funding for Internal Knowledge Mobilization Programming = $150,000

d. CowBytes Distribution and Enhancement

Sales of CowBytes continues to be strong (Table 1) since ownership of the software was transitioned to the BCRC in 2023 and is a positive indicator of the demand for this resource. Retained earnings from sales continue to be put in reserve, which will be used to leverage other external funding to build a web-based version.

CowBytes Software Upgrade and Online Migration

The current version of CowBytes is provided on a USB flash drive which can be accessed using only a laptop or desktop computer. Work is currently underway to initiate development of CowBytes Version 6, which will be hosted online and accessible from a variety of devices (Windows or Apple computer, tablet, phone, etc.). The development of Version 6 will also include updated nutrition calculations based on the *Nutrient Requirements of Beef Cattle, eighth revised edition* (NASEM 2016) and improved ration formulation functionality.

A comprehensive Scope of Work and Terms of Reference for the project has been completed and software development firms were engaged in a request for proposals. The selection of a suitable firm is underway.

Table1. Geographic distribution of CowBytes sales, August 2023 – March 2025

Region	Quantity Sold
AB	287
SK	154
MB	140
BC	37
ON	34
QC	15
NS	4
PE	3
NL	1
USA	144
INTL (excluding US)	3

Development and timelines are currently conditional as discussions with potential funding partners including the Government of Saskatchewan, Government of Manitoba, and Results Driven Agricultural Research occur. If approved, the project is estimated to cost approximately $450,000 and development could begin mid-2025 and take approximately 18 months to complete.

Total 2024/25 projected National Check-Off funding for CowBytes Distribution and Enhancement = $0

vii. Cost of Production Network

In 2024/25, the BCRC continued to support the Canadian Cost of Production (COP) Network with work overseen by Canfax Research Services. The COP Network supports industry competitiveness by having Canadian beef cattle cost of production data in every province/ecoregion to guide technology transfer and research priorities.

2024/25 was an indexing year for the COP Network with a focus on analysis and adding value from the database developed from over 225 producers' contributions to 59 benchmarks in the three years prior. The addition of Alberta AgriSystems Living Lab's 6 benchmarks makes for a total of 65 benchmark farms from coast to coast, representing different production systems.

Year 4 presentations included *2023 Results and Replacement Heifer Cost Analysis* (December 2024), a webinar with COP Network participants, *Beneficial Management Practices Cost-Benefit Analysis* (January 2025), and results from the Alberta AgriSystem Living Lab that were all distributed via social media.

New fact sheets were developed on *Labour Costs in Cow-Calf Operations* (March 2025), *To Own or to Lease Rangeland: Which One Fits Your Goals?* (February 2025), *Cost of Raising Replacement Heifers* (October 2024), and *Summary of 2023 Results* (August 2024). All of these can be found at *Canfax.ca*.

Alberta AgriSystems Living Lab producer interviews summarizing learnings from BMPs were published in September 2024: *Adaptive Winter Grazing Strategies*; *Utilizing Annual and Perennial Forages to Improve Productivity*; and *Small Step, Big Gains: How Starting Slow Leads to Grazing Success*.

The scenarios on five BMPs were run on COP Network benchmark farms and duplicated in HOLOS with the ADOPT model run to incorporate results from the cost benefit analysis and environmental results. This work is being finalized and made into journal publications.

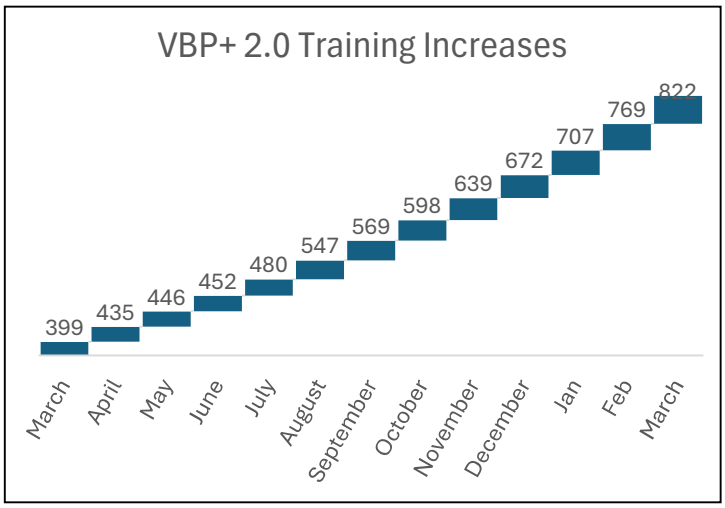
Total 2024/25 projected National Check-Off funding for Cost of Production Network = $151,000

IV. Verified Beef Production Plus

Verified Beef Production Plus (VBP+) and VBP+ Delivery Services Inc. (VBP+ Inc.) deliver training and certification services to Canadian beef producers across all provinces and industry sectors.

VBP+ delivers training on best management practices and requirements/recommendations for successful certification. Training is delivered three ways; on-line through the *CanadianCattleLearningCenter.com*, hosted by provincial coordinators in-person, and through webinars.

The number of producers who have completed the VBP+ 2.0 training has steadily increased in 2024/25. Driven by provincial government incentives in infrastructure linked to training completion, growth was primarily centered in Alberta and Saskatchewan, with residual progress in British Columbia and Manitoba.

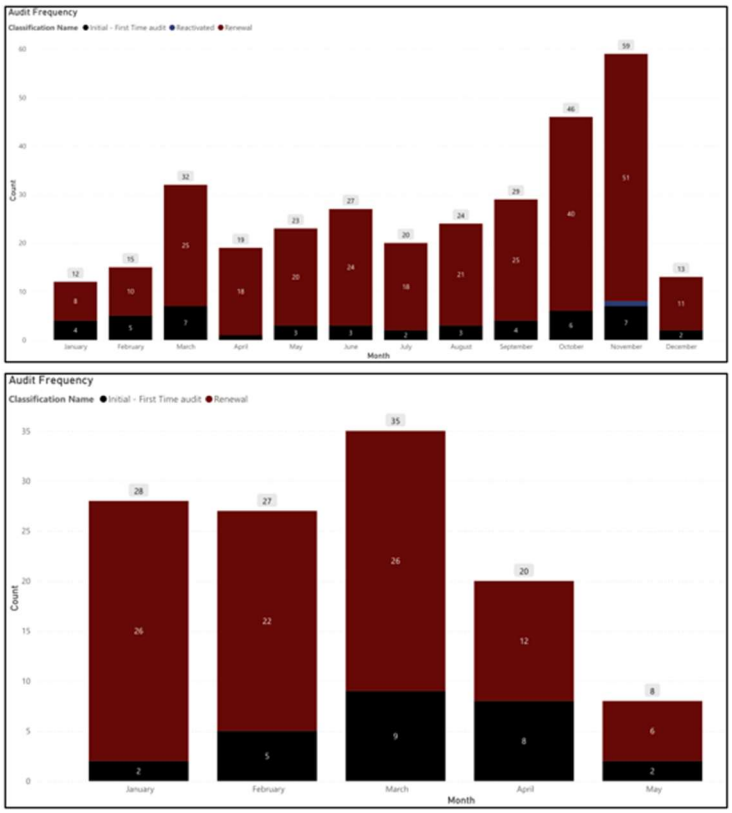


VBP+ continues to work on development of additional training offerings that are relevant and reflect current best management practices, current regulatory changes, and future challenges. Examples include Medicated Feed Preventative Control Plan development and Biosecurity training updates.

Provincial government incentives offered in both Alberta and Saskatchewan, linked to positive outcomes in Animal Health, Animal Care and Biosecurity, and validated by VBP+ training completions and successful VBP+

certification, have been the primary drivers of progress. VBP+ and VBP+ Inc. have been important partners along with the Delivery Agents in those provinces to deliver services and provide data on uptake and associated practices to strengthen sector resiliency in those vital areas.

Since the launch of the Alberta VBP+ Incentive project, administered by the Alberta Beef Producers in the fall of 2024, there has been a steady increase in the number of producers pursuing the joint VBP+/CRSB certification. While many of the certifications are for operations who were previously certified, there has been a recent upward trend of new certifications.



Completed initial and renewal certifications for January 2024 to May 12, 2025.
Source: VBP+ Internal Data

VBP+ continues to progress on the activities in the SCAP Agri-Assurance Project titled "Enhancing VBP+ to Drive Sustainability and Market Growth in Canadian Beef." This project is scheduled for completion in 2028. The project includes activities that look at increasing training offerings, strengthening VBP+ standard indicators, including On-Farm Food Safety, Biosecurity, Animal Care and Environmental Stewardship, enhancing surveillance on the prevalence of foreign objects found in beef carcasses and exploring additional certification pathways to increase accesses to international markets.

The partnership with the Canadian Roundtable for Sustainable Beef (CRSB) continues to deliver two certifications through one delivery mechanism. VBP+ is encouraged by progress in delivering consistent incentivization for successful certification to the Sustainable Beef Production Standard and providing a positive return on investment for producers who pursue certification.

Total 2024/2025 projected National Check-Off funding for VBP+ = $668,625

(includes industry allocation for the Sustainable Canadian Agricultural Partnership (SCAP) project)

V. BCRC Administration and Management

The BCRC is overseen by a Council comprised of industry representatives appointed by provincial cattle organizations that contribute to the BCRC through the Canadian Beef Cattle Check-Off. The BCRC is led by an Executive Director who oversees research and extension programming development and implementation, playing a key role in establishing and refining industry research priorities in consultation with other

stakeholders. The Executive Director acts as a liaison and facilitation link among the BCRC Council and the BCRC staff, CCA, the Canadian Beef Advisors, the Canadian Beef Cattle Research, Market Development and Promotion Agency, technical advisors and national and provincial interest groups with similar research objectives. The Executive Director encourages coordination of priorities and funding allocations between agencies in alignment with the *Canadian Beef Research and Technology Transfer Strategy*.

Supporting the Executive Director, the BCRC Science Director and Research and Innovation Coordinators manage priority research projects as well as projects undertaken within the Beef Cattle Industry Science Cluster. The Operations Manager supports the development and implementation of BCRC's business planning, budget management and reporting processes. The Knowledge Mobilization and Communications Director, Knowledge Mobilization Coordinator and Knowledge Mobilization Specialist support the Technology Transfer & Knowledge Dissemination Strategy. In addition to these positions, administrative, financial and technical expertise support the BCRC operations.

The BCRC Executive Director also oversees the VBP+ Business Manager who works with the VBP+ Technical Manager and VBP+ Operations Manager and various contractors and is directly responsible for delivering the national VBP+ program and overseeing VBP+ Delivery Services Inc. the wholly owned non-profit responsible for delivery of VBP+ audit delivery.

A Science Advisory Panel comprised of industry, academic and governmental scientific expertise, continues to support the BCRC's research program. This expertise helps to ensure the delivery of research plans that are directed towards industry's research objectives and achieve the outcomes desired by industry.

National Check-Off funding directed to the BCRC general administration and management expenses for 2024/25 is projected at $769,338.

VI. Financial Notes

The BCRC fiscal year is July 1 to June 30 and therefore the BCRC audited financial statements are not included in this report. In many instances, the projected expenditures in this report reflect the year-to-date expenditures, as of publication date, and do not reflect BCRC's entire fiscal year. Due to the nature of the BCRC's funding cycle, this will result in a variance between this report and the close of BCRC's year end on June 30th, as a large volume of BCRC project transactions occur between May and June of each year.

A small number of projects wrapped up in 2024/25 underbudget. For these projects, unspent funds were returned to the BCRC and will show up in the budget tables as negative values.

The BCRC 2024/25 financial summary and CCA audited financial statements will be available to the Agency after August 2025.

Projected Canadian Beef Cattle Check-Off funding allocated to research programming in 2024/25 is outlined in various sections of this report and includes the following:

Beef Science Cluster research projects = **$1,998,154**

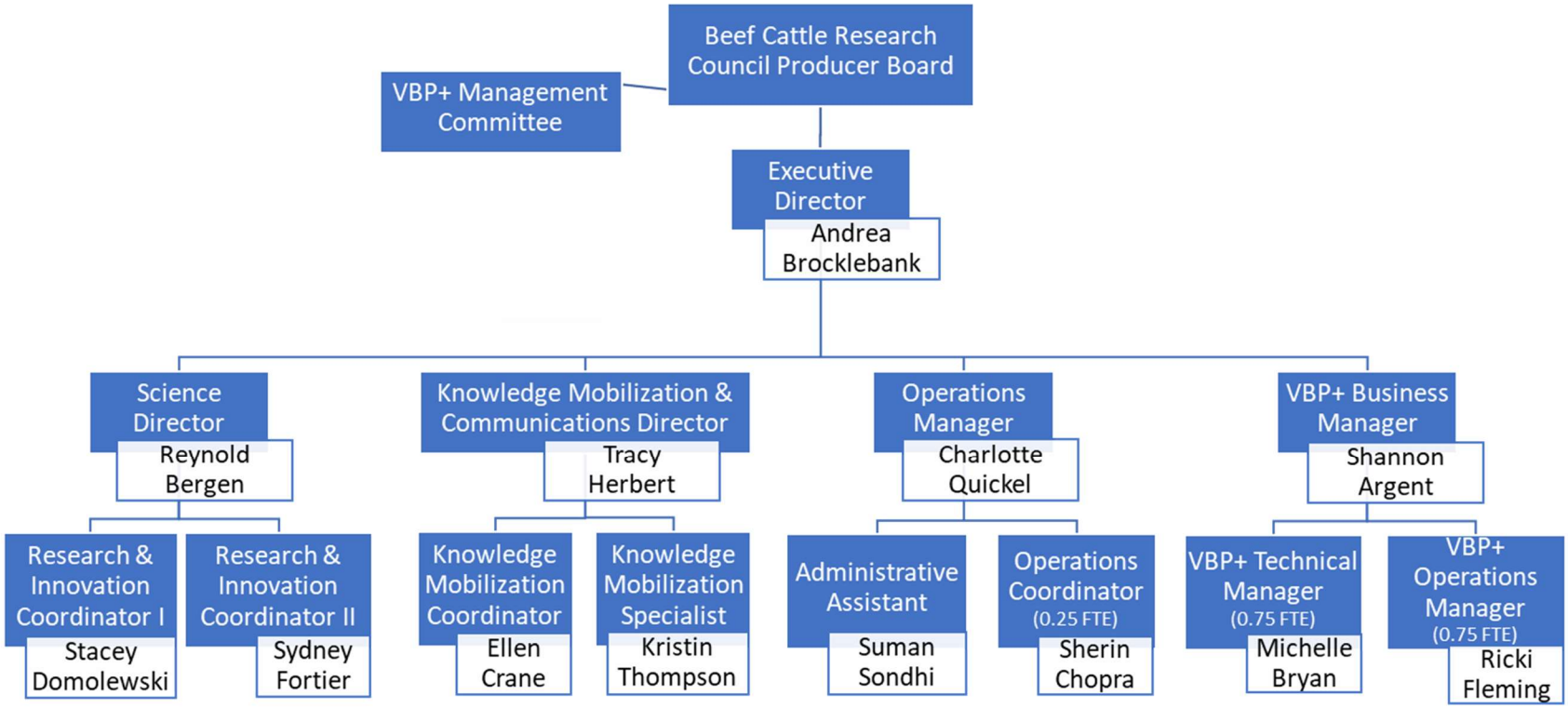
Other BCRC research projects = **$3,034,781**

Verified Beef Production Plus = **$668,625**

BCRC general program management and administration = **$769,338**

Total Beef Cattle Check-Off funding = **$6,470,898**

VII. Appendix I – BCRC Organization Chart



Note: In addition to permanent positions, BCRC and the VBP+ Program hire services from various experts, on a contractual basis as required

VIII. Appendix II – Beef Science Cluster IV Projects

Project Number	Project Title	End Date	Total 5-Yr Funding ($)	2024/25 Funding ($)	Factsheet Link
	Climate Change & Environment				
ENV.06.21C	Grazing management across western Canada: uncovering the role of the microbiome	Mar 2028	2,069,001	519,173	*Factsheet*
ENV.11.21C	Understanding the influence of grazing management regimes on cow methane emissions in Canada	Mar 2028	1,036,951	309,655	*Factsheet*
ENV.12.21C	Potential for dietary mitigation of enteric methane during winter feeding in Canadian beef cows	Mar 2028	629,824	186,890	*Factsheet*
FDE.04.21C	Potential for inclusion of surplus food in beef cattle diets	Mar 2028	524,839	80,425	*Factsheet*
FDE.18.21C	Systematic characterization of the bovine rumen microbiome and determination of its causal roles in cattle feed efficiency and methane emission using machine learning	Mar 2028	879,265	238,728	*Factsheet*
FRG.14.21C	Integration of Livestock on Annual Crop Land	Mar 2028	1,768,046	379,688	*Factsheet*
	Economic Growth & Development				
ANH.04.21C	The Canadian Cow-Calf Health and Productivity Enhancement Network (C3H/PEN)	Mar 2028	1,378,350	139,150	*Factsheet*
FRG.02.21C	Breeding climate-resilient forage germplasm for the Canadian beef industry: a national collaboration	Mar 2028	1,175,010	234,282	*Factsheet*
FRG.04.21C	Development of Cicer milkvetch (CMV) germplasm for enhanced fitness to alfalfa and improved animal health.	Mar 2028	396,720	84,650	*Factsheet*
FRG.06.21C	Advancing Canadian sainfoin breeding for profitability, animal health, and a future of sustainable beef and forage production systems	Mar 2028	571,920	152,865	*Factsheet*
FRG.08.21C	Winter hardiness of alfalfa	Mar 2028	955,580	204,686	*Factsheet*
FRG.09.21C	Maximizing Use of Forage Legumes to Improve Cattle Productivity and Health and Promote Soil Health and Carbon Sequestration.	Mar 2028	1,169,905	235,325	*Factsheet*
	Sector Resilience & Societal Challenges				
ANH.15.21C	Re-considering treatment strategies: can we accelerate recovery from disease by considering gut health?	Mar 2028	961,858	257,686	*Factsheet*
ANH.16.21C	Understanding the molecular epidemiology and transmission of antimicrobial resistance in bovine respiratory disease pathogens to improve the precision and reduce the use of antimicrobials in beef production.	Mar 2028	698,850	177,750	*Factsheet*

ANH.18.21C	Evaluating the efficacy of injectable and oral vaccines for Johne's disease in cattle	Mar 2028	383,235	98,210	*Factsheet*
ANH.25.21C	Establishment of bovine anaplasmosis in Canada: current status and development of rapid tests to control an emerging disease.	Mar 2028	604,095	195,183	*Factsheet*
ANH.26.21C	Application of glycomics to enhance resilience against bovine respiratory disease	Mar 2028	433,650	142,025	*Factsheet*
ENV.09.21C	A comprehensive risk-benefit analysis of ractopamine and common-use parasiticides: Co-occurring impacts on microbial communities, non-target environments, chemical fate, and GHG emissions from manure	Mar 2028	478,610	146,190	*Factsheet*
FDE.20.21C	A Benchmark study of the Canadian feedlot industry and an evaluation of best management practices (BMPs) to improve the sustainability of feedlots.	Mar 2028	597,149	135,144	*Factsheet*
FOS.01.21C	Development and validation of novel "green" technologies for improving the safety and shelf life of beef	Mar 2026	657,680	275,690	*Factsheet*
Knowledge and Technology Transfer					
KTT.01.21C	Enhancing Knowledge and Technology Transfer in the Canadian Beef Industry	Mar 2028	1,772,000	381,700	NA
Science Coordination					
SCI.01.21C	Science Coordination	Mar 2028	888,049	174,660	NA
Retrospective Cluster Analysis					
SCI.02.21C	Impact Assessment - Retrospective Cluster Analysis	Mar 2026	70,000	35,000	NA
Total			**20,100,587**	**4,784,755**	

Summary of 2024/25 investments in Cluster IV projects:

Fund Recipients	AAFC $'s	Industry $'s	Total $'s
AAFC researchers	979,758	832,695	1,812,453
Non-AAFC researchers/Universities	1,726,843	1,245,459	2,972,302
Total funding for Cluster IV projects	**2,706,601**	**2,078,154***	**4,784,755**

** Includes funding provided directly to the BCRC from the following organizations:*
Les Producteurs de bovins du Québec = $30,000; Alberta Cattle Feeders' Association = $30,000; Dairy Farmers of Newfoundland and Labrador = $10,000; Fondation de l'Université du Québec en Abitibi-Témiscamingue = $10,000

** varies from value presented in annual budget; this total reflects net project funding excluding the BCRC project management expenses or management reimbursements from AAFC.*

Total 2024/25 projected National Check-Off funding for Cluster IV projects = $1,998,154

Provincial cattle association Cluster IV project investment in 2024/25 = $30,000

IX. Appendix III – Priority Research Projects

Project Number	Project Title	Start Date	End Date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet Link
AMR.02.18	Use of bacteriophage-derived lysins in combatting multi-drug resistant (MDR) pathogens that cause bovine respiratory disease (BRD)	Oct 2019	Oct 2025	97,565	0	*Factsheet*
ANH.19.18	Characterization and optimization of visual pen checking criteria to improve BRD treatment outcomes in feedlot cattle	Jun 2020	Aug 2024	86,496	-33,878	*Factsheet*
FOS.01.18	Persistence of Shiga toxin-producing Escherichia coli (STEC) in Cattle and Association with Clinical Infections in the Same Geographic Region	Apr 2020	Mar 2024	97,875	5,279	*Factsheet*
FRG.03.18	Improving vegetative biomass yield and digestibility in alfalfa for enhanced livestock production.	Apr 2021	Aug 2024	159,300	1,725	*Factsheet*
FRG.09.18	Enhancement of total lipid content/composition in non-GMO alfalfa and sainfoin for improved energy density and reduced methane emissions	Apr 2020	Mar 2025	118,188	9,600[4]	*Factsheet*
ANH.01.19	A screen for drugs that reveal *Mycoplasma bovis* to the bovine immune system: a novel approach to vaccine development	Sep 2020	Sep 2024	71,250	12,937	*Factsheet*
ANH.02.19	Application of a multi-omics strategy to investigate liver abscess development in beef cattle	Apr 2021	Mar 2026	419,250	0	*Factsheet*
ANH.10.19	Antimicrobial use and resistance in cow-calf herds: Will anything change after the switch to prescription only sales of medically important antimicrobials?	Sep 2020	Oct 2024	143,070	24,460	*Factsheet*
ANH.18.19	Development of multiplex recombinase polymerase amplification (RPA) assays for the detection of antimicrobial-resistant (AMR) bacterial pathogens causing bovine respiratory disease (BRD).	Jul 2020	Jul 2024	64,023	11,853	*Factsheet*
ENV.03.19	Prairie Ecosystem Services Project: Quantifying the contribution of wetlands in livestock production landscapes	Jan 2021	Mar 2025	190,555	28,583[4]	*Factsheet*
FDE.01.19	Canola supplementation of cows in late gestation leads to increased calf growth and modification of epigenetic, gene expression, and blood metabolite profiles	Feb 2022	Jul 2026	137,074	7,922	*Factsheet*
FDE.03.19	Improving feed efficiency in the cow herd: Individual cow variability in fibre digestibility, feed efficiency, and methane emissions.	Sep 2021	Dec 2024	7,500	2,500[4]	*Factsheet*
FRG.09.19	Corn intercropping strategies for extended winter grazing of beef cattle	Apr 2021	Mar 2025	88,066	14,033[4]	*Factsheet*

Project Number	Project Title	Start Date	End Date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet Link
ANH.08.20	Infectious causes of calf diarrhea (scours) and efficacy of current vaccination strategies to prevent scours in beef calves in Western Canada (phase 1)	Apr 2021	Dec 2025	108,738	0	Factsheet
ANH.12.20	Investigating foot rot and its microbiological relation to digital dermatitis	Aug 2021	Dec 2024	97,394	14,609	Factsheet
ANH.17.20	Assessment of animal condition and welfare outcomes to improve timely euthanasia in feedlot cattle	Feb 2023	Jan 2026	105,625	15,844	Factsheet
ANH.19.20	Enhancing respiratory health of beef cattle through modulation of innate immunity, analysis of the resistome, and identification of culturable bacteria	May 2022	Apr 2027	300,000	30,000[4]	Factsheet
ANH.20.20	Rapid characterization of the viral microbiome in arriving feedlot calves to inform vaccine gaps and risk assessment for bovine respiratory disease	Apr 2021	Mar 2025	227,010	34,052[4]	Factsheet
ANH.25.20	Comprehensive evaluation of the effect of extended-term delivery of local anesthetic on mitigating the pain caused by castration	Aug 2021	Aug 2024	144,914	0	Factsheet
ANH.29.20	Insights into environmental transmission of Escherichia coli in beef production	May 2021	Dec 2024	84,000	0	Factsheet
ANH.30.20	Antimicrobial use and resistance in eastern Canadian cow-calf herds - establishing a baseline for antimicrobial stewardship	Oct 2021	Sep 2024	155,745	0	Factsheet
FDE.04.20	Level of fat from canola seed supplementation in pregnant beef cow diets - Effects on cow and calf performance	Feb 2021	Aug 2026	139,214	0	Factsheet
FDE.05.20	Development and demonstration of a genomics-enhanced whole herd genetic management platform to improve beef production efficiency and quality	Sep 2021	Aug 2024	318,900	0	Factsheet
FDE.07.20	Examining the microbial basis of forage digestion efficiency in beef cattle	Sep 2021	Mar 2025	214,434	2,465[4]	Factsheet
FOS.01.20	In-Plant Validation of Harvest Processing Equipment Sanitization Best Practices	Mar 2022	Nov 2024	71,489	2,143	Factsheet
FRG.11.20	Complex forage blends: reducing supplementation costs through strategic forage selection	Feb 2023	Nov 2026	89,190	0	Factsheet
FRG.12.20	Quantifying the economic benefits and carbon capture efficiency of including forages in cropping systems: A test using long-term data from the Breton plots	Apr 2021	Mar 2025	62,662	23,283[4]	Factsheet
SRV.02.20	Surveillance of antimicrobial use (AMU) and antimicrobial resistance (AMR) in Canadian feedlot cattle; continuation of bovine respiratory disease pathogen isolation and susceptibility testing	Jan 2022	Dec 2025	360,434	0	Factsheet

Project Number	Project Title	Start Date	End Date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet Link
ANH.02.21	Understanding contagious transmission informs best management practices for respiratory disease in feedlot calves by leveraging whole genome sequencing of a unique isolate collection	Dec 2021	Dec 2024	98,606	-23	Factsheet
ANH.04.21	Effect of avermectin and tetracycline on the rumen microbiome and resistome of Beef cattle	Dec 2021	Aug 2024	65,000	0	Factsheet
ANH.23.21[1]	Development of a bacterial community to enhance the respiratory health of cattle	Apr 2025	Mar 2028	249,000	186,750[4]	To be developed
ENV.07.21	Estimating the cost of providing ecosystem goods and services on prairie grasslands	Apr 2023	Mar 2027	93,777	9,378[4]	Factsheet
FDE.02.21[2]	Developing strategies to reduce the toxicity of ergot alkaloids in the diet of feedlot cattle.	Jul 2023	Jun 2028	354,161	50,334[4]	Factsheet
FDE.14.21[1]	Improving evaluation of cereal grain processing and starch digestibility	Apr 2025	Mar 2029	466,029[3]	0	To be developed
FDE.19.21	Novel microbiome manipulation strategies for reducing methane emission and foodborne pathogen colonization	May 2023	Mar 2028	150,697	0	Factsheet
FOS.01.21	To explore conditions for improving the efficiency of water usage during sanitation	Apr 2023	Mar 2026	172,050	23,757[4]	Factsheet
FOS.02.21	SRM Risk Analysis - Problem Formulation & Risk Analysis	Aug 2021	Feb 2024	60,000	39,950	To be developed
FOS.03.21	Assessment of the population structure of E. coli O157 from cattle and associated food safety risks	Jan 2024	Apr 2028	170,097	17,010[4]	Factsheet
FRG.02.21	Low-cost forage management (hay and pasture systems, legume seeding) impacts on productivity and soil health of old grassland	Apr 2022	Mar 2026	235,492	20,263[4]	Factsheet
FRG.04.21	Evaluation of polycrop mixtures for swath grazing, soil health and economics	Jan 2022	Aug 2027	190,178	19,018	Factsheet
FRG.13.21	Generating Climate Smart Alfalfa through an Integrated Approach Targeting Beneficial Root and Carbon Assimilation Traits	Jan 2025	Dec 2028	216,158	162,118	To be developed
FRG.16.21[1]	Effect of Stocking Rate During Early Gestation on Subsequent Performance of Beef Females	Jan 2025	Dec 2029	287,177	0	To be developed
ANH.01.22	Known unknowns: macrolide resistance at beef cattle feedlots	Apr 2023	Mar 2026	224,772	22,477[4]	Factsheet
ANH.08.22	Maternal nutrition, winter feeding, and calf immune fitness in beef cattle	Apr 2024	Mar 2027	190,476	19,048	Factsheet
ANH.10.22	A Microbiome-supported Bovine Reproductive Sequencing Panel (BovReproSeq) for detecting, preventing and mitigating reproductive diseases in beef cattle	Nov 2023	Oct 2026	260,700	5,830	Factsheet
ANH.11.22	Development of an enhanced early life program (EELP) to improve health and productivity of beef cattle	Jan 2025	Dec 2027	137,060	0	Factsheet
BQU.02.22	Up-cycling of low valued cattle hides into alternative protein food products	May 2024	May 2027	77,050	0	Factsheet
FDE.03.22	Evaluation of malate potential in beef cattle production	Apr 2024	Mar 2027	109,164	6,374[4]	Factsheet

Project Number	Project Title	Start Date	End Date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet Link
FDE.05.22	The impact of early life nutritional management of purebred and crossbred cattle on lifetime feed efficiency and methane production	Sep 2023	Jul 2028	193,500	0	*Factsheet*
FRG.04.22	Evaluating the use of prescribed fire to rejuvenate degraded forage pastures and its impact on soil health	May 2023	Mar 2027	208,955	20,895[4]	*Factsheet*
FRG.06.22	Sod-seeded legumes to improve forage production, forage quality and soil benefits	Jun 2023	Mar 2026	162,622	0	*Factsheet*
FRG.08.22	Evaluation of Stocking Rate, Grazing Duration and Recovery Times on Native Grassland: Impact on Forage Production, Livestock Production, and Economics	May 2024	May 2027	71,745	0	*Factsheet*
FRG.09.22	Evaluation of new perennial forages for pasture production selected for improved yield, environment resilience, nutritional value, and carbon hoofprint	Apr 2024	Mar 2027	115,202	0	*Factsheet*
FRG.13.22	Evaluation of perennial forages under grazing for enhanced environmental sustainability and animal health	Apr 2024	Mar 2028	220,338	0	*Factsheet*
LAB.01.22	Integrating beef, forage and cropping systems to improve soil carbon sequestration and reduce greenhouse gas emissions' Alberta Living Lab	May 2022	Mar 2027	200,000	40,000	NA
LAB.02.22	SODCAP Living Lab	Jun 2022	Mar 2027	200,000	50,000[4]	NA
LAB.03.22	BC Living Labs: Extended Grazing Season and Winter-Feeding Strategies	Apr 2023	Mar 2027	60,000	0	NA
ANH.01.23	Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS): Beef Feedlot Antimicrobial Resistance Surveillance: the Beef Feedlot AMR Surveillance Project	Apr 2023	Mar 2028	0	0	NA
FDE.01.23	Barley Cluster	Apr 2023	Mar 2028	89,161	19,951[4]	NA
FDE.02.23	Improving the value and environmental impact of barley through breeding	Apr 2024	Mar 2029	60,000	45,000	*Factsheet*
ANH.02.24	Host-pathogen interactions in Mycoplasma bovis pneumonia of cattle	Jul 2025	Oct 2028	58,250	43,688	To be developed
ANH.05.24	Phenotypic and genotypic characterization of antimicrobial resistance of bovine respiratory disease complex neglected bacteria	Apr 2025	Mar 2027	95,680	81,328	To be developed
ANH.07.24[1]	Micronutrient deficiencies in fall-placed calves and increased risk of respiratory disease early in the feeding period	Jul 2025	Jun 2029	246,667	0	To be developed
ANH.16.24[1]	Strengthening the utility/reach of the CIPARS/CFAASP surveillance network: leveraging infrastructure and generating baseline data to facilitate collaborative research in BRD	Jan 2025	Dec 2028	351,424	200,553[4]	To be developed

Project Number	Project Title	Start Date	End Date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet Link
BQU.05.24	Application of augmented marbling score evaluations on Canada D1, D2, D3 and D4 beef carcass grades	Jan 2025	Jan 2027	45,430	38,616	To be developed
FDE.02.24	Synergistic Rumen Microbial Consortia: A Probiotic Approach to Augmenting Feed Utilization Efficiency	Dec 2024	Nov 2026	108,390	92,132	To be developed
FDE.12.24[1]	Effect of divergent fibre digestion efficiency on growth performance, methane emissions, and carcass characteristics of beef cattle, and its association with the host genetic/genomic makeup	Apr 2025	Mar 2028	67,179	0	To be developed
FDE.13.24	Developing innovative laser-induced breakdown spectroscopy technology with machine learning capability for rapid analysis of cereal grain and byproduct composition	Apr 2025	Mar 2027	177,009	132,757	To be developed
FOS.02.24[2]	New strategies for prevention and control of pathogenic biofilms in slaughter plants	Jan 2025	Dec 2028	251,561	132,421[4]	To be developed
FOS.05.24	Remote ante and postmortem meat inspections using augmented-reality live-stream video software.	Apr 2025	Mar 2027	69,691	52,268	To be developed

[1]Project has been approved but the funding agreement is pending.

[2]Project Lead funding agreement is in place, collaborator funding agreement is pending.

[3]Project is approved but reported Total NCO Funding Amount yet to be finalized.

[4] Payment has not been made at time of writing but is projected to be made prior to June 30, 2025.

Total 2024/25 projected National Check-Off funding for ongoing Priority Research projects = $1,739,303

Provincial cattle association priority research project investment in 2024/25 = $0

X. Appendix IV – Proof of Concept Projects

Project #	Project title	Project end date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet
POC.07.22	Use of multiple mitigation strategies to reduce greenhouse gas emissions in beef cattle production systems	Feb 2026	50,000	0	*Factsheet*
POC.08.22	Verification that guanidinoacetic acid supplementation enhances growth and feed efficiency of beef steers without compromising carcass and meat quality	Mar 2025	50,000	0	*Factsheet*
POC.14.22	Using a bovine Lactobacillus mixture as a strategy to minimize beef calf stress	Mar 2025	50,000	0	*Factsheet*
POC.19.22	Towards the identification of agents associated with infectious bovine keratoconjunctivitis (IBK, pink eye)	Dec 2025	45,943	0	*Factsheet*
POC.01.23	Faster, cheaper, more accurate detection of Shiga toxin producing E. coli	Dec 2024	49,910	0	Factsheet
POC.06.23	Learning from the past: A universal and updated analysis of environmental and cattle metagenomic information from beef operations	Sep 2024	50,000	7,500	Factsheet
POC.13.23	Establishing a genomic sequencing strategy for Bovine Respiratory Syncytial Virus (BRSV) to enable genomic surveillance of field strains and vaccine strains	Dec 2024	50,000	7,500	Factsheet
POC.26.23	Testing the protective efficacy and DIVA (differentiate infected from vaccinated animals) potential of MSX-1 in a pre-clinical mouse model of bovine tuberculosis	Nov 2024	50,000	7,500[2]	Factsheet
POC.34.23	Identification of bacterial enzymes associated with beef production efficiency and carcass quality	Nov 2024	50,000	7,500[2]	Factsheet
POC.35.23	Genomic discovery and elucidation of highly unusual and novel microbes in septic arthritis tissues of feedlot cattle	Dec 2024	44,333	6,023[2]	Factsheet
POC.05.24	Can vaccination of beef cows against diarrheal pathogens at fall pregnancy check provide sufficient immunity to newborn calves?	Jun 2026	49,910	42,424	To be developed
POC.07.24	Anogenital distance as a potential fertility indicator trait in breeding bulls: A proof-of-concept study	Nov 2026	11,184	9,506	To be developed
POC.09.24[1]	Determining whether invariant natural killer T cells play a role in immune responses in cattle	Apr 2026	46,117	39,199[2]	To be developed
POC.10.24	Development of a rapid, chute side diagnostic test to aid in the identification of feedlot cattle requiring treatment for respiratory disease.	Sep 2025	35,706	30,350	To be developed
POC.16.24	Unified PCR-Sequencing panel for bovine infectious diseases to increase diagnostic thoroughness and laboratory operational efficiency	May 2026	50,000	42,500	To be developed
POC.30.24[1]	Enzyme supplementation to improve nutrient utilization in forage-based diets	Apr 2026	50,000	10,625[2]	To be developed

[1] Project has been approved but the funding agreement is pending

[2] Payment has not been made at time of writing but is projected to be made prior to June 30, 2025.

Total 2024/25 projected National Check-Off funding for Proof of Concept projects = $210,627.

XI. Appendix V – Knowledge Mobilization Network Projects

Project #	Project title	Project end date	Total NCO funding ($)	2024/25 NCO funding ($)	Factsheet
KTT.01.18	Early Calf Health and Survival Management Risk Assessment Tool	Dec 2024	36,656	5,498[1]	*Factsheet*
KTT.01.21	Motivations, barriers and alternatives to feed testing for cow-calf producers	Dec 2024	40,950	-7,074	*Factsheet*
KTT.08.21	Development and Production of a Beef Cattle Animal Health Podcast	Aug 2024	15,807	-8,841	*Factsheet*
Total KTT Content and Resources Funding			**93,413**	**-10,417**	
KTT.23.24	AHC FMD Resource Development	Mar 2025	24,750	24,750	NA
Total KTT Priority Resource Development			**24,750**	**24,750**	
KTT.15.23	Making Science Accessible: Turning 10+ years of calf health and welfare research into producer-friendly videos	Aug 2024	1,500	1,500	NA
KTT.16.23	Livestock Water Management Series	Aug 2024	2,500	2,500	NA
KTT.19.23	Who Darted? A Seminar on Remote Drug Delivery Best Practices	Jun 2024	5,000	5,000	NA
KTT.26.23	Pilot Project: Beef Producer Peer Groups	Aug 2024	3,000	2,721	NA
KTT.28.23	Improving Nutrition and Grassland Management Through the Education of Future Beef Cattle Veterinarians	Aug 2024	5,000	5,000	NA
KTT.01.24	Dart Seminar	Nov 2024	5,000	4,262	NA
KTT.03.24	Water Quality and Ration Balancing with CowBytes	Nov 2024	3,500	3,500	NA
KTT.05.24	CowBytes Training with Barry Yaremcio	Nov 2024	3,500	2,349	NA
KTT.09.24	Livestock and Forage Extension Day	Mar 2025	5,000	4,519	NA
KTT.10.24	Digesting CowBytes - a training session	Oct 2024	5,000	5,000	NA
KTT.14.24	Rancher's University 2024	Dec 2024	3,000	3,000	NA
KTT.16.24	Back to Basics	Apr 2025	5,000	4,917	NA
KTT.20.24	Enhancing Livestock Water Management through Educational Workshops and Farm Tours	Jul 2025	4,200	0	NA
KTT.22.24	Atlantic KTT - Two Approaches to Three Topics	Apr 2025	5,000	5,000[1]	NA
Total KTT Regional Initiatives Funding			**56,200**	**49,268**	

[1] Payment has not been made at time of writing but is projected to be made prior to June 30, 2025.

Total 2024/25 projected National Check-Off funding for Knowledge Mobilization Network projects = $63,601 (included in KMb Network Activities Total reported in Section III (vi) b)