



BEEF CATTLE RESEARCH COUNCIL
Advancement Through Science



2023-2024 Year in Review

*Highlighting investments by
Canadian cattle producers*



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> BEEF CATTLE RESEARCH COUNCIL

Canada's industry-led funding agency for beef, cattle and forage research and extension

The Beef Cattle Research Council funds leading-edge research and technology transfer activities to advance the competitiveness and sustainability of the Canadian beef cattle industry. All activities are guided by core principles defined by the beef industry in the renewed **Five-Year Canadian Beef Research and Technology Transfer Strategy**.

OUR GUIDING PRINCIPLES:

- > 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.



OUR VISION:

A transparent, competitive, resilient and sustainable Canadian beef industry supported by strategic and effective research, technology transfer and innovation.

OUR MISSION:

To lead the Canadian beef industry as the most prominent supporter of cattle, forage and beef research with a producer-led Council who invest producer funds into research and technology transfer to support growth in beef demand, increase productivity and earn public trust.

> MESSAGE FROM THE CHAIR

Craig Lehr

What a difference a year can make! As we started the 2023-24 fiscal year, large parts of the country faced significant drought. Thankfully, as we moved into Spring 2024, many regions were welcoming some much-needed moisture.

In response to the drought, the Beef Cattle Research Council began this time period largely dedicated to providing producers access to resources on forage management, alternative feeding strategies, feed testing, mineral supplementation and body conditioning. By spring, the BCRC team was shifting focus toward drought recovery and strategies to help build back forage and grasslands and increase productivity.

As we move into the 2024-25 fiscal year, we are seeing strong cattle prices and the potential for lower feed prices, which lines up opportunities for beef producers to expand herds and perhaps focus on productivity improvements. The BCRC will continue devoting time and materials toward funding research and developing extension resources that are closely aligned with the needs and priorities of Canadian beef cattle producers.

One of these needs is the lack of meaningful progress in bovine respiratory disease (BRD) prevention and treatment strategies. To address this, the BCRC is developing a BRD Research & Extension Strategy to encourage cohesive approaches to the issue among Canada's major research teams and funders. I have the honour of chairing the steering committee of researchers, beef producers and veterinarians creating this Strategy, which is spotlighted on [page 17](#).

Browse through the other project highlights in this report to learn about what a difference your Canadian Beef Cattle Check-Off investments have made to the industry in the past year.



“The BCRC uses producer input to direct Check-Off dollars toward priority beef and forage research projects. And, our practical extension materials make certain this research doesn’t just sit on a shelf, but it actually gets out to producers so we can improve our individual operations and make our industry even better.”



> MESSAGE FROM EXECUTIVE DIRECTOR

Andrea Brocklebank

Right out of the gate in the 2023-24 fiscal year, Agriculture and Agri-Food Canada announced \$12.1 million, five-year funding for beef and forage projects, which the Beef Cattle Research Council immediately put to work to leverage industry research investments and to initiate a new cycle of research and extension activities.

The BCRC is committed to sharing all project results with Canadian beef producers, but sometimes the outcomes of particular research may not quite be ready for extension efforts. Consequently, we have launched a quarterly report of bite-sized research summaries on BeefResearch.ca called “**The Results Are In.**”

In order to reach an even broader audience of beef producers, the BCRC launched a call for proposals to fund regional extension activities (a couple are spotlighted on [page 16](#)). This program has been a great way to leverage connections and resources from other groups and use a more hands-on approach, which is something the BCRC cannot directly do. Several of the events profiled BCRC materials, such as our printed guides on proper use of remote drug delivery devices and CowBytes workshops.

This year, the responsibility of **CowBytes** ration-balancing software transitioned from the Government of Alberta to the BCRC. The timing could not have been better, as we were able to reinstate the distribution of CowBytes when drought-challenged producers truly needed a resource to help them look more closely at balancing rations and alternative feedstuffs. Demand for this software has been high, and we look forward to launching a web-based version that will allow for even easier access and more regular updates.

Another important step forward in generating value for producers is our increasing focus on linking the VBP+ quality assurance program directly with the BCRC’s extension priorities and the useful record-keeping the VBP+ program encourages. Learn more about this valuable program on the [final page](#) of this report.



“This report is just one of several ways the BCRC strives to share the impacts research is having on industry productivity, beef quality, food safety and public trust with our investors—which are Canada’s beef cattle producers.”

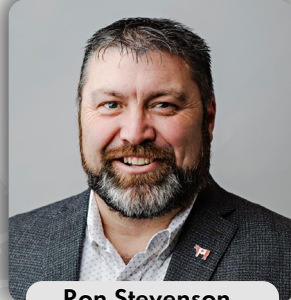
> MEET THE COUNCIL

Producer-led and Canada-wide

The BCRC is directed by a committee of 16 beef producers from across the country, including one member at large and is funded primarily through the Canadian Beef Cattle Check-Off.



Craig Lehr, AB
BCRC Chair



Ron Stevenson, ON - Vice Chair



Dean Manning, Atlantic,
Finance Chair



Fred Lozeman, AB



Jeff Braisher, BC



Graeme Finn, AB



Roger Meyers, SK



Ryan Beierbach, SK



Lyle Adams, AB



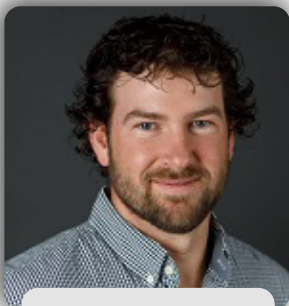
Lee Irvine, AB



Michael Spratt, SK



Matt Bowman, ON



John Doherty, AB



Trevor Sund, MB



Melissa Atchison, MB



Nathalie Côté, QC
Ex-Officio

> THE BCRC & ITS PARTNERS

Tackling industry priorities and generating the most value from every research dollar

In the 2023-24 fiscal year, the BCRC received on average \$0.67 (unaudited) of every \$2.50 of the Canadian Beef Cattle Check-Off collected by the provincial beef cattle associations. This funding was leveraged under various programs to maximize producer returns on their national check-off investments. Typically, for every \$1 in producer Check-Off invested, the BCRC looks to leverage \$2-3 in other direct funding and in-kind contributions.

When making funding decisions, the BCRC seeks expert advice to ensure proposed projects address industry priorities, are practical and are both scientifically and practically sound. A science advisory body provides relevant advice on the technical merit of any proposed research. As well, independent peer reviewers help ensure new research is original, progressive and uses valid scientific approaches. Before making funding decisions, the BCRC Council members consider this expert advice, priorities in the [Five-Year Canadian Beef Research and Technology Transfer Strategy](#), other scientific and industry feedback and emerging issues. This process provides a fair, transparent and thorough evaluation of all research activities.

In addition to funding research, the BCRC plays a leading role in increasing industry uptake of relevant technologies through its knowledge dissemination and technology transfer strategies. Information sharing across a broad audience of producers, researchers, funders, government and other industry organizations supports communication networks across the country.



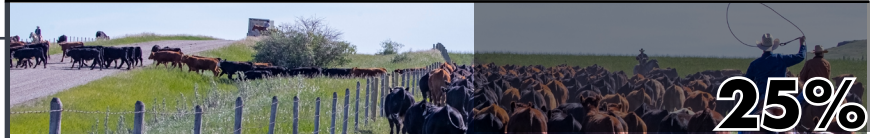
The BCRC works closely with other industry and government funding agencies to increase coordination, reduce duplication and ensure priority research outcomes are addressed for the benefit of Canadian beef and cattle producers.

> BCRC FUNDING BY PROGRAM AREA

Total Five-Year Funding to All Projects: **\$35 Million**

Percent of total research funding by portfolio*

Animal Health, Welfare & Antimicrobial Resistance & Use



Forage & Grassland Productivity

Forage varieties and management strategies to increase yields, nutrition & competitiveness



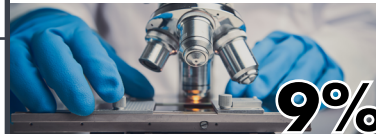
Feed Efficiency & Utilization

Cost-effective methods for more efficient cattle, feeds and feeding strategies



Research Capacity

Partnering with key institutions to implement long-term research capacity in priority areas



Proof of Concept & Other

Testing the feasibility of pursuing larger or riskier research projects



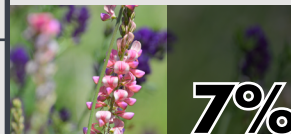
Food Safety

Sustaining beef safety and consumer confidence



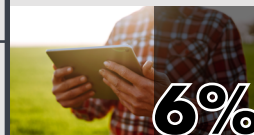
Environmental Sustainability

Reducing the environmental footprint of Canadian beef



Technology Transfer & Production Economics

Encouraging greater awareness and adoption of new technologies and beneficial practices



Beef Quality

Maintaining domestic and international satisfaction with Canadian beef



* Full colour portions of the bar graph represent percent of total funding coming from Canadian Beef Cattle Check-Off funding.

Shaded portions indicate the percentage of funding per project area from other funding sources, including government, that is managed by the BCRC.



> BCRC PROJECT FUNDING BY SOURCE

Total Project Funding for 2023-24: **\$10.6 Million**

\$4.9 Million



\$4.1 Million

OTHER INDUSTRY
& GOVERNMENT
FUNDING

\$2.1 Million



2023-24 TOTAL ALLOCATIONS

23% Forage & Grassland Productivity

22% Animal Health, Welfare & Antimicrobial Resistance & Use

16% Feed Efficiency & Utilization

12% Research Capacity

9% Environmental Sustainability

7% Proof of Concept & Other

5% Technology Transfer & Production Economics

5% Food Safety

1% Beef Quality

> BEEF & FORAGE AGRISCIENCE CLUSTER

2023-24 Canadian Check-Off Funding: **\$1.43 Million**

Canada's Beef and Forage AgriScience Cluster for 2023-28 is a \$21.4 million program, with Agriculture and Agri-Food Canada contributing \$12.1 million and industry contributing \$9.3 million over five years. There are a total of 23 Cluster projects - all of which reported activities between April 1, 2023, and March 31, 2024.



PROJECT SPOTLIGHT:

Dr. Tim McAllister from the AAFC Lethbridge Research Centre is leading a research team to better understand the molecular epidemiology and transmission of antimicrobial resistance in bovine respiratory disease pathogens. By analyzing nasopharyngeal samples from sick animals on cow-calf operations and commercial feedlots, they aim to identify strategies for improving precision and reducing the use of antimicrobials in beef production.

PROJECT SPOTLIGHT:

Dr. Cheryl Waldner from the Western College of Veterinary Medicine, along with colleagues from universities across Canada, have created a network of 150 cow-calf herds that will serve as a "living laboratory" to help answer key questions affecting the economic viability of the beef industry. Data collected from the Canadian Cow-Calf Health and Productivity Enhancement Network (C3H/PEN) will provide regionally relevant information regarding reproductive performance, winter feeding practices and pre-weaning calf survival.



> BEEF & FORAGE AGRISCIENCE CLUSTER

Driving environmental, economic and social sustainability

Under the Cluster IV framework, every activity aligns with Agriculture and Agri-Food Canada's key priority areas: climate change and the environment, economic growth and development, and sector resilience and 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 including animal health and welfare, forage and grassland productivity and feed efficiency and utilization.

PROJECT SPOTLIGHT:

Dr. Yousef A Papadopoulos, a researcher with the AAFC's Research and Development Centre in Kentville, Nova Scotia, is working with researchers from across the country to maximize the quality and longevity of forage legumes in Eastern Canada.

The team will study the long-term effects of grazing management on cattle productivity, soil health and carbon sequestration. Another focus of the study will be measuring fecal egg counts to better understand whether or not legumes can be used to reduce parasite loads in cattle.

PROJECT SPOTLIGHT:

All six of Canada's forage breeding programs are working together to develop new perennial forages that will both sequester carbon and reduce greenhouse gas emissions. In addition, they will create a new forage testing system through which to better understand what is required to develop new Canada-specific, climate-resilient forage varieties. Dr. Bill Biliget from the University of Saskatchewan is leading the national collaboration to breed climate-resilient forages for the Canadian beef industry.



> PRIORITY RESEARCH PROJECTS

2023-24 Canadian Check-Off Funding: **\$1.97 Million**

Priority research includes projects that fall outside of the Cluster program requirement or timeline but are important to the beef industry. A call for letters of intent went out in January 2024 and received 59 letters of intent. Of these, 21 research teams were invited to submit a full proposal. Final funding decisions will be made later in 2024. All successful applicants are required to secure funding from other government and industry sources, which stretches Check-Off dollars to at least twice its value. In 2023-24, the BCRC managed 75 priority research projects, including the two featured below, with funding made available to researchers through previous open calls for proposals.

PROJECT SPOTLIGHT:

Drs. Emily Snyder and Cheryl Waldner at the Western College of Veterinary Medicine compared the degree to which bovine respiratory disease (BRD) and antimicrobial resistance (AMR) arise in individual feedlot calves compared to how they are spread contagiously from calf to calf. The researchers discovered BRD and AMR can develop within individual cattle one at a time, but the contagious spread of resistant BRD pathogens among animals is primarily responsible for the widespread BRD early in the feeding period.



PROJECT SPOTLIGHT:

University of Saskatchewan's Dr. Greg Penner and team validated the use of high-moisture corn and snaplage as feed sources. While they encountered the need for higher supplementation when feeding high-moisture corn residue to extend the grazing season for pregnant beef cattle, they determined producers in Western Canada could consider snaplage or high-moisture corn as energy sources for finishing cattle, as these products may have the potential to improve hot carcass weight and dressing percentage while reducing the incidence of liver abscesses compared to cattle fed dry-rolled barley grain.



> PROOF OF CONCEPT PROJECTS

2023-24 Canadian Check-Off Funding: **\$307,217**

The BCRC managed 14 proof of concept projects in 2023-24, including six new projects. These short-term projects test the feasibility of new or higher-risk research areas before investments are made in larger, more defined research. They are funded by Canadian Beef Cattle Check-Off dollars leveraged with provincial and federal government and/or industry partner funding. All project summaries are available in the 2023-24 BCRC Results Report.

PROJECT SPOTLIGHT:

Dr. Marcio Duarte's team at University of Guelph proposed that feeding three times the recommended levels of vitamin A to pregnant cows in late gestation may be an effective strategy to improve marbling in their offspring. They found it, indeed, can increase marbling and marbling potential in calves from early life to slaughter without depositing fat elsewhere on the carcass. This was achieved without any other differences in dam or calf performance; only marbling was impacted. However, despite the difference in marbling, there was no significant difference in grade.

PROJECT SPOTLIGHT:

A team led by Dr. Jennifer Davies at the University of Calgary investigated the value of telemedicine via video call to improve the process of conducting necropsies. They 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 necropsies.

Having this service available to rural veterinary clinics could strengthen disease surveillance, support the Vet-Client-Patient-Relationship and allow beef producers to make more informed and cost-effective choices regarding herd health and welfare.



> RESEARCH CAPACITY

2023-24 Canadian Check-Off Funding: **\$625,000**

The Beef Cattle Research Council has developed three research chair positions in partnership with key research institutions and matching industry and government funders. The goal is to ensure long-term research capacity is in place to gain and maintain momentum in priority areas.

RESEARCH CHAIR SPOTLIGHT:

Dr. Gleise M. Silva

University of Alberta BCRC/Hays Chair in Beef Production Systems

Since beginning this position in August 2021, Dr. Silva has supported the beef sector in key areas including investigating the relationship between residual feed intake and environmental stress, grazing practices to reduce enteric methane emissions and using growth implants and calf microbial inoculations to enhance calf health and production. Dr. Silva supervises six graduate students and two postdoctoral researchers with national and international collaborations. Dr. Silva says, "It has been great to work with the BCRC and the cattle industry to investigate ways to continue improving cattle health and performance."



INDUSTRY SUPPORT TO ACQUIRE KEY RESEARCHERS:

In addition to establishing chair positions, the BCRC has supported retention of valuable research capacity in Canadian institutions and has bolstered the establishment of new research programs by providing start-up funds on two occasions. Start-up funding encourages institutions to create or reinvest in beef positions, attracts strong candidates, invites industry to engage in the selection process and enables newly acquired researchers to get underway while they build relationships with funding agencies.

- > University of Alberta: \$250,000 over five years for the new assistant professor in forage production and management science position, filled by Dr. Erick Santos
- > University of Guelph: \$50,000 for a qualified candidate to fill an assistant or associate professor in ruminant health management position



> **Dr. Cheryl Waldner**

University of Saskatchewan NSERC/BCRC Industrial Research Chair in One Health & Production-Limiting Diseases

This position has been renewed to 2029. Her previous position was

backfilled by Dr. Emily Snyder, who is actively engaged in complimentary research and extension activities.

- > **The University of Saskatchewan Beef Industry Integrated Forage Management & Utilization Chair is currently vacant and seeking applicants.**
- > **A call for a fourth research chair was held in 2024 and this new position will be announced in 2024-25 with funding starting in 2025-26.**

> KNOWLEDGE & TECH TRANSFER

2023-24 Canadian Check-Off Funding: **\$288,201** *

* Although the BCRC executes knowledge and technology transfer (KTT) activities, both under and external to the Beef & Forage Agriscience Cluster program, the funding amount above reflects KTT projects that are outside of the Cluster. The BCRC uses this funding to develop content, tools and resources aligned with key priorities identified by the industry.

NEW RESOURCES FOR PRODUCERS:

By leveraging producer-paid Canadian Beef Cattle Check-Off dollars with the support of Canada's Beef and Forage AgriScience Cluster, the BCRC developed several new resources over the past year, including 49 timely posts, 44 research summary factsheets, 12 monthly e-newsletters, 12 articles for Canadian Cattlemen—The Beef Magazine, several infographics, five videos and three webinars. Webpages were developed on **biosecurity** and **foot and mouth disease** to provide practical, science-based information on disease prevention and mitigation.

- > An interactive **replacement heifer costs calculator** also was designed to help beef cattle producers estimate the total costs of developing a replacement heifer from weaning, through breeding to preg-checking.



- > In 2023-24, the BCRC continued its popular, ongoing **#Calf911** initiative with the development of two additional printable calf management guides with corresponding videos. One set demonstrates how to evaluate newborn calves using a **Calf VIGOR Score System** and the other explains how to spot and respond to **respiratory acidosis** in a newborn calf.

> KNOWLEDGE & TECH TRANSFER

Reaching more than ever before

- > The new **Canadian Beef Cattle BCRC Podcast** launched in January 2024 on all major podcast streaming platforms. Weekly episodes deliver the most popular, seasonally relevant content from BeefResearch.ca in audio format.



- > Three online **Cow-Calf Record-Keeping Courses** were created for beef producers looking to strengthen their farm record-keeping and analysis skills to help make more profitable decisions. These free courses deliver valuable information to a beef producer's inbox in digestible bites every few days.

- > With funding through the AgriScience Cluster, popular content on BeefResearch.ca will be available in French in 2024. Input from industry colleagues and website traffic by users in French-speaking regions determined which content to make available in both languages. Additional relevant content will be translated to French and added to the website semi-annually through the duration of the 2023-2028 AgriScience Cluster.

Access French content by toggling between English and French at the top right of the website.



> KNOWLEDGE & TECH TRANSFER

Supporting new regional extension activities

A new funding program pilot to support regional extension activities was announced in September 2023. Applicants could apply to receive up to a maximum of \$5,000 in funding per activity. Matching funding was encouraged. Thirteen activities, which must be completed by summer 2024, were funded. These activities include video development, establishment of producer peer groups and workshops for producers held in several provinces.

Due to the popularity of the program and successful outcomes of pilot activities, the pilot program was renewed in May 2024 to fund regional activities through summer 2025.

- > **One of the BCRC-funded regional KTT projects resulted in seven cattle nutrition workshops across Manitoba. Organized by Manitoba Agriculture, the training focused on teaching producers how to effectively use CowBytes Ration-Balancing Software for better feed utilization and low-cost ration balancing.**

COWBYTES NOW AVAILABLE THROUGH THE BCRC:

CowBytes Ration-Balancing Software allows Canadian beef cattle producers to formulate their own feed rations. Producers can input various combinations of feed and byproducts at different prices to reduce feed costs while meeting animal production targets.

The BCRC assumed the trademark and responsibility for the CowBytes software in 2023 and the software is available for purchase at www.CowBytes.ca.

CowBytes was originally developed by Alberta Agriculture and Forestry in collaboration with Saskatchewan and Manitoba agriculture departments, Agriculture Canada and the University of Saskatchewan. The Saskatchewan Ministry of Agriculture remains an active partner, providing technical support for users and the beef nutrition expertise to lead future upgrades. Creating an updated, web-based version is currently projected to begin in 2025 and launch in 2026.



CowBytes
Ration-Balancing Software

Save feed costs, prevent nutrition problems and fine-tune winter rations

\$60 - Order Now

> KNOWLEDGE & TECH TRANSFER

Engaging stakeholders across the beef sector

CELEBRATING 10 YEARS OF MENTORSHIP:

In 2023-24, three scientists participated in the **Beef Researcher Mentorship Program**, which engages researchers who study cattle, beef, genetics, feed or forage production with producers and other Canadian beef cattle industry stakeholders. Each researcher was paired with two mentors who helped them develop knowledge, skills and networks through discussions and by initiating various introductions, tours and meetings. Mentees are also provided with a small travel budget to attend relevant industry events.

Since the mentorship program's inception in 2014, 40 researchers have participated across a wide range of specialty areas. The program has encouraged development of strong relationships between industry and researchers.

Researchers report they have increased confidence and knowledge of industry issues, while industry has benefited from the diverse backgrounds and technical skills new researchers contribute.



PROJECT SPOTLIGHT:

The BCRC is developing a Bovine Respiratory Disease Research & Extension Strategy to address a lack of meaningful progress in BRD prevention and treatment as well as associated concerns about antimicrobial reliance and resistance. The objective is to encourage a more cohesive approach to BRD investigation, identifying focused priority research outcomes and seeking collaboration among Canada's major research teams and funders to accomplish them. The Strategy is taking a multi-faceted approach which includes stakeholder engagement, comprehensive literature reviews, a conference and workshop, a final Strategy document and communications plan. A technical working group is leading the initiative, with a goal to publish a completed strategy in late 2025.



> VERIFIED BEEF PRODUCTION PLUS

2023-24 Canadian Check-Off Funding: **\$451,240**

Under the umbrella of the Beef Cattle Research Council, **Verified Beef Production Plus** (VBP+) and VBP+ Delivery Services Inc. (VBP+ Inc.) strives to fulfill its mission and vision through the maintenance and delivery of training and certification to all beef producers from coast to coast.

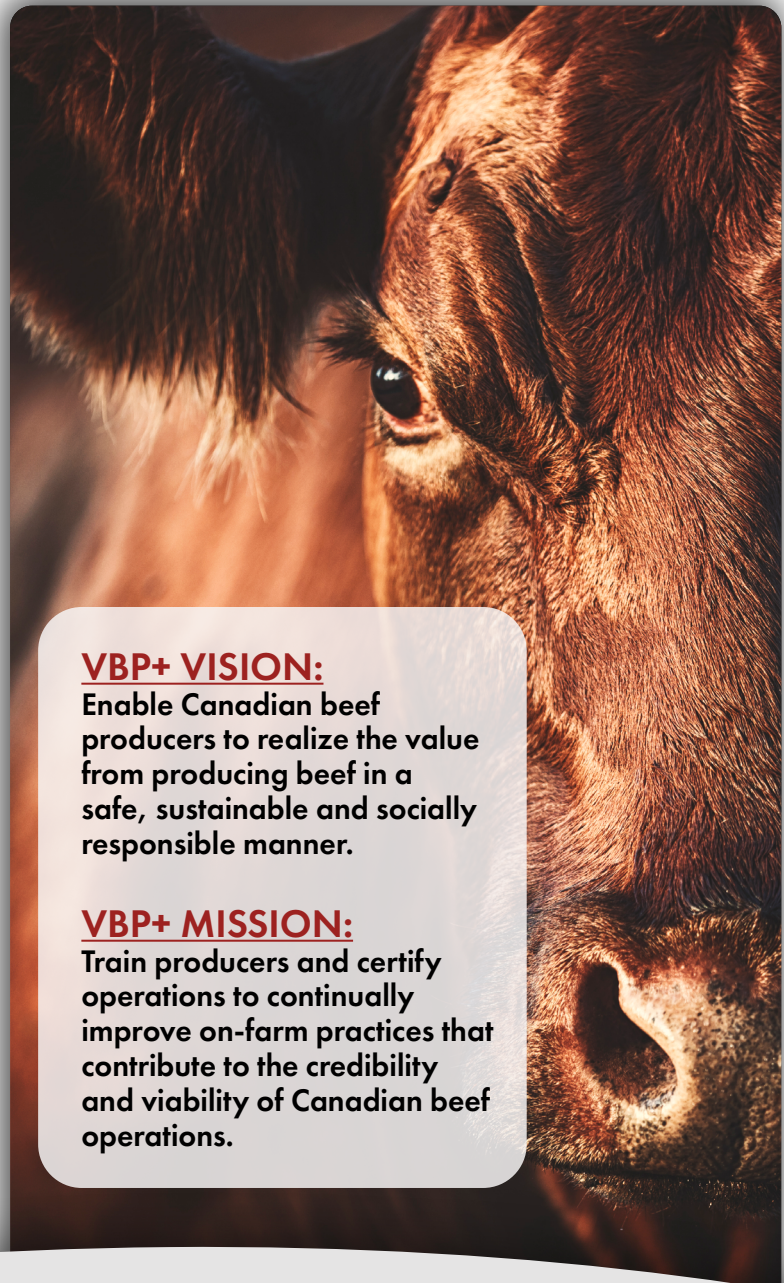
VBP+ successfully applied to Agriculture and Agri-Food Canada's (AAFC) Agri-Assurance National Industry Component program. Through a project titled, "Enhancing VBP+ to Drive Sustainability & Market Growth in Canadian Beef," VBP+ will achieve the following in 2023-2028:

- > Review and modernize the industry standard Hazard Analysis Critical Control Point (HACCP) plan
- > Develop surveillance for foreign objects in meat through a foreign objects reporting portal
- > Develop a standard, self-assessment and training for youthful-fed beef in Canada
- > Investigate and develop a business model for livestock sharps disposal

Incentives in some provinces continue to drive demand for VBP+ training. In-person training, which is the preferred training pathway for many producers, continues to gain momentum.

Certification has seen an increase in 2024, partly driven by a large number of operations seeking re-certification at the end of the five-year certification cycle. While on-farm certifications are increasing, progress is moderated by operations that are withdrawing from the program mid-cycle or declining to renew.

1.7 million head of cattle and **6.5 million** acres are managed by active VBP+ certified operations



VBP+ VISION:

Enable Canadian beef producers to realize the value from producing beef in a safe, sustainable and socially responsible manner.

VBP+ MISSION:

Train producers and certify operations to continually improve on-farm practices that contribute to the credibility and viability of Canadian beef operations.



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