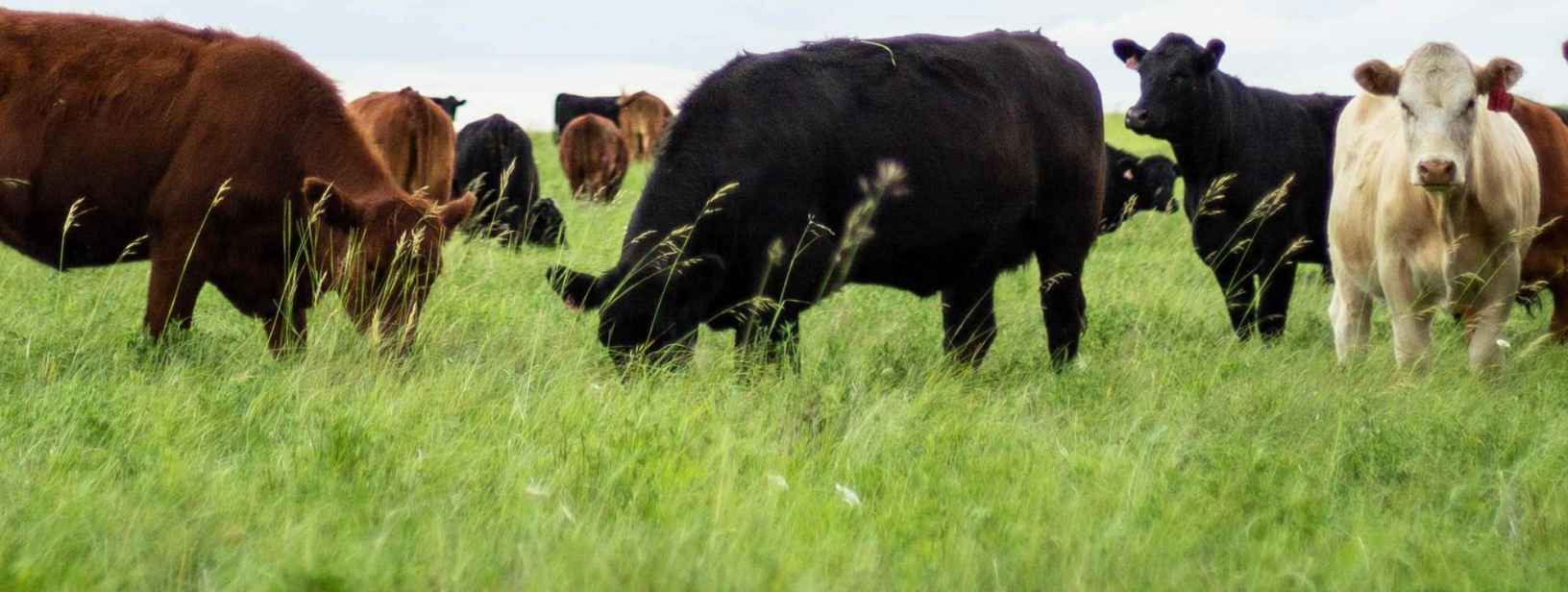


July 2026

Five-Year Canadian Beef Research & Knowledge Mobilization Strategy



**In collaboration with more than 500
members of Canada's beef industry**

Table of Contents

1. Executive Summary.....	3
2. Background.....	5
2.1 Beef Cattle Research Council.....	5
2.2 Industry Competitiveness.....	6
2.3 Beef Industry Goals to 2030	8
3. Context for the Canadian Beef Research and Knowledge Mobilization Strategy	11
3.1 Rationale for the Strategy	11
3.2 Strategy Development Process	12
4. Outcomes and Priorities by Program Area	15
4.1 Cattle Nutrition and Production Efficiency	15
4.2 Forage and Feed Production	20
4.3 Animal Health, Welfare and Antimicrobial Resistance	27
4.4 Food Safety	33
4.5 Beef Quality.....	38
4.6 Environmental Sustainability	43
4.7 Knowledge Mobilization	47
5. Appendices	50
5.1 Alignment with 2030 Beef Industry Goals	50
5.2 2025 Beef Stakeholder Prioritization Survey Results	55
5.3 Strategy Development Participants	64
5.4 References	66



1. Executive Summary

The Five-Year Canadian Beef Research & Knowledge Mobilization Strategy strengthens Canada's position as a global leader in sustainable beef production by aligning high-priority science, innovation and adoption at a national scale.

Canada's beef industry is a cornerstone of the Canadian economy, food system and rural landscape. As the country's largest source of farm cash receipts, the sector contributes \$34 billion annually in Canada's gross domestic product (GDP), supports more than 347,000 jobs and provides high-quality, nutrient-dense protein to domestic and international consumers. Canada is recognized globally as a producer of safe, high-quality beef with one of the lowest greenhouse gas (GHG) emission intensities per unit of production in the world.

As global demand for sustainable protein continues to grow, the Canadian beef industry is positioned to strengthen its leadership in environmental stewardship, animal care, innovation and food production. At the same time, the sector faces increasing pressure to improve productivity, strengthen climate resilience, reduce production risk, maintain public trust and remain globally competitive in a rapidly evolving marketplace.

This Strategy provides a coordinated national framework to align investment, accelerate innovation and ensure research outcomes lead to measurable impact for producers, the broader value chain and the public.

Through a highly collaborative process, the Beef Cattle Research Council (BCRC) worked with the Canadian Beef Advisors and a broad range of industry stakeholders to revise and update the previous Five-Year Strategy. Built upon previous iterations, the Strategy reflects both the progress achieved to date and the emerging challenges facing the sector. It recognizes that long-term industry success depends on continual improvements.

Research, innovation and knowledge mobilization are essential for the Canadian beef industry to meet challenges and capture opportunities.



1. Executive Summary, cont.

This Strategy directly supports the Canadian beef industry's ambitious 2030 goals, established through the National Beef Strategy, to improve productivity, long-term sustainability and competitiveness. Achieving these outcomes will require coordinated advancements across interconnected research and knowledge mobilization priorities, outlined in **Section 4**.

The Strategy recognizes that environmental sustainability and economic competitiveness are mutually reinforcing. Research that improves productivity and operational efficiency across the production chain can also contribute to reduced GHG emissions, improved drought resilience, enhanced soil health, carbon sequestration, biodiversity conservation and the long-term stewardship of Canada's grasslands and wetlands. Similarly, advances in reproductive efficiency, forage productivity, animal health and feeding strategies support producer profitability, food security and sector competitiveness while contributing to the industry's broader sustainability goals.

Knowledge mobilization remains central to the Strategy's success. Research only delivers impact when producers and industry stakeholders can access, assess and adopt practical solutions and practices. The Strategy therefore emphasizes targeted extension, communication and adoption-focused initiatives that accelerate the implementation of science-based beneficial management practices and emerging technologies across the beef sector.

The Strategy reflects extensive industry engagement to ensure priorities are grounded in producer needs and real-world challenges across the value chain. More than 500 stakeholders participated through national surveys, focus groups and engagement sessions involving producers, veterinarians, researchers, government representatives, industry organizations, funders and extension specialists from across Canada.

Canadian beef research continues to deliver measurable value. Investments in research and knowledge mobilization have contributed to major improvements in feed efficiency, reductions in GHG emission intensity, responsible antimicrobial use, improved beef safety and quality, reduced production costs and stronger producer resilience. A 2022 evaluation found that every dollar invested in research through the Canadian Beef Cattle Check-Off generated an estimated \$63 in producer benefit, demonstrating the strong return on coordinated, industry-led research investment and reinforcing the importance of sustained funding.

The Canadian beef industry has long demonstrated its ability to adapt, innovate and lead. This Strategy positions the industry to continue advancing its profitability, competitiveness and sustainability while contributing to Canada's economy, food security, environment and rural communities for generations to come.

Beef Industry 2030 Goals Supported in The Canadian Beef Research & Knowledge Mobilization Strategy

- Reduce primary-production GHG intensity by 33%
- Sequestering an additional 3.4 million tonnes of carbon annually
- Preserving native grasslands and biodiversity
- Strengthening antimicrobial stewardship
- Improving animal welfare
- Reduce food loss and waste across the value chain by 50%
- And more highlighted throughout the Strategy

2. Background

2.1. Beef Cattle Research Council

The Beef Cattle Research Council (BCRC) is Canada's national industry-led funding agency for beef, cattle and forage research. It is producer-led, evidence-driven and provides high return on investment.

To support a transparent, competitive, resilient and sustainable Canadian beef industry, the BCRC invests producer dollars into strategic and effective research and knowledge mobilization. The BCRC is directed by a council of beef producers from across Canada which directs investments to increase productivity, support growth in beef demand and earn public trust, all of which are key priorities for Canadian beef producers.

Research funding decisions are directed by industry priorities outlined in the Five-Year Canadian Beef Research & Knowledge Mobilization Strategy. Input from producers, scientific expertise and independent peer review all inform the evaluation and selection of projects, ensuring a fair, transparent and rigorous decision-making process.

In addition to funding research, the BCRC plays a leading role in supporting the uptake of relevant technologies and practices through its knowledge mobilization strategies. Direct communication with Canadian producers, combined with collaboration with knowledge mobilization specialists across Canada, supports the uptake of research results on beef operations.

A 2022 study evaluating the benefits of the Canadian Beef Cattle Check-Off found a producer benefit of \$63 for every \$1 spent on research.¹ In the 2024-25 fiscal year, the BCRC received an average of \$0.66 (unaudited) of every \$2.50 of the Canadian Beef Cattle Check-Off collected by provincial beef 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 leverages \$2-3 in other direct funding and in-kind contributions.

Key principles are considered when developing the Strategy and while funding research and knowledge mobilization activities:

1. Develop, enhance and encourage adoption of beneficial practices and innovations that support industry sustainability, resilience and competitiveness.
2. Increase producer profitability and sector resilience by responsibly increasing productivity or decreasing costs of production and risks while contributing to broader economic growth.
3. Support continuous improvements in Canadian beef demand through advancements in the quality and safety of Canadian beef.
4. Generate and mobilize trusted science to inform decision makers, policy and beneficial management practices and to support consumer confidence and public trust.
5. Accelerate innovation by developing, enhancing and encouraging adoption of leading-edge technologies that support industry productivity, competitiveness, and sustainability.
6. Ensure the maintenance and rejuvenation of critical research capacity and infrastructure that facilitate proactive inquiry and long-term innovation to support industry advancement.



The BCRC's mandate is to identify research and knowledge mobilization priorities for the Canadian beef cattle industry and to administer the portion of the Canadian Beef Cattle Check-Off allocated to research.

2. Background, cont.

2.2. Industry Competitiveness

The Canadian beef industry is an important driver in Canadian agriculture and the overall economy. It represents the largest single source of farm cash receipts, with cash receipts from cattle and calves totaling \$14.5 billion annually (2022-2024 average), representing 15% of total farm cash receipts, contributing \$34 billion to Canada's GDP annually and generating an estimated 347,352 jobs in Canada. Every job in the sector yields another 4.9 jobs elsewhere in the economy. For every \$1 of income received by workers and farm owners, another \$3.36 is created elsewhere.²

The Canadian beef industry is in a positive position for expansion due to the combination of Canada's progressive producers, an ideal landscape for beef production and strong global meat demand that is projected to continue to rise. Growth in production and beef exports would position the industry as a strong economic driver and contribute positively to domestic and global food security while improving economic and environmental resilience.

The industry must maintain its competitive position. Canadian beef is recognized globally as a safe, high quality, nutritious and delicious protein source. However, Canadian beef must compete with other meat and protein sources on consumers' plates. Canada's beef industry must also maintain its competitive position against other major beef-exporting countries. Canada represents 1% of global cattle inventories producing 1.6 million tonnes of beef and exporting 52% of production valued at \$7.1 billion in 2024 (including live slaughter). Canada is the eighth largest beef exporter in the world and an important contributor of low GHG emission beef to international consumers.³ Canadian beef has one of the lowest GHG footprints per unit of production in the world at 12.0 kg CO₂ equivalent per kilogram of live weight, less than half of the global average.⁴

The industry has a responsibility to address domestic and global food security by providing nutrient-dense food. With sustainable production practices, higher productivity and reduced emissions go hand in hand. Beef is a nutrient-dense, high-quality protein source containing 14 essential nutrients including zinc, bioavailable iron, selenium, potassium and a range of vitamins. Iron and zinc found in red meat are also more bioavailable than from plant sources, making beef an efficient way to address nutrient gaps that remain a concern even in developed countries.

Gram for gram, Canadian beef provides substantial and cost-effective nutrient benefits over other protein options. A 2020 study shows that beef can deliver these nutrients efficiently, with relatively low calorie intake and at a cost comparable to many alternative protein sources.⁵ As governments and industry work together to strengthen food security, beef can continue to play an important role in supporting access to nutritious, balanced diets.



2. Background, cont.

2.2. Industry Competitiveness, cont.

Improving production efficiency has long-reaching impact on the Canadian beef sector's resilience and ability to grow. Producing more beef per acre of land can be achieved through increased forage yields, refined grazing management strategies and improved agronomic management of forage stands. Gains in production efficiency will also reduce the carbon footprint of beef from 10.5 kg CO₂eq/kg live weight in the West and 9.8 kg CO₂eq/kg live weight in the East as improvements in grazing and feeding strategies reduce enteric methane and other energy costs.⁶

Improving forage yields on a per-acre basis impacts production as well as the cost of feed. Forage breeding, management and rejuvenation contribute to improving forage yields. In Canada, acres of hay and other forage crops grown have decreased 4% between 2016 and 2021.⁷ As winter feed is one of the largest costs for Canadian beef producers, lowering winter feed costs can have a large impact on profitability. Improved hay and forage yields can increase the economic efficiency of the beef industry.

Regardless of calf prices, profitability requires optimal reproductive performance in the cow herd as well as calf survival through the early life and pre-weaning periods. However, nutrition and health management of the cow herd impact colostrum quality, rebreeding success, fetal development and calf survival. Early life management affects a calf's ability to survive to weaning and successfully adapt to the feedlot environment or develop into a productive breeding female. Cost-effectively improving breeding rates and calf survival through disease management and nutrition improves production efficiency at both farm and industry level.

Environmental resilience is economic resilience. The Canadian beef industry is called upon to respond to the dual calls of meeting global food requirements and addressing economic and environmental resiliency. Production practices that mitigate the effects of climate change—such as grassland and wetland conservation, improved forage resilience to a wide variety of weather conditions and increased production efficiency—also impact the ability of the beef industry to operate through periods of prolonged drought. The industry's ability to adapt to adverse weather conditions supports the availability of beef and food security for Canadians.

Keeping land in beef production improves a number of other metrics, including the amount of land preserved as native grasslands, wetland retention, biodiversity and carbon sequestration. Improving production efficiency, and therefore cost efficiency, ensures beef producers will continue land stewardship and conversion to annual crops will be less economically advantageous.

The Canadian beef industry's story is and always has been one of readiness, resilience and responsibility toward Canadians and the global community. The industry is called upon to increase food production while stewarding the landscape and remaining economically viable. This is possible through the research, innovation and knowledge mobilization outlined in this Strategy.

2. Background, cont.

2.3. Beef Industry Goals to 2030

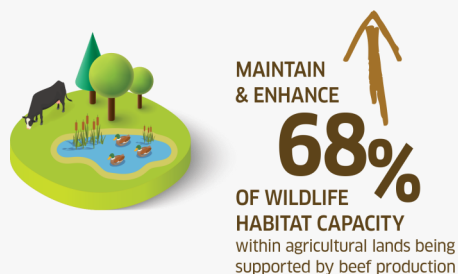
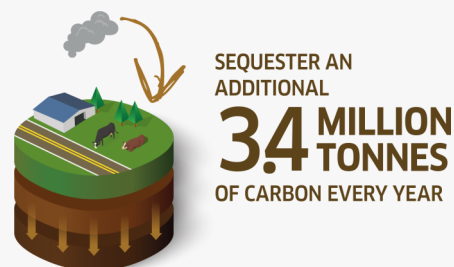
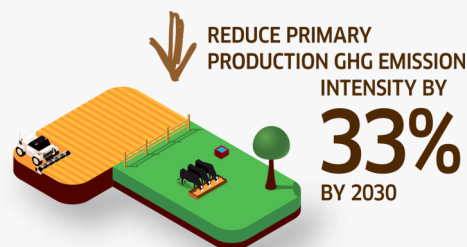
The **National Beef Strategy** promotes a unified approach to position the Canadian beef industry for greater profitability, growth and production of a high-quality beef product. To achieve these aims, the Canadian Beef Advisors developed a suite of 10-year goals to concentrate industry efforts. These goals outline how the Canadian Industry strives for incremental and continual improvements—economically, environmentally and socially.

Topics addressed under the 10-year goals include animal health and welfare, beef quality and food safety, land use and biodiversity, greenhouse gas emissions and carbon sequestration, human health and safety, water and technology. These goals recognize the breadth of benefits from beef production beyond supplying beef to the global protein market.

Highlights of the 2030 goals include:

- Develop and promote best practices to preserve the continued effectiveness of existing and future antimicrobials to support human and animal health and welfare.
- Increase the value of AAA and prime carcasses by building demand for all cuts.
- Support innovation, research and commercialization of technology throughout the supply chain.
- Reduce primary production GHG emission intensity by 33%.
- Sequester an additional 3.4 million tonnes of carbon yearly.
- Protect and maintain the 35 million acres of native grassland in the care of beef producers.
- Protect animal well-being by ensuring the five freedoms of health, mental state, nutrition, environment and behaviour.
- Cut food loss and waste by 50% from secondary processing to consumers.
- Maintain and enhance 68% of wildlife habitat capacity within agricultural lands being supported by beef production.
- Protect wetlands, filter nutrients and build resilience to drought and flooding.
- Invest in innovative solutions for a better tomorrow.

2030 CANADIAN BEEF GOALS



- 2030 Beef Goals continue on p. 9 -

2. Background, cont.

2.3. Beef Industry Goals to 2030, cont.

Development and Progress:

An iterative process was used to develop the 2030 Canadian beef industry goals. This included a literature review, historical performance and interviews with researchers, veterinarians, producers and other industry experts to determine feasibility of accomplishing the goals. Though ambitious, these goals were set to help drive the industry forward.

In 2024, an updated National Beef Strategy was released, identifying and filling gaps to help meet the 2030 industry goals. While some goals, such as yearly carbon sequestration, are being met, others, such as surveillance of Canadian production practices or water use efficiency in the beef value chain, require ongoing work.

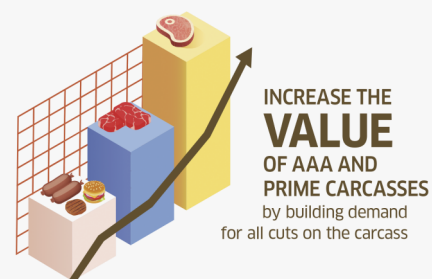
Research and knowledge mobilization move the beef industry toward the 2030 goals by developing, refining and promoting adoption of new processes and practices. Since their release, several research projects have specifically targeted advancements toward the goals, including reducing food waste and stewarding responsible antimicrobial use.

Role of Research and Knowledge Mobilization:

Much of Canada's beef industry success to date is due to incremental improvements in average daily gain, reproductive efficiency, animal health, forage and feed yields, nutrition management, and grassland management and conservation. These achievements are supported by research (to understand production realities and identify and test potential solutions) and knowledge mobilization (to encourage beneficial production practice change).

Research is required to bridge knowledge gaps and take concepts in feed efficiency, forage breeding and grazing from the lab and small plots or pens to the herd scale. Once research has provided evidence for a new production practice, knowledge mobilization spreads new knowledge, identifies barriers to adoption and assists producers with adopting beneficial practices.

2030 CANADIAN BEEF GOALS



2. Background, cont.

2.3. Beef Industry Goals to 2030, cont.

For example, targeted knowledge mobilization has improved adoption of evidence-based calving practices, contributing to improved calf survival rates and producer profitability. The first **cow-calf surveillance network**, established in 2013, identified that calf survival within the first 24 hours of life could be improved through resuscitation techniques. In response, a suite of **Calf 911 resources** were developed and disseminated by the BCRC, veterinarians and extension agents. **Recent surveys** found increased adoption of scientifically backed calf resuscitation techniques and increased calf survival.



Sainfoin variety development and utilization is another success story example. Forage breeding is a long-term commitment that can assist with producer profitability and environmental resilience. Mountainview sainfoin is a nutritious, drought and cold tolerant legume that does not cause bloat. Including sainfoin in an alfalfa stand can reduce the risk of bloat. Developed by a team of researchers in Western Canada, this sainfoin variety is now available to producers. It is also included in the **Forage U-Pick tool**, which assists producers in choosing forage varieties that will fit with their environment.

The Five-Year Canadian Beef Research & Knowledge Mobilization Strategy feeds into the broader National Beef Strategy and 2030 goals of which the Canadian Beef Advisors and other partners work collaboratively to achieve.

CANADIAN BEEF ADVISORS



3. Context

3.1. Rationale for the Strategy

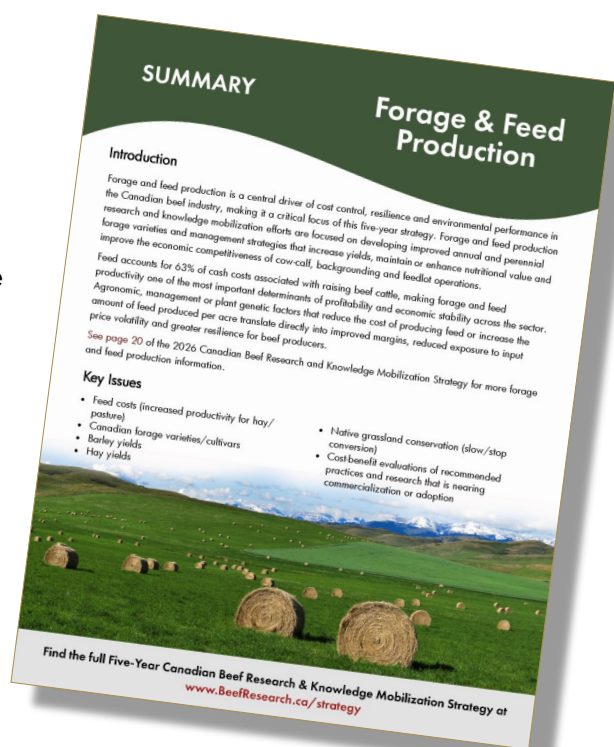
The Canadian beef industry faces complex long-term challenges that require coordinated national action. Advancing the beef and forage industry depends on improvements in productivity, food safety and quality, operational efficiency, resilience and profitability, while reducing production risk and addressing evolving consumer expectations to earn public trust. Strategic investments and collaboration among funding agencies, researchers and knowledge mobilization specialists are essential to ensure research and extension activities drive meaningful, incremental changes across the industry.

Research and knowledge mobilization play a key role in supporting producer awareness and adoption of beneficial management practices, accelerating innovation uptake and supporting decision making across the beef value chain. Knowledge mobilization also helps translate research outcomes into practical tools, technologies and resources that improve industry performance and competitiveness. Continued investment in these areas is necessary to maintain Canada's global reputation as a producer of safe, high-quality and sustainably produced beef recognized internationally for strong environmental and production standards. Sustained investment is also required to maintain and renew research infrastructure, scientific expertise and extension capacity needed to support long-term industry innovation.

The 2028 Five-Year Canadian Beef Research & Knowledge Mobilization Strategy is a national framework designed to coordinate beef research, knowledge mobilization and technology transfer efforts across Canada. This is the fourth iteration of the Five-Year Strategy. The Strategy originated from recognition by the Beef Cattle Research Council (BCRC) and the Beef Value Chain Roundtable (BVCRT) of the need for a coordinated national approach, stronger alignment among funding agencies and improved efficiency in research investment. Each Strategy aims to encourage collaboration and alignment of limited funding and resources, reduce duplication of research efforts, strategically address priority research and capacity needs and maximize the value and impact of research investments.

The Strategy recognizes science, innovation and producer adoption are key to improving the environmental, social and economic sustainability of the beef industry. It also supports adoption of emerging technologies and data-driven tools to improve productivity, sustainability and efficiency.

The development, renewal and ongoing stewardship of the Five-Year Canadian Beef Research & Knowledge Mobilization Strategy has contributed to significant progress, including improved information sharing between industry and government funding agencies and stronger coordination in defining annual funding priorities. Having a single national strategy has provided a greater focus on targeted research outcomes while encouraging clearer, more proactive discussions around infrastructure, research capacity and collaborative opportunities across the sector.



Priority summaries and previous five-year strategies are available at BeefResearch.ca.

3. Context, cont.

3.1. Rationale for the Strategy, cont.

The Canadian beef industry continues to work toward improvements throughout the supply chain. The industry's 2030 goals were established to provide ambitious, measurable targets that support continual advancements in environmental, economic and social sustainability. As the industry works toward achieving these goals, the Five-Year Canadian Beef Research & Knowledge Mobilization Strategy helps direct research and extension efforts in alignment with industry priorities. All priorities within the Five-Year Strategy align with one or more of the Canadian beef industry's 10-year goals.

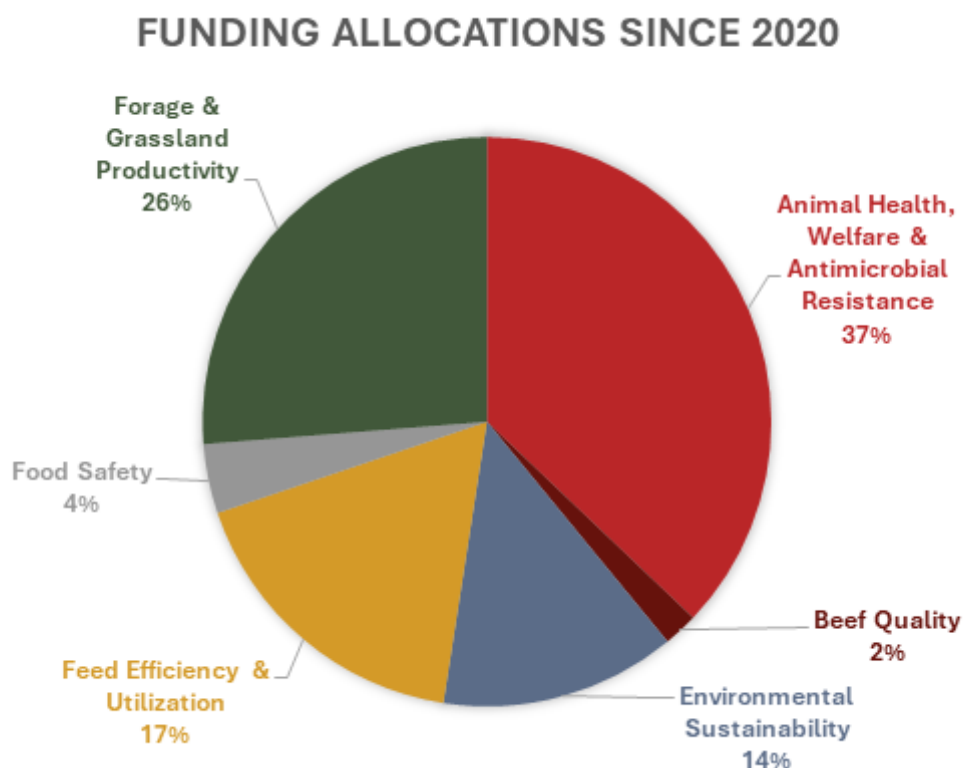
3.2. Strategy Development Process

Building off past success, the 2028 Five-Year Canadian Beef Research & Knowledge Mobilization Strategy was developed through a collaborative and stakeholder-driven process. The process incorporated perspectives from across the beef value chain to ensure priorities reflected the needs of the broader industry. Input was gathered through direct stakeholder consultation, an open online survey, program area specific focus groups, engagement with broader beef industry stakeholders and a comment period on the draft priorities. The engagement processes considered both immediate industry challenges and longer-term opportunities to support current and future competitiveness and sustainability.

Survey questions, focus group discussion and follow-up feedback focused on the following program areas:

- cattle nutrition and production efficiency
- forage and feed production
- animal health, welfare and antimicrobial resistance
- beef quality
- food safety
- environmental sustainability
- knowledge mobilization

A review of historical funding allocations from the BCRC and partner funding organizations was conducted to identify areas of progress and opportunities where further investment and development may be needed.

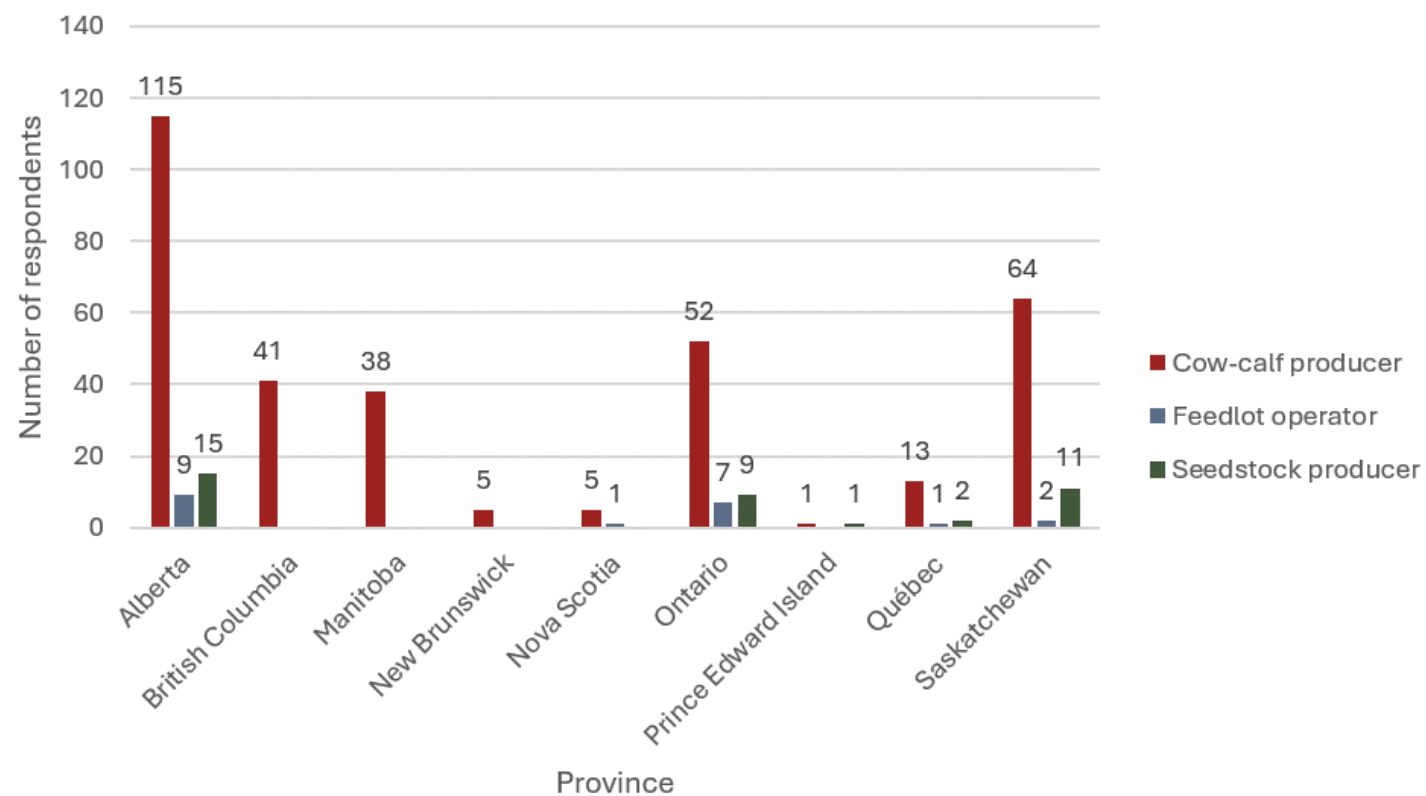


3. Context, cont.

3.2. Strategy Development Process, cont.

To inform focus group recommendations, industry feedback was gathered through an open online survey conducted from June to September 2025. The survey allowed participants to rate the importance of a broad range of research and extension issues. A total of 591 survey respondents participated, including cow-calf producers (57%), seedstock breeders (6%), feedlot operators (3%), veterinarians (7%), researchers (6%), government staff (5%), industry staff (4%), non-governmental organizations (2%) and other stakeholders (10%, including producers from other countries and supply chain representatives). Canadian producers were represented from across the country.

Canadian beef producers who responded to the industry survey:



Due to limitations on the number of individuals that could participate in focus groups, the survey results also served to validate and confirm themes identified through the focus group discussions. Particular attention was given to issues that were identified as “very” or “extremely” important by a large proportion of respondents, as well as issues frequently identified as “low” priority or “not” important. The survey also provided insights into preferred approaches for future knowledge mobilization and producer outreach. A summary of the survey results is included in [Appendix 5.2](#).

Focus groups identified program-area-specific research and extension priorities that contribute to advancing the Canadian beef industry and achieving industry goals. These discussions engaged industry stakeholders including producers, veterinarians, packers, non-government organizations, industry partners, researchers, funders and extension groups, with 133 participants in total. A list of focus group participants is included in [Appendix 5.3](#).

3. Context, cont.

3.2. Strategy Development Process, cont.

The knowledge mobilization focus group engaged individuals and organizations involved in extension and producer outreach within the beef industry. A pre-meeting survey of extension priorities identified across the program areas helped focus discussion on key opportunities for knowledge mobilization. Discussion centered on innovations and practices with the greatest potential to improve adoption, competitiveness and sustainability across the Canadian beef industry. A follow-up discussion with small- and medium-sized feedlot operators, nutritionists and veterinarians was also conducted to identify knowledge mobilization priorities relevant to that sector.

Draft priorities developed from these focus group discussions were further refined through feedback from focus group participants, Canadian beef industry professionals, researchers working within the beef sector and the Canadian Beef Advisors.

The Canadian Beef Advisors is a diverse group of elected leaders and staff representatives of the seven national beef organizations responsible for policy, marketing, research and sustainability. The organizations include the BCRC, Canadian Beef Breeds Council, Canada Beef, Canadian Cattle Association (and its provincial member associations), Canadian Meat Council, Canadian Roundtable for Sustainable Beef and the National Cattle Feeders’ Association.

On behalf of the Canadian beef industry, the Canadian Beef Advisors help prioritize and advance goals outlined in the National Beef Strategy. This broader National Beef Strategy encompasses the Five-Year Canadian Beef Research & Knowledge Mobilization Strategy alongside objectives related to policy, marketing and public trust.

In addition to the focus groups and online survey, two broader virtual engagement sessions were conducted. The first session focused on consultation with industry and government funding agencies and other key stakeholders. Provincial and federal government representatives, along with industry funders, discussed opportunities to improve coordination and delivery of research and extension programming aligned with the draft Strategy. The second session engaged researchers on the goals of the Canadian beef industry and the role of the Five-Year Strategy in supporting those objectives.

Following completion of the engagement sessions and industry comment period, the draft Strategy was reviewed and approved by the BCRC and the Canadian Beef Advisors.

Definitions used in the Canadian Beef Research & Knowledge Mobilization Strategy

Goals: Overarching objectives that define the desired future state of the Canadian beef industry.

Program Areas: Broad thematic categories that organize research and knowledge mobilization efforts and group related outcomes.

Outcomes: Specific statements of desired results that research and knowledge mobilization efforts aim to achieve within each program area, contributing to the overarching goals.

Priorities: Targeted areas of focus that identify specific challenges or opportunities to be addressed, guiding investment and activity to achieve desired outcomes.

4. Outcomes and Priorities by Program Area

4.1. Cattle Nutrition and Production Efficiency

Over the next five years, advances in cattle nutrition and production efficiency will play a key role in improving productivity, reducing costs and emissions and strengthening the long-term competitiveness of the beef sector. Research and knowledge mobilization in this area spans multiple interconnected priorities, including whole life cycle efficiency, mineral nutrition, feed processing and byproduct utilization. Within this area, efforts target feeding and management factors across all production systems, directly influencing overall productivity.

Improved production efficiency of cattle at all stages of the life cycle (i.e., pre-weaning, post-weaning, backgrounding, grassing and feedlot) is key to improving cost of production, reducing methane emissions and ensuring industry competitiveness. Current methods to evaluate efficiency in cattle are often expensive or only correlate to one portion of an animal's lifecycle. Better criteria are needed to help producers select animals that will perform in their environments and reach individual productivity goals.

Mineral nutrition plays a key role in cattle health and performance. It is therefore, essential to ensure current mineral feeding recommendations are adequate and aligned with today's management systems. A deeper understanding of mineral interactions, impact of antagonists and strategies to improve absorption is needed to enhance animal health and productivity throughout the production cycle. In addition, while there are several mineral delivery options available for cattle on pasture, a simple and effective method that consistently ensures adequate intake of essential minerals is still lacking.

Feed processing presents an opportunity to reduce costs and improve feed efficiency. Cereal grains represent 70-85% of feedlot diets, and processing can have a major impact on how these grains are utilized. Improved processing methods could therefore increase overall efficiencies and reduce cost of production.

Increased utilization and digestibility of byproducts can also impact feed efficiency and reduce cost of production. Utilizing byproducts from other sectors also reduces waste across the entire agricultural industry.

In emerging beef-on-dairy systems, important gaps in knowledge remain for managing young calves prior to entering the feedlot and during the feedlot period. This segment of the industry is becoming increasingly important to the future of the Canadian beef industry and feedlot sector, and additional research is needed to identify beneficial management practices for beef-on-dairy animals.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.



4. Outcomes and Priorities by Program Area, cont.

4.1. Cattle Nutrition and Production Efficiency, cont.

10-Year Cattle Nutrition and Production Efficiency Goals for Canada's Beef Industry: Improvements in production efficiency will be instrumental to achieving industry goals related to greenhouse gas (GHG) emission intensity, because most of the fossil fuel emissions associated with beef production are directly related to feed production, and digestive efficiency is inversely related to the enteric and manure emission intensities.

The Role of Research & Knowledge Mobilization in Advancing These Goals: Achieving these ambitious goals will entail significant research, knowledge mobilization efforts and investment across a range of specialties. These include, but not limited to, animal nutrition, advancements in production and processing of traditional and alternative feedstuffs, evaluation of feed additives that may reduce enteric methane emissions, genetics and breeding. The on-farm decisions to achieve these goals will be supported by practical knowledge mobilization efforts, including decision-making tools such as ration formulation software and efficiency benchmarking, guidance for feed processing and byproduct use and tools for evaluating herd and cow efficiency.

2025 National Beef Research and Knowledge Mobilization Priority Survey: Priority areas in this section were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section. Identification and evaluation of alternate feeds and feeding strategies, feed quality impacts on feed efficiency and improved utilization of low-quality feeds and forages were identified as priorities to both cow-calf and feedlot producers. Feedlot producers also prioritized barley yield, silage production, storage and feeding, feedlot management and genetic markers as priorities. Cow-calf producers were more concerned with identifying efficient or inefficient cows during winter feeding.

2025 Cattle Nutrition and Production Efficiency Focus Group: Overarching nutrition, feeding, beef-on-dairy, mineral research and knowledge mobilization outcomes and priorities were further developed and refined through focus groups consisting of 29 individuals, including producers, industry stakeholders, researchers and funding partner representatives.

Beef Industry 2030 Goals Related to Cattle Nutrition and Production Efficiency

- Reduce primary-production GHG intensity by 33% in 2030
- Reduce food loss and waste (from secondary processing to consumer) by 50% by 2030
- Attain 92% reproductive efficiency in Canadian beef production (improve from 85% in 2018)



4. Outcomes and Priorities by Program Area, cont.

4.1. Cattle Nutrition and Production Efficiency, cont.

Research Outcomes and Priorities

Outcome 1: Improved beef cattle productivity and profitability through feed processing, by-products, additives, supplements or other feeding strategies

Research Priorities:

1. Develop and/or validate rapid tests to detect and quantify antinutritional factors (e.g., ergot, nitrates)
2. Characterize the nutritional value of by-products that are available in significant volumes (e.g., hemp, lentil, peas, camelina by-products)
3. Improve the digestibility of high-fiber and recalcitrant feedstuffs and by-products
4. Develop cost-effective measuring and feeding strategies to ensure uniform supplement intake on pasture
5. Investigate starch availability in feedlot diets and methods to formulate rations based on starch content

Outcome 2: Improved production efficiency through animal selection, genetics and breeding

Research Priorities:

1. Identify and develop practical metrics to evaluate and predict production efficiency in cows on pasture and assess subsequent impacts on calf feed efficiency in the feedlot

Outcome 3: Improved reproductive efficiency through increased understanding of beef cattle mineral requirements, supplementation practices and bioavailability

Research Priorities:

1. More precisely define micronutrient requirements and develop regionally appropriate supplementation recommendations for breeding cattle of different ages throughout the production cycle in extensive winter-feeding systems
2. Investigate novel mineral supplementation strategies that help cattle maintain optimal mineral status on pasture (e.g., timing, delivery method)
3. Investigate strategies to increase the intake, absorption and bioavailability of minerals, particularly in the presence of mineral antagonists
4. Develop strategies or technologies to simply and cost-effectively improve water quality in remote areas, with specific focus on sulphates and mineral load

Outcome 4: Improved animal performance and production efficiency in feedlot cattle

Research Priorities:

1. Optimize protocols for the use of growth-enhancing products in beef-on-dairy cattle
2. Investigate how early-life and pre-feedlot management practices influence the health, performance and profitability of beef-on-dairy calves once they enter the feedlot
3. Evaluate management and duration of growing, backgrounding and feedlot phases to maintain intakes and efficient performance in long-fed cattle

4. Outcomes and Priorities by Program Area, cont.

4.1. Cattle Nutrition and Production Efficiency, cont.

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of feed testing as a basis for making sound feeding decisions

Knowledge Mobilization Priorities:

1. Promote tools that guide producers on how to properly collect feed samples
2. Share resources on how to interpret feed tests and incorporate results into strategic feeding decisions
3. Provide and promote resources on feed and forage antinutritional factors (e.g., ergot, mycotoxins) including risks, sources and when and how to test
4. Build materials highlighting real producer examples that demonstrate effective feed management practices
5. Demonstrate cost savings through feed testing to improve ration efficiency and avoid unnecessary supplementation

Outcome 2: Increased adoption of mineral nutrition and supplementation beneficial management practices

Knowledge Mobilization Priorities:

1. Develop and promote resources that help producers make informed decisions on when and what type of mineral product to feed
2. Highlight the advantages and disadvantages of different mineral supplementation strategies including practical implementation, monitoring intake and common misconceptions
3. Develop materials that describe mineral bioavailability and why it matters
4. Illustrate the economic value of proper mineral nutrition and the hidden costs of mild deficiencies, incorporating real producer examples
5. Provide guidelines on available methods for assessing an animal's mineral status
6. Offer resources to help producers recognize and prevent mineral-related nutritional issues when feeding by-products

Outcome 3: Increased adoption of beneficial practices for monitoring stock water quality

Knowledge Mobilization Priorities:

1. Provide clear examples of the economic benefits of water testing using current prices
2. Develop and share resources outlining practical steps to manage water issues during drought
3. Update and maintain water quality guidelines according to the latest research, including the Livestock Water Quality Field Guide
4. Create materials demonstrating that visual inspection alone cannot reliably assess water quality

4. Outcomes and Priorities by Program Area, cont.

4.1. Cattle Nutrition and Production Efficiency, cont.

Knowledge Mobilization Outcomes and Priorities, cont.

Outcome 4: Increased adoption of incremental changes to management practices that impact calf performance and optimize profitability

Knowledge Mobilization Priorities:

1. Create and share resources promoting implant adoption, highlighting economic benefits and addressing producer perspectives
2. Share resources and host events demonstrating proper implant procedures
3. Promote the economic benefits of low-stress weaning strategies to encourage adoption
4. Promote the importance of maternal body condition score and its effects on calf performance
5. Promote crossbreeding as a tool for commercial producers to increase production efficiency
6. Develop visual resources on metrics impacting calf performance
7. Develop resources on beneficial management practice guidelines for starting calves on feed in backgrounding and feedlot environments, including producer examples and experiences
8. Promote beneficial management practices for feed and water requirements of cattle in backgrounding and feedlot environments
9. Create and share resources on feed grains (e.g., corn, barley, wheat) nutrition, processing and feeding guidelines

Outcome 5: Improved production outcomes through increased adoption of interconnected management practices that impact herd performance

Knowledge Mobilization Priorities:

1. Create resources describing the selection for herd genetics that fit different production environments, including why this is important
2. Promote the importance of using body condition score as a tool to measure cow performance and reproductive fitness
3. Develop visual resources on metrics impacting cow reproductive performance and longevity
4. Promote resources outlining beneficial practices for breeding bull nutrition and management
5. Develop troubleshooting guides for unexpected reduced reproductive performance



4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production

Forage and feed production is a central driver of cost control, resilience and environmental performance in the Canadian beef industry, making it a critical focus of this five-year strategy. Forage and feed production research and knowledge mobilization efforts are focused on developing improved annual and perennial forage varieties and management strategies that increase yields, maintain or enhance nutritional value and improve the economic competitiveness of cow-calf, backgrounding and feedlot operations.

Feed accounts for 63% of cash costs associated with raising beef cattle, making forage and feed productivity one of the most important determinants of profitability and economic stability across the sector.¹ Agronomic, management or plant genetic factors that reduce the cost of producing feed or increase the amount of feed produced per acre translate directly into improved margins, reduced exposure to input price volatility and greater resilience for beef producers.

Canada's cold climate limits the ability of many feed and forage varieties developed elsewhere to grow or thrive in Canadian conditions. Varieties made in Canada are essential to ensure that forages and feed available to producers can thrive and contribute to the competitiveness of the Canadian beef industry. While crops like oilseeds and corn benefit from extensive privately funded breeding programs, private investment in cereal and forage breeding in Canada is also nonexistent. This is due to factors such as the ability to save seed for future cereal crops, perennial forage stands longevity (often 10+ years) and the relatively small size of the Canadian market in comparison to other countries. As a result, the beef industry continues to invest in breeding as a priority to ensure Canadian beef producers have the feed and forage varieties that yield well and contribute to their economic sustainability.

Maintaining international competitiveness requires improved forage yields and beef production (fewer acres per cow or more beef per acre) on marginal land. Higher yielding varieties have been developed but have not fully compensated for the move to less productive marginal land. Public investment in forage variety development is necessary as private companies have limited ability to recoup their initial investment within a reasonable timeframe.

Canadian barley yields were on average 10% lower than United States yields between 2016 and 2025, ranging from 1-29% lower.² In 2021, the number of Canadian farms growing barley increased by 3% compared to 2016, but remained 14% below the 2011 level.³

Seeded barley acreage 2025 dropped by 8% compared to 2016, while harvested area increased by 1%, yields increased by 10% (7 bushels per acre), and total production increased by 10% (885,799 metric tonnes).⁴



4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

Approximately 80% of Canada's beef production occurs while animals consume forage, primarily because cow-calf operations rely almost exclusively on grazing and stored forage. Extending the winter grazing season continues to present a major opportunity to reduce winter feeding costs on some farms. Research has focused on the viability of winter grazing alternatives, along with how to use annuals in stored systems such as greenfeed and silage. In these systems, agronomic and harvest decisions are often made based on recommendations for grain production rather than forage production.

The four western provinces have 97% of Canada's natural land for pasture, 94% of the nation's tame pasture⁵ and 90% of the beef cows.⁶ Expanding annual crop production has come at the expense of forage; between 2016 and 2021, Canada's acreage of natural land for pasture and tame forage decreased by 4% and 5%, respectively.⁷ Canadian tame hay production averaged at 17 million tonnes in 2021-2025, this has decreased from 22 million tonnes in 2016-2020. Tame hay harvested area averaged 11.7 million acres in 2021-2025, down from 13 million acres in 2016-2020. The five-year (2021-2025) average hay yield of 1.58 tons/acre is down from 1.82 ton/acre in 2016-2020 average and below the peak of 2.18 tons/acre in the 1980s.⁴ As annual crop acreages increase, producers grow forages on increasingly marginal land, which makes maintaining yield and productivity more difficult. An increase of 0.15 tons/acre, which would restore average hay yields to the 2000-2019 levels of 1.73 tons/acre, would be worth \$379 million in potential economic value due to the increased output.⁸ This underscores the significant economic return potential of forage productivity research.

In Canada, 35 million acres of native grassland is managed by beef producers. This presents a unique ecosystem providing habitat for species at risk and various other wildlife. Native rangelands face many threats including expanding crop acres and encroachment by invasive species. Research into control of invasive species as well as ways to manage these pastures in a way that they can compete economically with cropland acres is needed to ensure that native forage stands remain intact and productive.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.

Beef Industry 2030 Goals Related to Native Grasslands, Carbon Sequestration and Greenhouse Gas Emissions

- Safeguard the existing 1.5 billion tonnes of carbon stored on lands managed with beef cattle
- Sequester an additional 3.4 million tonnes of carbon each year
- Maintain the 35 million acres of native grassland in the care of beef producers
- Maintain a network of natural landscapes and healthy functioning ecosystems through well-managed grazing systems that maintain sustainable plant communities and healthy rangelands

4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

10-Year Forage and Feed Goals for Canada's Beef Industry: Grasslands play a major role in carbon sequestration and long-term carbon storage.

Ensuring that producers can grow forages in an economically viable way helps keep marginal lands in grasslands, allowing them to sequester carbon and deliver environmental value while supporting producer livelihoods.

The forage and feed production research outcomes and priorities and improved management practices identified in the 2028-33 Canadian Beef Research and Knowledge Mobilization Strategy will directly contribute to the 2030 industry goals for native grasslands, carbon sequestration and greenhouse gas emissions.

The Role of Research and Knowledge Mobilization in Advancing These Goals: Achieving these ambitious goals will require significant research and knowledge mobilization efforts, including investment across a range of specialities such as forage and grassland productivity, plant breeding, animal nutrition, grazing and animal behaviour and soil health and quality. Knowledge mobilization will be critical to translating research outcomes into regionally appropriate, producer-relevant guidance that supports forage productivity, grazing management, and resilient feed systems across diverse production environments.

2025 National Beef Research and Knowledge Mobilization Priority Survey: Priorities in this section were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section. Forage yield, forage drought resilience and management, stand rejuvenation, invasive species control, as well as silage production, storage and feeding, were priorities across both the cow-calf and feedlot sectors. The cow-calf sector also prioritized stand establishment, native forage management and year-round grazing management. The feedlot sector additionally prioritized barley yields.

2025 Forage and Feed Focus Group: The targeted forage and feed production research and knowledge mobilization outcomes and priorities were further developed and refined through focus groups consisting of 36 producers, industry stakeholders, researchers and funding partner representatives.



4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

Research Outcomes and Priorities

Outcome 1: Annual feed and forage: Improved agronomic performance, yield, nutritional quality and palatability of annual species for grazing, feed grains or stored forage

Research Priorities:

1. Develop new, high-yielding feed grain and silage varieties with superior agronomic performance and disease resistance, consistent kernel size, longer silage and greenfeed harvest window, reduced lodging and improved nutritional quality
2. Investigate promising international and domestic annual species, varieties and mixtures through independent comparisons on a meaningful scale (interprovincial collaboration is encouraged) to inform producer seed selection decisions under a wide range of environmental conditions and soil types
3. Investigate agronomic and harvest practices (e.g., fertilization rates, harvest timing) to optimize yield, lengthen the silage and greenfeed harvest window, reduce lodging, produce consistent kernel size and improve nutritional quality of annual species for storage and extended grazing
4. Investigate harvest timing and agronomic recommendations for silage production, including optimum fertilizer rates and inoculant use
5. Evaluate the impacts of ensiling on changes in nitrate levels
6. Evaluate how soil compaction caused by cattle grazing influences subsequent crop performance and develop practical, cost-effective mitigation strategies

Outcome 2: Tame perennial forages: Improved management and productivity of tame pastures and hay stands

Research Priorities:

1. Develop and evaluate new forage varieties with improved germination, emergence, yield, nutritive value, salinity, disease resistance, drought and flood tolerance, reduced fall dormancy, improved grazing tolerance, improved seed production, improved winter hardiness and improved plant persistence
2. Investigate promising international and domestic perennial species, varieties and mixtures through independent comparisons on a meaningful scale (interprovincial collaboration is encouraged) to inform producer seed selection decisions under a wide range of environmental conditions and soil types
3. Investigate cost-effective agronomic practices (e.g., optimal fertilization rates) that improve forage yield, stand longevity, germination, emergence, yield, nutritive value, stockpiled forage quality, as well as salinity, drought and flood tolerance
4. Investigate optimum fertilization rates to improve forage yield and performance
5. Investigate grazing management practices, including the interaction between rest period and utilization rate, to improve forage yield, resilience, stand longevity and animal health and performance
6. Reinvestigate recommendations for rest period requirements of tame pastures in high-moisture climates

4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

Research Outcomes and Priorities, cont.

Outcome 3: Native/naturalized forage: Improved management and productivity of native/naturalized pastures to enhance profitability and discourage land conversion

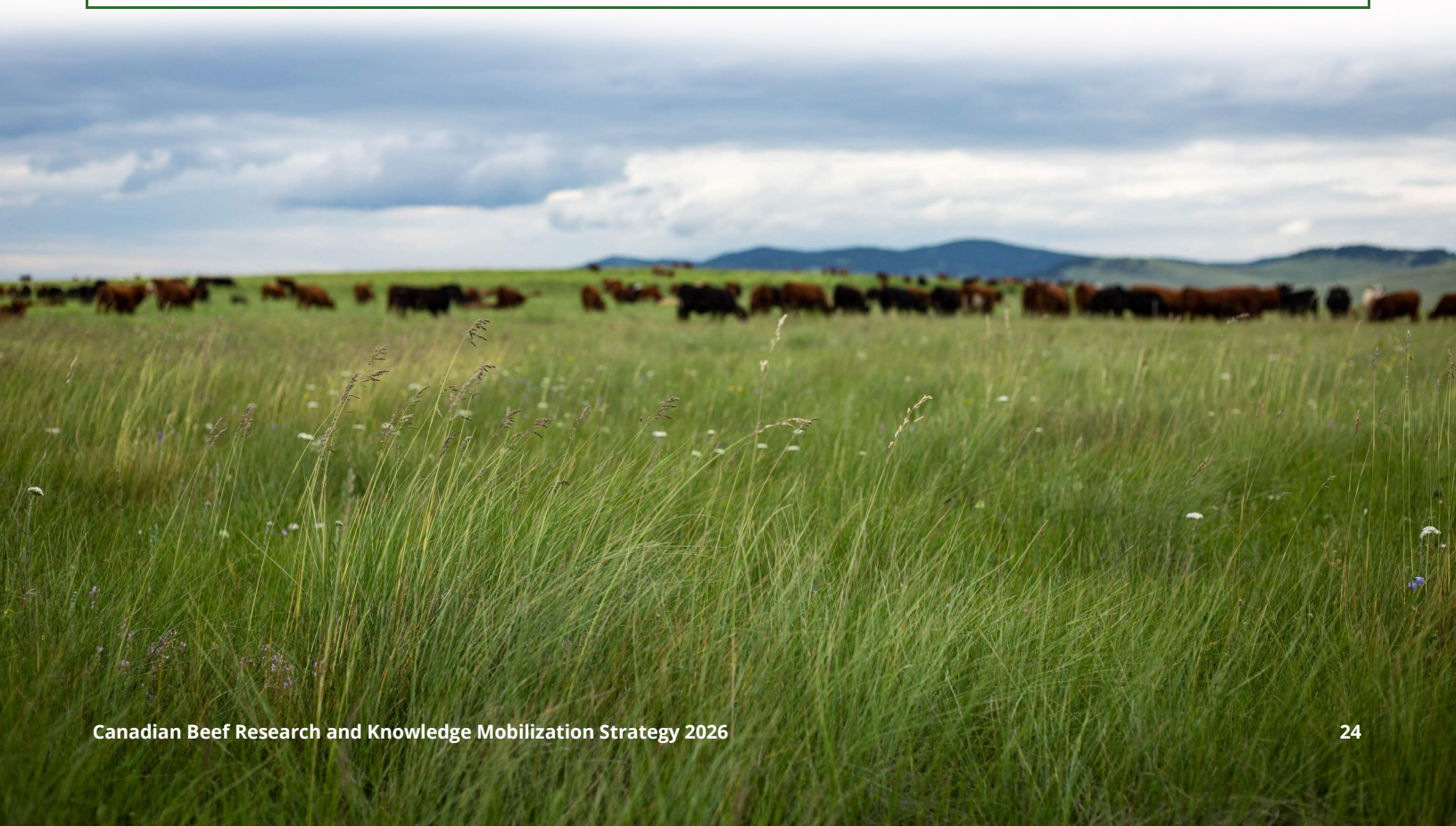
Research Priorities:

1. Identify grazing practices to optimize the utilization and resilience of native/naturalized pastures and restore degraded rangeland
2. Identify and develop cost-effective management strategies to control the spread of invasive plant species, shrubs or woody plants on rangeland
3. Develop recommended rest periods for native/naturalized pastures in response to changes in grazing pressure, timing of grazing, drought, flood or fire
4. Investigate the long-term economic impacts of maintaining native grasslands on marginal soils versus conversion to annual crop production

Outcome 4: Optimize the balance between livestock and forage productivity and biodiversity by developing environmentally friendly and cost-effective solutions for managing pests and wildlife

Research Priorities:

1. Develop solutions for managing pests and wildlife (e.g., grasshoppers, gophers/moles, badgers, burrowing mammals, wild ungulates, predators) that maintain the balance between livestock productivity and biodiversity



4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of regionally appropriate agronomic and management practices for forage stand management

Knowledge Mobilization Priorities:

1. Encourage producers to maintain pasture records and use them to guide pasture management decisions
2. Create and share resources that help producers identify when forage stands require rejuvenation
3. Promote tools and resources that assist producers determine when it is economically viable to break and reseed tame pastures
4. Develop materials that illustrate the economic losses associated with maintaining pastures beyond their productive lifespan
5. Promote beneficial management practices for successful forage establishment when reseeding
6. Where suitable, encourage the use of inoculant to support effective legume establishment

Outcome 2: Increased adoption of grazing cattle on cropland

Knowledge Mobilization Priorities:

1. Provide case studies demonstrating how producers are addressing infrastructure challenges with this practice, including examples of implementation on their own land or utilizing neighbouring cropland
2. Create checklists outlining key factors and requirements to consider before grazing cattle on cropland
3. Develop example agreements that cow-calf producers can use when negotiating arrangements with crop landowners
4. Design tools to assist with determining the costs and benefits each party contributes to the arrangement, supporting transparent pricing discussions

Outcome 3: Increased adoption of best practices when selecting and planting annual forage mixtures

Knowledge Mobilization Priorities:

1. Create and promote resources providing weed and pest control options for annual crop mixtures
2. Develop regionally appropriate resources for agronomists, outlining best practices to consider when using annual forage mixtures



4. Outcomes and Priorities by Program Area, cont.

4.2. Forage and Feed Production, cont.

Knowledge Mobilization Outcomes and Priorities, cont.

Outcome 4: Increased adoption of beneficial grazing management practices

Knowledge Mobilization Priorities:

1. Encourage the consistent use of range health assessments by actively promoting their value and application
2. Promote tools, resources and professional support for developing effective grazing rotations
3. Highlight resources that showcase beneficial grazing management practices for native forages including appropriate rest and recovery periods
4. Develop and distribute materials outlining beneficial management practices for grazing within silvopasture systems
5. Share guidance on proper management practices for grazing forages with antinutritional factors

Outcome 5: Increased adoption of regionally appropriate beneficial management practices to control invasive plant species

Knowledge Mobilization Priorities:

1. Promote tools and resources to control invasive plant species through regionally appropriate beneficial management practices

Outcome 6: Increased adoption of the use of soil agronomic principles and their use in decision making

Knowledge Mobilization Priorities:

1. Create and share resources on soil testing and texture, targeting how to make improvements in soil quality

Outcome 7: Promote adoption of beneficial management practices for proper silage harvest management, storage and feedout

Knowledge Mobilization Priorities:

1. Create and share resources on silage testing, including mycotoxins, nitrates and antinutritional factors



4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance

Continued advances in animal health, welfare and antimicrobial stewardship will be critical to sustaining producer profitability, maintaining public trust and ensuring continued access to effective animal health tools. Investing in research and knowledge transfer initiatives will support a shift from reactive to predictive data-driven management, which strengthens resilience and helps the beef industry meet evolving societal expectations.

Animal health research develops cost-effective management, diagnostic and treatment tools to reduce the losses caused by major production-limiting diseases and animal health challenges. Complementary animal welfare research informs science and outcome-based management practices, regulations and public communication on the welfare impacts of beef production. These efforts, together with research supporting the continued effectiveness of antimicrobials, will advance strong animal health and welfare outcomes.

In the cow-calf sector, it is generally expected that each breeding age female in the herd will produce and wean a healthy calf each year. Regardless of calf prices, profitability depends on optimal reproductive performance in the cow herd as well as calf survival through early life and pre-weaning periods. The extensive nature of cow-calf production means disease pressures are generally lower than in more intensive confinement systems. However, nutritional and health management of the cow herd affects overall productivity, including reproductive performance, fetal development, colostrum quality and calf health and survival. Management practices in early life affect a calf's ability to survive and thrive pre-weaning, successfully adapt to the feedlot environment or develop into a productive breeding female.

The backgrounding and feedlot sectors continue to face significant challenges from bovine respiratory disease (BRD) and associated diseases including histophilosis and *Mycoplasma*, as well as metabolic diseases associated with high-concentrate diets and lameness. The persistent and worsening nature of longstanding diseases like BRD suggests the beef industry needs a better understanding of disease etiology, including the roles of the pathogens, the host and environmental factors. Greater understanding is also needed of the microbiome's role in supporting animal health, including how it is established and how it may be effectively modified.

The adoption of beef-on-dairy genetics poses new challenges for the feeding sector and requires a better understanding of calf colostrum, health and nutritional management in these specific systems.



4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance, cont.

Significant strides have been made in developing and adopting practices to avoid or reduce the postoperative pain associated with routine management practices. However, effective solutions to alleviate both procedural and chronic pain remain limited.

Ongoing technological advancements have the potential to improve the industry's ability to predict individuals or groups of animals that are predisposed to particular diseases, accurately detect illness and improve diagnoses and treatment recommendations.

Surveillance of production practices in all sectors of the beef industry is critical to monitor changes in management practices, production-limiting disease patterns and antimicrobial use and resistance. These findings also inform both research priorities and knowledge mobilization efforts.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.

10-Year Animal Health, Welfare and Antimicrobial Resistance Goals for Canada's Beef Industry: The research outcomes and improved management practices identified in the 2028-33 Canadian Beef Research and Knowledge Mobilization Strategy will directly contribute to achieving the 2030 industry goals for animal health and care.

Advances in animal health, welfare and responsible antimicrobial use can reduce production losses associated with poor reproductive performance, illness, disease and mortality. In turn, these improvements will help support the goal of reducing primary production GHG emission intensity by 33% (greenhouse gas and carbon sequestration goal).

Beef Industry 2030 Goals Related to Animal Health and Care

- Ensure the five freedoms of animal wellbeing by increasing adoption of on-farm management practices
 - ⇒ Attain 92% reproductive efficiency in Canadian beef production (improve from 85% in 2018)
 - ⇒ Adopt management and breeding choices that support animal welfare (e.g., calving ease, polled genes, pain relief)
 - ⇒ Establish and maintain a surveillance system to monitor cattle production practices across Canada
- Ensure the effectiveness of existing and future antimicrobials is preserved to support human and animal health and welfare
 - ⇒ Develop, monitor and disseminate best practices regarding antimicrobial use
 - ⇒ Quantify and describe baseline antibiotic use practices in Canadian feedlot production
 - ⇒ Determine and monitor antibiotic resistance profiles in bacteria of concern in feedlot cattle



4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance, cont.

The Role of Research and Knowledge Mobilization in Advancing These Goals: The apparent simplicity of these goals is deceptive. Incremental improvements in animal health, welfare and antimicrobial stewardship will require substantial research effort and collaboration across a wide range of specialties, including beef cattle nutrition, grazing, pasture management, genetics, physiology, microbiology, virology, parasitology and the development and validation of diagnostic tests, vaccines and alternatives to antimicrobials. Significant investment is also needed around surveillance for emerging diseases and antimicrobial resistance to protect animal health, human health and food production. Ongoing knowledge mobilization to increase adoption of science-based beneficial management practices will support animal health, including reproductive performance, responsible antimicrobial use and animal welfare throughout the entire industry.

2025 National Beef Research and Knowledge Mobilization Priority Survey: Priority areas in this section were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section. Producers, veterinarians and industry professionals identified several concerns that informed priority development.

Reproductive performance and neonatal disease were high priorities among seedstock, cow-calf, feedlot and veterinary respondents. Feedlot operators and veterinarians identified respiratory diseases (i.e., BRD, including histophilosis and *Mycoplasma*), nutritional diseases associated with high-concentrate rations (e.g., acidosis, liver abscesses, laminitis) and painful practices as significant concerns. Advancing disease prevention through an increased understanding of immunology, improved vaccines and vaccination practices were identified by all sectors of the industry. Surveillance of production-limiting disease, antimicrobial use, resistance and management practices and tools to reduce the need for antibiotics were highlighted as research needs, particularly by participating veterinarians.

2025 National Beef Research and Knowledge Mobilization Focus Groups: Target animal health, welfare and antimicrobial resistance research outcomes and priorities were developed and refined through focus groups consisting of 32 individuals, including producers, industry stakeholders, researchers and funding partner representatives.



4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance, cont.

Research Outcomes and Priorities

Outcome 1: Improved prevention and mitigation of economically relevant and emerging animal disease issues (e.g., neonatal diarrhea, calf pneumonia, bovine respiratory disease, histophilosis, mycoplasmosis, digestive upsets, liver abscesses, lameness)

Research Priorities:

1. Advance basic research (e.g., microbiome, host-microbiome interactions, etiology, pathophysiology) into common production-limiting diseases to support development of cost-effective prevention and treatments
2. Identify, develop and validate key practices (e.g., management of cattle, feed, water, facilities) that cost-effectively maintain calf health through weaning and improve post-weaning health and feedlot productivity
3. Develop and independently validate vaccines, novel health products and practices that cost-effectively support animal health, prevent economically important production-limiting diseases and reduce the need for antibiotic treatment

Outcome 2: Improved prevention and mitigation of animal welfare issues

Research Priorities:

1. Develop cost-effective and easily administered tools and strategies to manage procedural and chronic pain associated with castration, branding, dehorning and lameness
2. Develop cost-effective practical alternatives to branding
3. Identify simple behavioural and physiological assessments that reliably indicate when euthanasia is the most cost-effective and humane treatment choice
4. Investigate and develop effective options for mass depopulation and disposal of cattle that minimize human and animal stress
5. Quantify the impact of bedding and pen conditions on animal health, welfare, carcass weight and grade, performance, tag score and feedlot economics

Outcome 3: Improved technologies and strategies to rapidly, accurately and cost-effectively predict, detect and diagnose economically important production-limiting and emerging diseases to reduce the need for and preserve the effectiveness of antibiotics

Research Priorities:

1. Which animals are likely to get sick? Improved assessment of the nutritional, immune and vaccination status of cattle to predict the risk of disease before signs of clinical disease becomes apparent
2. Which animals are sick? Improved disease detection in live cattle to assist with timely and appropriate treatment decisions
3. What is causing sickness? Improved diagnosis of specific pathogens associated with production limiting diseases, along with their specific virulence and antibiotic resistance profiles

4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance, cont.

Research Outcomes and Priorities, cont.

Outcome 4: Maintain effective surveillance of production-limiting diseases, production practices, antimicrobial use and antimicrobial resistance

Research Priorities:

1. Support the ongoing collection of antimicrobial use and resistance information in beef production systems and environments to support improved cattle health management and outcomes
2. Support ongoing surveillance of management practices and animal health and productivity information at the cow-calf, backgrounding and feedlot levels across Canada

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of operationally appropriate vaccination protocols and beneficial management practices to improve vaccine efficacy

Knowledge Mobilization Priorities:

1. Promote resources for veterinary professionals to share with clients on vaccine handling and storage beneficial management practices
2. Advocate for the proper use and timing of vaccine boosters
3. Create and distribute resources for producers that highlight environmental, nutritional and management factors that impact vaccine efficacy
4. Promote the adoption of targeted vaccine use
5. Develop resources highlighting the role of a veterinary-client-patient relationship
6. Create resources to help identify methods, processes and infrastructure needed for vaccinating/treating herds efficiently

Outcome 2: Increased adoption of regular biosecurity beneficial management practices

Knowledge Mobilization Priorities:

1. Promote practical, effective, on-farm prevention measures to help strengthen herd health and reduce disease threats
2. Create and promote step-by-step guides on evaluating biosecurity risk levels
3. Highlight the economic impacts of herd health and disease challenges
4. Understand social and economic factors shaping producer and consumer perspectives on biosecurity practices

4. Outcomes and Priorities by Program Area, cont.

4.3. Animal Health, Welfare and Antimicrobial Resistance, cont.

Knowledge Mobilization Outcomes and Priorities, cont.

Outcome 3: Increased adoption of effective calving season management practices to help increase calf survival

Knowledge Mobilization Priorities:

1. Provide beef producers with practical calving season support including checklists, instructional guides and promotion of Calf 911 resources
2. Promote mental well-being support for beef producers as they navigate the demands of calving season

Outcome 4: Increased adoption of responsible antimicrobial use according to current antimicrobial use guidelines

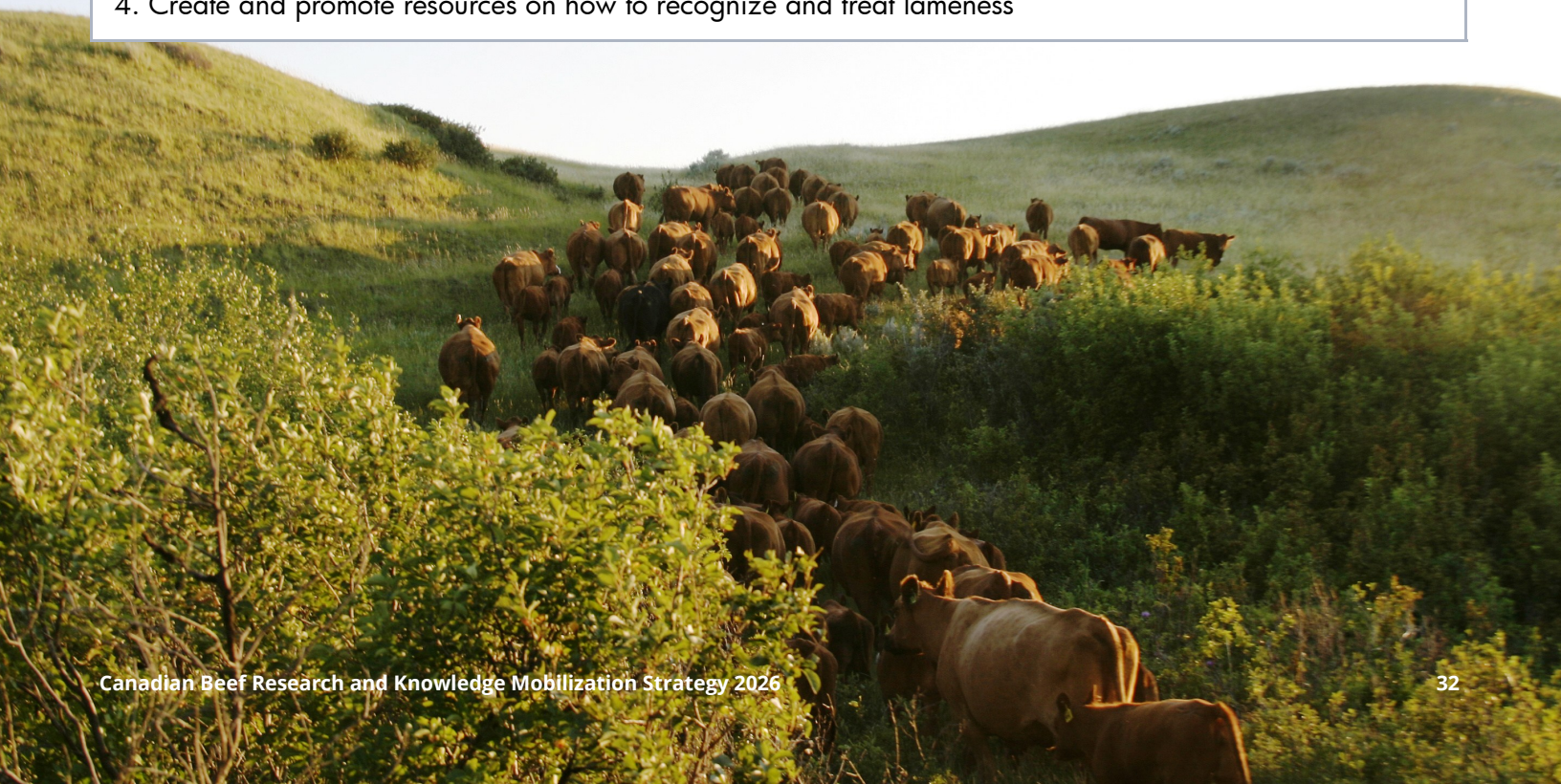
Knowledge Mobilization Priorities:

1. Advocate the importance of producers working with veterinary professionals on appropriate antimicrobial use
2. Encourage communication between industry sectors on animal health product use

Outcome 5: Increased adoption of proactive cattle health and welfare practices

Knowledge Mobilization Priorities:

1. Promote the use of proper cattle handling and welfare practices during transport, with attention to heat and cold stress risks
2. Create and share resources on when euthanasia is necessary and the proper procedures
3. Promote the effective use of pain-mitigation strategies throughout the production cycle
4. Create and promote resources on how to recognize and treat lameness



4. Outcomes and Priorities by Program Area, cont.

4.4. Food Safety

Food safety is essential to protect consumers, maintain domestic and international customer confidence and support beef demand. Research has played an important role in developing improved food safety interventions that effectively combat multiple pathogens and methods to quantify the effectiveness of these interventions. The adoption of this research has led to significant improvements in the safety of Canadian beef.

While Canada's beef industry has achieved significant food safety gains, maintaining this performance and protecting market access requires continuous innovation in the face of evolving pathogens, regulatory expectations and trade dynamics.

Commercial implementation of interventions like lactic acid washes and carcass pasteurization have significantly reduced pathogen contamination on carcasses. More recent efforts have focused on effectively cleaning equipment, conveyor belts, knives, gloves and more to avoid re-contaminating beef on the fabrication line. Not all food safety interventions that have been demonstrated to be effective within the Canadian beef supply chain have been approved in key international markets. In some cases, additional research may be necessary to help address specific concerns and regulatory and technical barriers to trade.

Since 2015, the Public Health Agency of Canada (PHAC) FoodNet Canada system has collected data on the prevalence of enteric pathogens including Shiga toxin-producing *E. coli* (STEC) in manure, irrigation water and retail meat, as well as human disease incidence rates in sentinel sites in British Columbia, Alberta, Ontario and Quebec. In 2017, STEC was found in 24% of feedlot manure samples and 33% of irrigation water samples collected. In subsequent years, the percentage of positive feedlot manure samples has not exceeded 15.15% (2021); and fewer than 25% of irrigation water samples (irrigation water sampling apparently ended in 2020).¹ Fewer than 5% of retail beef samples have tested positive for STEC since the program was initiated.

The Canadian Food Inspection Agency's National Microbiological Monitoring Program (NMMP) samples beef at federally inspected processing plants as well as warehouses, distribution centres and wholesalers. *E. coli* O157 has been identified in fewer than 0.3% of domestic ground beef and veal samples tested between 2018-19 and 2024-25.



4. Outcomes and Priorities by Program Area, cont.

4.4. Food Safety, cont.

FoodNet Canada sentinel sites (described above) also report that incidence rates of endemic STEC-associated illness per 100,000 Canadians have remained steady between 2015 and 2022, ranging from a low of 1.86 (2016) to a high of 3.88 (2019). These incidence rates are lower than for campylobacteriosis (13.58 to 20.73 per 100,000) or salmonellosis (6.43 to 15.03 per 100,000), two enteric diseases rarely linked to beef but that have comparable rates of emergency room visits and hospitalization and higher rates of antimicrobial prescription than STEC.

Similarly, the Public Health Agency of Canada's National Enteric Surveillance Program has reported annual national *E. coli* O157:H7 incidence rates between 0.62 (2020) to 1.57 (2009) per 100,000 Canadians.² Non-O157 STEC incidence rates have been rising since monitoring began in 2012, from 0.41 to 1.94 per 100,000 Canadians in 2024. Similar to FoodNet Canada results, STEC incidence rates have been much lower than for campylobacteriosis (2.79 to 5.32 per 100,000) or salmonellosis (8.79 to 21.45) from 2013 through 2024.

It is worth noting that while *E. coli* is often perceived to be a beef-specific issue, food-related recalls are more often linked to other foods. The Government of Canada reported 26 *E. coli*-related food recalls and warnings between 1991 through April 2026.³ Only three involved beef (two O157; one non-O157 STEC). The remaining recalls were linked to cheese (12), seafood (2), vegetables (2), herbs (4) and ready-to-eat products (3), which involved non-pathogenic *E. coli* (16) or non-O157 STEC (7). Ongoing research and knowledge mobilization are essential to support science-based communication and to mitigate unfounded reputational risk to the beef industry.

Research has underpinned these improvements in the safety of Canadian beef, but food safety is an evolving target. Known pathogens may evolve resistance to current interventions, necessitating new interventions. New pathogens may emerge for which current interventions are ineffective. It is essential that Canada maintains and supports research programming and capacity to proactively identify and respond to these potential threats before its reputation for food safety can be questioned.

Removing domestic and international regulatory impediments is critical to maintaining a competitive industry. Canada's regulatory bodies must have the dedicated capacity required to complete analysis and research to inform science-based approvals of effective new food safety measures, technologies and certifications in a timely manner. This will help protect the health of Canadians by encouraging and ensuring marketplace responsiveness to new innovations and reporting demands. As our major trading partner, ensuring that the U.S. accepts Canadian food safety test results as equivalent with their own is a significant priority to facilitate cross-border shipments and reduce the food waste and downgrading of fresh product that results from shipping delays and returned loads. Research to develop and validate more rapid, accurate and cost-effective testing protocols and technologies would greatly facilitate trade.



4. Outcomes and Priorities by Program Area, cont.

4.4. Food Safety, cont.

Achieving this requires sustained research capacity and strong research and knowledge mobilization initiatives aimed at identifying and quantifying where Canada's cattle and beef production system is excelling, as well as where improvements are needed. A refocused Beef Quality Audit holds significant potential in this regard. At the same time, the Agriculture and Agri-Food Canada (AAFC) January 2026 decision to eliminate its beef carcass and quality research program and infrastructure poses a significant threat to the beef industry's ability to gather the information necessary to move forward.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.

10-Year Food Safety Goals for Canada's Beef Industry: Canada needs to reinforce and build on the significant food safety improvements achieved in recent years that support continued consumer confidence and beef demand. Food safety gains also reduce waste, costs and emissions. Research priorities identified in the 2028-33 Strategy will directly contribute to the 2030 industry food safety goals as well as indirectly support several other industry goals.

The Role of Research and Knowledge Mobilization in Advancing These Goals:

Achieving the industry's 10-year goals will require contributions and commitment from all stages of the supply chain to measure and monitor progress. Re-establishing a carcass quality and meat science research program in Canada will be key to achieving the beef industry's 10-year goals.

Beef Industry 2030 Goals Related to Food Safety

- Remove internal regulatory impediments to innovation, export and commercial trade and the competitiveness of Canadian beef in domestic and international markets
- Support the development, regulatory approval and adoption of improved food safety interventions and technologies throughout the supply chain

Indirectly Related 2030 Technology Goals:

- Invest in technological solutions that reduce costs, improve competitiveness and enable regulatory approvals and business functions that support trade and commerce
- Support innovation, research, refinement and commercialization of technologies throughout the supply chain that support economic viability and worker conditions by connecting cattle industry domain expertise with cutting edge technological expertise
- Promote the acceptance of sustainable and safe beef production technologies by customers and regulators in domestic and international markets

Indirectly Related 2030 Water Goals:

- Sanitation carcass and facility sanitation strategies that ensure food safety while using less hot water and sanitizers will contribute to improving water use efficiency in the beef value chain

Indirectly Related 2030 Greenhouse Gas Goals:

- Reducing food safety-related recalls will help reduce food loss and waste (from secondary processing to consumer) by 50% by 2030

4. Outcomes and Priorities by Program Area, cont.

4.4. Food Safety, cont.

2025 National Beef Research and Knowledge Mobilization Priority Survey: Priority areas were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section (3.2). Survey respondents identified food contamination, carcass residues and food safety standards as the most important food safety issues for maintaining or improving competitiveness of Canada's beef industry.

2025 Food Safety Focus Groups: Target food safety research outcomes and priorities were further developed and refined through in-depth individual interviews and focus groups of 25 individuals that included producers, industry stakeholders, researchers and funding partner representatives.

It is noteworthy that the survey and focus group consultations were conducted before AAFC announced the closure of its Lacombe research station and programming. As a result, target research outcomes and priorities pertaining to research capacity were added after those consultations had been conducted and were highlighted during the open consultation period to ensure they were endorsed by industry stakeholders.

Research Outcomes and Priorities

Outcome 1: Improved food safety in beef production and processing facilities

Research Priorities:

1. Develop and implement cost-effective technologies targeting multiple pathogens in cattle and beef production and processing facilities, including heat- and acid-resistant *E. coli* and biofilm-forming bacteria
2. Identify key management practices in processing facilities that help avoid or limit biofilm formation
3. Develop simple and cost-effective techniques and technologies that reliably detect biofilms in difficult-to-clean places in processing facilities
4. Design and implement ongoing surveillance to detect changes in pathogen prevalence in Canadian beef processing facilities

Outcome 2: Validated efficacy and safety of new technologies in support of the rational regulatory approval and adoption of improved food safety interventions throughout the supply chain

Research Priorities:

1. Develop methods to synthesize available in-plant and customer information as early signals that potential food safety issues may be developing
2. Develop technologies and identify practices to reduce odours associated with packing plants, rendering facilities and settling ponds
3. Conduct research to proactively resolve market access concerns for Canadian beef

4. Outcomes and Priorities by Program Area, cont.

4.4. Food Safety, cont.

Research Outcomes and Priorities, cont.

Outcome 3: Improved air, water and soil outcomes associated with beef packing and processing

Research Priorities:

1. Develop cost-effective cleaning technologies and procedures that ensure food safety with less need for (hot) water, sanitizers and labour in large and small processing facilities

Outcome 4: Increased food safety research, teaching and extension capacity in Canada



Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of best practices in small processors, food service and retail facilities

Knowledge Mobilization Priorities:

1. Develop simple, practical information and training opportunities that empower small processors, food service and retail facilities to develop and implement effective environmental, sanitation and food safety protocols
2. Encourage the consistent adoption of known best practices to minimize risks of pathogen contamination in beef processing plants related to the proper and thorough cleaning of conveyor belts, personal equipment, processing and grinding equipment, etc.

Outcome 2: Proactively identify likely regulatory barriers or concerns in key beef markets so they can be resolved before market access is impaired



4. Outcomes and Priorities by Program Area, cont.

4.5. Beef Quality

Canadians have rediscovered Canadian beef. In an environment of record prices, shifting trade dynamics and heightened international competition, consistent beef quality is no longer a competitive advantage; it is a market access requirement. Research and development play a crucial role in supporting beef quality.

Following a 28% decline between 2004 and 2015, total domestic beef consumption averaged 735,000 tonnes between 2016 and 2024, a 17% increase.¹ However, population growth has outpaced production, with per capita consumption declining on average 0.3 lbs/year since 1981. Consumer beef purchasing decisions are both individual and complex. Although health, food safety, environmental and ethical concerns are frequently cited as important to consumers, the two most important considerations continue to be price and eating quality.

Canada's beef demand index measures how willing Canadian consumers are to pay for beef at various prices, with values over 100 reflecting increased consumer demand for beef. Between 2000 and 2013, the beef demand index has fluctuated between 95 and 112. The demand index has exceeded 140 in every year since 2020 and reached 156 in 2025,² the strongest it has been since the early 1980s.

In 2025, Canada exported 47% of the beef it produced, making market access and international end-user and consumer demands nearly as important as domestic beef demand. Fortunately, renewed consumer interest in Canadian beef also extends to export markets. Canada's beef exports have declined slightly in recent years, from 504,200 metric tonnes in 2021 to 486,100 metric tonnes in 2025 (product weight).³ However, the value of these exports have increased from \$4.47 billion in 2021 to over \$5.31 billion in 2025, a 19% increase.⁴



4. Outcomes and Priorities by Program Area, cont.

4.5. Beef Quality, cont.

With record-high prices for high-quality beef, it is critical that Canadian beef meet consumer expectations every time. Disruptions in international trade dynamics emphasize the importance of Canada continuing and increasing its efforts to diversify international market access and trade relationships.

Achieving the Canadian industry's beef quality goals requires strong research capacity, along with research and knowledge mobilization initiatives that aim to identify and quantify where Canada's cattle and beef production system is excelling, as well as areas where further improvement is possible. A refocused Beef Quality Audit holds significant potential in this regard. The National Beef Quality Audit will benchmark progress, identify areas for improvement and provide producer-relevant information for improving carcass and beef quality. At the same time, the Agriculture and Agri-Food Canada (AAFC) January 2026 decision to eliminate its beef carcass and quality research program and infrastructure poses a significant threat to the beef industry's ability to gather the information necessary to move forward.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.

Beef Industry 2030 Goals Related to Beef Quality

- Establish the inherent quality and value of Canadian Beef in domestic and export markets which supports comparative equivalency or superiority to alternatives
- Increase the value of AAA and Prime carcasses, to be equivalent with the US, by building demand for all cuts on the carcass
- Remove internal regulatory impediments to innovation, export and commercial trade and the competitiveness of Canadian beef in domestic and international markets

2030 Technology Goals Related to Beef Quality:

- Supporting functional information flow solutions to producers derived from a competitive service sector
- Invest in technological solutions that reduce costs, improve competitiveness and enable regulatory approvals and business functions that support trade and commerce
- Support innovation, research, refinement and commercialization of technologies throughout the supply chain that support economic viability and worker conditions through connecting cattle industry domain expertise with cutting-edge technological expertise
- Promote the acceptance of sustainable and safe beef production technologies by customers and regulators, in both domestic and international markets

Improved consumer satisfaction and improved carcass composition (i.e., reduced waste fat) will also contribute to the industry's efforts to reduce food loss and waste from secondary processing to consumer by 50% by 2030, contributing to the **greenhouse gas reduction goal**.

4. Outcomes and Priorities by Program Area, cont.

4.5. Beef Quality, cont.

10-Year Food Safety Goals for Canada's Beef Industry: Canada's beef industry needs to ensure consumers who purchase Canadian beef are satisfied with their eating experience. Clearly establishing, validating and improving the quality of Canada's cattle and beef production system will ensure the industry has access to safe, effective technologies with the potential to improve or guarantee eating quality.

The beef quality research and knowledge mobilization priorities identified in the 2028-33 Canadian Beef Research and Knowledge Mobilization Strategy will directly contribute to the 2030 Industry Beef Quality Goals.

The Role of Research & Knowledge Mobilization in Advancing These Goals: Achieving the beef industry's 10-year goals, and measuring and monitoring progress, will require contributions and commitment from the entire supply chain, including seedstock, cow-calf and feedlot producers, beef processors and the retail and foodservice sectors. The following are key drivers to achieving the industry's 10-year beef quality goals.

Indicators to monitor success include capacity (i.e., re-establishing a carcass quality and meat science research program in Canada) and refreshing the National Beef Quality Audit (i.e., focusing on quantifying animal welfare and carcass quality defects related to on-farm production, marketing and transportation decisions, as well as producer-focused communication to adopt production practices that will reduce the prevalence of these defects).



2025 National Beef Research and Knowledge

Mobilization Priority Survey: Priority areas in this section were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section. Survey respondents from all sectors identified beef eating quality and carcass characteristics as the most important beef quality issues in terms of maintaining or improving the competitiveness of Canada's beef industry. Animal health professionals also identified carcass defects and animal transportation and welfare as key issues, and genetics was a high priority for the seedstock sector.

2025 Beef Quality Focus Groups: The targeted beef quality research outcomes and priorities were further developed and refined through in-depth individual interviews and focus groups consisting of 24 individuals, including producers, industry stakeholders, researchers and funding partner representatives.

It is noteworthy that the survey and focus group consultations were conducted before AAFC announced the closure of its Lacombe research station and programming. As a result, target research outcomes and priorities pertaining to research capacity were added after those consultations had been conducted and highlighted during the open consultation period to ensure they were endorsed by industry stakeholders.

4. Outcomes and Priorities by Program Area, cont.

4.5. Beef Quality, cont.

Research Outcomes and Priorities

Outcome 1: Improved beef carcass quality

Research Priorities:

1. Conduct a National Beef Quality Audit to identify animal welfare and carcass defects influenced by management decisions related to cattle management, handling and transportation
2. Develop and implement processes and technology to evaluate tenderness, identify tag, bruising, foreign objects and liver abscesses in real-time at processing plants
3. Develop and implement processes and technology to report data gathered at processing plants back to the producer to inform improved on-farm cattle management practices
4. Develop sensitive, accurate, rapid technology to cost-effectively support antemortem inspections
5. Reassess carcass lean meat and retail cut yield predictions in Canada's current slaughter cattle population, in collaboration with broader North American initiatives
6. Identify and develop practical, cost-effective solutions to offset potential animal welfare, carcass merit or beef quality issues associated with increasing carcass weight

Outcome 2: Improved consumer satisfaction with Canadian beef

Research Priorities:

1. Summarize the available science regarding how ingredients and by-products commonly used in Canadian feedlot diets affect the eating quality of beef and identify critical knowledge gaps
2. Summarize the available science regarding differences in eating quality between different retail cuts of Canadian beef to assist in market identification and differentiation and identify critical knowledge gaps

Outcome 3: Increased meat science research, teaching and extension capacity in Canada



4. Outcomes and Priorities by Program Area, cont.

4.5. Beef Quality, cont.

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of beneficial practices to maintain or improve carcass and beef quality

Knowledge Mobilization Priorities:

1. Increased adoption of beneficial practices through timely and effective communication of National Beef Quality Audit results pertaining to production-related issues
2. Promote resources regarding the use of genetic tools to improve carcass and beef quality
3. Improve on-farm cattle management practices for fed cattle through reporting results on tag, bruising, foreign objects and liver abscesses collected at processing plants
4. Identify on-farm management practices that significantly impact the consumer's beef eating experience

Outcome 2: Improved consumer satisfaction with Canadian beef

Knowledge Mobilization Priorities:

1. Communicate fact-based information regarding the equivalence or superiority of Canadian beef to comparable U.S. and Australian grades among domestic and international customers
2. Increase the quantity of Canadian product that meets domestic and international customer preferences through implementation of results from domestic and international benchmarking surveys
3. Encourage adoption of best practices by processors and domestic and international customers to ensure maximum shelf life and customer satisfaction with Canadian beef



4. Outcomes and Priorities by Program Area, cont.

4.6. Environmental Sustainability

Environmental sustainability will be a defining driver of resilience, competitiveness and public trust in the Canadian beef industry over the next five years. The beef industry's environmental sustainability research and knowledge mobilization portfolio continues to grow and expand. While this section focuses on environmental outcomes, other areas of this strategy—including forage and feed productivity, animal health, performance and growth efficiency, beef quality and food safety—also help reduce the environmental footprint of Canadian beef through improved soil and watershed health, carbon sequestration, resource use efficiency and reduced food loss and waste.

Improving environmental outcomes strengthens overall resilience. Many areas of Canada have seen periods of prolonged drought in recent years and improving watershed health, water holding capacity and soil health, helps beef producers maintain operations and sustain their herds during these periods. The forage-based cow-calf sector remains an opportunity to reach environmental goals while improving the economic viability of the beef industry.

Approximately 85% of the agricultural land cattle inhabit is unsuited for crop production due to climatic risk, topography, soil limitations, or other constraints. Crop producers may accept these risks and convert forage acres to annual cropland during times of high grain and oilseed prices, resulting in irreversible environmental damage. By 2003, conversion of native grasslands to croplands resulted in the loss of over 97% of tall grass prairie and 71% of mixed grass prairie.¹ In the year 2022 alone, it is estimated that 1.9 million acres of grasslands were converted to cropland.² The loss of native grasslands has led to a 57% drop in grassland bird species since the 1970s, with some species declining by as much as 87%.³ It is estimated that 1.5 billion tonnes of carbon are stored in lands that have been managed for beef cattle. Grazing cattle on these landscapes not only helps prevent land conversion and preserves both habitat and carbon stored but helps these grassland ecosystems to thrive.

A thorough cost-benefit calculation is strongly encouraged for research that is nearing commercialization or adoption.

4. Outcomes and Priorities by Program Area, cont.

4.6. Environmental Sustainability, cont.

10-year Environmental Sustainability Goals for Canada's Beef Industry : Grasslands play a major role in the ability to sequester and store carbon, support healthy watersheds and maintain biodiversity and other important ecological services. Ensuring cattle producers can produce forages in an economically viable way ensures that marginal lands stay in grasslands, continue to sequester carbon and provide value to the producer and the environment. Continued improvements in productivity efficiency within the Canadian cattle cow-calf, feeding and processing sectors will contribute to further reductions in greenhouse gas and resource use intensity.

The Role of Research and Knowledge Mobilization in Advancing These Goals: In addition to environmentally specific research and extension activities outlined here, achieving these ambitious 10-year goals will require significant effort and investment across a range of other research and extension areas, including feed and forage productivity, animal health and nutritional management, beef quality and food safety. Knowledge mobilization efforts will be critical to translating research outcomes into regionally appropriate, producer-relevant decision support that helps maintain grasslands, improve water and soil management and strengthen resilience under changing climatic and economic conditions.

2025 National Beef Research and Knowledge Mobilization Priority Survey: Priority areas in this section were informed by results from the national survey and broader consultation process, as outlined in the Strategy Development section. Water use, quality and management was a priority for beef producers in all sectors as well as soil quality and nutrient management in soil and water. Cow-calf producers also listed environmental implications of converting land use between perennial grassland and annual crops.

Beef Industry 2030 Goals Related to Environmental Sustainability

- Safeguard the existing 1.5 billion tonnes of carbon stored on lands managed with beef cattle
- Sequester an additional 3.4 million tonnes of carbon each year
- Reduce primary production GHG emission intensity by 33% by 2030
- Maintain the 35 million acres of native grassland in the care of beef producers
- Maintain a network of natural landscapes and healthy functioning ecosystems through well-managed grazing systems that maintain sustainable plant communities and healthy rangelands
- Promote practices that maximize water quality and retention to deliver healthier landscapes, resilience to drought and flood events and groundwater recharge as appropriate to the region's precipitation
- Improve water use efficiency in the beef value chain

4. Outcomes and Priorities by Program Area, cont.

4.6. Environmental Sustainability, cont.

2025 Environmental Sustainability Focus Group : Recognizing that environmental outcomes and production outcomes are interrelated, no stand-alone environment focus group was held. Instead, environment priorities were discussed and refined in each of the other four focus groups. Key issues identified through this process included water use and management, manure management and soil health, reinforcing the integrated approach reflected throughout this strategy.

Research Outcomes and Priorities

Outcome 1: Improved on-farm profitability through practices that reduce greenhouse gas emissions, improve biodiversity, increase soil carbon or improve water infiltration on pastures and rangeland

Research Priorities:

1. Investigate cost-effective methods to reduce greenhouse gas emissions that also improve animal performance in pasture- or forage-based systems
2. Evaluate the roles of animal management, soil microbiome and plant-soil interactions in short-, medium- and long-term soil carbon storage and sequestration, plant yield and water holding capacity
3. Evaluate how grazing management affects biodiversity, water quality and soil health

Outcome 2: Improved air, water and soil outcomes associated with confined cattle feeding operations

Research Priorities:

1. Evaluate the cost-effectiveness of supplements, strategies and practices used to reduce greenhouse gas emissions in the feedlot using a systems approach
2. Develop manure handling and processing technologies and strategies that enable manure to be transported and spread more cost-effectively
3. Identify and develop strategies or technologies to cost-effectively reduce odour in feedlot production systems

Outcome 3: Improved air, water and soil outcomes associated with beef packing and processing

Research Priorities:

1. Develop cost-effective cleaning technologies and procedures that ensure food safety with less need for (hot) water, sanitizers and labour in large and small processing facilities

4. Outcomes and Priorities by Program Area, cont.

4.6. Environmental Sustainability, cont.

Research Outcomes and Priorities, cont.

Outcome 4: Optimize the balance between livestock and forage productivity and biodiversity by developing environmentally friendly and cost-effective solutions for managing pests and wildlife

Research Priorities:

1. Develop solutions for managing pests and wildlife (e.g., grasshoppers, gophers, moles, badgers, burrowing mammals, wild ungulates, predators) that maintain the balance between livestock productivity and biodiversity

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of effective manure management

Knowledge Mobilization Priorities:

1. Develop and promote resources outlining the advantages and disadvantages of different manure storage strategies, including producer examples
2. Promote beneficial manure composting practices and demonstrate their economic costs and benefits
3. Share regionally relevant resources on manure management regulations and guidelines
4. Create resources on sampling manure and using results to inform manure application decisions

Outcome 2: Increased adoption of management practices to support biodiversity and species-at-risk habitat preservation

Knowledge Mobilization Priorities:

1. Promote resources, such as the Habitat and Biodiversity Assessment Tool (HBAT), that enable producers to incorporate native species needs into their land-management decisions
2. Share resources that demonstrate the benefits of restricting cattle access to riparian areas, including improved water quality and water availability
3. Provide examples of producers who are implementing beneficial practices and the positive impacts on biodiversity

4. Outcomes and Priorities by Program Area, cont.

4.7. Knowledge Mobilization

Research creates opportunity, but knowledge mobilization turns it into practice and impact. Strategic research with sufficient research capacity to support diverse program areas are essential to improving the productivity, sustainability, competitiveness and resilience of Canada's beef industry. However, generating science-based knowledge alone does not ensure adoption in practice or meaningful change across the beef sector. Achieving the beef industry's ambitious 10-year goals will depend on mobilizing knowledge gained through research, the adoption of beneficial management practices, innovation and the use of benchmarking to measure progress and improvement.

Knowledge mobilization plays a central role in bridging the gap between research and practice. Ensuring that research investments translate into measurable outcomes requires effective and cost-efficient approaches to translating research into on-farm practice, communicating its value and supporting implementation. This includes understanding the economic, social, operational and regional factors that influence producer and industry decision-making.

Strengthening the evidence base on which knowledge mobilization approaches accelerated adoption can help improve production metrics, increase return on research investment and support more rapid uptake of beneficial practices across the beef sector. Addressing current gaps in understanding through systematic evaluation of knowledge mobilization approaches will enable the Canadian beef industry to better target extension efforts, enhance producer engagement and drive measurable on-farm impact across diverse regions and production systems.



4. Outcomes and Priorities by Program Area, cont.

4.7. Knowledge Mobilization, cont.

The Role of Research and Knowledge Mobilization in Advancing Goals: The importance of knowledge mobilization is reflected across all program areas and contributes to advancement toward all relevant Canadian beef industry 2030 goals. These include goals related to productivity and competitiveness, animal health and welfare, responsible antimicrobial use, beef quality and food safety, environmental sustainability, biodiversity, drought resilience and the adoption and commercialization of innovation across the value chain.

The Five-Year Canadian Beef Research & Knowledge Mobilization Strategy is intended to support these broader industry goals by helping ensure that research outcomes are translated into action and improvement.

2025 National Beef Research and Knowledge Mobilization Priority Survey:

Input gathered through the national strategy survey confirmed that knowledge mobilization helps evidence generated by research reach producers and other industry decision-makers in ways that are practical, credible and relevant to real-world conditions. The survey also provided insights into preferred approaches, reinforcing the importance of ensuring that communication and extension efforts are aligned with stakeholder needs and priorities.

A Selection of Beef Industry 2030 Goals Requiring Knowledge Mobilization

- Ensure the effectiveness of existing and future antimicrobials is preserved to support human and animal health and welfare
 - ⇒ Develop, monitor and disseminate best practices regarding antimicrobial use
 - ⇒ Quantify and describe baseline antibiotic use practices in Canadian feedlot production
- Reduce primary production greenhouse gas emission intensity by 33% by 2030
- Improve water use efficiency in the beef value chain
- Maintain a network of natural landscapes and healthy functioning ecosystems through well-managed grazing systems that maintain sustainable plant communities and healthy rangelands
- Attain 92% reproductive efficiency in Canadian beef production (improve from 85% in 2018)

2025 Knowledge Mobilization Focus Groups: The Knowledge Mobilization focus group engaged individuals and organizations involved in extension and producer outreach within the beef industry. Discussion centered on innovations and practices with the greatest potential to improve adoption, competitiveness and sustainability across the Canadian beef industry. The discussion reinforced the importance of practical, targeted and sector-relevant approaches that support adoption and improve the usefulness of research outputs for end users.

4. Outcomes and Priorities by Program Area, cont.

4.7. Knowledge Mobilization, cont.

Research Outcomes and Priorities

Outcome 1: Improved understanding of the impact of knowledge mobilization practices

Research Priorities:

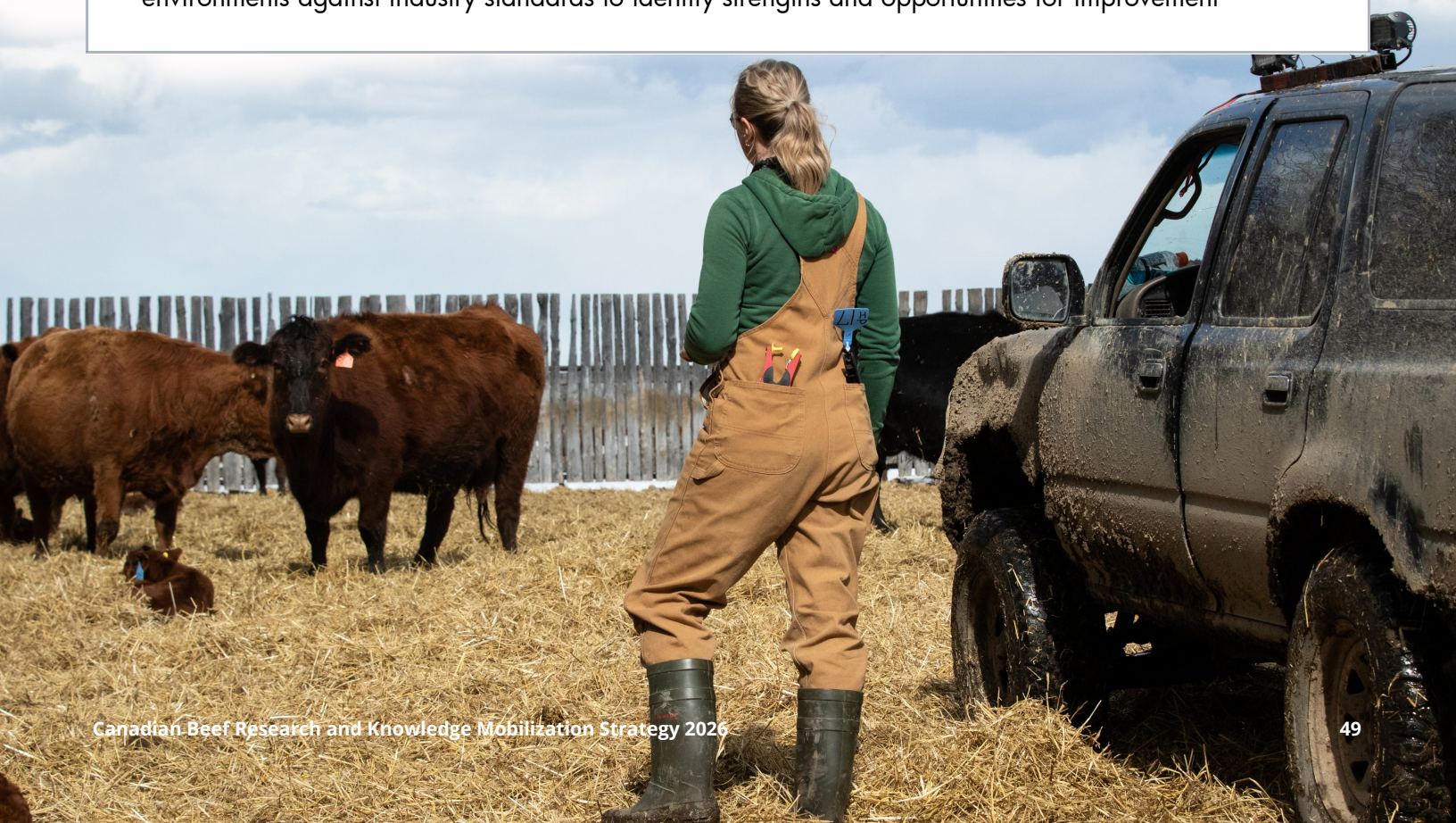
1. Systematic review identifying knowledge mobilization practices that effectively contribute to measurable practice change and production metrics within different sectors of the beef industry

Knowledge Mobilization Outcomes and Priorities

Outcome 1: Increased adoption of comprehensive record-keeping systems to strengthen producers' ability to make data-driven management decisions

Knowledge Mobilization Priorities:

1. Emphasize the value of accurate record-keeping supporting informed management decisions that improve herd health and performance outcomes
2. Share case studies on how producers can overcome perceived barriers to record-keeping, analysis and utilization
3. Encourage the adoption of digital record-keeping tools and technologies that simplify data collection, organization and analysis
4. Promote the use of records for benchmarking herd performance, cow-calf, backgrounding and feedlot environments against industry standards to identify strengths and opportunities for improvement



5. Appendices

5.1. Alignment with 2030 Beef Industry Goals

	Canadian Beef Advisors Industry Goal Areas to 2030						
	Greenhouse Gas & Carbon Sequestration	Animal Health & Welfare	Land Use & Bio-diversity	Water	Beef Quality & Food Safety	Human Health & Safety	Technology
Cattle Nutrition and Production Efficiency							
Research Outcomes							
1. Improved beef cattle productivity and profitability through feed processing, by-products, additives, supplements or other feeding strategies	X	X					
2. Improved production efficiency through animal selection, genetics and breeding	X						
3. Improved reproductive efficiency through increased understanding of beef cattle mineral requirements, supplementation practices and bioavailability	X	X					
4. Improved animal performance and production efficiency in feedlot cattle	X			X			
Knowledge Mobilization Outcomes							
1. Increased adoption of feed testing as a basis for making sound feeding decisions	X	X					
2. Increased adoption of mineral nutrition and supplementation beneficial management practices	X	X					
3. Increased adoption of beneficial practices for monitoring stock water quality				X			
4. Increased adoption of incremental changes to management practices that impact calf performance and optimize profitability	X			X			
5. Improved production outcomes through increased adoption of interconnected management practices that impact herd performance	X						

5. Appendices, cont.

5.1. Alignment with 2030 Beef Industry Goals, cont.

Canadian Beef Advisors Industry Goal Areas to 2030							
	Greenhouse Gas & Carbon Sequestration	Animal Health & Welfare	Land Use & Bio-diversity	Water	Beef Quality & Food Safety	Human Health & Safety	Technology
Forage and Feed Production							
Research Outcomes							
1. Annual feed and forage: Improved agronomic performance, yield, nutrition quality & palatability of annual species for grazing, feed grains or stored forage	X						
2. Tame perennial forages: Improved management and productivity of tame pastures and hay stands	X		X	X			
3. Native/naturalized forage: Improved management and productivity of native/naturalized pastures to enhance profitability & discourage land conversion	X		X	X			
4. Optimize the balance between livestock and forage productivity and biodiversity by developing environmentally friendly and cost-effective solutions for managing pests and wildlife			X				
Knowledge Mobilization Outcomes							
1. Increased adoption of regionally appropriate agronomic & management practices for forage stand management	X		X	X			
2. Increased adoption of grazing cattle on cropland	X						
3. Increased adoption of best practices when selecting and planting annual forage mixtures	X						
4. Increased adoption of beneficial grazing management practices	X		X	X			
5. Increased adoption of regionally appropriate beneficial management practices to control invasive plant species			X				
6. Increased adoption of the use of soil agronomic principles and their use in decision making	X						
7. Promote adoption of beneficial management practices for proper silage harvest management, storage & feedout	X						

5. Appendices, cont.

5.1. Alignment with 2030 Beef Industry Goals, cont.

Canadian Beef Advisors Industry Goal Areas to 2030							
	Greenhouse Gas & Carbon Sequestration	Animal Health & Welfare	Land Use & Bio-diversity	Water	Beef Quality & Food Safety	Human Health & Safety	Technology
Animal Health, Welfare & Antimicrobial Resistance							
Research Outcomes							
1. Improved prevention and mitigation of economically relevant and emerging animal disease issues (e.g., neonatal diarrhea, calf pneumonia, bovine respiratory disease, histophilosis, mycoplasmosis, digestive upsets, liver abscesses, lameness)	X	X					
2. Improved prevention and mitigation of animal welfare issues		X					
3. Improved technologies and strategies to rapidly, accurately and cost-effectively predict, detect and diagnose economically important production-limiting and emerging diseases to reduce the need for and preserve the effectiveness of antibiotics		X					
4. Maintain effective surveillance of production-limiting diseases, production practices, antimicrobial use and antimicrobial resistance		X					
Knowledge Mobilization Outcomes							
1. Increased adoption of operationally appropriate vaccination protocols and beneficial management practices to improve vaccine efficacy		X					
2. Increased adoption of regular biosecurity beneficial management practices		X					
3. Increased adoption of effective calving season management practices to help increase calf survival		X					
4. Increased adoption of responsible antimicrobial use according to current antimicrobial use guidelines		X					
5. Increased adoption of proactive cattle health and welfare practices		X					

5. Appendices, cont.

5.1. Alignment with 2030 Beef Industry Goals, cont.

Canadian Beef Advisors Industry Goal Areas to 2030							
	Greenhouse Gas & Carbon Sequestration	Animal Health & Welfare	Land Use & Bio-diversity	Water	Beef Quality & Food Safety	Human Health & Safety	Technology
Food Safety							
Research Outcomes							
1. Improved food safety in beef production and processing facilities					X		
2. Validated efficacy and safety of new technologies in support of the rational regulatory approval and adoption of improved food safety interventions throughout the supply chain					X		
3. Increased food safety research, teaching & extension capacity in Canada					X		
4. Improved air, water and soil outcomes associated with beef packing and processing				X	X		
Knowledge Mobilization Outcomes							
1. Increased adoption of best practices in small processors, food service and retail facilities				X	X		
2. Proactively identify likely regulatory barriers or concerns in key beef markets so they can be resolved before market access is impaired					X		
Beef Quality							
Research Outcomes							
1. Improved beef carcass quality					X		
2. Improved consumer satisfaction with Canadian beef					X		
3. Increased meat science research, teaching and extension capacity in Canada					X		
Knowledge Mobilization Outcomes							
1. Increased adoption of beneficial practices to maintain or improve carcass and beef quality					X		
2. Improved consumer satisfaction with Canadian beef					X		

5. Appendices, cont.

5.1. Alignment with 2030 Beef Industry Goals, cont.

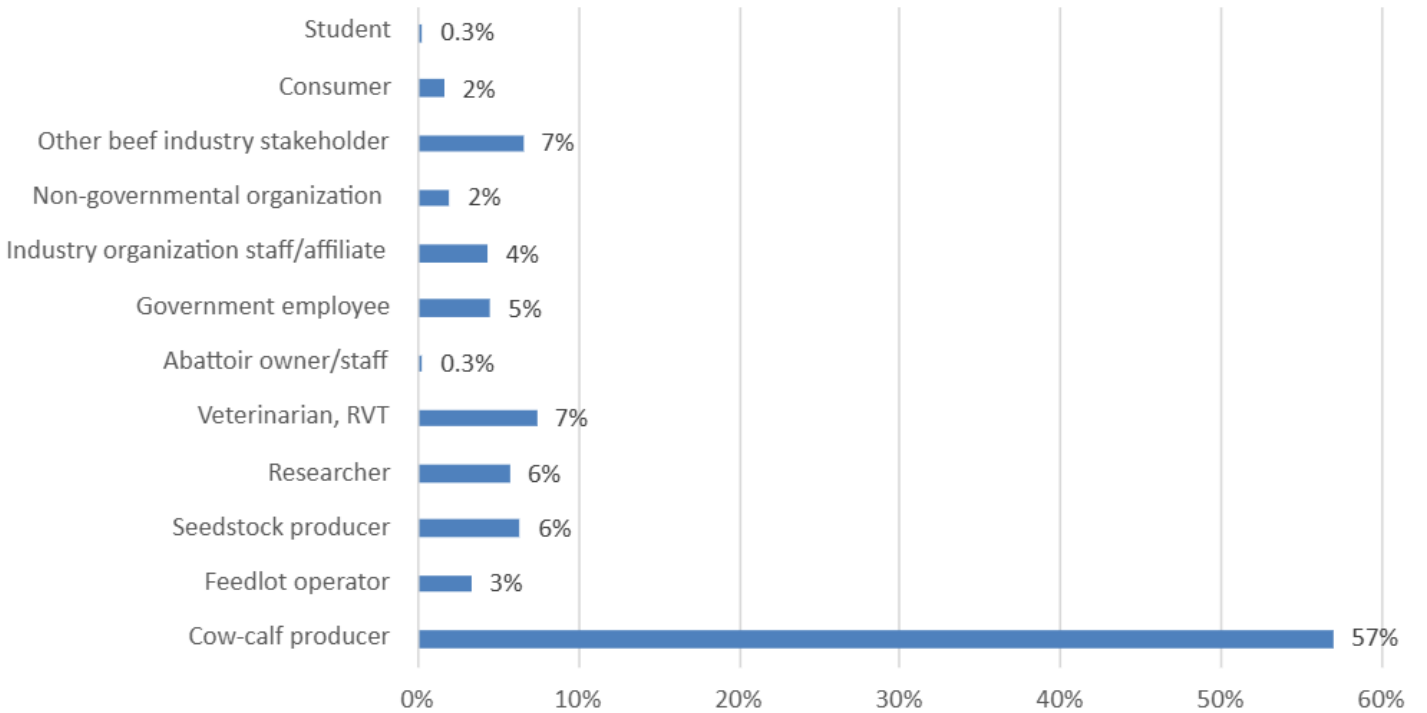
Canadian Beef Advisors Industry Goal Areas to 2030							
	Greenhouse Gas & Carbon Sequestration	Animal Health & Welfare	Land Use & Bio-diversity	Water	Beef Quality & Food Safety	Human Health & Safety	Technology
Environmental Sustainability							
Research Outcomes							
1. Improved on-farm profitability through practices that reduce greenhouse gas emissions, improve biodiversity, increase soil carbon or improve water infiltration on pastures and rangeland	X		X	X			
2. Improved air, water and soil outcomes associated with confined cattle feeding operations	X		X	X			
3. Improved air, water and soil outcomes associated with beef packing and processing				X	X		
4. Optimize the balance between livestock and forage productivity and biodiversity by developing environmentally friendly and cost-effective solutions for managing pests and wildlife			X				
Knowledge Mobilization Outcomes							
1. Increased adoption of effective manure management	X			X			
2. Increased adoption of management practices to support biodiversity and species-at-risk habitat preservation			X				
Knowledge Mobilization							
Research Outcomes							
1. Improved understanding of the impact of knowledge mobilization practices	X	X	X	X	X		
Knowledge Mobilization Outcomes							
1. Increased adoption of comprehensive record-keeping systems to strengthen producers' ability to make data-driven management decisions		X	X	X			

5. Appendices, cont.

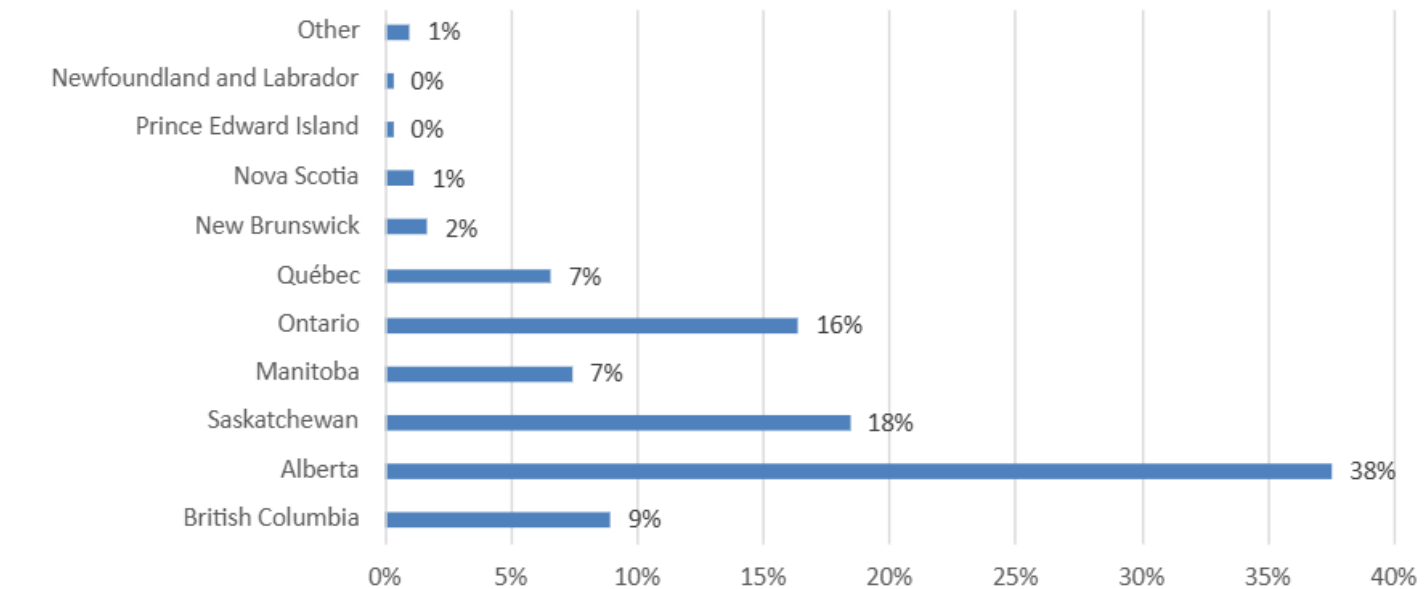
5.2. 2025 Beef Stakeholder Prioritization Survey Results

An open online survey was conducted through [BeefResearch.ca](#) between June 4 and September 4, 2025, to obtain feedback regarding industry research priorities. A total of 591 responses were obtained, with 392 responses from Canadian beef producers. Primary role and geographical demographics of survey respondents are shown in the following graphs.

Survey Respondent Demographics: Percentage by Sector or Occupation



Survey Respondent Demographics: Percentage by Province



5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

The following tables are based on feedback provided by the survey respondents most directly involved in primary production (i.e., seedstock, cow-calf, feedlot producers). Veterinary responses are included for the animal health issues, and responses from non-governmental organizations are included for the environmental issues. Priorities rated as “extremely or very important” by more than 75% of respondents are highlighted in green. Priorities rated as “slightly or not important” by more than 25% of respondents are noted in red.

Survey Responses: Cattle Nutrition and Production Efficiency

	Cow-Calf (274 responses)			Feedlot (15 responses)			Seedstock (32 responses)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Barley yield	43%	39%	10%	79%	14%	0%	41%	48%	3%
Corn yield	33%	40%	16%	57%	36%	7%	40%	50%	3%
Silage production, storage and feeding	52%	32%	11%	80%	7%	7%	74%	16%	6%
Identification and evaluation of alternate feeds and feeding strategies	65%	25%	9%	73%	13%	13%	69%	25%	6%
Feed quality impact on feed	76%	21%	3%	80%	20%	0%	68%	32%	0%
Feedlot management impact on feed efficiency	54%	27%	10%	67%	27%	7%	52%	32%	6%
Genetic markers for feed efficiency that work regardless of breed/composition	59%	28%	8%	73%	13%	7%	61%	32%	6%
Differences in wintering costs between efficient and inefficient cows	72%	22%	5%	57%	29%	0%	53%	44%	3%
Improved utilization of low-quality	73%	23%	3%	60%	33%	7%	63%	34%	3%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Priorities rated as “extremely or very important” by more than 75% of respondents are highlighted in **green**. Priorities rated as “slightly or not important” by more than 25% of respondents are noted in **red**.

Survey Responses: Forage and Feed Production

	Cow-Calf (276 responses)			Feedlot (15 responses)			Seedstock (32 responses)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Forage yield	84%	13%	2%	73%	13%	13%	81%	16%	3%
Stand establishment (monoculture and mixture)	72%	20%	4%	53%	27%	13%	63%	31%	3%
Stand rejuvenation (monoculture and mixture)	76%	18%	3%	67%	20%	7%	78%	16%	3%
Forage drought resilience and management	86%	12%	1%	87%	7%	0%	84%	13%	3%
Salinity management	42%	34%	13%	50%	21%	0%	43%	37%	10%
Soil acidity management	43%	35%	15%	40%	33%	7%	41%	41%	15%
Flood resistant forages	34%	35%	25%	36%	43%	7%	24%	25%	28%
Pasture quality throughout the production cycle	81%	16%	3%	64%	36%	0%	84%	16%	0%
Fertilization (organic and chemical)	60%	28%	10%	73%	20%	7%	32%	65%	3%
Invasive species, weed and brush	70%	22%	7%	87%	7%	7%	63%	34%	3%
Grazing management strategies	75%	19%	6%	79%	21%	0%	69%	25%	6%
Native forage management	65%	26%	7%	57%	36%	7%	61%	26%	10%
Year-round grazing management	61%	28%	7%	57%	29%	14%	56%	31%	13%

Survey Responses: Animal Health

	Cow-Calf (298 responses)			Feedlot (15 responses)			Seedstock (35 responses)			Vets/Vet Techs (39)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Reproductive performance	94%	6%	0%	77%	23%	0%	97%	3%	0%	82%	13%	5%
Cow nutrition, including rapid and cost-effective diagnostic tests to assess nutritional status	80%	16%	4%	57%	36%	0%	80%	20%	0%	90%	8%	3%
Neonatal (newborn calf) diseases	76%	15%	8%	77%	15%	0%	79%	12%	9%	85%	13%	3%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Priorities rated as “extremely or very important” by more than 75% of respondents are highlighted in **green**. Priorities rated as “slightly or not important” by more than 25% of respondents are noted in **red**.

Survey Responses: Animal Health, cont.

	Cow-Calf (298 responses)			Feedlot (15 responses)			Seedstock (35 responses)			Vets/Vet Techs (39)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Pinkeye	28%	43%	28%	21%	50%	7%	23%	46%	31%	22%	54%	24%
Lameness	51%	35%	14%	53%	33%	0%	50%	29%	21%	62%	38%	0%
Immunology, vaccinations, disease prevention	80%	16%	4%	86%	14%	0%	74%	23%	3%	95%	5%	0%
Shipping fever/bovine respiratory disease (BRD), including Histophilosis and Mycoplasma	70%	21%	8%	87%	7%	0%	69%	29%	3%	90%	10%	0%
Nutritional disease associated with high-concentrate rations (e.g., acidosis, liver abscesses, laminitis)	45%	37%	15%	67%	27%	0%	41%	44%	13%	71%	26%	3%
Parasite control	63%	27%	9%	64%	36%	0%	62%	32%	6%	51%	43%	5%
Antimicrobial use and resistance	63%	26%	8%	73%	27%	0%	67%	30%	3%	77%	23%	0%
Management practices and other tools to reduce the need for antibiotics (e.g., nutritional management, vaccination, preconditioning, pre/probiotics)	80%	16%	3%	73%	20%	7%	77%	17%	6%	97%	3%	0%
Surveillance of production-limiting disease	64%	25%	7%	67%	13%	7%	57%	34%	9%	77%	15%	8%
Better diagnostics to improve treatment decisions	71%	23%	5%	80%	13%	0%	63%	31%	6%	63%	37%	0%
Other (describe below, including specific diseases or conditions of concern)	47%	17%	6%	33%	0%	0%	58%	8%	0%	45%	27%	0%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Priorities rated as “extremely or very important” by more than 75% of respondents are highlighted in **green**. Priorities rated as “slightly or not important” by more than 25% of respondents are noted in **red**.

Survey Responses: Animal Welfare

	Cow-Calf (281 responses)			Feedlot (15 responses)			Seedstock (33 responses)			Vets/Vet Techs (38)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Painful practices (e.g., pain control for or alternatives to castration, dehorning, branding)	56%	31%	13%	79%	7%	7%	41%	41%	19%	76%	22%	3%
Managing acute and chronic stress associated with management practices or health conditions	63%	28%	8%	73%	20%	7%	63%	25%	13%	66%	29%	5%
Transportation	47%	43%	10%	71%	21%	7%	57%	30%	13%	73%	24%	3%
Weaning	55%	38%	7%	50%	29%	14%	55%	30%	15%	72%	25%	3%
Extreme weather and housing conditions	48%	38%	13%	57%	36%	7%	42%	52%	6%	62%	35%	3%
Shipping fever/ bovine respiratory disease (BRD), including Histophilosis and Mycoplasma	62%	28%	8%	87%	7%	0%	67%	21%	9%	87%	13%	0%
Nutritional diseases associated with high concentrate rations (e.g., acidosis, liver abscesses, laminitis)	45%	36%	15%	64%	29%	0%	35%	48%	13%	68%	26%	5%
Lameness	49%	36%	13%	53%	33%	7%	42%	42%	15%	68%	27%	5%
Other (describe below)	21%	14%	3%	40%	0%	0%	43%	0%	0%	50%	10%	0%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

For beef quality and food safety, respondents were asked to list issues affecting the competitiveness and sustainability of the Canadian beef industry. Open-ended responses were analyzed and grouped by issue. Responses that identified more than one issue were included under all applicable categories.

Survey Responses: Food Safety

	<u>Cow-Calf</u> <u>(127 responses)</u>	<u>Feedlot (5 responses)</u>	<u>Seedstock</u> <u>(19 responses)</u>	<u>Vets/Vet Techs</u> <u>(16 responses)</u>
Food contamination	22%	20%	32%	31%
Food safety standards	17%	20%	21%	6%
Antimicrobial residues	18%	0%	5%	13%
Animal diseases	7%	0%	16%	6%
Consumer knowledge and education	8%	0%	0%	6%
Inspections	6%	20%	0%	13%
Foreign objects	8%	20%	0%	0%
Biosecurity	2%	20%	11%	6%
Packers	2%	0%	5%	13%
On-farm food safety/ BQA	2%	0%	5%	0%
Records and data transfer	3%	0%	0%	0%
Water & sustainability	2%	0%	0%	0%
Hormones	2%	0%	0%	6%
Trade	1%	0%	5%	0%
Feed and feed additives	1%	0%	0%	0%

Survey Responses: Beef Quality

	<u>Cow-Calf (90 responses)</u>	<u>Feedlot (6 responses)</u>	<u>Seedstock (26 responses)</u>
Eating characteristics	31%	33%	31%
Carcass characteristics	23%	17%	12%
Carcass defects, antimicrobial residues	10%	17%	4%
Nutrition & Feeding	13%	17%	12%
Transportation & Welfare	9%	0%	8%
Economics	14%	0%	0%
Marketing	10%	0%	0%
Breeding/Genomics	3%	0%	19%
Consumer perception & education	4%	0%	4%
Human nutrition	3%	0%	0%
Butchers	3%	0%	0%
Data flow back to producers	2%	0%	8%
Food safety	3%	17%	0%
Beef x dairy	1%	0%	4%
Hormones	2%	0%	0%
Regulatory barriers	1%	0%	0%
Uninspected animals	1%	0%	0%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Priorities rated as “extremely or very important” by more than 75% of respondents are highlighted in **green**. Priorities rated as “slightly or not important” by more than 25% of respondents are noted in **red**.

Survey Responses: Environmental Sustainability

	Cow-Calf (269 responses)			Feedlot (12 responses)			Seedstock (32 responses)		
	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important	Extremely or Very Important	Moderate Importance	Slightly or Not Important
Greenhouse gas reduction - impact on animal health, reproductive efficiency, feed/nutritional management, feed additives, hormones, beta antagonists, etc.	37%	38%	21%	38%	50%	13%	29%	43%	29%
Carbon sequestration	42%	36%	16%	33%	44%	11%	52%	24%	24%
Biodiversity	61%	26%	8%	45%	36%	9%	55%	35%	10%
Water use, quantity and quality management	78%	19%	3%	75%	17%	8%	81%	19%	0%
Nutrient (manure and fertilizer) management in soil and water	66%	25%	8%	75%	17%	8%	63%	34%	3%
Soil quality (e.g., microbial activity, compaction, organic matter)	75%	17%	6%	92%	0%	8%	78%	19%	3%
Environmental implications of converting land use between perennial grassland and annual crops	68%	24%	7%	42%	33%	17%	61%	35%	3%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Survey Responses: Knowledge Mobilization

Respondents were asked: “How often do you use the following communication channels to access science-based information for making informed decisions that benefit your work or the industry?”

	Cow-Calf (268 responses)			Feedlot (14 responses)			Seedstock (34 responses)		
	Daily/ Weekly	Monthly to 7x/year	Fewer than 3x/year	Daily/ Weekly	Monthly to 7x/year	Fewer than 3x/year	Daily/ Weekly	Monthly to 7x/year	Fewer than 3x/year
Beef Cattle Research Council (e.g., BeefResearch.ca, emails from the BCRC)	33%	49%	18%	14%	43%	43%	38%	47%	15%
Verified Beef Production Plus (VBP+) program (e.g., website, emails, materials, workshops, representatives)	12%	30%	59%	7%	36%	57%	6%	30%	64%
Websites other than BeefResearch.ca and VerifiedBeef.ca	25%	51%	24%	43%	43%	14%	39%	52%	10%
Social media (e.g., YouTube, X (Twitter), Facebook, Instagram, LinkedIn, Pinterest)	41%	24%	34%	40%	30%	30%	45%	21%	33%
In-person field days, conferences, seminars, workshops	2%	39%	59%	13%	38%	50%	0%	50%	50%
Online webinars or virtual conferences	4%	52%	44%	0%	43%	57%	0%	27%	73%
Veterinarians, Registered Veterinary Technologists (RVT) or vet clinic staff	9%	61%	30%	30%	50%	20%	13%	67%	20%
Fee-for-service professional consultants (e.g., nutritionists)	2%	19%	79%	15%	38%	46%	0%	32%	68%
Livestock or forage extension specialists (e.g., government, university)	2%	24%	74%	18%	9%	73%	0%	9%	91%
Magazines and newspapers	26%	52%	23%	30%	40%	30%	20%	63%	17%
Other printed materials (e.g., brochures, fact sheets)	9%	56%	35%	22%	44%	33%	17%	48%	35%
Radio (i.e., AM, FM, XM)	31%	19%	50%	27%	9%	64%	21%	17%	62%
Podcasts	20%	27%	54%	22%	22%	56%	15%	26%	59%
Smartphone apps	27%	17%	56%	39%	9%	55%	17%	23%	60%
Peer-reviewed scientific journals	4%	31%	65%	0%	36%	64%	4%	29%	67%
Other (describe below)	2%	13%	85%	0%	29%	71%	0%	0%	100%

5. Appendices, cont.

5.2. 2025 Beef Stakeholder Prioritization Survey Results, cont.

Survey Responses: Knowledge Mobilization

Respondents were asked: “How influential are the following sources of science-based information (or how heavily do you rely on the following) in your professional decision-making?”

	Cow-Calf (254 responses)			Feedlot (10 responses)			Seedstock (31 responses)		
	Extremely or Very Important	Moderate or Slightly Important	Not Important	Extremely or Very Important	Moderate or Slightly Important	Not Important	Extremely or Very Important	Moderate or Slightly Important	Not Important
Beef Cattle Research Council (e.g., BeefResearch.ca, emails from the BCRC)	51%	45%	2%	40%	50%	10%	42%	58%	0%
Verified Beef Production Plus (VBP+) program (e.g., website, emails, materials, workshops, representatives)	20%	44%	25%	11%	56%	11%	13%	52%	26%
Media (agriculture magazines and newspapers)	29%	63%	6%	40%	60%	0%	13%	87%	0%
Government extension services (e.g., staff, newsletters, events, other government extension)	21%	60%	14%	30%	40%	10%	23%	61%	13%
University/college extension services (e.g., staff, newsletters, events, other university/college extension)	22%	49%	21%	30%	20%	30%	13%	61%	23%
Researchers and scientists (e.g., academic papers, journal articles, presentations)	25%	59%	12%	20%	40%	20%	23%	68%	10%
Regional or provincial producer associations/organizations (e.g., staff, newsletters, websites, events)	33%	58%	7%	50%	30%	0%	23%	74%	3%
Peers (e.g., similar farmers, ranchers)	53%	45%	0%	70%	20%	0%	52%	48%	0%
Veterinarians, Registered Veterinary Technologists (RVT) or vet clinic staff	65%	31%	2%	50%	30%	0%	67%	33%	0%
Fee-for-service professional consultants (e.g., nutritionists)	24%	33%	29%	60%	10%	20%	26%	45%	23%
Interactive calculators or other customizable decision tools	20%	52%	19%	20%	40%	20%	17%	53%	30%
Peer-reviewed scientific journals	16%	51%	22%	20%	20%	40%	19%	48%	26%

5. Appendices, cont.

5.3. Strategy Development Participants

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5. Appendices, cont.

5.3. Strategy Development Participants, cont.

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