

SUMMARY

Knowledge Mobilization

Introduction

Knowledge mobilization is the process of moving evidence into action through building awareness, disseminating findings and enabling the use of research knowledge to create a desired impact. Identifying effective and cost-efficient ways to translate, communicate and support the implementation of new practices and innovations on-farm is critical to ensure research investments translate into measurable industry outcomes. The importance of knowledge mobilization, reflected across all program areas, is essential to advancing industry priorities and supporting informed decision making and adoption of beneficial practices.

Research to better understand effective and efficient knowledge mobilization practices and adoption is needed and is highlighted in the Research Outcomes section below. In addition, strategic knowledge mobilization efforts and initiatives are necessary to help address knowledge gaps and promote beneficial practices in the beef industry. These gaps have been identified, and targeted outcomes are included in Knowledge Mobilization Outcomes related to farm records; **cattle nutrition and production efficiency**; **forage and feed production**; **animal health, welfare and antimicrobial resistance**; **environmental sustainability**; **food safety**, and **beef quality**. Find all knowledge mobilization survey responses on **pages 62-63** of the full strategy.

A photograph showing a woman with dark hair tied back and a man with grey hair and glasses looking at a tablet together in an outdoor setting. The man is pointing at the screen. They are both wearing jackets, suggesting a cool environment. The background is a blurred field with some trees.

Knowledge mobilization professionals, extension specialists, veterinarians, agronomists and other stakeholders are encouraged to refer to this document when developing resources, communication materials, presentations and other outreach materials for beef producers and the broader supply chain.

Find the full Five-Year Canadian Beef Research & Knowledge Mobilization Strategy at
www.BeefResearch.ca/strategy

Research Outcomes

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

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

Farm Records

Key Themes:

- Adoption of record-keeping and digital tools
- Data-driven decision making and herd performance improvement
- Benchmarking and overcoming barriers to effective data-use

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

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

Cattle Nutrition & Production Efficiency

Key Themes:

- Feed testing and ration optimization
- Mineral nutrition and supplementation management
- Water quality monitoring and risk management
- Calf performance and production efficiency practices
- Interconnected herd management practices for improved productivity

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

1. Promote tools that guide producers on how to properly collect feed samples
2. Share resources that show how to interpret feed tests and incorporate the 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/how to test
4. Build materials that highlight real producer examples to help 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 beneficial management practices for mineral nutrition and supplementation

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

Knowledge Mobilization Outcomes, cont.

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

1. Provide clear examples of the economic benefits of water testing using current prices
2. Develop and share resources outlining practical steps producers can take 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

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

1. Create and share resources that promote implant adoption by highlighting economic benefits and addressing producer perspectives
2. Share resources and host events that demonstrate 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. Promote beneficial management practices for feed and water requirements of cattle in backgrounding and feedlot environments
8. Create and share resources on feed grains (corn, barley, wheat) nutrition, processing and feeding guidelines

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

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



Knowledge Mobilization Outcomes, cont.

Forage & Feed Production

Key Themes:

- Forage stands and pasture management (e.g. rejuvenation, establishment, productivity)
- Grazing systems and cropland grazing
- Annual forage production and silage management practices
- Soil health and invasive species control

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

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 in determining 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

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

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

Outcome 4: Increased adoption of beneficial grazing management practices

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 Outcomes, cont.

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

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

Outcome 8: Create and share resources on silage testing, including mycotoxins, nitrates and antinutritional factors

Animal Health, Welfare & Antimicrobial Resistance

Key Themes:

- Vaccination protocols and vaccine efficacy
- Biosecurity and herd disease prevention systems
- Calving season management
- Antimicrobial stewardship and responsible use
- Cattle health, welfare and stress management practices

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

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 the environmental, nutritional and management factors that impact vaccine efficacy

5. Promote the adoption of targeted vaccine use
6. Develop resources highlighting the role of a veterinary-client-patient relationship
7. Create resources to help identify the methods, processes and infrastructure needed for vaccinating/treating herds efficiently

Outcome 2: Increased adoption of regular biosecurity beneficial management practices

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 the social and economic factors shaping producer and consumer perspectives on biosecurity practices

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

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

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

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

Knowledge Mobilization Outcomes, cont.

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

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

Environmental Sustainability

Key Themes:

- Manure management and nutrient recycling practices
- Biodiversity conservation and habitat protection
- Water quality and riparian area management

Outcome 1: Increased adoption of effective manure management

1. Develop and promote resources outlining the advantages and disadvantages of different manure storage strategies, including producer examples

2. Promote beneficial management practices for, and the economics of, composting manure
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

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



Knowledge Mobilization Outcomes, cont.

Food Safety

Key Themes:

- Food safety and sanitation practices
- Pathogen control in processing facilities
- Regulatory and market access risk management

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

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 the risk 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



Beef Quality

Key Themes:

- Carcass and beef quality improvement practices
- Practices to maximize shelf life and consumer satisfaction

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

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

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