

SUMMARY

Animal Health, Welfare & Antimicrobial Resistance

Introduction

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.

See page 27 of the 2026 Canadian Beef Research and Knowledge Mobilization Strategy for more animal health, welfare and antimicrobial resistance information.

Key Issues

- Economically relevant and emerging animal diseases (i.e., neonatal diarrhea, calf pneumonia, bovine respiratory disease, histophilosis, mycoplasmosis, digestive upsets, liver abscesses and lameness)
- Chronic and procedural pain management
- Efficient and effective prediction, detection and diagnosis of disease
- Responsible antimicrobial use
- Surveillance
- Cost-benefit evaluations of recommended practices and research that is nearing commercialization or adoption



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

Research Outcomes

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 and lameness)

1. Advance basic research (e.g., microbiome, host-microbiome interactions, etiology, patho-physiology) into common production-limiting diseases required to support the development of cost-effective prevention and treatment options
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 productivity outcomes in the feedlot
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

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

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

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

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

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 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

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

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

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

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

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

