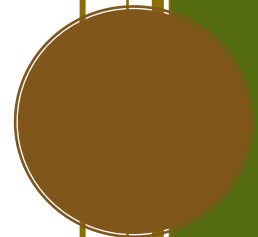


Beef Farmers
of Ontario

BEEF FARMERS OF ONTARIO

Research Investment Strategy 2021-2024



Contents

BFO Research Investment Strategy	3
Structure	4
Other supporting documents	4
Action items to facilitate the process:	4
SWOT Analysis	4
Theme 1: Environmental Sustainability	5
Theme Outcome:	5
Objectives	5
Theme 2: Animal Health	5
Theme Outcome:	5
Objectives	5
Sub-Categories.....	5
Objectives for Animal Health recommended for consideration at the national level:.....	6
Theme 3: Economic Sustainability	6
Theme Outcome:	6
Objectives	6
Sub-Categories.....	6
Theme 4: Forages/Feeds	7
Theme Outcome:	7
Objectives	7
Sub-Categories.....	7
Theme 4: Food Safety and Quality	8
Theme Outcome:	8
Food Safety Objectives:	8
Food Quality Objectives:.....	8
Theme 6: Market Research (Consumer)	8
Theme Outcome	8
Objectives:	8

BFO Research Investment Strategy

The BFO Research Investment Strategy 2021-2024 (Strategy) is intended to be used as a guide when investing in research.

The strategy articulates a clear desire on the part of the industry in this Province to utilize science, technology, and research to grow the industry in a sustainable and profitable manner.

The drive for sustainability is apparent in the desired outcomes related to the themes – Environment Sustainability, Animal Health, Economic Sustainability, Forages/Feeds, Food Safety, and Quality, and Market Research (Consumer Preferences). Their objectives (targets) are designed to take us to these outcomes and are externally focused on our client/customer base and the community in which BFO operates. Also included under these headings, there are multiple different subcategories. These subcategories are covered under various themes; however, they have been slated under the theme that is most applicable to it

Of course, our sustainability goals are underpinned by economics, which, in turn, promotes profitability.

Profitability is a central component of any research strategy for business or industry. The objectives are provided below the themes for Economic sustainability, animal health, Food Safety, and Quality and Forages/Feeds and Market Research, ensuring that producers remain profitable by making progress in each of these areas. However, the objectives aimed at ensuring profitability and sustainability are not exclusively targeted at individual producers. There is much in this strategy that speaks to the motivation to explore industry-wide and provincial important elements. These include a clear statement of intent on traceability, a desire to capture new markets by producing beef that meets specific export requirements, and the need to investigate new production models for different regions within the Province. The industry wants to produce a high-value protein that meets our consumers' many and ever-changing demands. Healthy animals cared for by professionals who have the technologies to ensure the welfare and environmental expectations are exceeded during production are of the utmost importance.

The industry wants to explore all avenues that will provide it with a secure future in Ontario by investigating new regional production systems, better utilization of gene technologies, nutritional advances, forage breeding, and management and market intelligence.

This strategy lays down the roadmap for investment in order to secure this future through research.

Structure

There are 6 overarching “themes” in the strategy. Each theme area is introduced with a desired “outcome” for the theme, which BFO will use as a performance measure in 2024. Beneath are several objectives, each of which has been designed to enable us to achieve the desired outcome.

The objectives serve a twofold purpose:

- A clear guide for researchers looking to submit proposals to BFO for funding; and
- A measure of progress and, ultimately, success in seeking to reach the overarching theme outcome.

There is no priority on the themes – the whole being greater than the sum of its parts – and therefore, each component of this strategy is important and relies on the others for ultimate success. In any industry research strategy, there will be areas that overlap with other jurisdictions. In this case, objectives that coincide with the national strategy have been noted at the bottom that respective themes.

Other supporting documents

Action items to facilitate the process

During the process of developing this strategy, the group felt some barriers could prevent us from achieving our objectives and, by the same token, some actions that can be undertaken that will help us.

SWOT Analysis

During the process, a review of the participants’ views on the strengths, weaknesses, opportunities, and threats (SWOT) to the industry in concerning their ability being able to deliver on its elicited research needs was undertaken. The action items and SWOT analysis are contained in separate documents that should be read in conjunction with this investment strategy.

Theme 1: Environmental Sustainability

Theme Outcome

Ontario beef farmers are measurably reducing the industry's environmental footprint by developing solutions and systems beneficial to both beef production and the Environment.

Objectives

- 1.1 The carbon impact of standard practices is identified and benchmarked
- 1.2 Life Cycle Analysis (LCA) of beef production in Ontario is measured
- 1.3 Improved feed efficiency and nutrient utilization that demonstrably reduces environmental impact
- 1.4 Cost-effective technologies that prevent phosphates from contaminating water are being implemented on Ontario beef farms
- 1.5 The environmental impact of developing a beef industry in Northern/eastern Ontario has been undertaken and published

Objectives for Environment recommended for consideration at the national level

- water use efficiency of beef compared with other livestock protein production

Theme 2: Animal Health

Theme Outcome

By 2024, Ontario beef cows have a health status that enables a longer, more productive, and profitable life than 2021. Calves are more robust and require less pharmaceutical intervention, which will help optimize the calves' performance. Ontario beef production will continue to meet or exceed the standards outlined in the *National Beef Code of Practice for Standards of Care and Handling of Canadian Beef Cattle 2013*.

Objectives

- 2.1 Develop management programs that utilize genetics, nutrition, welfare, biosecurity, and environmental management to produce robust cattle with reduced reliance on other treatments
- 2.2 By 2022, validated vaccination and weaning protocols are being widely promoted to producers and; by 2024, significant uptake of the protocols is achieved across the industry in Ontario
- 2.3 Create effective education programs for the efficacious and prudent use of antibiotics for the whole industry
- 2.4 Producers and industry have techniques that enable more rapid and accurate recognition and diagnoses of health issues in individual animals

Subcategories

- AMR
 - Develop processes and technologies that limit the use of antibiotics in Beef Production
- Welfare

- Evidence-based, cost-effective options for pain control during necessary routine procedures such as dehorning and castration have been developed and are being routinely implemented by Ontario producers
- Evidence-based transportation protocols that reduce stress and injury have been developed and have been adopted across the industry
- Emerging technologies that reduce the frequency with which animals are transported, such as the use of video sales, are being continually assessed
- Nutrition
 - New nutritional management strategies have reduced the incidence of metabolic diseases by 20%, with no associated decrease in productivity

Objectives for Animal Health recommended for consideration at the national level

- Antibiotic use in cattle production in Canada should be benchmarked under ‘health management’ as part of the Nationwide benchmarking survey of the incidence and economic impact of production limiting diseases, health management, biosecurity practices, and welfare practices in beef cattle. (see National Beef Research Strategy 2016.
- Improved rapid diagnostics of individual animal health
- Improved identification of emerging diseases, such as bluetongue
- Alternatives to antimicrobials for infection and disease management (vaccines, phage, and nutritional technology) actively developing
- New anti-infective agents have been identified

Theme 3: Economic Sustainability

Theme Outcome

Develop processes, procedures, technology, and equipment to help create a more economically sustainable Ontario beef industry.

Objectives

- 3.1 Optimal weaning weights have been identified for maximum profitability in all sectors
- 3.2 An effective system that equitably distributes returns to stakeholders along the value chain is in place
- 3.3 An analysis tool for objectively interpreting grading results has been developed
- 3.4 Producers are effectively using market signals to adjust management to maximize carcass values
- 3.5 Financial modeling tools have been developed that allow producers to undertake a COP based evaluation of new market opportunities
- 3.6 The economics of developing a beef industry in Northern/Eastern Ontario is understood

Subcategories

- Genetics
 - Gene technologies are delivering productivity increases through:
 - Increased feed conversion,

- Improvements in product quality to meet market demands (marbling and tenderness),
 - Improved disease resistance - a result of selecting genetically more robust animals,
 - Reductions in greenhouse gas emissions as measured by improvements in feed utilization.
- Meat Processing Systems
 - technologies and systems that create a more productive and efficient meat processing industry and;
 - technologies that can make up for the labor shortage currently facing the meat processing industry
- Feed efficiency
 - Cost-effective novel nutritional strategies increase feed efficiencies by 5-10% by 2024
 - Improved nutrition has enabled cost-effective access to markets where a guarantee of hormone-free products is required

Theme 4: Forages/Feeds

Theme Outcome

Development forages and feed systems that satisfy nutritional demands for animals at the same time increasing performance, optimizing animal health as well as decreasing production cost for producers

Objectives

- 4.1 Continue to improve cow efficiency through new and current feeds and feeding systems
- 4.2 An efficient and cost-effective method of evaluating the feasibility of using nutritional manipulation and novel feeding strategies for utilizing by-product and alternative feeds is developed
- 4.3 Producers are confidently developing nutritional strategies to meet carcass targets that satisfy processor/market demand
- 4.4 By 2024, a forage research program for the beef industry is established in Ontario. The target of this program will be to increase yields by 10% over 10 years
- 4.5 By 2024, alternative feed energy sources (to corn) are being trialed

Subcategories

- Pasture Systems
 - Develop pasture management systems that increase animal health and performance while making a positive impact on the Environment
- Cover Crops
 - Development of strategies that utilize cover crops in production systems
- Field Crops
 - Research field crops that optimize performance without impacting the overall health of the animal
- Feed Systems
 - Increase overall feed efficiency by 5%-10% by 2024
 - Develop strategies around maintaining feed quality both in storage and in the bunk

Theme 4: Food Safety and Quality

Theme Outcome

Ontario beef farmers continue to supply safe and high-quality beef that consistently meets consumer's demands.

Food Safety Objectives

- 4.1.1 Ontario beef has achieved complete supply chain traceability Objectives for Food Safety recommended for consideration at the national level
- 4.1.2 Consumer attitudes and beliefs related to the relative safety of new technologies such as irradiation and GMO's, is quantified and benchmarked (see Market Research – Theme 7)
- 4.1.3 Potential pathogens and food safety risks (microbial, chemical, and physical contamination) are identified and quantified
- 4.1.4 Beyond carcass wash, the incidence of microbial resistant organisms has been quantified, benchmarked and technologies designed to reduce the incidence implemented

Food Quality Objectives

- 4.2.1 A system that provides a complete information flow from grading to producers, which will allow for improved product consistency and reduced defect rates
- 4.2.2 An objective tenderness standard and test is developed and operational
- 4.2.3 In 2024, market signals are driving genetic selection and are the basis of quality improvements on the animal's carcass traits

Theme 6: Market Research (Consumer)

Theme Outcome

Accurate and timely market intelligence enables the industry to produce Ontario beef that continually meets or exceeds consumer expectations.

Objectives

- 6.1 Producers have developed and are operating a market intelligence system designed to forecast future consumer needs
- 6.2 A planned series of valuable functional (human health) attributes of beef and their respective costs of production are understood
- 6.3 Market research specifically targeted to increase beef's share of the consumer market is undertaken regularly

Results will highlight:

What consumers are buying and why,

- The product characteristics for which consumers are willing to pay a premium. Objectives for Market Research recommended for consideration at the national level

- Effective methods for consumers to identify desirable traits or characteristics
- An effective methodology to flow value throughout the whole value chain
- Survey results for consumer desires instead of “vote with their wallet” currently being utilized, i.e., organic, carcass side, product range, etc.
- Improved knowledge of consumer demands and how to communicate with them