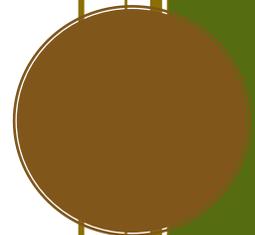




BEEF FARMERS OF ONTARIO

Research Investment Strategy 2014-2020



BFO Research Investment Strategy 2014-2020

The BFO Research Investment Strategy 2014-2020 (Strategy) is intended to be used as a guide for use 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 as tools 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, Food Safety, Market Research (Consumer Preferences) and Product Quality - wherein the objectives (targets) designed to take us to these outcomes are externally focused on our client/customer base and the community in which we operate. Also included under sustainability are the themes Production Systems and Animal Welfare which cross over between sustainability and profitability, the one being completely reliant on the other.

All of our drive to sustainability is of course underpinned by economics, which in turn underpins profitability.

Profitability is a central component of any research strategy for business or industry and the objectives sitting below the themes of Animal Health & Zoonotics, Animal Welfare, Genetics and Reproduction, Nutrition and Production Systems are aimed at ensuring that by making progress in each of these areas producers remain profitable. 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 elements of industry wide and provincial importance such as; 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 high value protein that meets the many and ever changing demands of our consumers. Healthy animals that are cared for by professionals who have the technologies to ensure welfare and environmental expectations are exceeded during production is of the utmost importance. The industry wants to explore all avenues that will provide it with a secure future in Ontario, through the investigation of 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 10 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 2018. Beneath that are a number of objectives each of which has been designed as a target that will 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 into other jurisdictions. In this case, objectives that overlap with the national strategy have been noted at the bottom of the respective themes.

Finally, there are also issues that arise in developing a strategy such as this that are not the responsibility of the industry to address. They are nevertheless important and as such have been recorded at the end of the document so that they are not ‘lost’ and considered unimportant.

Other supporting documents

Action items to facilitate the process:

During the process of developing this Strategy there were some barriers that the group felt 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 relation to 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: Animal Health

Theme Outcome:

By 2020, Ontario beef cows have a health status that enables a longer, more productive and profitable life than in 2014. Calves are more robust, require less pharmaceutical intervention and regain optimal growth rates more quickly than in 2014.

Objectives:

- 1.1 Develop management programs that utilize genetics, nutrition, welfare biosecurity and environmental management to produce robust cattle with reduced reliance on other treatments
- 1.2 By 2017, validated vaccination and weaning protocols are being widely promoted to producers and; by 2020 a measurable uptake of the protocols is achieved across the industry in Ontario
- 1.3 By 2017, effective education programs for the efficacious and prudent use of antibiotics are being conducted for the whole industry
- 1.4 Producers and industry have techniques that enable more rapid recognition and diagnoses of health issues in individual animals
- 1.5 By 2020, the incidence of Johne's Disease in beef herds in Ontario is measurably declining

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 *Nation-wide 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 June 2012*)
- 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 2: Animal Welfare

Theme Outcome:

Ontario beef production meets or exceeds the standards outlined in the national *Code of practice for standards of care and handling of Canadian beef cattle 2013*.

Objectives:

- 2.1 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
- 2.2 Evidence based transportation protocols that reduce stress and injury have been developed and have been adopted across the industry
- 2.3 Emerging technologies that reduce the frequency with which animals are transported such as the use of video sales, are being continually assessed
- 2.4 An alternative to tail docking in slatted floor feedlots is being implemented
- 2.5 Environmental/housing conditions and animal movement techniques that reduce stress and injury in beef cattle are understood

Objectives for Animal Welfare recommended for consideration at the national level

- Develop alternative identification options to branding



Theme 3: Environment

Theme Outcome:

Ontario cattle producers and processors are measurably reducing the environmental footprint of the industry.

Objectives:

- 3.1 The carbon impact of standard practices is identified and benchmarked
- 3.2 Life Cycle Analysis (LCA) of beef production in Ontario is measured
- 3.3 Improved feed efficiency is demonstrably reducing environmental impact
- 3.4 Technologies that prevent phosphates contaminating water are being implemented
- 3.5 Improved feed nutrient utilization by Ontario beef cattle is reducing environmental impact (also see nutrition 8.4)
- 3.6 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 4: Economics

Theme Outcome:

The Ontario beef industry is taking advantage of opportunities along the value chain that enable all sectors to be profitable and sustainable.

Objectives:

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

Theme 5: Food Safety

Theme Outcome:

Ontario beef is a fully traceable, reliably safe animal protein.

Objectives:

- 5.1 Potential pathogens and food safety risks (microbial, chemical and physical contamination) are identified and quantified
- 5.2 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)
- 5.3 Ontario beef has achieved complete supply chain traceability

Objectives for Food Safety recommended for consideration at the national level

- Beyond carcass wash, the incidence of microbial resistant organisms has been quantified, benchmarked and technologies designed to reduce the incidence implemented

Theme 6: Genetics and Reproduction

Theme Outcome:

Genetic and reproduction technologies are being fully utilized as management tools to maximize profitability.

Objectives:

- 6.1 Accelerated genetic improvement brought about by increased testing
- 6.2 Producers understand and are using available genomic technologies (see national context comment below)
- 6.3 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.



Objectives for Genetics and Reproduction recommended for consideration at the national level

- Industry has investigated, understands and is addressing the issue of producers not using all available genomic technologies

Theme 7: Market Research (Consumer Preference)

Theme Outcome:

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

Objectives:

- 7.1 Producers have developed and are operating a market intelligence system designed to forecast future consumer needs
- 7.2 A planned series of valuable functional (human health) attributes of beef and their respective costs of production are understood
- 7.3 Market research specifically targeted to increase beef's share of the consumer market has been undertaken by 2017. Results will highlight:
 - What consumers are actually 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 as opposed to “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



Theme 8: Nutrition & Feeding Systems

Theme Outcome:

Based on available feed options, producers are able to formulate rations to competitively satisfy nutritional and market requirements.

Nutrition Management Objectives:

- 8.1 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
- 8.2 Producers are confidently developing nutritional strategies to meet carcass targets that satisfy processor/market demand
- 8.3 Valuable functional foods are being generated through nutritional manipulation. A minimum of three new functional foods are available to the market by 2020. (See Theme 7. Market Research - Consumer Preference)
- 8.4 Cost effective novel nutritional strategies increase feed efficiencies by 5-10% by 2020
- 8.5 Improved nutrition has enabled cost effective access to markets where a guarantee of hormone free products is required
- 8.6 By 2020 improved nutrition has improved cow efficiency by 10% per pound produced
- 8.7 New nutritional management strategies have reduced the incidence of metabolic diseases by 20%, with no associated decrease in productivity



Forages & Grazing Systems Objectives:

- 8.8 By 2017 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
- 8.9 By 2017 alternative feed energy sources (to corn) are being trialed
- 8.10 A research program designed to maintain productivity while improving utilization of beef animals as ruminants is in place by 2017 including:
 - Grazing 365 days a year with no stored feed (see also production/farming systems)
 - Plant genetics and pasture management is increasing pasture yields at the same rate as cash crops increase value

Theme 9: Production Systems

Theme Outcome:

The industry is measurably growing as a result of improved/alternative production systems being implemented across the Province.

Objectives:

- 9.1 Implant and/or ionophore free production systems are developed
- 9.2 Investigation and analysis of alternative regional production systems based on profitability and sustainability has been undertaken and reported
- 9.3 Production models for beef cattle systems in the different regions of Ontario have been developed
- 9.4 By 2016, a cost benefit analysis of the value of the organic matter in manure has been undertaken and the results disseminated to producers
- 9.5 Increased demand for extension/information services is being driven by more effective research results dissemination and benchmarking initiatives



Theme 10: Product Quality

Theme Outcome:

Ontario beef is consistently meeting consumer demands.

Objectives:

- 10.1 A system that provides more complete information flow from grading is improving product consistency and reducing defect rates
- 10.2 An objective tenderness test is developed and operational
- 10.3 In 2020 market signals are driving genetic selection and are the basis of quality improvements

Important points that fall outside of the BFO research mandate but which should not be lost:

- *Reduced number of sales barns and collection yards*
- *Transport costs reductions are being achieved through decreased transportation cost for feeders, for example by utilizing more Ontario, Manitoba and USA feeders*
- *Research on the connection of animal to human disease*
- *Improved knowledge of animal drug use and impact on human health*



Theme 11: Economic Analysis

Theme Outcome:

The Ontario beef industry is receiving a measurable beneficial return on their research investments.

Objectives:

11.1 The economic impact and return on investment for Ontario beef research projects (2014-2020) has been documented, analyzed and disseminated to industry stakeholders

11.2 The economic impact and return on investment for Ontario beef industry development projects and other BFO sponsored programs and policies has been documented, analyzed and disseminated.