ONTARIO Sheep MARKETING AGENCY

ONTARIO SHEEP RESEARCH STRATEGY

Towards 2020

The Ontario sheep sector in 2020.

In 2020 the market is experiencing increased consumer demand and is successful and profitably anticipating and meeting that demand. The new population demographic has a large impact in the market and producers are supplying them with the products they want at sustainable prices. Domestic products are displacing imports as well as growing the market through a revised offering of value added products and consistently high quality basic cuts. The value chain is well established with strong collaborations connecting retail and food service back to producers so that producers are reacting to market signals in a timely manner. Ontario Lamb is a high-quality, possibly branded product in high demand because of its quality, safety and production ethics.

On farm genetic evaluations and genomics is playing a major role in developing products that the market wants in a cost effective and sustainable manner. Ewes are more robust, living longer and producing lambs that thrive. Stock health is improved and producers have access to vaccines and medications that are efficacious and cost effective to use.

At a macro level the industry is thriving and utilizing farming systems that suit specific environmental contexts and produce lamb for pre-defined markets across Ontario and Canada. Canadian approval for foreign products is more efficient.

Collaboration is the watchword and producers are using technologies that enable them to understand grading in a manner that allows them to alter their management practices to achieve better results and to communicate with the market via the processor. * Genetics *

Producers have access to smart systems when seeking technical solutions and they are linked in to research incentives and results upon which they can rely. Research is driven by industry needs and tackles major issues of importance that impact the whole sector.

Theme 1. Animal Health

Sheep are raised in a variety of production systems (intensive and extensive) in Ontario where the physical conditions at the farm and in transport, climate, exposure to wild animals carrying disease, chronic parasite problems, viral and bacterial exposure among other things expose sheep (individual and flock) to a plethora of disease challenges.

Management is recognized as paramount and continuing education as well as research is key to ensuring an improved health profile for Ontario sheep.

Theme Outcome

In 2020, the lamb mortality average in the Ontario sheep industry is reduced to less than 10% and breeding ewes are more productive and therefore are more profitable than in 2013.

Research Objectives

1. **Understand the major causes and cost of early mortality and culls**

   Potential areas of research

- Record current mortality and causes of death in Ontario and use as a local benchmark
- Benchmark mortality rates (from above) against similar systems in other, similar production regions within Canada (and internationally if possible)
- Compare and contrast systems/other jurisdictions to ascertain if they perform better than the Ontario industry and if so, investigate why this is so

2. **To reduce the impact of chronic disease**

   Potential areas of research

- Develop a prioritized program to investigate the cycle of events that cause chronic diseases (including abortions) to proliferate – compare and contrast this with the same diseases and their management in other similar jurisdictions
- Continue to investigate production systems that enhance the control of gastrointestinal nematodes and other parasites
- Combine current on-farm programs into one 'easily accessible' best management practices document for producers. Undertake a cost benefit analysis for the program to demonstrate the long term benefits of participating in the program

3. **To reduce the impact of parasites on productivity**

   Potential areas of research

   - Undertake research into breeding programs that enable selection for natural resistance to parasites
   - Develop and recommend best management parasite control systems
   - Continue investigations into the lifecycles of parasites and demonstrate practical, cost effective management solutions to break parasite life cycles
   - Continue to investigate parasite resistance to current pharmaceutical interventions

4. **Improved access to pharmaceuticals**

   - Minor Use Minor Species (MUMS). This is a note to ensure that OSMA remains engaged with the MUMS working group.
   - Develop improved (more accurate and faster) diagnostic techniques and work to improve access to pharmaceuticals and other animal health products

Theme 2. Nutrition

Understanding nutrition and planning and managing proven nutritional strategies will determine the future success of any livestock system. Because sheep can adapt to a variety of different sources of nutrition it is important to understand how to optimize these for maximum productivity.

Theme Outcome

Producers understand 'how to feed' in their context to maximize profitability.

Research Objectives

Increase animal and business performance through improved nutritional strategies

Potential areas of research

- Investigate lower cost feeds, feed additives, feed supplements, alternative feeds and feed management systems that maintain or increase current production levels
- For different markets, production systems and breeds, seek to understand optimal mature ewe and ram body size based on returns
- Develop pasture management and grazing systems (pasture utilization, plants, grazing intensity, fertility needs), including alternative forages to maximize productive capacity of the system
- Develop BMP's for the most effective use of minerals
- Understand the protein and energy requirements for accelerated lambing

Theme 3. Marketing, Product Quality and Economics

The sheep industry in Ontario is a growth industry influenced by various economic conditions in the market and in production. The majority of the market in Ontario is currently supplied from overseas, a situation that suggests there are significant opportunities for import replacement for the Ontario grown product. In order for this to occur a clear understanding of what drives profit within the value chain coupled with smart farming systems knowledge is important.

There are many different systems of sheep production and many different breeds of sheep within those systems, making economic comparison between systems difficult. Never the less if the industry is to succeed in growth through greater market penetration including import replacement it needs to understand what the most profitable sheep farming systems are in Ontario and how to most profitably enter the market and then sustain and grow market share.

Theme Outcome

As a result of a better understanding of the economic drivers along the value chain, the Ontario sheep industry is growing sustainably year after year through increased market penetration and displacement of imported sheep meat products.

Ontario sheep producers have the information on the economics of production, business and market opportunities necessary for them to make profitable business decisions.

Research Objectives

To provide Ontario sheep producers with information on the economics of production, business and market opportunities that will enable them to make profitable business decisions.

Potential areas of research - Understanding marketing and market forces

1. Value Chain research:
    - Calculate and clearly understand the impact on the consumer and producer of the profit being made/taken at each point along the entire value chain and how this impacts market opportunity
    - Identify other similar value chains and investigate what elements make them successful or otherwise

2. Understanding the customer:
    - Investigate the changing population demographic trends in Ontario in relation to increasing populations, particularly those that traditionally consume sheep and goat products
    - Undertake market research to ascertain what the various sectors of the new demographic want from sheep products
    - Investigate opportunities in value adding and new markets within the new demographic and elsewhere for whole carcass utilization
    - Investigate opportunities to develop and market a wider range of value added products, learning from other jurisdictions and niche markets.
    - Investigate the success factors, limitations and costs of introducing branded sheep products to the Ontario market

3. Investigate the factors that have and are affecting demand. Explore supply systems that could be applied in the Ontario context to more closely meet demand

Potential areas of research - Economics and product quality related to production

This area of research is ongoing and OSMA has considerable information and resources related to sheep production & economics that should be reviewed prior to undertaking any new research in this area.

- Understanding cost of production (COP) - Undertake research to identify and quantify all of the factors that contribute to the cost of production in the most common management systems in Ontario and how individual producers successfully manage these
- Monitor inputs and outputs of the most common management systems to develop benchmarks against so that producers can measure their performance and work to maximize productivity and increase profit per ewe
- Work with processors to better understand consumer preferences relating to meat quality
- Investigate and seek implementation of cost effective, dollar index linked grading systems that are able to provide individual carcass reports back to producers on:
  - ✓ The major drivers of quality
  - ✓ Cysticercus ovis (C. ovis) levels
  - ✓ Loin and backfat measurements
- Investigate systems and costs of identifying and grading the quality of lamb against mutton
- Investigate handling techniques/systems that will reduce carcass damage (particularly bruising)

Theme 4. Genetics

The potential to maximize market opportunities using genetic selection is not being fully realized by the sheep sector in Ontario. Selection for animals that produce consistent quality cuts that the market demands is paramount if the industry is to successfully grow its market share.

Theme Outcome

Fifty per cent increase in Ontario sheep numbers on the Canadian Sheep Genetic Evaluation System (CSGES) testing program using genetics and genomics as tools to produce the high quality consistently uniform product that profitably meets market requirements.

Research Objectives

To utilize genetic selection as a marketing and production tool in order to produce a high quality, consistent product.

Potential areas of research

- Investigate and define the market and production values attached to specific genetic traits and encourage producers to target the defined traits
- Identify those traits that will provide more robust animals with improved life time productivity and efficiency with focus on feed efficiency and disease/parasite resistance
- Elucidate Canadian genomic information and provide the results in a format that producers can use to improve productivity and market penetration
- Undertake research into breeding programs that enable selection for natural resistance to parasites

Theme 5. Reproduction and Production Systems

The recognition of the fact that productivity is dependent on the management of the entire production system, not simply the individual components in isolation, is leading to big improvements in productivity and market acceptance. Ontario sheep production is in a strong position to capitalize on production systems research with potential to link different production systems to meet different market demands.

Theme Outcome

Production systems that consistently provide a basis for the growth of the sector in Ontario.

Research Objectives

To provide producers with the knowledge to implement the most beneficial production system for the environment in which they operate

Potential areas of research

- Identify and develop the most cost-effective models for the different (holistic) production systems (i.e. annual versus accelerated lambing). Research methods should ideally be developed to allow for meaningful 'benchmarkable' comparisons to be made between the different systems i.e. confinement versus pasture; type of breeding stock accelerated versus annual; dollar return per hectare
- Understand the cost benefits of producing and marketing new crop versus heavy lambs
- Develop systems (including use of genetics, genomics and synchronization protocols) to improve the overall efficiency and productivity (including increasing conception rates and reducing mortalities) of out of season breeding
- Continue to investigate fetal mortality in order to understand the conditions that lead to it. Develop management programs (including genetic selection) to reduce its incidence

Theme 6. Environment

Theme Outcome

Consumers and retailers understand that sheep production in Ontario is well suited to the environment in which it is practiced.

Sheep producers are increasing production and productivity year after year and concurrently utilizing best management practices to improve the environment in which they operate.

Research Objectives

To provide the Ontario sheep industry with the ability to demonstrate its environmental management credentials and the Life Cycle Analysis[1] (LCA) of its products.

Potential areas of research

- Undertake LCA for all sheep products produced in Ontario and compare the different systems used
- Understand the cost/benefit of predator control
- Continue to investigate mechanisms for reducing and eventually eliminating the impact of predators
- Investigate low cost ways of efficiently retrieving and disposing of deadstock
- Continue to trial and promote nutrient management practices that create economic benefit while protecting the environment
- Investigate the long-term impacts of sheep coexisting with species at risk (e.g. bobolinks)

[1] Life Cycle Analysis is a technique used to assess environmental impacts associated with all the stages of a product's development and subsequent sale.

Theme 7. Food Safety

Food safety is an issue that to date has not been of major significance to the Ontario sheep industry. There is a significant market advantage for those sectors able to demonstrate high standards of accepted best management practices (consistently supplying clean, disease and parasite free product), traceability and product handling.

Theme Outcome

Ontario sheep industry is acknowledged as a producer of high quality, healthy product.

Research Objectives

To ensure that Ontario sheep meat continues to have an unblemished food safety record. Industry can demonstrate that it is implementing accepted best management practices in food handling along the entire supply chain.

Potential areas of research

Using previously identified Critical Control Points (CCPs) develop mechanisms and tools to eliminate the risk of product contamination. One issue of primary focus is the elimination of Ovine Cysticercosis (C. ovis)

- Develop cost effective and simple ways to identify animals and trace them
- Work with processors to establish a system of measuring carcass contamination, understanding where contamination is occurring and developing methods to eliminate it

Theme 8. Animal Welfare

Sheep are capable of feeling pain, learning, displaying emotion and stress.

The factors that effect sheep welfare are multifactorial which suggests a multi-disciplinary approach to the exploration and understanding of welfare is required.

Theme Outcome

Producers and industry service personnel are able to recognize the early symptoms of sheep becoming distressed and alleviate the conditions that are causing that reaction.

Research Objectives

Provide producers and service personnel with management tools and the knowledge needed to apply them, to alleviate welfare problems before they negatively impact the health of the sheep and/or flock.

Potential areas of research

- Investigate the most effective pain mitigation including the use of analgesics, anti-inflammatories and anesthetics
- Identify and work to resolve the most important gaps in scientific knowledge related to pain – recognizing symptoms and identifying causal agents
- Investigate euthanasia techniques with emphasis on developing information for producers on not only the most effective methods (cost and efficacy) and how to apply them, but also when to apply them
- Investigate handling techniques/systems that will to reduce carcass damage (particularly bruising)