



ONTARIO PORK

Ontario Pork represents the 1,600 farmers who market hogs in the province in many areas, including research, government representation, environmental issues, consumer education and food quality assurance. The pork industry in Ontario accounts for 1 in 7 jobs, and it is estimated that total industry output from farm gate sales is worth \$5.6 billion to the Ontario economy.

The primary purpose for raising pigs is to provide us with food, or pork to be specific. Ontario farmers produce some of the highest quality pork in the world and abide by strict on-farm food safety regulations. Research and Development has always been a cornerstone to the industry and provide valuable knowledge, practices and information that allows the industry to continue to advance.

Ontario Pork conducted a strategic review of Research in 2011-2012. Two reports were commissioned. The first was a Situation Analysis: A Strategic Review of the Ontario Pork – University of Guelph/OMAFRA Relationships conducted by: Paul Hodgman Agribusiness; Ingratta Innovations and Toma & Bouma Management Consultants. Ontario Pork set up an Ad Hoc Research Committee (AHRC) which developed an Ontario Pork Research Strategic Pathway Project Report which:

- Determined the research requirements and priorities
- Evaluated strategic partnerships for research
- Outlined accountability and a research structure/pathway

A session was held on November 21, 2012 to consider the research priorities and build research outcomes to be used to solicit measurable and achievable research project and programs for the benefit of Ontario pork producers. The session was attended by 30 invited producers and industry leadersⁱ and facilitated by Tim Nelson from the Livestock Research Innovation Corporation (LRIC). To focus the attendees, a quick exercise resulted in the group striving for a collective commitment for Ontario Pork to conduct practical and adoptable research that creates better returns for producers and value for the industry that produces safe nutritious welfare friendly pork. This resulted in the following vision for Ontario Porks' research investment:

Vision:

Ontario Pork research, supporting sustainable growth in swine production and pork marketing.

The Ontario Pork AHRC identified four high level research priorities each of which encompasses several sub-categories:

- Production - Herd Health, Nutrition, Environment and Reproduction
- Economics - Competitiveness and Business Sustainability, Industry (Market) Trends
- Societal Trends and Perceptions - Animal Welfare, Consumer Perception
- Product Development and Innovation - Product and Process Development, Health Benefits and other attributes of Pork

The group attending the facilitated workshop identified eight areas of interest/concern that impact the ability of the industry to be as efficient, profitable and sustainable as it can be. Five of these themes correlated with the priorities identified by the AHRC (see table below) and became the research 'themes' which this strategy addresses in detail.

The other three were recognized as areas of concern but fall outside of the scope of Ontario Pork investment of research funds. These areas are included in the table below with further notes on each included at the end of the document.

Research Themes/AHRC Priority Correlation.

Research Themes	Corresponding ad hoc Research Committee Priorities
Trade	Economics
Production	Production and Economics
Animal Health	Production, Economics, and Societal Trends and Perceptions
Consumer Trends	Economics, Societal Trends and Perceptions, Product Development
Welfare and Public Perception	Societal Trends and Public Perceptions, Production, Product Development
Areas identified that fall outside the scope of Ontario Pork research investment	
Regulations	Importance was recognized with these themes, however it was not recommended as appropriate for research funds to be invested in these areas.
Infrastructure and Organization	
Infrastructure (Physical)	

NOTE: Innovation was identified as a research theme however during the discussion it became clear that Innovation is a significant and integral element of every theme and priority. So whilst it is not explicitly referred to as a theme innovation is implicit in each of the others.

Similarly it was stressed that some outcomes/research priorities can never be planned. They come from fresh, innovative ideas that require some risk in investment into 'blue sky' research.

The following statement incorporates Ontario Pork's commitment to not limiting all of its research investment to planned expenditures.

Opportunities with the potential to provide future industry benefits to pork producers in any area across the pork value chain are not limited by current knowledge or thinking.

For each of the themes an overarching statement of the difference Ontario Pork investment would make in each was developed. Broadly speaking, these are aspirational statements of what 'success' (a desired future), would look like for each theme.

Barriers preventing us from reaching that aspirational future were identified and discussed and 'outcome statements' for each of the barriers developed.

Those desired outcome statements are the guiding statements that indicate where Ontario Pork research priorities lie and where research investment in projects will be targeted.

A high level research investment statement was developed for each outcome statement.

Note: The nature of industry is such that some research priorities naturally fall under more than one theme and therefore similar outcomes that appear under different theme.

Trade

Corresponding Research Priority:

- Economics (incorporating Competitiveness and Business Sustainability and Industry (Market) Trends)

Success

Maintaining and growing existing markets while identifying and capturing markets that add value to the supply chain

Research Investment

Invest in market intelligence and engage the value chain partners to cultivate value added markets

Desired Outcome/s

1. A model for gathering and sharing market data and information has been developed

The model:

- Allows comparisons and contrasts production and processing costs locally and within global markets and
- Enables an assessment of competitive advantages and market opportunities for Ontario pork producers and value chain partners and
- Highlights opportunities for cost reductions along the value chain

2. Value Chain (VC)

- VC's are clearly identified
- VC's are formally recognized by the partners including government
- VC partnerships are developing ways in which they can enhance profits by working together more effectively.

3. Value Chain partners report increased profits from accessing and sharing market intelligence provided through the model.

Animal Health

Corresponding Research Priorities:

- Production (incorporating Herd Health, Nutrition, Environment and Reproduction)
- Economics (incorporating Competitiveness and Business Sustainability, Industry (Market) Trends)

Success:

Manage production throughout our pork value chain in such a manner to achieve competitiveness in the North American Market in the short term and globally in the long term

Research Investment

Related to health management:

- Identify how to reduce and prioritize costs of production and increase efficiencies to enhance competitiveness and product quality.
- Develop or modify techniques, products and/or inputs that will result in reduced production costs in Ontario production facilities

Desired Outcome/s

1. Effective techniques and protocols that reduce the negative effects of disease/stress on pig performance have been identified and evaluated. Techniques and protocols should be regarded in the broadest terms. Examples might include genomics, herd management, and biosecurity.

2. Industry recognizes major diseases and pathogens that may impact the health of the swine herd in Ontario and has identified;

- their origin and spread
- their influence on health status and productivity and
- effective methods to diagnose control and/or minimize their influence

3. Industry understands the origin, spread and predisposing factors of common production limiting, emerging and re-emerging diseases of hogs that impact Ontario herds

4. The cost of managing diseases to the industry in Ontario, the economic impact of those diseases is quantified;

- Investment in research to improve understanding of disease causation, diagnostics and prevention with a focus on reducing costs (cost benefit)

5. The major disease threats to the industry are identified and effective identification and control methods are readily available;

- New methods and improve current diagnostic techniques that enhance the speed and accuracy of diagnosing production limiting diseases and

- New interventions and improve techniques that reduce disease impact
- Increased speed and treatment accuracy of control measures

6. Ontario Producers are using cost effective, innovative communication tools that utilize collaboration and information sharing to increase the speed with which research results are disseminated and this has resulted in a reduced impact of disease on the Ontario swine herd.

7. Methods that more effectively engage Ontario Producers in industry wide disease mitigation initiatives are implemented.

Production

Corresponding Research Priorities:

- Production (incorporating Herd Health, Nutrition, Environment and Reproduction)
- Economics (incorporating Competitiveness and Business Sustainability, Industry (Market) Trends)

Success:

Manage production throughout our pork value chain in such a manner to achieve competitiveness in the North American Market in the short term and globally in the long term

Research Investment

Related to Production and productivity:

- Identify how to reduce and prioritize costs of production and increase efficiencies to enhance competitiveness and product quality.
- Develop or modify techniques, products and/or inputs that will result in reduced production costs in Ontario production facilities

Desired Outcome/s

For Nutrition

1. Ontario producers are using feeding strategies to measurably reduce production costs and increase profit.

2. Innovative products and nutritional strategies that:

- Utilize alternative feedstuffs
- Derive increased nutritional value from feedstuffs,
- Improve feeding techniques, e.g. precision feeding and,
- Reduce production limiting feed contamination

are being constantly reviewed and improved

For Reproduction

1. Reproduction and Herd Breeding Management techniques and technologies are providing measurable benefits to the swine herd

2. Genetic markers to improve disease resistance are identified and improving the health status of swine.

3. Genomic and reproductive management techniques are identified, improved and utilized to improve hog productivity and producer profitability.

For Air Quality

1. In-barn and pen level air is optimal for production, welfare and health. This includes, but is not restricted to control of factors such as:

- excess ammonia
- temperature
- relative humidity
- draughts
- dust,
- carbon monoxide,
- hydrogen sulphide,
- methane

2. Barn explosions caused by foaming manure are no longer occurring.

3. Barns designs ensure less risk to animals and humans. This includes, but is not restricted to control of factors such as gas poisoning and barn explosions

For Environment

Note: It is acknowledged that innovative nutritional strategies need to be considered within this area.

1. New and innovative manure management techniques and treatments have demonstrably increased the value of manure as a crop input and simultaneously decreased our environmental footprint (nutrient, pathogen and greenhouse)

2. Investigation and innovative application equipment has improved the timing and accuracy of manure application

3. Algae blooms caused by soluble phosphorous is no longer an issue in the Great Lakes and no till farming methods previously thought to contribute to soluble phosphorus as the culprit are vindicated.

For Water Quality

1. Nutrients are applied agronomically and in such a way as to make sure they stay attached to soil and used by the plant and out of surface and ground water.

2. Precision manure/fertilizer application – (how to better supply/position nutrients to get the best crop performance with the least environmental impact) is now an accepted practice.

3. Nitrates levels in ground water have been dramatically reduced

4. Manure is properly mixed and incorporated with the soil to allow bacteria to be neutralized and prevented from entering surface or ground water

5. Land drainage is designed to control sedimentation

Nutrient and soil management

- The value of manure as a crop input is fully recognized
- soil compaction is no longer an issue due to decreased axle loads and improved land management
- Better and more cost effective, methods of storing manure while reducing N losses
- Buildings are being designed to maximize manure value and to reduce ammonia losses

Consumer trends

Corresponding Research Priorities

- Economics
- Societal Trends and Perceptions Production
- Product Development

Success

The Ontario Pork value chain is acknowledged for successfully exploring and using all forms of media for gathering intelligence for consumer needs both opportunities and challenges

Research Investment

Ontario Pork and the value chain partners will invest in research that investigates and prioritizes emerging consumption trends in order to expand our customer base and improve our return on investment by fulfilling customer wants.

Desired Outcome/s

1. Systems are in place that:

- Ensure opportunities with potential to provide future industry benefits are not limited by current knowledge or thinking and,
- Enable producers and processors to react quickly and cost effectively to emerging market trends.

2. Value Chain Partners (VCPs) are accessing new markets and/or capturing more value from the markets by using a collaboratively and collectively developed framework for gathering and sharing market data and information between all VCPs.

3. VCP's report increased profits from accessing and sharing market intelligence provided through the framework.

4. A system for monitoring Health trends has been developed and knowledge of the impact of new/emerging health trends on pork production and marketing is understood and shared across the value chain

5. Out-sourced Product Development is expanding pork product offerings to consumers and novel pork products and pork product applications are increasing returns along the value chain.

6. Information and logistics systems are in place to enable producers and processors to react quickly and cost effectively to emerging market demands.

Welfare and Public Perception

Corresponding Research Priorities
Societal Trends and Perceptions
Animal Welfare and
Consumer perception

Success:

The Ontario pork value chain receives very positive public recognition and cultivates trust by identifying and addressing welfare concerns.

Research Investment

We will invest in research that demonstrates the priority of addressing sound science based management practices throughout the value chain and gain the trust in our social contract at a sustainable cost

Desired Outcome/s

For Welfare

1. Cost effective alternatives to antibiotics are available to producers e.g. management techniques, genetics, nutrition etc.
2. A report that identifying the most important gaps in scientific knowledge related to swine welfare is produced and the gaps are being addressed. These gaps include but are not restricted to:
 - Pain control – analgesics, anti-inflammatories, anesthetics – products are available to producers
 - Evidence pigs are not suffering
 - Inventory of potential concerns
3. A metric or metrics for measuring and benchmarking animal welfare has been developed and is being used by producers

For Consumer Perceptions

1. Ontario Producers and Processors have timely knowledge of current and emerging consumer trends which could impact the management of animals in our care. This might include but is not limited to:
 - changes to accepted management,
 - handling,
 - transport practices
2. The financial impact (individual producer and industry wide), of making changes to common industry practices that may be required as a result of public pressure is calculated and understood.

3. Factors that predict key Market Drivers are identified and Programs and systems that accurately anticipate market changes have been developed and are in place.

Areas identified that fall outside the scope of Ontario Pork research investment

It is worth noting these for consideration and evaluation within the Ontario Pork Strategic Plan:

- Outcome- A report is completed and circulated that highlights the future infrastructure needs of the hog (or all of agriculture) industry in Ontario. Because deteriorating rural infrastructure is an important issue for the entire agricultural sector in Ontario, the report should be jointly funded and commissioned by a number of organizations or perhaps OFA.
- Outcome - Industry infrastructure is reviewed with a focus on barns (loss of productivity due to lack of investment)
- Outcome - Ontario Pork and the both Provincial and Federal policy makers have developed a participatory mechanism to assess the need for and draft regulations as needed.
- Outcome - The regulators do not commence developing regulations without first having reached agreement on the need for regulation with Ontario Pork
- Outcome - A rural infrastructure needs assessment including costs is completed and the results presented to Ontario Pork (this is an outcome to be directed to LRIC)
- Outcome - Succession planning primarily at the University of Guelph in the area of Nutrition and Animal Health. Ensuring that programs have longevity and are not impacted by researcher retirement or employment changes. Note: This issue is not isolated to these areas related to Swine Research but is an inherent agriculture issue with the University of Guelph. There have been preliminary discussions with other Ontario Livestock organizations and the groundwork established for the Livestock Research Innovation Corporation to collaborate and take the lead on resolving this issue with the University of Guelph.
- Outcome - Identify Ontario pork products in the global market (let's brand it)
- Outcome - Enhanced engagement of academia in the Ontario Pork Research Committee

- Comment - An important method to direct research is to influence research capacity (people and facilities) so efforts to influence appointments are valuable
- Comment - Promotion and encourage participation in existing benchmarking initiatives (pigchamps, agristats)

i ii Attendees: Beth Clark, John Otten, Arno Schrober, Rod de Wolde, Lloyd Holbrook, Tony Stam, Kevin Kimball, Rob Versteeg, Clare Schlegel, Jim Donaldson, Stewart Cressman, Tanya Terpstra, Stewart Skinner, Doug Richards, Vahab Farzan, Kees de Lange, John Bancroft, Randy Duffy, Tim Blackwell, Jaydee Smith, Jane Carpenter, Lori Moser, Colin Siren, Bruce Kelly, Jeff Crozier, Don Davidson, Jessica Fox, George Charbonneau, Claude Miville, Dan Cohoe, Jean Howden