



Swine Innovation Porc

GOAL

ENHANCE THE COMPETITIVENESS,
PROFITABILITY AND SUSTAINABILITY
OF THE CANADIAN PORK SECTOR

**RESEARCH
&
DEVELOPMENT
STRATEGY**

HORIZON 2023

SWINE INNOVATION PORC'S COMMITMENT



SIP has proven its ability to implement and coordinate successful national R&D programs and is committed to investing in research that will address to the swine industry's most important issues and challenges

THE R&D STRATEGY WILL BE PUT IN PLACE TO :

- Support innovation, increase productivity and reduce production costs in swine herds
- Enhance efficiencies in the pork value chain
- Improve pig health and control diseases by implementing new approaches and strategies
- Develop quality attributes of fresh pork for domestic and export markets
- Encourage the development of highly qualified people through funded research projects
- Promote multi-disciplinary and multi-institutional collaborative efforts that significantly impact the success of Canada's swine industry
- Promote R&D that will positively impact environmental sustainability and social licence

RESEARCH PRIORITIES & MAIN TARGETS

RESPONSIBLE USE OF ANTIBIOTICS



- Optimize microbiome in baby pigs via dam and progeny
- Determine the role of nutrition in optimizing the microbiome and immunity
- Develop alternatives to antibiotics such as macrolides, ionophores or antimicrobial peptides
- Design on-farm e-data capture to improve and demonstrate responsible antibiotic use

IMPROVING PIG HEALTH



- Improve biosecurity on the farm and in transit
- Develop more efficient disinfectants and easy-to-clean coatings
- Review genetic and nutritional opportunities to increase disease tolerance and immunity
- Optimize environment to avoid depressing immunity through stress
- Improve intelligence and cross-border risk assessment for emerging diseases

REDUCING FEED COSTS AND IMPROVING FEED EFFICIENCY



- Explore novel approaches to control mycotoxins
- Evaluate novel ingredients and alternative feed crops such as pulses, insects and algae
- Further develop precision feeding systems and alternative feeding strategies
- Optimize formulation of existing ingredients for nutrient profile and low cost
- Review opportunities to improve performance through micronutrients

RESEARCH PRIORITIES & MAIN TARGETS

INDUSTRY SUSTAINABILITY AND COMPETITIVENESS



- Develop lower cost and longer-lasting building designs and materials
- Explore innovative applications for robotics and emerging technologies in the barn
- Encourage training of HQP to ensure succession of expertise within the swine science base
- Explore opportunities for electronic vertical coordination in the farm-to-fork value chain

INTERNATIONAL MARKETING OF CANADIAN PORK



- Better define meat quality for major markets
- Explore new technologies for non-invasive measures of pork quality on the line
- Develop separate quality standards for carcasses, primals and individual cuts
- Improve the taste and cooking attributes of fresh, chilled and frozen pork
- Model the impact of alternative grading systems on profitability

CONSUMER DIET AND HEALTH



- Determine the nutrient profile and health benefits of modern pork
- Determine the impact of pork on whole meal plate glycaemic index (blood sugar levels)
- Collaborate on the development of consumer education programs

RESEARCH PRIORITIES & MAIN TARGETS

PIG REPRODUCTION



- Improve piglet weight, uniformity and viability in larger litters
- Optimize energy and amino acid intake during late gestation and lactation, and in the nursery
- Investigate alternative methods for gender control, including low-dose insemination
- Review the technology to automate heat detection

ENVIRONMENTAL SUSTAINABILITY



- Review opportunities for the reduction of swine industry GHG emissions
- Conduct a whole life cycle analysis of energy and water use, plus undesirable emissions for pork
- Review existing literature on the presence of toxic residues in pig meat, feed and manure
- Increase the use of manure to replenish soil nutrients and microflora

ANIMAL WELFARE AND BEHAVIOUR



- Review European literature and experience on group housing systems
- Determine the necessary conditions to avoid stressful truck unloading during transit
- Optimize gilt training and sow behaviour under new group housing conditions
- Determine best pen designs for modern, more sensitive, finisher genotypes

VALUES &

PRINCIPLES

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-  PARTNERSHIP
-  COLLABORATION
-  COORDINATION
-  TRUST
-  ACCOUNTABILITY