Swine Innovation Porc

SWINE CLUSTER 3
INNOVATING FOR A STRONGER PORK SECTOR

Swine Cluster 3 is the third Canada-wide research and knowledge transfer program that Swine Innovation Porc has built since 2010. This program is designed to accelerate the pace of innovation, drive sustainable growth, strengthen competitiveness, and maximize the resilience of the swine sector.

$18.5 million program

$12.7 million: AAFC

$5.8 million: industry

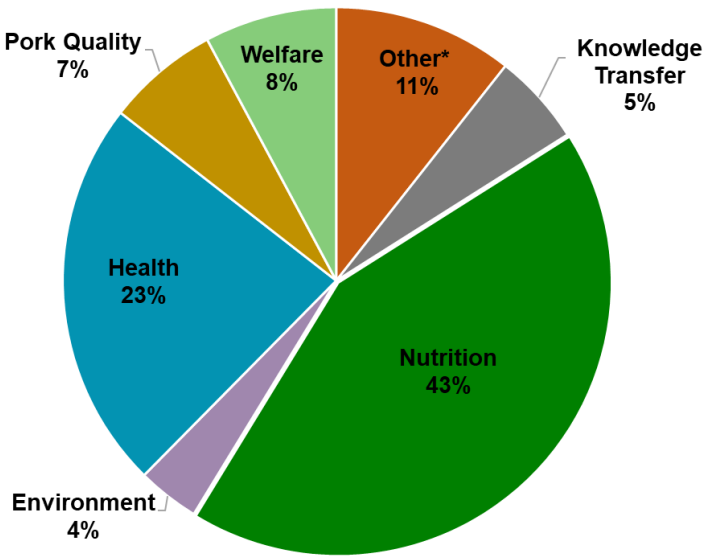
Swine Cluster 3 in a few numbers...

+ 90 researchers

+ 20 research institutions

+ 45 industry partners

Allocation of Funding



*Includes coordination and fees related to managing the program

Pork Quality

Classifying Canadian pork based on quality attributes

Manuel Juarez, AAFC (Lacombe)

Objective: Generate research, commercial testing and cost estimates of different technologies for on-line pork classification based on the proposed Canada Pork International (CPI) quality grading system.

Nutrition

Innovative micronutrient strategies for maximizing piglet's robustness and performance during the pre- and post-weaning periods

Jérôme Lapointe, AAFC (Sherbrooke)

Objective: Develop innovative nutritional strategies for pre- and post- weaned piglets that optimize metabolic status and efficiency of copper, zinc, vitamin D and vitamin A, enhance health and robustness, improve environmental sustainability and maximize profits based on performance up to market weight.

Reducing feed cost and the environmental footprint and enhancing global competitiveness of Canadian pork production by increased nutrient utilization of feedstuffs fed to growing-finishing pigs

Martin Nyachoti, University of Manitoba
Ruurd Zijlstra, University of Alberta

Objectives: 1) Reduce feed costs, improve feed efficiency and optimize feed formulation by: Characterizing novel ingredients and alternative feed crops to expand the feedstuff matrix; Processing and using novel feed enzymes to increase nutrient availability and utilization. 2) Increase environmental sustainability by enhancing nutrient use of Canadian feedstuffs and thereby reduce the environmental footprint.

Development of innovative strategies to reduce feed costs in the post-weaning period while maintaining optimal performance and health

Dan Columbus, Prairie Swine Centre
Martin Nyachoti, University of Manitoba

Objective: Develop effective feeding strategies for weaned pigs that maximize profits, reduce reliance on in-feed antibiotics, and improve pig robustness while maintaining animal performance.

Towards a new feeding approach of neonatal and weanling piglet for optimizing nutritional status, immunity and microbiota and minimizing the use of antibiotics

Frédéric Guay, Laval University
Martin Lessard, AAFC (Sherbrooke)

Objective: Develop effective feeding strategies for neonatal and newly weaned piglets that improve pig robustness and well-being, minimize reliance on in-feed antibiotics, and maximize performance.

Development of novel feed additives to replace antibiotics and promote pig gut health

Joshua Gong, AAFC (Guelph)
Chengbo Yang, University of Manitoba

Objective: Develop and determine the effectiveness of different types of novel antibiotic alternatives to improve pig performance and health when incorporated in the post-weaning diet.

New feeding and management strategies for replacement gilts that will maximize future milk yield

Chantal Farmer, AAFC (Sherbrooke)

Objective: Increase sow milk yield, hence growth and weaning weights of suckling piglets, via the development of novel feeding and management strategies for replacement gilts and lactating sows.

Environment

Advancing the Canadian swine sector through environmental footprint analyses

Mario Tenuta, University of Manitoba

Objectives: 1) Establish current production efficiency and environmental footprint of pig farming in Canada. 2) Determine changes in production practices over the past 10-12 years. 3) Identify improvements in the environmental footprint of pig farming in Canada, through a comparison of current pig farming in Canada to an earlier period.

Welfare

Effects of long distance transport on the health and welfare of early weaned pigs

Jennifer Brown, Prairie Swine Centre

Objective: Produce objective and scientific information on the effects of commercial transport conditions on the health and welfare of early-weaned piglets.

Optimizing sow productivity and management: Impact of grouping practices on sow reproductive performance and piglet development and identification of risk factors for sow mortality

Jennifer Brown, Prairie Swine Centre

Objective: Study some existing knowledge gaps related to the management of gestating sows related to sow productivity and longevity, and piglet vitality.

Health

Improved Biosecurity in the Canadian Swine Transport Industry - Phase 3

Terry Fonstad, University of Saskatchewan

Objective: Develop methods to improve biosecurity within the Canadian swine transport industry.

Improvement of therapeutic and prophylactic measures against porcine reproductive and respiratory syndrome (PRRS) virus through the discovery of antiviral drugs and the use of antimycotoxins

Carl Gagnon, University of Montreal

Objective: Improve the general health status of swine by acquiring new knowledge and subsequently improving the antimicrobial protection of pigs against PRRSV using any suitable means such as antiviral drugs development and improvement of PRRS vaccination efficacy.

Pig Gut microbiome project – Characterization of the core gut microbiome associated with pig health and performance: towards fecal diagnostics and microbiome therapy

Vahab Farzan, University of Guelph
Andrew Van Kessel, University of Saskatchewan
Ben Willing, University of Alberta

Objective: Determine the factors regulating microbial succession in the pig and to investigate whether core members of succession communities are associated with pig health status and production performance.

ACKNOWLEDGEMENTS

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