



Swine Innovation Porc

SWINE INNOVATION PORC

DRIVING RESULTS THROUGH INNOVATION

SUBMITTED TO

Farm Products Council of Canada

ESTABLISH A CANADIAN PORK PROMOTION AND RESEARCH AGENCY

Public Hearing

February 16, 2016

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Executive Summary

Establishing the Promotion-Research Agency would allow coordinated and consolidated efforts to take place that would ensure essential research and marketing activities are supported in a timely manner. This would in turn bring tangible benefits to all participants across the pork value chain, as well as increase market access for pork.

Continued scientific research focused largely on genetics and feed will improve the quality, environmental sustainability, and consumer healthfulness of pork products. Along with providing an increased understanding of disease, it will also lead to improvements in animal health, freedom from stress, and better welfare that will promote consumer acceptance within a discerning public in Canada and around the world.

Swine Innovation Porc is recognized as the “go to” organization in Canada that facilitates swine related research and technology transfer initiatives. Its main strategic objectives are to:

- Determine national research priorities
- Develop multi-institution and multi-disciplinary R&D programs
- Act as coordinator for the research community and industry partners
- Deliver timely and effective knowledge transfer programs
- Promote the development of highly qualified professionals as well as research skills

SIP has demonstrated its ability to leverage each dollar invested in research by producers to generate about nine dollars from government and industry partner funding. PRA funding would be leveraged in the same way to provide an R&D program aimed at enhancing swine industry competitiveness, profitability and sustainability.

SIP's Role and Vision

Swine Innovation Porc (SIP) is the brand name of the Canadian Swine Research and Development Cluster, incorporated in 2010. It is a national organization that comprises nine members, including the Canadian Pork Council and eight provincial pork organizations. In addition, representatives from SIP's own Science Advisory Body and the pork value chain sit on SIP's Board of Directors.

OUR VISION: Swine Innovation Porc increases Canadian swine industry competitiveness through a national R&D structure

OUR MISSION: Swine Innovation Porc is committed to provide national leadership in coordinating and facilitating research, knowledge transfer and commercialization initiatives to enhance the competitiveness of the Canadian swine industry

SIP's goal is to be recognized as the "go to" organization in Canada that facilitates swine related research and technology transfer initiatives.

To achieve this goal, SIP has implemented five strategic initiatives¹ to allow the organization to deliver on its promise of providing specific programs and services for the benefit of the entire swine industry:

- Determine national research priorities
- Develop multi-institution and multi-disciplinary R&D programs
- Act as coordinator for the research community and industry partners
- Deliver timely and effective knowledge transfer programs
- Encourage the development of highly qualified professional and research skills

SIP is recognized for its leadership in coordinating research expertise across the country, by both increasing collaboration and avoiding duplication of efforts. Furthermore, our company has demonstrated its ability to identify national research priorities and manage multi-institution and multi-disciplinary R&D programs and Knowledge Transfer (KT) activities.

In fact, so far, SIP has been successfully managing relevant R&D activities designed to enhance the profitability and differentiation of the Canadian pork value chain:

- Swine Cluster 1 (2010-2013): a \$12 million research program
- Swine Cluster 2 (2013-2018): a \$17 million research program

Results from these programs can be found at www.swineinnovationporc.ca

¹Swine Innovation Porc Strategic Plan 2013-2018
http://www.swineinnovationporc.ca/resources/Strategic_Plans/Full%20Version%20Strategic%20Plan%202013-2018.pdf

SIP's Capabilities

Management Team

Over the last six years, SIP has demonstrated its ability to manage comprehensive, large and complex research programs. The management team, with the support of the Board of Directors and related committees, including the Science Advisory Body, has accomplished numerous activities since 2010 in order to ensure the coordination of its research programs and knowledge transfer activities.

The team has always focused on reaching SIP's overall goals and meeting its commitments with Agriculture and Agri-Food Canada (AAFC). SIP's management team has the capacity to annually undertake a range of functions on behalf of the corporation, which include:

- Ensuring overall project management
- Entering into agreements with several partners:
 - ✓ Pork producer organizations
 - ✓ Industry partners
 - ✓ Universities and research centres
 - ✓ Government agencies
- Coordinating funding from multiple sources and ensuring financial management
- Coordinating, delivering and reporting on a regular basis about the performance of activities including financial reports on research and knowledge transfer programs
- Providing support to its Board of Directors
- Preparing strategic plans and an annual business plan which reflect the policy decisions of the Board
- Providing support to committees (Science advisory Body, Steering Committee, etc.)
- Providing operational leadership
- Providing a broad range of administrative functions

SIP's current portfolio of activities includes a complex array of projects that have a multitude of funding components. The management team operates an established system of activity-based reporting by which project leaders first report to Swine Innovation Porc. The management team then integrates this data across a range of variables and provides reports to a range of users, including AAFC.

Board of Directors

SIP is a national organization whose Board of Directors consists of representatives from its member provincial pork organizations, the Quebec and Ontario pork sectors, the pork value chain, and the Science Advisory Body.

The Board of Directors is charged with governing the operation of SIP. These responsibilities include, but are not be limited to:

- Approving a multi-year program, including associated budgets
- Approving the establishment of formal partnerships and research networks
- Appointing and supervising a corporate management team
- Ensuring the financial integrity of the organization
- Ensuring the alignment between the policies and the actions of the organization

Science Advisory Body (SAB)

The governance structure of SIP includes a science advisory body. Since its creation, this group has comprised at least eight people that are nominated by the Board for a period of 2 years, renewable. Members of the SAB are recognized professionals who are prominent in their fields. The group represents a diverse range of expertise that spans the full range of swine research and is drawn from public and private research organizations including colleges, universities, research institutions, government departments and agencies both within and outside Canada.

SAB members review research proposals, provide scientific expertise, technical advice and develop a consensus on each project. The group then provides recommendations to the Board of Directors. SAB members could also be called upon to assist the Board if additional advice is required on follow-ups of specific projects.

R&D Planning Process

SIP has established a rigorous planning process for the building of national, multi-disciplinary and multi-institution R&D programs. This comprises the following steps:

- Step 1: Identify research priorities
- Step 2: Launch call for “Letters of Intent” (LOIs)
- Step 3: Evaluate LOIs
- Step 4: Launch call for “Full Proposals” (FP)
- Step 5: Peer review process and evaluation by the Scientific Advisory Body
- Step 6: Final decisions by the Board

Identify Research Priorities (RP)

SIP aims to build a well-balanced portfolio including both fundamental and applied research projects. Therefore, identifying research priorities is a crucial step in the process, involving:

- Internal SIP brainstorming
- Consultation with the industry and the research community
- Communication of the final list of research priorities

This exhaustive consultation process permits the generation of new ideas and the gathering of information from government, academia and industry. It is a process that will be repeated every 4 years. However, this list will also be reviewed on an annual basis and, if necessary, update it through the internal SIP committee and with feedback from researchers and industry.

Call for LOIs and FPs and Evaluation Process

SIP has a clearly established procedure for launching calls for proposals and their subsequent evaluations.

The LOIs are evaluated by a subcommittee of the Board of Directors. One of the main criteria that the subcommittee looks at is the relevance of the proposal for the pork industry. Regarding the evaluation of the FPs, the process includes:

- External peer reviews
- Science Advisory Body (SAB) evaluation

SIP Success Stories

Research Programs

As demonstrated through the management of the Swine Cluster 1 & 2 research programs, SIP has proven that it is the “go to organization” that can actually bring the research community together with its many partners from industry to ensure that results are generated and applied.

	Swine Cluster 1	Swine Cluster 2
Total Budget	\$12 million	\$17 million
Industry Funding	\$1.8 million	\$4.3 million
Number of Projects	14	18
Number of Researchers	More than 100	More than 90
Number of Research Institution	More than 27	More than 30
Number of Industry Partners	More than 22	More than 20
Number of highly skilled professionals trained (Master, Doctoral and Postdoctoral)	More than 67	Under compilation

Knowledge Transfer Programs (KT) and Communication Activities

SIP already completed its first KT program (2010-2013) and is preparing for its second one. The objective is to increase the adoption of new knowledge generated from research projects by the end users.

Since 2010, the following KT and communication activities have been undertaken:

- Held a workshop on mycotoxins (more than 270 participants)
- Held four workshops on sow lameness: Manitoba, Ontario, Québec and New Brunswick (more than 215 individuals from seven provinces)
- Held a workshop on nutrition in Ontario; included a live webcast
- Developed a Lead User Program where technologies have been brought into Canadian barns, such as:

- Training to use the “Zephyr” non-penetrating captive bolt for piglet euthanasia
- Lameness assessment
- Developed a tool to install a sprinkling system on pot-belly trailers
- Collaborated with existing events, such as Banff Pork Seminar and London Swine Seminar, with the objective of assisting researchers to present their research results
- Prepared E-newsletters and press releases
- Ensured that Farmscape interviews were done. Up to November 2015, a total of 90 interviews related to SIP’s activities were completed
- Also, SIP regularly updates its website to ensure that relevant information is posted

From these activities, researchers write papers for peer-reviewed scientific journals. For instance, during the Swine Cluster 1 program, researchers wrote more than 190 papers.

Funding Model

SIP has put in place a mixed model for funding its research and KT programs:

- A Memorandum of Understanding agreement between provincial pork organizations and SIP represents a financial commitment of 2.5 cents per market hog that is invested in supporting R&D and KT programs.
- The research community is asked to secure industry contributions when submitting their proposals. Usually, SIP asks for a minimum of 25% industry contribution for projects. Through this strategy, a number of swine industry companies in the fields of nutrition, genetics and processing, among others, joined SIP by supporting specific projects.
- Also, SIP has the objective of diversifying its funding resources. Therefore, strategies are under development to increase funding that will be invested in research, and to provide the flexibility to quickly respond to emerging issues and/or generate new knowledge.

Leveraging Research Dollars

There are existing studies that prove the value of investing in swine research. For example, a 2001 Canadian study² estimated the benefit-cost ratio of investments in Canadian swine research from 1974 through to 1997. Depending on the scenario, they reported that the benefit-cost ratio ranged from 6.4 to 24.6. Therefore, every \$1 invested in swine research and development would be expected to return at least \$6.40 to the industry.

The Swine Cluster 1 and Swine Cluster 2 programs involved a total investment of \$29 million that was entirely facilitated through SIP. In this case, each dollar invested by producers was used to leverage about nine dollars from the government and other industry partner funding.

SIP, through the Cluster programs, demonstrated that it has the ability to leverage research funding for the benefit of the entire pork industry and consumers.

²Thomas, G., Fox, G., Brinkman, G., Oxley, J., Gill, R. and Junkins, B. 2001. “An Economic Analysis of the Returns to Canadian Swine Research:” 1974a. *Canadian Journal of Agricultural Economics* 49:153-180.

How SIP can Help the Canadian Pork Promotion and Research Agency Fulfill its Objectives

The proposal for the creation of a Canadian Pork Promotion-Research Agency³ (PRA) outlines the following objectives:

- Promoting the consumption of pork products in the domestic [Canadian] market
- Furthering development of export markets for Canadian pork
- Supporting the conduct of scientific-technical and market research initiatives

The proposal states that these objectives are intended to strengthen markets for hogs and pork, optimize production efficiencies, increase domestic consumption, and enhance financial returns from the marketplace for the benefit of participants across the Canadian pork value chain.

From the objectives listed above, it is understood that there are two main elements that the PRA would act on: promotion and R&D activities. While activities related to promotion would mostly be under the umbrella of Canadian Pork International (CPI), SIP's focus would be related to R&D activities.

More specifically, on an annual basis, SIP would ensure that the PRA funding is used to leverage other sources of funding to support scientific and technical studies. A diversified R&D portfolio would be created to reduce production cost, improve health and environmental practices, as well as enhance production methods and marketability.

Also, SIP can certainly assist in promotion activities by bringing rational and scientific results-based answers to consumer concerns. A range of market related studies could be set out to directly address challenges related to carcass grading, traceability initiatives, animal welfare, nutrition, health, safety and product handling, environmental considerations, and consumer trends and taste research. These research efforts are likely to help the PRA and other marketing organizations to differentiate pork products and address the need for additional product attributes to drive prices as well as demand.

In order to ensure the success of this funding model, SIP would play the role of facilitator through the following steps:

- Identify R&D priorities
- Leverage PRA funding
- Launch calls for proposals and establish a peer review process (external and internal, through the Science Advisory Body)
- Support R&D projects deemed as relevant and responding to PRA's objectives
- Ensure continuous coordination of activities and efficient use of infrastructure
- Implement a comprehensive KT program for taking results into practice
- Provide the industry with a flexible mechanism to respond rapidly to emerging challenges

³ Proposal for the Creation of a Canadian Pork Promotion-Research Agency (Ottawa: July 30, 2015). Submitted to FPCC.

By leveraging PRA funding, SIP would ensure that research and marketing activities are supported in a timely manner, thereby increasing market access for pork and bringing a direct and tangible impact on the industry. Additional scientific research focused largely on genetics and feed would improve the quality, environmental sustainability and consumer healthfulness of pork products. Along with an increased understanding of disease, it would also lead to improvements in animal health, freedom from stress, and better overall welfare that would promote consumer acceptance to a discerning public in Canada and around the world.

Preliminary Research Priorities

Over the past few months, SIP has held preliminary consultations with producers and researchers to identify research topics that would increase the success of the pork industry. The ten priority areas listed below were identified as high on the list of possible research topics.

Possible research topics for the pork industry

Faster, cheaper truck washing and sanitizing
Antibiotic reduction and alternatives to antibiotics
Lower feed costs: improved feed efficiency and sustainability
Increasing genetic disease resilience, immunity and robustness
Mycotoxin mitigation, and interaction with feed ingredients
Lower-cost building design, materials and financing
Financial risk management strategy for producers
Improving market presentation and quality branding of pork
Surveillance and control of new diseases and potential vectors
Increasing sow longevity: nutrition, management and housing

This preliminary list would be revised and updated on a rolling basis depending upon the needs of the industry, and in any case at the launch of the PRA. This selection of research topics illustrates clearly how science and research can continue to contribute to raise the level of success of the swine industry. The topics were chosen to give a relatively quick payback to the investment of check-off funds through the rapid creation and the practical application of new knowledge.