



# African Swine Fever: Canadian Research Priorities

## What is African swine fever?

African swine fever (ASF) is a contagious virus that affects domestic and wild pigs. It is not currently in Canada. While ASF is not transmissible to humans and is not a public health issue, it is considered to be a major worldwide threat to pork production due to its high mortality in pig herds and its impact on access to international markets.

## What has been done so far in Canada?

On April 30, 2019, [a forum on ASF](#) was held in Ottawa, Ontario, where the objective was to “prevent the entry and mitigate the impacts of ASF in the Americas.” The following four primary activity areas were created as part of the forum’s framework for the prevention and control of ASF:

- Preparedness and planning
- Enhanced biosecurity
- Ensure business continuity
- Coordinated risk communications

Following this forum, various governmental agencies, producer organizations and industry partners have been working together to coordinate strategies on preventing the virus entering Canada and on contingency planning in case of an introduction. For a good overview of what is happening on ASF preparedness, please consult the Canadian Pork Council’s website.

In response to this coordinated effort, Swine Innovation Porc invited swine health experts from Canada and the United States to form the Coordinated ASF Research Working Group, in order to develop an analysis of the gaps in the science related to addressing ASF.

## How were the research priorities developed?

The following experts made up the ASF Research Working Group:

Dr. Andrew Van Kessel (Working Group Chair)  
*Professor, University of Saskatchewan and Science Advisory Body Chair for Swine Innovation Porc*

Dr. Egan Brockhoff  
*Veterinarian, Canadian Pork Council*

Dr. Alfonso Calvijo  
*Executive Director, National Centres for Foreign Animal Disease, Canada Food Inspection Agency (until October 2019)*

Dr. Volker Gerdts  
*Director & CEO, VIDO-InterVac*

Dr. Paul Sundberg  
*Executive Director, Swine Health Information Centre (USA)*

The group met on several occasions throughout 2019 to discuss and deliberate the research priorities for ASF. Once the preliminary priorities were developed, Swine Innovation Porc's board of directors, a group represented by pork producer organizations and scientific expertise, reviewed and provided input to the list.

The research priorities outlined below are a result of this joint effort between industry and the scientific community.

## ASF Research Priorities



### Surveillance and Animal Health

*i.e. Rapid diagnostic testing and pen-side diagnostics*

*i.e. Testing protocols to demonstrate that pork and/or live animals are free of ASF/viable ASF virus*

Project Ideas:

- Testing meat products for presence of ASF virus: validation of tests
- Validation and/or development of new serological tests for North America: determine confirmatory protocols to detect live virus following a positive PCR test (in order to know if detected virus is live or not)
- Validation of existing devices used in pen-side testing: A number of devices exist already, but it is not well understood how they perform in terms of generating false positives/negatives (some devices are undergoing testing, but more tests needed for others)
- Development of protocols for incorporation of pen-side testing devices into a national process supporting control of virus dissemination and resumption of trade.
- Testing feed for presence of ASF virus: develop sampling protocols
- Testing meat products for presence of ASF virus: develop sampling protocols
- Testing feed for presence of ASF virus: validation of tests
- Testing oral fluids for presence of ASF virus: develop sampling protocols
- Testing oral fluids for presence of ASF virus: Determine the feasibility of using oral fluid samples for active surveillance, as well as validation of oral fluid field testing (ongoing joint project USDA-CFIA)
- Screen/develop anti-viral compounds against ASF
- Investigate/develop effective agents that can be added to feed in order to prevent/eliminate the presence of ASF virus in feed ingredients





## Biosecurity

*i.e. How to manage/eradicate wild pigs in Canada*

Project Ideas:

- Wild pig management/eradication
- Validate disinfection agents and protocols for use of on multiple construction surfaces (there is some work already ongoing in ASF-infected farms in Vietnam to develop protocols for existing agents. Also, projects are ongoing at Kansas State University on the development of new agents)
- Adapt (if required) disease transmission and risk assessment models for outdoor pigs (organic, backyard, wild)
- Establish and enable interaction/collaboration with backyard pig producers



## Destruction/Disposal:

*i.e. Humane slaughter methodologies by size class; Disposal of waste material*

Project Ideas:

- Develop an effective mass euthanasia protocol in an outbreak scenario: developing new/adapting existing euthanasia technologies integrated into a workable strategy



## Mental Health

*i.e. Managing the mental health challenges associated with a large-scale border closure.*

Project Ideas:

- Develop best practices for producers and personnel in order to be well prepared for an ASF outbreak



## Economic Impact

*i.e. Enabling the swine industry to recover from an ASF outbreak*

Project Ideas:

- Develop best practices/economic tools to allow the industry recover as quickly as possible from an ASF event



## Knowledge Transfer / Extension

*i.e. Enhanced farm level biosecurity*

*i.e. Motivating small-scale producers to improve production systems*

Project Ideas:

- Develop communication strategies for backyard and hunter stakeholders
- SIP can work with Prairie Swine Centre, *Centre de développement du porc du Québec* and provincial pork organizations to develop/coordinate relevant KT and/or on-farm demonstration programs



Swine Innovation Porc