PRRSV Control and Elimination in Canada

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Introduction

Several PRRSV (Porcine Reproductive and Respiratory Syndrome virus) Area Regional Control and Elimination (ARC&E) projects in Canada are in the process of being delivered or in the planning stages. There are other supporting projects in process or in planning that will augment the knowledge and resources needed to successfully control and eliminate PRRSV. These include a virus database, transport biosecurity, traceability, insurance, biosecurity benchmarking, national biosecurity standards with a user guide, and others.

A key development on PRRSV control and elimination is coming from the Canadian Swine Health Board (CSHB). This is a new organization with a mandate to provide leadership, coordination and support in the management of the health of the Canadian swine herd. Through an inclusive approach involving all stakeholders, the CSHB is working to develop and implement a long term strategy for control of diseases in the hog industry. This national leadership and funding is providing real opportunities to use PRRSV as the model pathogen to build a national biosecurity plan that will be more robust, transparent and effective against current endemic diseases, future emerging diseases and foreign animal disease strategies.

Canada has three primary pig raising areas: Prairies, Ontario and Quebec. These three areas with 563, 324 and 379 thousand sows respectively are distinctly different in approach to PRRS ARC&E.

The Prairies have a culture of good biosecurity at the farm-level, good health status and location security on PRRSV (and other pathogens) spread. This area also does not have the number of virulent field strain viruses that are present in Ontario or Quebec. The dominant strain is the modified live virus vaccine strain RFLP 252 which shows no to mild clinical signs in an unstable population. Because of this fact, PRRS is not viewed as a major cost of
production issue of the Prairies and thus PRRS ARC&E is in its infancy with few related projects being delivered at this time.

Quebec on the other hand is very challenged with many virulent field PRRSV strains and because of the close proximity of farm sites the area spread is frequent and problematic. PRRS control and elimination is then much more a cost of production issue with various projects underway and many more being planned. This region has the most focus on barn filtration because of the pig site density.

Ontario is literally and figuratively in the middle of the PRRS spectrum but is advancing ARC&E with an area project well underway, another being planned and support projects in the process of delivery and planning.

The various national and regional projects are summarized with delivery organization and funding partners listed. At the conference the discussion will centre on updating project results, issues and new developments, how these projects mesh with our US trading partner and outlining some future vision ideas.

- **Biosecurity Projects**

  1. **Modification of the AASV PADRAP as a Tool to Assess On-Farm Biosecurity Across Canada**

     **Goal:**
     
     To assess and customize the Production Animal Disease Risk Assessment Program (PADRAP) biosecurity survey tool to meet the needs of the Canadian swine herd.

     The PADRAP allows individual farms or systems to assess their current biosecurity practices and benchmark against production systems across North America.

     **Delivery Organization:** Ontario Swine Health Advisory Board (OSHAB)

     **Funded by:** Canadian Swine Health Board
2. Update and Expand a Disease Control and Elimination Tool Kit for use as a National Tool

**Goal:**
Update and expand the current OSHAB PRRS Control Elimination Tool Kit.

This Tool Kit will provide an essential tool for on-farm and regional PRRS control and elimination trials and can act as a model for the development of disease control and elimination strategies.

**Delivery Organization:** Ontario Swine Health Advisory Board (OSHAB)

**Funded by:** Canadian Swine Health Board

3. Implement an Ontario Regional PRRS Control & Elimination (Voluntary) Pilot Project

**Goal:**
Develop an industry culture of openness, transparency, cooperation and collaboration within the project area; lead a change in attitude from neighboring producers being independent and working alone to becoming partners and working together; target greater than 90% producer participation in designated region. Improve communications and share knowledge with the whole industry. Work toward adoption of disease exclusion on-farm biosecurity protocols for participating farms. Change/maintain the PRRS status of participating farms in the designated region: if positive with viral shedding change to no viral shedding, maintain non-shedding or negative status.

**Delivery Organization:** Ontario Swine Health Advisory Board (OSHAB)

**Funded by:** Ontario Pork, Ontario Ministry of Agriculture & Food, Animal Health Lab

4. Pilot Project Analyzing Hog Movements within a High Hog-Density Area

**Goal:**
This project will propose recommendations for biosecurity practices during the arrival and departure of the hogs from farms.
A survey of hog farmers and their transporters within the identified geographic zone will be undertaken. Information on health status and biosecurity practices for production site and transporter will be gathered.

**Delivery Organization:** Clinique Vétérinaire Demeter

**Funded by:** Canadian Swine Health Board

5. Identification by a Group of Experts, of Priority On-Farm Actions to Upgrade On-Farm Biosecurity Systems

**Goal:**
To identify priority on-farm actions in order to improve the health and biosecurity status of hog farms.

This project will develop the main parameters for the upgrading-activities stage of the support program for the implementation of hog farms’ biosecurity and of health stabilization systems.

**Delivery Organization:** Clinique Vétérinaire Demeter

**Funded by:** Canadian Swine Health Board


**Goal:**
The purpose of this project is to identify priority systemic off-farm actions in order to improve the health and biosecurity status of hog farms.

The project will define off-farm actions for the following themes: animal transportation, layout and services in the receiving zones of processors or adjoining areas, control of sarcoptic mange and a control of pathogens.

**Delivery Organization:** BPR

**Funded by:** Canadian Swine Health Board; Fédération des producteurs de porc du Québec; Elanco

**Goal:**
To produce and standardize the tools required for a multidisciplinary approach to the delivery of a health and biosecurity intervention plan that takes into account the overall capacity of the farm.

The three stages of this project will be:

- Determination of technical, economic and health standards
- Development of a visualization module of health crises that will make it possible to visualize the consequences of health crises; quantify the loss of piglets associated with the crisis; determine approximately the propagation period of the virus; compare the farm’s situation to that of an average-performance zone.
- Testing of the guide on 10 hog farms and training of stakeholders in order to validate the guide’s content.

**Delivery Organization:** Centre de développement du porc du Québec Inc.

**Funded by:** Canadian Swine Health Board


**Goal:**
To develop a technical guide for the installation and optimal use of air filtration systems in hog barns.

The guide will present current information primarily on the limits of air filtration systems in protecting the herd from contamination; the various types of filters currently available; barn models and methods of installing under Quebec conditions; connections between filtration systems and barn design; steps leading to the operation of barns with filtered air; fundamentals to consider during the evaluation of a proposal from a supplier.

**Delivery Organization:** Centre de développement producteurs du porc du Québec Inc.

**Funded by:** Canadian Swine Health Board
9. Workshop with Veterinarians to Validate the Biosecurity Process

**Goal:**
To validate with veterinarians the proposed biosecurity and health stabilization process for Quebec hog farms to conform with the National Standard for On-Farm Biosecurity.

**Delivery Organization:** Clinique Vétérinaire Demeter

**Funded by:** Canadian Swine Health Board; Fédération des producteurs de porc du Québec

10. Alberta Biosecurity Training & Audit Program

**Goal:**
To provide Alberta swine producers with an interactive learning opportunity to better understand and benchmark their on-farm biosecurity strengths and opportunities.

**Delivery Organization:** Alberta Pork

**Funded by:** Alberta Pork

- Research Projects

1. A Risk, Benefit, Strength, Weakness, Opportunity and Threat Analysis for the control and possible eradication of Porcine Reproductive and Respiratory Syndrome (PRRS) virus within the Canadian swine herd.

**Goal:**
This project will provide a detailed and practical discussion paper outlining if increased control and possible eradication of the PRRS virus is technically and organizationally possible. Specific recommendations will be made on how to improve the control and the ultimate eradication of the PRRS virus in Canada.

**Delivery Organization:** George Morris Centre in association with CDPQ and Prairie Swine Centre Inc.

**Funded by:** Canadian Swine Health Board
Long Term Disease Risk Management Programs

1. Mortality Insurance Program

Goal:
This project will scope, develop and design an insurance product to underwrite losses associated with animal mortality from any peril, including disease.

Delivery Organization: Ontario Livestock and Poultry Council on behalf of Manitoba Pork Council, Ontario Pork and la Fédération des producteurs de porcs du Québec

Funded by: Canadian Swine Health Board

2. Development of Protocols, Sampling and Diagnostics for a PRRS Negative Herd Certification Pilot Program in Western Canada

Goal:
The deliverables for this project include:

- The definition of PRRS negative status, sampling standards, diagnostic testing standards, and geographical requirements if any.
- Testing of up to 100 herds, primarily sow herds, across western Canada that have a significant need/interest in demonstrating a PRRS-negative status.
- The development of a certification process which would be administered by provincial associations.

Delivery Organization: Saskatchewan Pork Development Board on behalf of Sask Pork, Alberta Pork and Manitoba Pork Council

Funded by: Canadian Swine Health Board

3. Development of a non-reportable disease surveillance and outbreak detection system using PRRSv as a model

Goal:
This project will expand and develop a regional non-reportable disease surveillance system based on the OSHAB PRRSV Sequence Database.

The project will include disease surveillance and mapping with consideration given to confidentiality issues and work to develop a procedure for the Ontario
swine industry to investigate and communicate about emerging and re-emerging production (non-reportable) diseases.

*Delivery Organization:* Ontario Swine Health Advisory Board (OSHAB)

*Funded by:* Canadian Swine Health Board

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