

Assessing on-farm biosecurity on Canadian swine farms - Changes to the PADRAP on-farm assessment survey for the Canadian industry

What is PADRAP?

The Production Animal Disease Risk Assessment Program (PADRAP) is a disease risk assessment tool that allows individual farms or systems to assess their current disease risk and benchmark their biosecurity against production systems across North America. Veterinarians conduct the surveys on-farm in partnership with producers to assess an operation’s biosecurity practices and identify areas for improvement. The two available surveys are PRRS Risk Assessments for breeding and growing pig herds.

The PADRAP is administered by the American Association of Swine Veterinarians (AAV). An assessment and modification project was undertaken by the **Ontario Swine Health Advisory Board (OSHAB)** on behalf of the **Canadian Swine Health Board (CSHB)** to customize the tool for the Canadian swine sector.

Why complete a PADRAP?

Producers who complete the survey receive a herd-specific analysis package that outlines their farm’s risk factors from highest to lowest importance. This ranking allows them to see the changes that would yield the greatest impact, allowing them to determine where they can receive the best return on their investment.

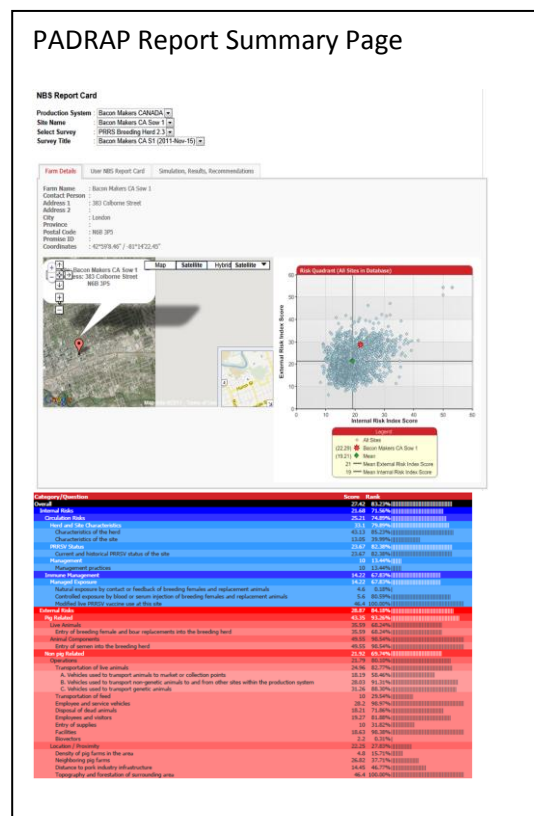
With PADRAP, producers can monitor and track their long-term biosecurity progress. Year over year, they can redo the survey to compare their scores and track herd-specific improvements, which will show if and how a farm is progressing in its biosecurity program.

PADRAP modifications specific to the Canadian swine industry

An interprovincial team of swine industry representatives reviewed the PADRAP program and made a series of recommendations, including:

- Changes to the survey’s reporting format to make it more interactive and easier to use – such as a front summary page, a report card page for the National Swine Farm-Level Biosecurity Standard (NBS) and a simulation page
- Categorizing existing PADRAP questions according to the NBS and developing additional questions to address all the NBS categories so that Canadian production sites can evaluate their compliance with the standard.
- Adjusting survey questions to address the realities of industry practices in Canada
- Provision of the tool in French as well as English

The new front summary page includes farm information at a glance, such as a premise ID, GPS image of the farm site with the ability to click and magnify to allow demarcation of Controlled Access Zones (CAZ), Restricted Access Zones (RAZ), a risk quadrant graph which benchmarks the farms results against other farms in the database and a risk profile summary chart highlighting internal and external disease transmission risks.



National Swine Farm-Level Biosecurity Standards Report Card

NBS Category/Question	Median	Score	
Direct Routes of Contamination	22.8	42.4	Opportunity to Improve
Domestic Live Animals	28.7	35.6	Opportunity to Improve
Domestic Semen and Embryos	19	48.6	Opportunity to Improve
Foreign live pigs, semen or embryos			Opportunity to Improve
Procedures are in place to meet legal requirements for importation of foreign live pigs, semen or embryos.			Opportunity to Improve
Indirect Routes of Contamination	20.4	22.2	Opportunity to Improve
Incoming animal transport	15.2	29.2	Opportunity to Improve
Outgoing animal transport	17.2	18.2	Opportunity to Improve
Dead stock	15.1	18.2	Opportunity to Improve
People	18.4	25.1	Opportunity to Improve
Aerosols	26.5	22.2	Acceptable
Pests, birds, and insects	46.4	2.2	Acceptable
Fomites	10	19	Acceptable
Feed and bedding	10	19	Acceptable
Pharmaceuticals	28.2	19	Acceptable
Meat Products (for human consumption) from foreign countries			Opportunity to Improve
Entry of pork meat products by employees, visitors, service and delivery personnel			Opportunity to Improve
Domestic animals			Opportunity to Improve
Wildlife			Opportunity to Improve
Water			Opportunity to Improve
Waste other than manure			Opportunity to Improve
On-farm health management	12.2	19.4	Opportunity to Improve
Health status, disease management, and monitoring	9.3	23.7	Opportunity to Improve
Swine immunization strategies	13.6	14.2	Opportunity to Improve

The National Biosecurity Standard report card page shows a farm or system's compliance with the various NBS categories, highlighting opportunities to improve. A veterinarian will be able to select topics for further investigation and recommended changes through use of the simulation page.

The simulation page allows veterinarians to highlight a

Simulation Page

The simulation page interface displays a list of biosecurity categories with associated simulation options. Each category includes a description, a 'No restrictions' or 'No' option, and a 'Select new response' button. The categories shown include:

- Flow of service vehicles:** No restrictions, the same service vehicle may visit PRRS positive and negative or naive sites. Other possible responses: The same service vehicle can visit PRRS positive and negative or naive sites but a minimum downtime is required before visits to negative or naive sites following last visit to positive site. The same service vehicle never visits PRRS positive and negative or naive sites.
- Flow of on-site employee vehicles:** Allowed to visit other pig farm sites but must be washed and dried before return to this farm site. Other possible responses: Allowed to visit other pig farm sites but must be washed before return to this farm site. Allowed to visit other pig farm sites but must be washed, dried and disinfected before return to this farm site. No restrictions. Not allowed to visit other pig farm sites.
- Dead animals disposed of on-site (e.g. buried, composted or incinerated?):** No. Other possible responses: Yes.
- Management of manure disposal:** Outsourced to third party that provides service exclusively to production system. Other possible responses: Managed by production system. Outsourced to third party that provides service non-exclusively to production system.
- Sanitation procedure for employees and visitors entering site:** Boot wash / disinfection prior to entry. Other possible responses: Cover all and boot change, hands are washed prior to entry. Shower in and clothes changed prior to entry. Unrestricted entry.
- Design of entry to site:** Physical barriers separate the outside ("dirty") and internal ("clean") areas. Other possible responses: Direct access, no defined "dirty" and "clean" areas.
- Employee restrictions on visits to other swine production facilities:** No restrictions. Written biosecurity protocols. Written protocols and communications to on-site employees are sometimes provided in all language(s) spoken as first language by employees. Other possible responses: Not Applicable (Contact if a single swine operator that has no employees). Written protocols and communications to on-site employees are always provided in all language(s) spoken as first language by employees. Written protocols and communications to on-site employees are never provided in all language(s) spoken as first language by employees.

few actions based on the results of the assessment and on their knowledge of the producer and production system, and illustrate the impact of making modifications in those areas.

Review of modifications through on-farm trials

The recommended modifications were tested with veterinarians and producers in 21 on-farm trials. Seven were completed in each of Ontario, Quebec and Western Canada, with a diverse representation of herd sizes and farm types involved. Comments were solicited from both veterinarians and producers.

Overall, participants felt the changes improved the value of the tool and generated results that were easier for producers and veterinarians to understand and use. Specific highlights included:

- The simulation tool was identified as an excellent addition
- The National Biosecurity report card was cited as a valuable and easy to interpret tool that was also highly relatable to biosecurity training sessions currently being delivered.
- PADRAP was highlighted as being of particular value to producers who are seeking to review or improve their existing biosecurity protocols, and for genetics suppliers, multipliers or producers involved in PRRS Area Regional Control and Elimination (ARC&E) programs.

Training and information

The interprovincial leads who participated in the assessment and modification process have been trained in the use of the Canadian version of PADRAP and are available as resources to assist veterinarians in their area. Dr. Derald Holtkamp of Iowa State University, who administers PADRAP, is available to provide online training sessions on request. The Canadian Association of Swine Veterinarians PRRS coordinators, Drs. Manon St. Hilaire and Leigh Rosengren, are available to assist PRRS Regional control projects with accessing assessments for participating sites to allow regional evaluation and benchmarking.

More information about the Canadian PADRAP program, the assessment and resulting modifications are available at <http://vdpambi.vdl.iastate.edu/padrap/default.aspx> or by contacting Lori Moser at 1-519-577-6742.

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