



Surveillance of African Swine Fever in Canada

Surveillance of African Swine Fever (ASF) at Approved Laboratories in Canada

Revision date: May 2024. This is a working document and subject to change. Please ensure that you are referencing the most recent version.

Technical Description

The primary objective of CanSpotASF is risk-based early detection of ASF to protect the commercial swine sector from the associated impacts of this disease. Other objectives of CanSpotASF include providing evidence of freedom from ASF and to ease the transition to outbreak surveillance if a positive ASF case is detected in Canada.

CanSpotASF activities include the following:

1. Rule-out testing with cases selected at:
 - a. The barn/premises level by veterinarians
 - b. Laboratories by pathologists
 - c. Processing plants (federal and provincially licensed) by veterinary inspectors
2. Outreach and education
3. Wild pig surveillance
4. Setting a foundation for outbreak/post-outbreak surveillance should a positive case of ASF be confirmed in Canada.

For activity #1.a., cases are selected from diseased pigs that are submitted to the laboratory for further testing from commercial swine herds, small-holder/organic herds, or pet pigs. This CanSpotASF tool was implemented in laboratories in August 2020.

There is no change for any case where African Swine Fever (ASF) is suspected: these cases must be immediately reported to the local Canadian Food Inspection Agency (CFIA) district office.

Some approved¹ laboratories that are part of the Canadian Animal Health Surveillance Network (CAHSN) can perform ASF testing on cases to rule-out ASF just to be on the safe side. This rule-out testing is targeted at herds/swine with endemic diseases that could mask ASF and therefore delay detection. Both practicing veterinarians and pathologists can initiate ASF rule-out testing.

¹The term "approved laboratory" refers to a Canadian Animal Health Surveillance Network (CAHSN) laboratory that has been approved by the CFIA to perform testing for ASF after meeting several criteria including, but not limited to, accreditation to the ISO/IEC 17025 standard, certification to the Canadian Biosafety Standard, and successful participation in a proficiency testing program.

What cases are eligible for risk-based early detection?

Certain diseases/conditions have been shown to mask the clinical signs associated with ASF and delay detection. Herds with a history of these diseases/conditions, or cases with a compatible clinicopathological presentation are eligible for testing (Table 1). In addition, a veterinarian or pathologist can, at their discretion, submit samples not meeting the defined criteria but meeting the intent of CanSpotASF. This means that testing is being requested in situations where ASF is NOT suspected but could be a differential diagnosis.

How does CanSpotASF testing work?

The intention of the rule-out testing is to detect ASF as early as possible. We encourage veterinarians to submit sample materials (including spleen) for pathological examination whenever they see clinical signs that may mask ASF presence or where ASF is not suspected but could be on a differential diagnosis list. In addition, any routine case submitted to a CAHSN laboratory that meets eligibility criteria (Table 1) and includes trace back information and appropriate tissues may be tested for ASF. The decision to test an eligible case can be made by the herd veterinarian or the pathologist managing the case. Consultation between the pathologist and the practicing veterinarian on testing decisions is strongly recommended. The flowchart in Appendix 2 shows the testing decision tree.

For all commercial operations required trace back information includes province and premises ID. For smallholders and/or pet pigs, premises ID is preferred but address of physical location of pigs is an acceptable alternative.

Appropriate sample material for testing includes tissue sections of tonsil, spleen, kidney, lymph node and terminal ileum, body fluids, and whole blood.

Who will pay for testing?

ASF testing by approved laboratories on eligible cases will be paid for by the provinces.

Table 1.

Clinicopathological presentations eligible for additional ASF testing at approved laboratories

1. Septicemia and/or multi-organ hemorrhage such as caused by *E. rhusiopathiae*; *S. suis*; *S. zooepidemicus*; *A. suis*; *S. Choleraesuis*; other bacteria
2. Porcine Reproductive and Respiratory Syndrome virus (PRRS), especially when it causes cyanotic skin
3. Porcine Dermatitis and Nephropathy Syndrome (PDNS) and vasculitis that can be caused by PCV 2, PCV 3 or other pathogens
4. Hemorrhagic diarrhea / necrotizing enterocolitis such as caused by *Salmonella* spp; *L. intracellularis*; *B. hyodysenteriae*; *B. hampsonii*
5. Fibrinous pleuritis / pericarditis / hydropericardium such as caused by *G. parasuis*; *S. suis*
6. Mulberry heart disease
7. Splenic torsion
8. Abortion above historical trend for herd
9. Mortality above historical trend for herd



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Information for laboratories

CanSpotASF risk-based early detection testing at approved laboratories is open to all CAHSN laboratories. Currently the approved laboratories for ASF testing are:

- Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ) Animal Health Laboratory in Quebec,
- Ontario Animal Health Laboratory,
- Prairie Diagnostic Services,
- Alberta Agriculture and Forestry Agri- Food Laboratories, and
- British Columbia (BC) Animal Health Centre.

CAHSN laboratories that are not approved for ASF testing can submit ASF invasive wild pig surveillance samples to an approved laboratory. Transfer of samples and testing results between laboratories will use routine processes that are already in place for other types of testing.

Any laboratory that is conducting ASF testing must have a protocol in place to differentiate samples and results associated with domestic pigs from those of wild pigs. When a sample is associated with a wild pig, the animal species "wild pig" must be recorded in the laboratory data system to facilitate this differentiation. This is critical to support accurate data reporting.

It is expected that each approved laboratory may have slightly different laboratory workflow processes, and as such testing may be run on a sample-by-sample basis, or in weekly batches. It is recommended that where practical, ASF tests are run on Monday through Wednesday to facilitate communications with practicing veterinarians and the National Centre for Foreign Animal Disease (NCFAD).

Because the chance of any false positive or suspicious ASF test is very low, and there are significant time and resource costs associated with collecting and storing tissues, laboratories will not implement any enhanced tissue storage processes over and above standard procedure for pathology cases.

It is recognized that there is value in comparing test performance data across participating laboratories. As such, CFIA, NCFAD and approved laboratories will work together to compile and use this information for this purpose.

What will happen if the approved laboratory ASF test yields an unconfirmed positive or suspicious result?

Table 2.

Protocol for an unconfirmed positive or suspicious ASF test result from an approved laboratory

1. The approved laboratory will immediately inform the herd veterinarian and the local CFIA district office and follow procedure as outlined in Section 6.1.1 of the National African Swine Fever Operating Policy and Procedures for the CAHSN laboratories (ASF-OPP). If the approved laboratory is conducting the test for another laboratory, they will immediately notify that laboratory. The original laboratory will be responsible for immediately notifying the local CFIA district office and the National Centre for Foreign Animal Disease (NCFAD).
2. The CFIA district office affiliated with the approved laboratory will:
 - a. Collect information about the premises of origin.
 - b. Contact the CFIA district office affiliated with the premises of origin (if different)
 - c. Collect samples from the approved laboratory to submit to the NCFAD.
3. The CFIA district office affiliated with the premises of origin will:
 - a. Contact the owner or operator of the premises associated with the unconfirmed positive animals and schedule an on-site visit to perform a clinical examination of the suspect animals,
 - b. Seek permission from the person who has possession, care, or control of the animals in question to contact the veterinarian,
 - c. Complete an epidemiological investigation and risk determination,
 - d. Collect samples from pigs on the premises,
 - e. Send samples to the NCFAD.
4. If the CFIA risk determination does not find evidence of ASF, the CFIA will place a quarantine to stop movement of swine off the premises until the NCFAD confirmatory testing is completed (estimated 48 to 96 hours).
5. If the CFIA risk determination finds that there is a suspicion of ASF, the CFIA will place a quarantine on all susceptible animals on the premises to stop movement of swine, and a declaration of infected place to stop other traffic on and off the premises of origin until the NCFAD confirmatory testing is completed (estimated 48 to 96 hours).



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Reporting and Evaluation

Unconfirmed positive and suspicious tests will be immediately reported to the CFIA as per the reporting procedures outlined in section 6.1.1 of the ASF-OPP. Confidentiality must be maintained in accordance with section 7.0 of the ASF-OPP.

The CanSpotASF technical committee will lead the reporting of all active tools in CanSpotASF. It is expected that this reporting will evolve over time. Reports authored by the CanSpotASF epidemiologic surveillance group are intended for regional and national stakeholders within Canada and are considered unofficial. The CFIA remains the organization responsible for any official reporting of the available data (e.g. to the World Organization for Animal Health and international trading partners).

For risk-based early detection at laboratories, reporting to stakeholders includes the number of participating laboratories; the number of cases tested; summarized test results. It is recognized that the information collected may be further standardized over time and that additional fields may need to be captured, both to improve the utility and/or analyses of the information for the purposes such as official reporting if required by the international community, regional zoning, system compartmentalization by stakeholders, and scientific documentation.

Datasets and data compilation processes that are currently used by the national and regional/ provincial swine networks, including the Canadian Swine Health Intelligence Network (CSHIN), the Canadian West Swine Health Intelligence Network (CWSHIN), the Ontario Animal Health Network (OAHN), le Réseau d'alerte et d'information zoosanitaire (RAIZO), and the Atlantic region will continue to be used to generate information for stakeholder reports. CFIA has access to these datasets. For samples sent to another laboratory, the responsibility for reporting will remain with the regional network from which the sample originated. Animal Health Canada's Canadian Animal Health Surveillance System (CAHSS) division supports data compilation and reporting. Reports are communicated through the CSHIN. Management and surveillance reporting will be documented in the CanSpotASF annual report found at animalhealthcanada.ca/canspotasf alongside reporting from other CanSpotASF activities.

More information about CanSpotASF

CanSpotASF is a program under the direction of the ASF Executive Management Board (ASF EMB); a board that brings together federal, provincial, and territorial (FPT) governments and industry representatives to provide guidance and prioritize activities across FPT governments and industry to address the risk of ASF introduction and establishment in Canada. CanSpotASF is a collaboration between:

- the swine industry,
- the CFIA,
- CAHSN animal health laboratories,
- provincial governments,
- the Canadian Swine Health Intelligence Network (CSHIN), including the regional networks Réseau d'alerte et d'information zoosanitaire (RAIZO), the Ontario Animal Health Network (OAHN), the Canada West Swine Health Intelligence Network (CWSHIN), and the Atlantic provinces,
- Animal Health Canada.

A visual overview of CanSpotASF is provided in Appendix 1.



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For more information

If you are a staff member at a diagnostic laboratory and would like more information about CanSpotASF, please contact your laboratory director.

If you are a veterinary practitioner and would like more information about CanSpotASF please contact your regional swine surveillance network lead:

Region	Name	Email
Western Canada	Dr. Jette Christensen	manager@cwshin.ca
Ontario	Dr. Christa Arsenault	christa.arsenault@ontario.ca
Quebec	Dr. Chantal Proulx	Chantal.proulx@mapaq.gouv.qc.ca
Atlantic Canada	Dr. Dan Hurnik	hurnik@upei.ca

CanSpotASF provides tools for ASF surveillance. Implementation was prioritized based on risk and feasibility.

CanSpotASF is an iterative process with annual reporting and adjustments. The published CanSpotASF annual reports link can be accessed at animalhealthcanada.ca/canspotasf.

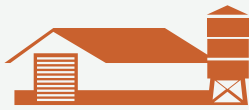
CanSpotASF is a voluntary program implemented across Canada.



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CanSpotASF is the enhanced African Swine Fever (ASF) surveillance targeting swine populations, such as commercial swine, smallholders, pet pigs and wild pigs. It is a voluntary program implemented across Canada.

ASF Surveillance Populations:



Commercial Indoor



Small-holder, organic



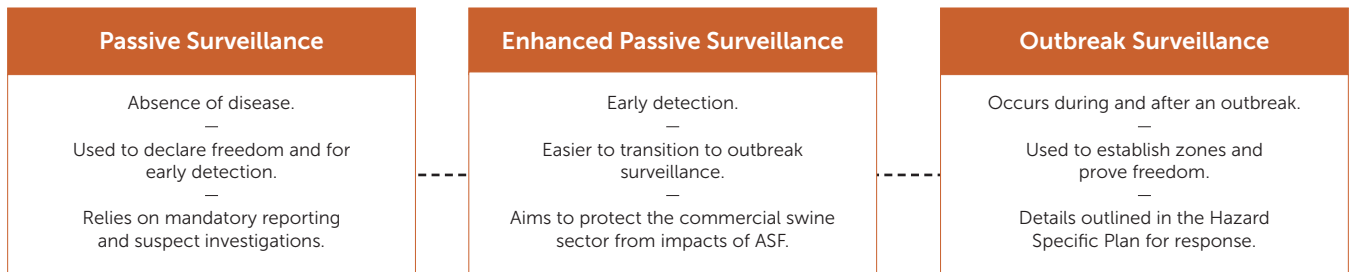
Pet Pigs



Wild Pigs

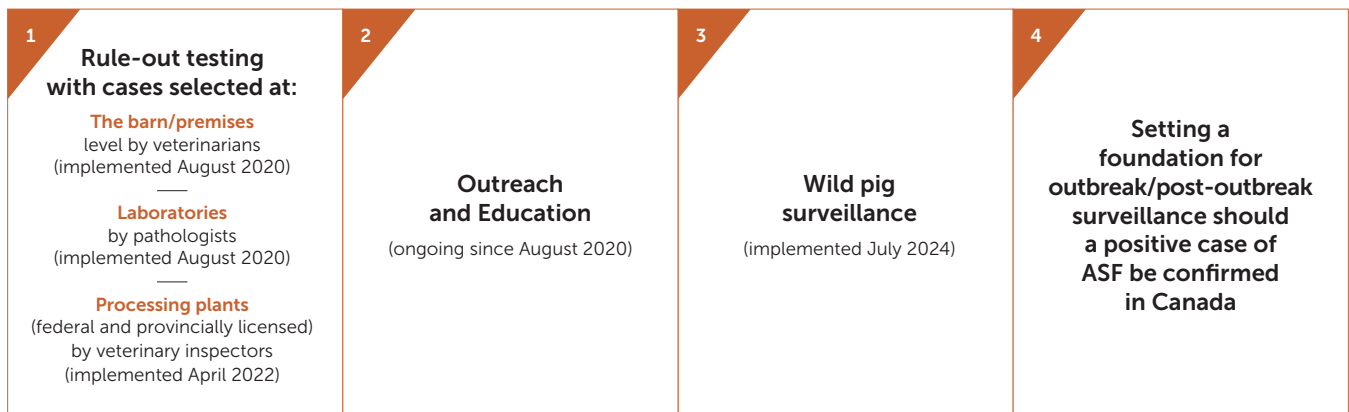
The primary objective of CanSpotASF is risk-based early detection of ASF to protect the commercial swine sector from the associated impacts of this disease. Other CanSpotASF objectives include providing evidence of freedom from ASF and easing the transition to outbreak surveillance if a positive ASF case is detected in Canada.

Canada has three types of ASF surveillance:



Any suspicion of ASF has been reportable to CFIA since 1991.

CanSpotASF activities include the following:



Further information: CanSpotASF provides tools for ASF surveillance. Implementation was prioritized based on risk and feasibility. CanSpotASF is an iterative process with annual reporting and adjustments. The Canadian Swine Health Intelligence Network (CSHIN) generates a quarterly report on CanSpotASF testing. The CanSpotASF program is a collaborative initiative under Animal Health Canada.



Appendix 2.

Flowchart showing processes for the CanSpotASF: Risk-based early detection testing at approved laboratories

