



Canadian Swine Health  
Intelligence Network

Réseau canadien de  
surveillance de la santé porcine

REPORT Q3 JUL-SEPT 2023

## HIGHLIGHTS FOR SWINE PRODUCERS

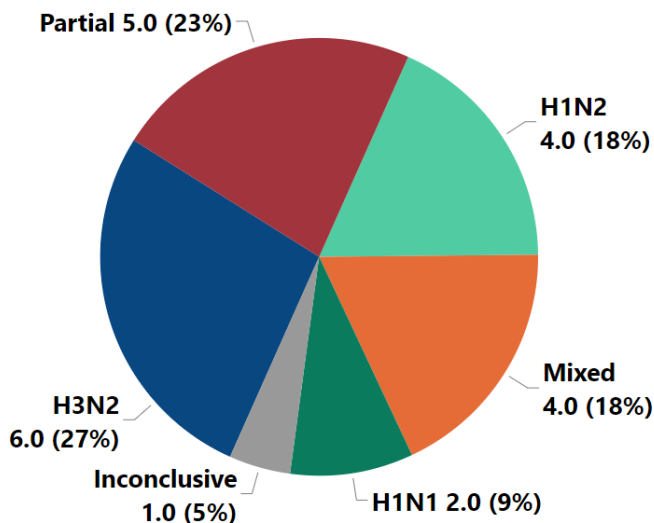
### Ontario Update on Novel H3N2 Influenza A- Cluster 2010.1

Dr. Christine Pelland from South West Ontario Veterinary Services provided an update to the CSHIN Q3 team on the status of a new emerging strain of H3N2 known as cluster 2010.1. In the CSHIN Q2 reports, OAHN reported that this novel influenza strain was first detected in Ontario on April 7, 2023. This virus is not genetically similar to any of the current regional autogenous vaccine strains or to any other virus documented in Canadian databases. History indicates this virus originated in humans in 2010, but since has become established in the swine population likely from humans working closely with pigs. This virus was determined genetically similar to a strain first detected in swine in the U.S.A. in 2013 and became the dominant strain in the U.S.A by 2017. This new strain often clinically presents as a sudden onset of coughing across all stages of production. Sows go off feed with high fevers and abortions is common. Growing pigs present with a sudden onset of coughing, off feed, followed by an increase in mortality due to secondary bacterial pneumonia. To date, it appears that previous influenza vaccination did not have any effect.

Dr. Hannah Golightly from OMAFRA provided an overview on Influenza A in swine submissions that were received at the Animal Health Lab (AHL) during Q3 2022 (see chart a, below) versus Q3 2023 (see chart b, below). The comparison of these pie charts demonstrates the dominance of the new novel H3N2 cluster 2010.1 in the submissions to the laboratory. At the Ontario Association of Swine Veterinarians (OASV) fall conference, Dr. Kevin Vilaca from South West Ontario Veterinary Services shared that this novel H3N2 strain has been added to a monovalent (single strain) autogenous vaccine for producers. South West Ontario Veterinary Services will share the protocol for CFIA emergency use and approvals with other veterinary clinics that are interested in Ontario. The future plan will be to include cluster 2010.1 with the regional (multi-strain) autogenous swine Influenza vaccine once CFIA approvals are received, which is anticipated in Jan 2024.

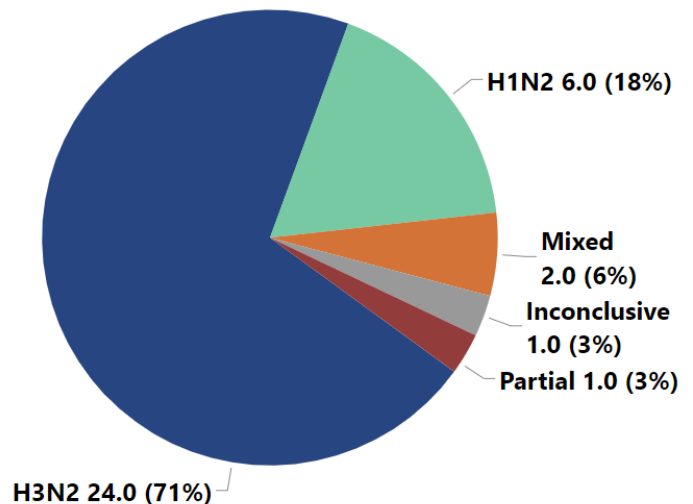
a

**Influenza A Subtypes  
2022 July-September**



b

**Influenza A Subtypes  
2023 July-September**



**Take Home Messages: No other provinces or territories in Canada have reported detections of this novel H3N2 influenza strain to date.** The good news story is that routine Influenza A surveillance in Ontario provided early detection and warning of this outbreak. **Based on how this virus behaved in the U.S.A. it is anticipated that the number of cases will increase.** This is concerning with the next “flu season” upon us already. **Veterinarians, producers, and government have an opportunity to be proactive and prevent the spread of this virus.**

Those that work directly with swine should be encouraged to stay home whenever possible if sick or experiencing clinical signs of Influenza. People working with infected pigs need to ensure they follow good biosecurity practices and whenever possible, wear an N95 or equivalent mask, and wash their hands frequently. Any personnel that work with swine should be encouraged to get the “flu” shot for influenza yearly.

## ASF Compartmentalization Tool Overview

Dr Egan Brockhoff from the Canadian Pork Council (CPC) provided an overview on ASF free compartments to the CSHIN Q3 team. Dr. Brockhoff explained that Canada needs **both** compartments and zoning tools that will assist with facilitating business continuity for the pig sector, maintaining food and job security, minimizing negative impacts on animal welfare in the case of ASF detection.

**Compartmentalization** is the creation of distinct sub-populations of pigs that follow common biosecurity management, surveillance, and traceability measures. It is a disease management tool used to facilitate trade and is recognized by the WOA.

- Compartments are established **before an outbreak**.
- Allow for the export of products even if they were to originate from an infected zone **causing little to no interruption to trade**.
- Have an **immediate benefit**.

**Zoning** defines geographical boundaries **during an active outbreak** to establish infected zones and disease-free areas.

- Takes time to implement and gain trading partner confidence and acceptance.
- Zoning has a **delayed benefit**.
- Canada has ASF zoning agreements in place with the U.S.A., the EU, Singapore, Hong Kong, and Vietnam.

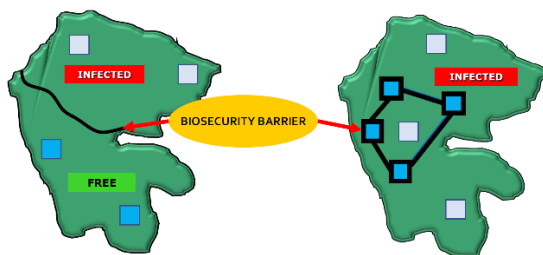


Image 1: Image on the left illustrates zoning. Image on the right illustrates a compartment.

The Canadian Food Inspection Agency (CFIA) released the following [information](#) on the launch of the ASF compartmentalization standards and framework to the public on Oct 30, 2023. A compartment could be developed where the final product is live pigs and/or processed meat. Dr. Brockhoff mentioned that pork processing plants have been involved in developing these standards and framework and have expressed confidence that they can segregate and enhance processes to meet the needs of the program. Through this [link](#) you can gain important information on the biosecurity, surveillance and traceability components of a compartment and the requirements of the program.

The CPC is now working on development of the Compartment Operator Program (COP) which is the last step to be completed before enrollment can begin. The CFIA plans to reach out to trading partners after the enrollments into the program begin.

In summary, the benefits of compartmentalization benefit the entire pork sector, not just those that choose to participate. This tool is being set up for use with ASF detection but could be transferred to use for other diseases.

## Sapovirus

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### RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that Quebec had their first 2 cases of Sapovirus detected in Q3. The first case presented in 9-day old piglets with diarrhea. Samples were positive on PCR for Sapovirus with a low CT value of 21 (Lower CT values indicate higher virus load). This case was also positive for Rotavirus. The second case presented in 9-10 day old piglets with diarrhea. The samples were positive on PCR for Sapovirus with a low CT value of 13. Histological lesions were also present supporting the Sapovirus diagnosis and no other pathogens were detected in this case.

### OAHN (Ontario)

Dr. Josepha DeLay from the Animal Health Laboratory (AHL) in Ontario, reported to the OAHN swine network that there were 2 cases of Sapovirus detected in Q2 2023. All cases were detected in neonatal piglets, were PCR positive, and all had clinical signs and histological lesions that supported the diagnosis. The AHL also reported that in Q3 2023 there were 5 cases of Sapovirus (although in one of these cases it could not be determined if Sapovirus was a primary cause of disease or not). The AHL is now offering in house PCR testing for this pathogen.

### CWSHIN (Western Provinces)

Dr. Jette Christensen reported that the first case of Sapovirus in the western provinces was reported from Q4 2022. The Prairie Diagnostic Services (PDS) laboratory in Saskatchewan have an in-house PCR test available for Sapovirus. In Q2 2023 PDS had 2 cases test positive on PCR for Sapovirus. In Q3 2023 there were 37 cases tested for Sapovirus and of these cases 25 tested positive (68% positivity rate). All cases tested had clinical signs of diarrhea present. Dr. Yanyun Huang mentioned that although histopathology is an important test, it should not be used alone to determine if Sapovirus may be the cause of disease. Dr. Huang was surprised at how low some of the CT values were (CT values in the 20's are common) indicating very high virus loads present in most of these positive submissions. He suggested veterinarians consider submitting for Sapovirus PCR testing in all cases submitted for Rotavirus PCR testing.

**Take Home Messages:** Diagnostic testing capabilities for Sapovirus are now available in Canada. Producers should alert their veterinarians if their herds are experiencing clinical signs of Sapovirus including unexplained cases of diarrhea.

## Porcine Epidemic Diarrhea (PED) and Porcine Deltacoronavirus (PDCoV)

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### OAHN (Ontario)

Jessica Fox, Manager of Swine Health Ontario (SHO) reported to the OAHN swine network that there has been a decrease in both PED and PDCoV detections since the beginning of Q3. There were 10 cases reported in Q3 2023 and all were in finishing operations. Jessica also reported that there have been no additional cases in Q4 thus far with **no new cases reported since August 31, 2023. All cases are pursuing elimination working with their veterinarians.**

The PED and PDCoV Tracking map is available at the Swine Health Ontario website and shows current and annual cases by county: <http://www.swinehealthontario.ca/Disease-Information/PED-PDCoV-Tracking-Map>.

## RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that Quebec's last finishing operation that had detected PDCoV virus has since regained a presumptive negative status. Quebec is now free from PED and PDCoV.

## CWSHIN (Western Provinces)

Dr. Jette Christensen mentioned that the last case of PED in Manitoba had regained a presumptive negative status. This is a huge accomplishment for Manitoba! Response efforts were ongoing from 2021-2023 for this outbreak response.

CSHIN would like to offer our congratulations to everyone that helped to achieve this milestone in Manitoba and in Quebec.

## Circovirus (PCV-2) & (PCV-3)

### CWSHIN (Western Provinces)

Dr. Kurt Preugschas reported that clinical presentations of Circovirus have changed in the last 1.5 years. A likely contributing factor is that the PCV2 viruses have changed and continue to change in response to our vaccination pressure. He reported that one of his herds saw a 30-40% mortality in the grower stage in previously vaccinated animals. He is attributing this break to be caused by sow herd PCV2 instability and leakage of virus into the piglets which overwhelmed the vaccine protection. Dr. Preugschas proposed that the long-term use of vaccines for PCV2 in piglets has resulted in incoming gilts who have not developed natural immunity to this virus, and potentially the first time they see the virus without full protection is once they are in the sow herd, leading to sow herd instability. There is also uncertainty on how to interpret PCR tests conducted on processing fluids and from environmental samples for PCV2 and PCV3. Dr. Preugschas mentioned that he has seen fully vaccinated herds that have exhibited the same clinical signs, so he doesn't believe that this is due to off-label usage of the PCV-2 vaccines.

*This information is a professional communication for swine producers. This information is not validated and may not reflect the entire clinical situation. Your judgment is required in the interpretation and use of it. It is the intent of CSHIN to improve the health of the national swine herd. CSHIN is funded by the Canadian Association of Swine Veterinarians (CASV), The Canadian Pork Council (CPC) and The Canadian Animal Health Surveillance System (CAHSS).*

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