



Ontario Update on Novel H3N2 Influenza A- Cluster 2010.1

Dr. Jordan Buchan from South West Ontario Veterinary Services provided an update to the CSHIN Q4 team on the status of a new 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 commented that the number of positive swine influenza submissions has been relatively stable over the last three Q4 periods. In Q4 2023, H3N2 detections were appreciably greater than any other subtype combined for each month of the quarter. This is a trend that has been ongoing since May 2023, and is markedly different than the last 2 years, where H3N2 detections only accounted for 20% to 28% of all positive cases in Q4 of 2021 and 2022, respectively. The majority of H3N2 detections in Q4 2023 were the novel cluster 2010.1, most of which were detected in grow-finish herds. As of January 2024, the novel cluster 2010.1 is now included in the regional autogenous swine Influenza vaccine in Ontario after receiving CFIA approvals and South West Ontario Veterinary Services will share the protocol for CFIA emergency use and approvals with other veterinary clinics that are interested in Ontario.

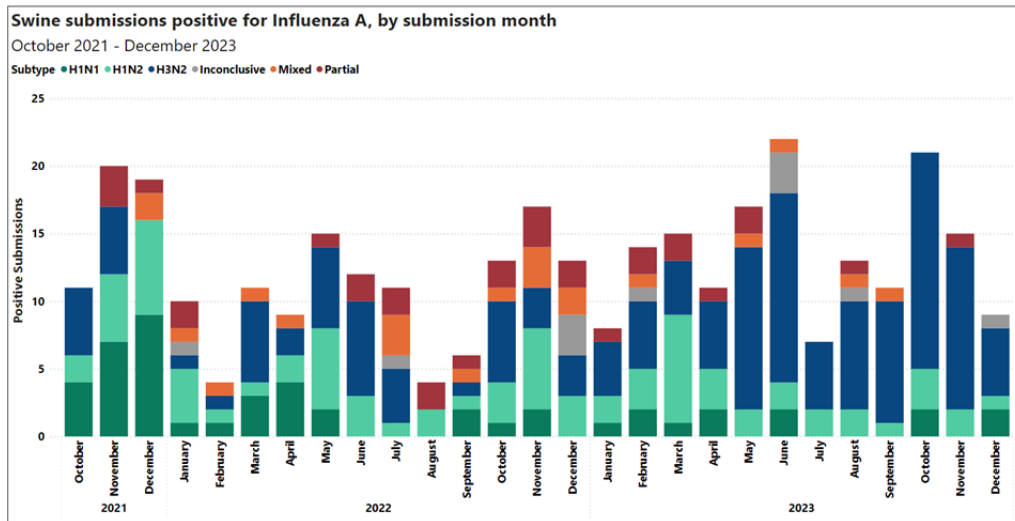


Figure 1. Submissions positive for influenza (not including ELISA tests) in swine by subtype and submission month, Ontario, October 2021 to December 2023. Most positive submissions in Q4 2023 (October-December) involve subtype H3N2. Figure 1 also shows counts of partial, mixed, and inconclusive subtypes isolated from Ontario swine herds. (see legend above graph).

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.

Circovirus (PCV-2) and (PCV-3)

Dr. George Charbonneau reported that **there were 62% of veterinarians indicated that PCV-2 activity was increased when compared to the previous quarter. This is a very notable increase from previous quarters and previous years.** Usually there are about 21% to 29% of veterinarians that would rank clinical PCV-2 as being “common” but in Q4 this number jumped to 64%. The cause for this perceived increase is unknown. In the past veterinarians have commented that sporadic cases of clinical PCV-2 have been related to vaccine storage or administration errors, fractionated dosages, or changes in vaccine timing. Sow herd instability with increased shedding by sows and the subsequent increased infectious pressure can also set off increased clinical disease. Another possibility is that increasing PRRS and Influenza virus challenges are undermining some of the PCV-2 control. Since 2006 when PCV-2 vaccines became available, the control of PCV-2 has been nothing less than remarkable even as the virus has slowly been evolving. Many in the industry are wondering if “the other shoe will drop” and we lose some of the control provided by the current vaccines. Has something changed with the virus? The U.S.A. has reported an increase in PCV-2 type d could this be the cause? Minimal genotyping of PCV-2 is currently conducted in Canada. Too early to tell on this but we will certainly keep an eye on this one.

Dr. Christine Pelland mentioned that they have conducted a veterinary practice clinical study on cases confirmed IHC and PCR positive for PCV-2. This study found that 60% of these cases are PCV-2 type d versus PCV-2 type a virus. She also mentioned that most clinical cases that she has seen to date have also had concurrent disease challenges like PRRS and Influenza viruses. Recently SHIC offered a swine Circoviruses PCV-2 seminar that was very interesting and can be reference [here](#).

CWSHIN (Western Provinces)

Dr. Jette Christensen reported that the laboratory data in the western provinces has seen a steady increase in porcine Circovirus positive tests over the past year. It is important to recognize that there have also been differences in how the labs are testing for porcine Circovirus over the years PCV vs. PCV-2 and PCV-3 testing now and also labs are now documenting mixed infections.

Dr. Kurt Preugschas reported that clinical presentations of Circovirus have changed in the last 1.5 years. He supported that vaccines for Circovirus are phenomenal vaccines! Three years ago this disease was extremely well controlled simply by using these vaccines. About 1.5 years ago something started to shift in this paradigm. Detections of PCV-3 are also a growing concern.

Senecavirus A (SVA)

RAIZO (Quebec)

Dr. Roxann Hart reported that in Quebec on December 15, 2023, there was a suspicious SVA PCR test from a transport trailer tested at an assembly site in Quebec. The sows at this assembly center were inspected for vesicular lesions, lameness, and any other clinical signs of disease. Some sows had the presence of blisters on the snout and coronary bands of the hooves with associated lameness seen. SVA PCR tests completed from manure samples were highly positive for SVA virus. In follow-up to this, SVA PCR tests were completed at several of the sow farms that ship to this assembly site and on transport trailers used to transport piglets from these farms. One sow farm had a suspicious PCR result and some sows had ulcers on their snouts (no other clinical signs). SVA ELISA tests were performed at the National Center for Foreign Animal Disease (NCFAD) CFIA's laboratory in Winnipeg and results were positive (but the PCR tests were all negative). This sow farm was declared a case by the EQSP. The nursery that received all piglets from this sow farm, that was reported as an epidemiological link, also was declared a positive site by the EQSP.

SVA PCR tests from a transport trailer transporting gilts tested suspicious. Rare blisters at the coronary band in a very small number of animals within this sow farm were observed. This barn was quarantined, as was the nursery that received its piglets as a precautionary measure.

Cleaning and disinfecting procedures being used on declared positive SVA sites in Quebec include:

- Cleaning: preparing the rooms and soaking the surfaces
- Washing: wash every nook and cranny then inspect the quality of the washing
- Disinfection: disinfection of clean surfaces with the correct contact times and then limit any contamination of the disinfected areas
- Drying: dry all surfaces thoroughly
- White wash: white wash buildings when deemed appropriate
- Post washing/disinfection/drying assessment: assess the effectiveness of the disinfection and check the water quality

After the final disinfection of the buildings and equipment on a farm that has been infected with SVA, the downtime where barns contain no animals is a minimum of 7 days, but ideally 14 days are recommended whenever possible before receiving new pigs.

Take Home Messages: To date, hundreds of tests have been completed on sites with potential epidemiological links and all test results completed since January 23, 2024, have been negative for SVA. The steps toward eradication of the disease are progressing positively to date.

CWSHIN (Western Provinces)

Dr. Jette Christensen communicated that in Q4 2023 CWSHIN launched an outbreak support network that is being led by Dr. Betty Althouse. This network was created due to an identified need for producer support when dealing with a potential reportable disease e.g. SVA. The western provinces have had a few cases where reports of blisters on pigs were investigated. Through these cases, it was recognized that the process to complete these investigations was not easy for all involved. This support network will pair with WeCAHN (Western Canadian Animal Health Surveillance Network) and include diseases that affect other species e.g. Bovine Tuberculosis and Highly Pathogenic Avian Influenza.

Sapovirus

OAHN (Ontario)

Dr. Christine Pelland reported that this pathogen most commonly is associated with nursing piglet diarrhea (typically around 10 days of age). The Animal Health Lab (AHL) in Guelph has been testing in house for Sapovirus PCR since September 2023. She communicated that her practice is adding this test to diarrhea cases where Rotavirus testing is requested. They are subsequently finding more cases of Sapovirus than they initially expected. It is often unknown whether Sapovirus is the primary cause of disease or not.

Dr. Tim Pasma from the Animal Health Laboratory (AHL) in Ontario, reported that the most recent AHL newsletter published that 57% of Sapovirus cases detected were co-infected with Rotavirus. Between September 2023 and February 2024, a total of 83 samples from 32 Ontario swine herds were tested by PCR for Sapovirus. Of these, Sapovirus was detected in 30 samples from 16 herds. The age range of Sapovirus positive pigs was 3-28 days with an average of 9 days. For more information on this study please refer to the [AHL newsletter](#).

CWSHIN (Western Provinces)

Dr. Jette Christensen reported that Prairie Diagnostic Services (PDS) lab in Saskatchewan started to test for Sapovirus in July 2023. In 2023 Q4, every case submitted to this lab for diarrhea was tested for Sapovirus and 68% of samples were found to be positive. This number was even higher in Q3 2023. Attempts have been made in the western provinces to vaccinate gilts and investigate to see if immunity is passed onto their piglets (important to note that this was an attempt of prevention NOT a clinical trial). Although the vaccine may have reduced scours in piglets it is prudent first to treat for other co-infections and other factors e.g. environment, cleaning, and disinfecting. Sapovirus vaccine should be used as a last resort. It is important to note that the effect of Sapovirus vaccine is still undocumented and the vaccine is difficult to handle because it requires (-70 degrees C freezer capacity). The Veterinary Diagnostic Service (VDS) lab in Manitoba is also very close to being able to offer Sapovirus testing (expected to be available in the next few months).

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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