



Canadian Swine Health
Intelligence Network

Réseau canadien de
surveillance de la santé porcine

CSHIN QUARTERLY PRODUCER REPORT

REPORT Q2 APR-JUN 2023

HIGHLIGHTS FOR SWINE PRODUCERS

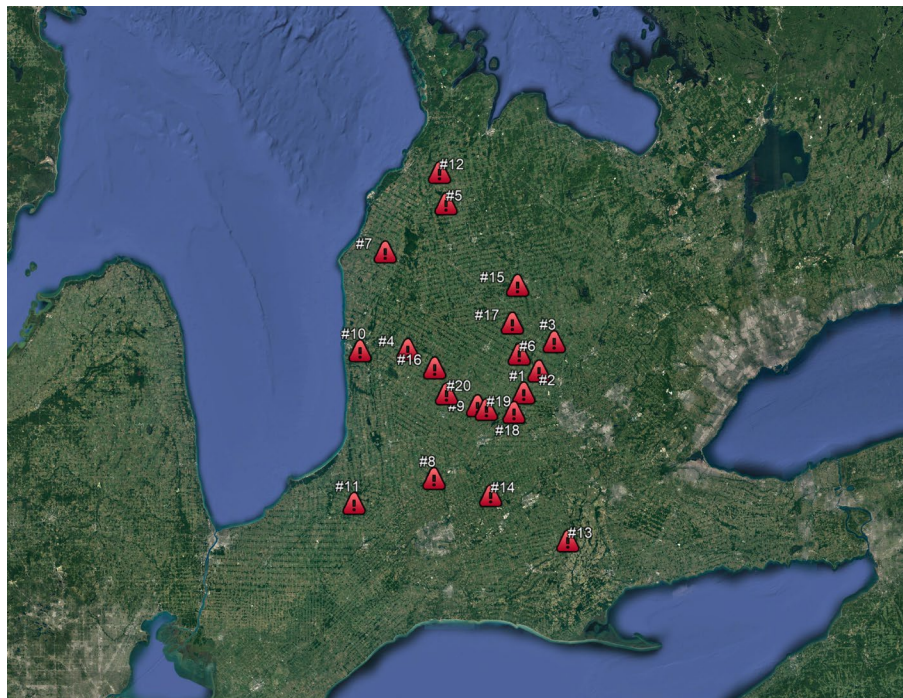
Novel H3N2 Influenza A Detected in Q2

Dr. Kevin Vilaca from South West Ontario Veterinary Services provided an overview to the CSHIN Q2 team about the detection of a new emerging strain of H3N2. On April 7, 2023, a new influenza strain of H3N2 known as cluster 2010.1 was detected in Ontario. This virus is not genetically similar to any of the current regional strains or to any other virus documented in Canadian databases. This virus originated in humans in 2010, but since has established itself 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.

Over the next 7 weeks, 12 more cases were detected, reported, and sequenced in Ontario. This new strain often clinically presents as a sudden onset of coughing across all stages of production. Sows going 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 influence.

Dr. Ojkic from the Animal Health Lab (AHL) communicated to Dr. Kevin Vilaca that this new strain is now 67% of the isolates sent to the AHL and this novel strain now consists of 85% of the H3's detected.

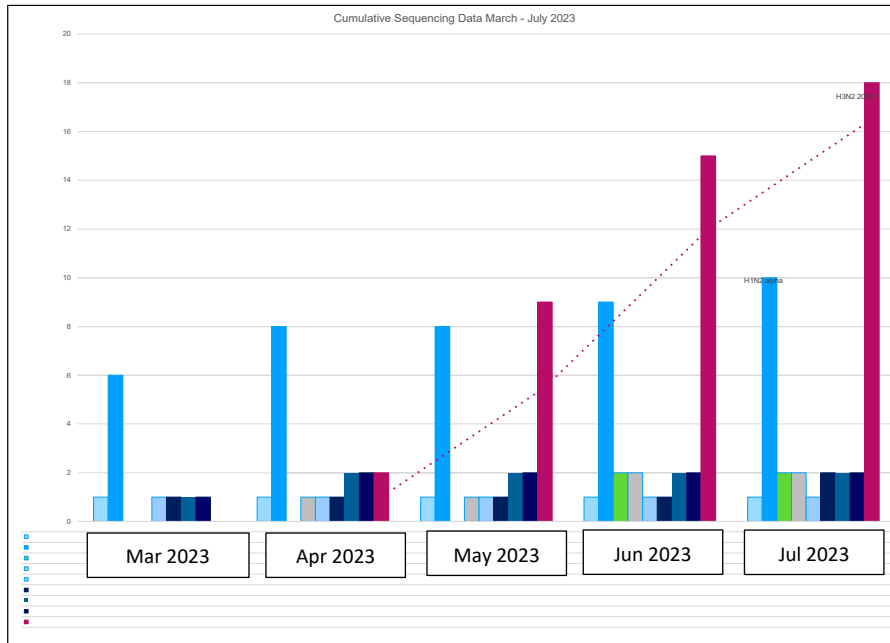
Detections with this novel strain of influenza has spread rapidly in swine throughout Ontario.



Map 1: Demonstrates the diverse geographical distribution in the novel H3N2 Influenza strain detected in Ontario in Q2 in sequential order of detection

Novel H3N2 Influenza A Detected in Q2 Continued...

of laboratory detections, broken down by type, in Ontario swine of Influenza A virus March- July 2023



Legend in sequential order

- H1N1 alpha
- H1N2 alpha
- H1N1 pdm
- H1N1 beta
- H1N1 gamma
- H3N2 IV
- H3N2 Ivb
- H3N2 IVx2
- H3N2 2010.1

Graph 1: Demonstrates the speed of Influenza A in swine detections in Ontario for the novel H3N2, cluster 2010.1, shown in the maroon colour

Take Home Messages:

The good news story is that routine Influenza A surveillance in Ontario provided early detection and warning of this outbreak. To date, Ontario has never seen an Influenza A virus in swine move this quickly, especially during the warmer and dryer months of the year. Based on how this virus behaved in the U.S.A. it is anticipated that cases will increase, and it will become the dominant strain in Ontario. This is concerning with the next “flu season” quickly approaching in the fall. Veterinarians, producers, and government have an opportunity to be proactive and prevent limiting the spread of this virus. Dr. Vilaca mentioned that South West Ontario Veterinary Services are currently working with the CFIA to create an emergency monovalent H3N2 vaccine that should be available in September 2023.

Those that work directly with swine should be encouraged to stay home when 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.

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

OAHN (Ontario)

Jessica Fox, Manager of Swine Health Ontario (SHO) reported to the OAHN swine team that there has been a substantial increase in incidence of both Porcine Epidemic Diarrhea virus (PED) and Porcine Deltacoronavirus (PDCoV) since the beginning of Q2 2023 in Ontario, with a total of 17 cases reported. These cases were spread out amongst most pig producing regions

within the province. All different production/farm types were also reported to have had cases. Jessica also reported that there have been 9 additional cases in Q3 2023 thus far with **no new cases reported since July 17, 2023**.

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>.

SHO is now also tracking presumptive positive cases due to downstream pig flows on their website. In some of these cases, biosecurity breaches were known and thought to be the cause of infection. One case reported cross contamination that occurred with a deadstock pickup. Another case reported an issue with a PED positive site not reporting this to their contract manure hauler. When informed, manure haulers will usually haul manure from another species between a PED positive site and any other site that has swine. Producers are encouraged to disclose PED and other health status information changes to all contract suppliers in advance to prevent further spread of disease.

Dr. Christine Pelland mentioned that it is important to note that simultaneous to the initial PED outbreaks being reported there was a stall in the cull sow market in Ontario. This resulted in minimal movement of cull animals moving south. **It is important to note that all cases are pursuing elimination working with their veterinarians.**

CWSHIN (Western Provinces)

Dr. Jette Christensen provided an update on PED in Manitoba. At the end of Q2, only 3 finishing operations in the high-risk area remained positive. Two finishers still had infected status and the other finisher was reported to be in transitional status for PED.

RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that Quebec only has one remaining site left that was positive for both PED and PDCoV initially and now remains positive for PDCoV only. In March 2023, this site attempted to eradicate both PED and PDCoV through a depopulation and repopulation of animals. This site was able to eradicate PED but was not successful with eradication of PDCoV. This is a good example on the importance of testing for both pathogens when going through and eradication process.

Sapovirus

CWSHIN (Western Provinces)

Dr. Jette Christensen reported that Sapovirus has been a topic of discussion with CWSHIN now for three quarters. Veterinary practitioners have been encouraged to send in clinical samples to the Prairie Diagnostic Services (PDS) laboratory in Saskatchewan to assist with test development and validation. CWSHIN has also encouraged veterinary practitioners to apply for an emergency vaccine for Sapovirus to the Canadian Food Inspection Agency (CFIA) every time they have a diagnosed case of Sapovirus. Dr. Yanyun Huang from PDS laboratory reported that they now have a test available for Sapovirus. They have been working with Iowa State Diagnostic Lab to get this test in place. To date, samples from at least 7 sites had been tested and all were positive for Sapovirus. It is important to note that all samples were taken from clinically affected pigs that presented with diarrhea. Thus, these results do not represent prevalence of Sapovirus in Canada.

Dr. Wendy Wilkins reported that the provincial ministry of agriculture in Saskatchewan is also working on compiling information on the associated impacts that Sapovirus is having within the province.

Dr. Judy Hodge from Hylife provided an overview of a case of Sapovirus that presented in a 3000 head farrow-to-wean operation. Scours initially exploded in this herd and were reported due to PED suspicion. It was evident upon further veterinary examination that this wasn't a case of PED, but rather the cause of disease was determined to be Rotavirus and

Sapovirus combined. This herd has always struggled with heating this barn effectively. In this case as well, it was determined that the farm had recently switched from a municipal water source to use of pond water. It is unknown the significance, if any that these two factors played in the presentation of clinical disease in this case.

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.

Blister Awareness- Seneca Valley Virus (SVV)

CWSHIN (Western Provinces)

Dr. Jette Christensen mentioned that enhanced surveillance with environmental testing and clinical inspection was in place at assembly yards in Manitoba. With this surveillance it should be expected that a few cases showing blisters will be traced back to herds.

Dr. Wendy Wilkins from the Ministry of Agriculture in Saskatchewan, reported on a case that occurred on June 8, 2023, where a few lots of sows were found to have blisters upon arrival to an assembly yard in western Canada. Approximately 20% of sows in each lot were found to have blisters. The CFIA was notified and tracebacks were completed back to the two herds of origin. The one herd of origin had approximately 5% of sows showing clinical signs of blisters and the other herd of origin had approximately 40% of sows showing clinical signs of blisters. The CFIA initially quarantined both farms in order to complete their disease investigation. Both farms were found to be negative for all known swine vesicular diseases and were also negative for Seneca Valley Virus (SVV). Further diagnostics were completed at the PDS laboratory in Saskatchewan and Dr. Yanyun Huang reported that tissue samples and swabs were submitted from the blisters and the lesions seen were compatible with a burn (heat/frost/chemical). However, the cause of these burns and blisters remains a mystery.

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).

MEET YOUR CSHIN Q2 NETWORK TEAM

Quebec RAIZO Representation

Dr. Claudia Gagné-Fortin
Dr. Laurie Pfeiderer

Western Provinces CWSHIN Representation

Dr. Jette Christensen
Dr. Susan Detmer
Dr. Judy Hodge
Dr. Yanyun Huang
Dr. Wendy Wilkins

Ontario OAHN Representation

Dr. George Charbonneau
Dr. Christine Pelland
Dr. Kevin Vilaca (Guest Speaker)

Maritimes Representation

Dr. Dan Hurnik

Canadian Pork Council (CPC)

Gabriela Guigou

CSHIN Manager

Dr. Christa Arsenault
Christa.arsenault@outlook.com

Canadian Association of Swine Veterinarians (CASV)

Dr. Christian Klopfenstein

Canadian Food Inspection Agency (CFIA)

Dr. Andrea Osborn
Dr. Nicholas Bachand

Canadian Animal Health Surveillance System (CAHSS)

Dr. Doris Leung