



Canadian Swine Health
Intelligence Network

Réseau canadien de
surveillance de la santé porcine

CSHIN QUARTERLY PRODUCER REPORT

REPORT Q1 JAN-MAR 2020

Veterinary Survey Participation: 54 veterinarians (16 Québec, 13 Ontario and 25 Western Canada). Provincial networks also contribute laboratory data.

HIGHLIGHTS FOR SWINE PRODUCERS

COVID-19 & Animals- What is known...

Dr. Andrea Osborn provided an overview of ongoing efforts of 2 one health working groups established to look at SARS-CoV-2 (COVID-19) at the human- animal interface. Group members include public health and animal health experts from Federal, Provincial and Territorial governments, the Canadian Veterinary Medical Association and Ontario Veterinary College. The Public Health Agency of Canada (PHAC) is leading the creation of guidance documents for veterinarians. The Canadian Food Inspection Agency (CFIA) with the support from Community of Emerging and Zoonotic Diseases (CEZD) is leading the rapid risk assessment process for companion animals and livestock. The rapid risk assessment is a qualitative process that assesses both the risks of human to animal and animal to human transmission of SARS-CoV-2. This process has been challenging as assessments become out of date quickly as new information becomes available.

Companion Animals

- From experimental studies cats and ferrets can be infected with SARS-CoV-2 and appear to be able to spread it amongst their species. From positive COVID-19 households, there have been case reports of clinical and sub-clinical infections in cats, but many cats also test negative.
- From experimental studies dogs show low susceptibility to SARS-CoV-2. From COVID-19 positive households there are case reports of sub-clinical cases in dogs. However, many dogs from COVID-19 positive households also test negative.
- From experimental studies hamsters can be infected with SARS-CoV-2 and appear to be able to spread it to other hamsters. There are no case studies reported.
- Several questions need to be answered through the rapid risk assessment process including:
 - Can the animal be exposed to an infectious dose and become infected?
 - Do infected animals shed the virus?
 - Can infected animals spread virus to their own species or other species?
 - Can the infected animal be exposed to uninfected humans, and if so, can it spread infection?

Livestock Animals

- **From experimental studies, pigs have shown no susceptibility to SARS-CoV-2 to date and there are no cases reported.**
- From experimental studies poultry have shown no susceptibility to this virus and there are no cases reported.
- To date minimal experimental studies have been completed in ruminants and in horses, and there is no evidence of susceptibility and no cases reported in either species
- There are positive case reports in mink in the Netherlands showing susceptibility to this virus and initial research suggests that mink to human transfer may have occurred in one person.

Take Home Message: The prominent route of transmission of COVID-19 is human to human. Evidence to date indicates that companion animals and livestock do not play a major role in transmission of this virus.

Porcine Epidemic Diarrhea Virus (PEDV)

RAIZO (Quebec)

RAIZO reported their first case of PEDV in 2020 which was detected due to surveillance being conducted at the abattoirs. This premises was connected to 3 more premises of which 2/3 tested PEDV positive on traceback testing. The connected premises sent pigs for processing at 3 different plants. Completing the tracebacks for these cases was extensive and involved contacting more than 100 transporters that have had contact with these 2 processing plants. The potential for cross contamination to have infected other sites was large due to this, however, to date no other premises have tested positive for PEDV.

Take home message highlights the importance of processing plant surveillance and the importance of cleaning and disinfecting transport trailers.

RAIZO also provided an update that on April 29, 2020 in Q2 4 new PEDV cases were detected. No relation to the cases reported in Q1.

OAHN (Ontario)

The first quarter was a bad quarter for PEDV in Ontario. OAHN reported 18 new PEDV positive sites including 4 sow operations, 11 grower-finisher operations and 3 finishing operations in Q1. The outbreak started on Jan 18, 2020 and continued throughout the quarter.

The outbreak began with a handful of finishing operations where the clinical signs of PEDV were mild and barely noticeable. Due to this, detection was delayed and further spread of the virus occurred. The first detection led to the diagnostic screening of the other sites and further turning up positives. The sow operations affected had connections to an assembly yard and transportation in common with the infected finishing operations. Follow-up for awareness occurred with the involved transportation companies. Initial finishing sites confirmed positive are now testing negative for PEDV.

CWSHIN (Western Provinces)

Dr. Jette Christensen reported good news with PEDV in Manitoba. As of May 19, 2020, Manitoba reported 1 PEDV positive, 4 transitional and 77 presumptive negative cases.

Senecavirus A (SVA) OAHN Swine Project Findings

OAHN (Ontario)

Dr. George Charbonneau reported that that Dr. Ryan Tenbergen provided an update on the OAHN Swine Network SVA project findings:

- Maternal antibodies in due to be weaned pigs gradually rose until about 6 weeks following the initial outbreak. There was a decline at 8 weeks and then the levels rose to 14 weeks.
- The number of pigs testing positive for SVA maternal antibodies at weaning was very variable throughout the entire testing period. The sample size was 20 pigs per week. There were approximately 35 to 100 % positive in any given week. It would have been interesting to have tested some of the serum with SVA PCR.
- Gilts took about 11 days after exposure to feedback to seroconvert.

- Oral fluids testing in the nursery was performed on 12 ropes per 2000 pigs. It was anticipated that the number of positives might have been higher. Perhaps 12 ropes per barn was not quite sensitive enough to pick up on all of the populations that were truly virus positive. The first group was negative at 7 weeks post outbreak but then there were positives up to 10 weeks post outbreak in other groups.
- Similar testing with 12 ropes per barn was done post entry to finisher and the results of that testing was also variable. Groups of pigs intermittently tested positive up to 15 weeks after the outbreak but all populations were negative after 15 weeks.
- **There were some batches that tested positive on entry to the nursery, negative at the end of nursery and for some unknown reason tested positive as soon as 1-week post entry to the finisher. It has been speculated that stress associated with shipping may cause another period of viral shedding and this has been seen in sows shipped to market.**
- From July 5 to September 9 all finishers were tested before they started to market pigs. There was a visual inspection to confirm that there were no vesicular lesions. All barns were negative for SVA based on negative oral fluids prior to shipping.
- Farrowing rooms started to test negative for SVA virus at 16 weeks post outbreak.
- **This SVA isolate did not appear to be closely related to other Canadian strains (CFIA) and did not appear to be related to viruses known through databases.**
- Final testing of the sow barns was completed in April which was 15 to 17 weeks after gilts were entered. All of those blood tests were negative.
- Boar semen was not tested because the “in barn” boars were not trained for on farm semen collection.

Influenza A in Swine (IAV-S)

CWSHIN (Western Provinces)

Dr. Susan Detmer provided an overview on some of the trends that she has seen lately in the IAV-S tracking that she completes. She has been doing IAV-S surveillance in western Canada since 2013 and from Oct 1, 2019-March 31, 2020 she received the highest number of samples and submission to date. Even surpassing 2014 when there was a resurgence of pandemic H1N1 in humans and a significant spill over into pigs. Since April 1, 2020 there has been a steep decline in submissions and she suspects that this is both due to COVID-19 lockdowns and the weather improving (normal seasonal trend).

RAIZO (Quebec)

In Quebec 44% of responding practitioners to the vet clinical impression survey reported seeing an increase in Influenza A activity in Q1. Influenza A is one of the biggest swine health issues in Quebec. One practitioner reported a few cases where they had seen suspicious clinical signs where they thought that IAV-S was the cause, but they were unable to isolate the virus and all other respiratory diseases were excluded. Dr. Claudia Gagné-Fortin reported that the different labs received 142 positive IAV isolates in Q1. They were able to sub-type 99 of these isolates and 13 were sub-type H1N2. This is a higher level of sub-type H1N2 than Quebec is used to seeing. In 2019 Q4 they saw only 4 sub-type H1N2 and in the three previous quarters they saw none. The lab also made note that sub-type H3N2 shrunk to very low numbers with only 16 detected in Q1 versus 39 detected in 2019 Q4.

Swine practitioner Dr. Jean-François Doyon reported that in Q1 H1N2 appeared to be more severe in clinical presentation and persisted longer than normal (2-3wks vs. 3-4 weeks).

OAHN (Ontario)

Influenza A has continued to be a common disease reported by vet practitioners in Ontario. Sub-type H1N1 made up 44% of the cases and was evenly split between pandemic vs. normal H1N1. Sub-type H3N2 made up 35% of the isolates and H1N2 21%. **Ontario saw a similar trend to match with Quebec in that H1N2 sub-types isolated in Q4 of 2019 were low and were back up to 11 isolates in Q1 of 2020 which is considered to be a consistent level.**

Maritimes

Dr. Dan Hurnik reported that the Maritimes does not see a lot of Influenza A activity.

Porcine Reproductive and Respiratory Syndrome (PRRS) virus

RAIZO (Quebec)

Quebec reported that Q1 was a bad quarter for PRRS with 69 cases detected in necropsy at the lab. Normal levels are around 50 cases per quarter. Nursery and finisher operations were the type of operations mainly affected. This increased trend has continued since the fall of 2019. So far in Q2, PRRS detections seem to be normalizing in Quebec.

OAHN (Ontario)

Ontario also saw an increase in PRRS cases in Q1 with 129 samples submitted for diagnostic confirmation. In comparison in Q1 of 2019 only 87 samples were submitted. Q1 has proven to be busy at the lab and also busy for practitioners due to PRRS.

This information is a professional communication for swine producers. The information was obtained from a survey of the clinical impressions of participating practising veterinarians with input from other swine health professionals. 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 jointly by the Canadian Association of Swine Veterinarians (CASV) and Canadian Pork Council (CPC).

MEET YOUR CSHIN Q1 NETWORK TEAM

CSHIN Manager

Dr. Christa Arsenault

Christa.Arsenault@outlook.com

Quebec RAIZO Representation

Dr. Claudia Gagné-Fortin

Dr. Edisleidy Rodriguez

Dr. Jean-Francois Doyon

Western Provinces CWSHIN Representation

Dr. Jette Christensen

Dr. Susan Detmer

Dr. Melissa Desrochers

Dr. Yanyun Huang

Ontario OAHN Representation

Dr. George Charbonneau

Dr. Christine Pelland

Dr. Jim Fairles

Maritimes Representation

Dr. Dan Hurnik

Dr. Ryan Tenbergen

Canadian Pork Council (CPC)

Gabriela Guigou

Dr. Egan Brockhoff

Canadian Association of Swine Veterinarians (CASV)

Dr. Christian Klopfenstein

Canadian Food Inspection Agency (CFIA)

Dr. Sonja Laurendeau

Dr. Andrea Osborn

Canadian Animal Health Surveillance System (CAHSS)

Dr. Theresa Burns