



CanSpot ASF Surveillance Q1 Update

The regional swine surveillance network leads, Dr. Claudia Gagné-Fortin (RAIZO), Dr. Jette Christensen (CWSHIN), Dr. Dan Hurnik (Maritimes) and Dr. Tim Pasma (OAHN) provided an update on the CanSpot ASF surveillance pilot project.

Maritimes	Number of eligible cases / Nombre de cas admissibles	Number of negative cases / Nombre de cas négatifs	Number of positive cases / Nombre de cas positifs
2021 Quarter 1 (Jan 1 to Mar 31) T1 (1 ^{er} janvier - 31 mars)	1	1	0
Cumulative / Cumulatif	7	5	0
RAIZO (Quebec)	Number of eligible cases / Nombre de cas admissibles	Number of negative cases / Nombre de cas négatifs	Number of positive cases / Nombre de cas positifs
2021 Quarter 1 (Jan 1 to Mar 31) T1 (1 ^{er} janvier - 31 mars)	134	28	0
Cumulative / Cumulatif	319	51	0
OAHN (Ontario)	Number of eligible cases / Nombre de cas admissibles	Number of negative cases / Nombre de cas négatifs	Number of positive cases / Nombre de cas positifs
2021 Quarter 1 (Jan 1 to Mar 31) T1 (1 ^{er} janvier - 31 mars)	64	15	0
Cumulative / Cumulatif	82	23	0
CWSHIN (Western Provinces)	Number of eligible cases / Nombre de cas admissibles	Number of negative cases / Nombre de cas négatifs	Number of positive cases / Nombre de cas positifs
2021 Quarter 1 (Jan 1 to Mar 31) T1 (1 ^{er} janvier - 31 mars)	41	45	0
Cumulative / Cumulatif	131	90	0

Disclaimer: The number of eligible cases are estimated differently at the participating laboratory level and the methodology differs amongst the reporting networks. CanSpotASF is a voluntary pilot project.

Avertissement: Le nombre de cas admissibles est estimé différemment par les laboratoires participant et la méthodologie diffère selon les réseaux qui rapportent l'information. CanaVeillePPA est un projet pilote à participation volontaire.

CanSpot ASF Surveillance Q1 Update Continued...

It is important to note that **all testing conducted to date has yielded negative ASF results**. Not all cases deemed to be eligible can be tested for ASF due to a multitude of reasons including but not limited to; tissues submitted not approved by the CFIA for ASF testing, samples submitted not viable and vet or producer consent not given.

It is important to continue to communicate the importance of Canada's ability to increase enhanced passive surveillance for ASF. **We have asked veterinarians to ensure that their clients are aware if samples are to be included in CanSpotASF. This pilot project is a positive step in granting provincial labs the ability to perform ASF testing in low-risk cases. It is very important that veterinarians and producers support this initiative.**

Streptococcus equi zooepidemicus (Strep. Zoo)- Research & Review Update

Dr. Matheus Costa from the Western College of Veterinary Medicine at the University of Saskatchewan provided a research and review update for the CSHIN network on *Streptococcus equi zooepidemicus (Strep. zoo)*. Dr. Costa began with a slide of some pathological swine lesions and asked the CSHIN team what their list of differential diagnosis would be?

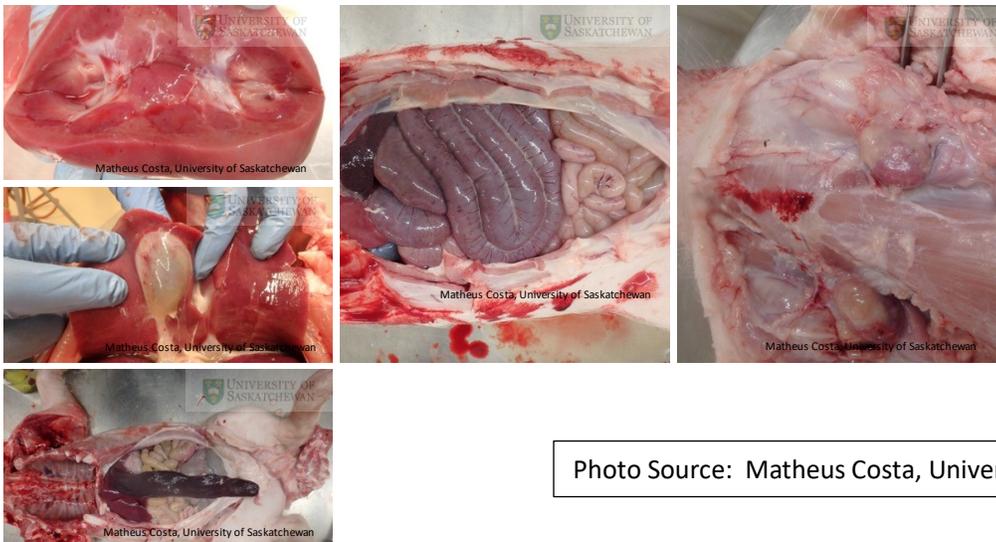


Photo Source: Matheus Costa, University of Saskatchewan

All the lesions above would support a differential diagnosis of African Swine Fever virus (ASF), Classical Swine Fever (CSF) virus or *Strep. zoo*. **Take home message: When *Strep. zoo* lesions are seen this should trigger ASF and CSF confirmatory negative testing.**

Strep. zoo is a normal part of the microbiota in multiple species. It can be isolated from the upper respiratory tract (including the nose and throat) and through the reproductive tract (including the vaginal mucosa). *Strep. zoo* can cause rare zoonotic infections in humans and has been associated with a few foodborne illness cases. When detected in humans it is often associated with immunosuppressed patients.

Before 2019 there had been no reports of clinical disease in pigs in North America. *Strep. zoo* has been considered endemic in China since 1977. *Strep. zoo* in pigs is identified through whole genome sequencing and is different from the *Strep. zoo* detected in other species, but 99.7% similar to the *Strep. zoo* isolated that originated in pigs in China in 1977 known as sequence type 194 (ST 194). In Canada, *Strep. zoo* ST 194 has been identified in a sow operation in Manitoba in 2019 and in a sow herd in Ontario in 2020. The Manitoba cases saw extreme sow mortality rates, up to 40% mortality seen in sows and

gilts. The Ontario case reported lower mortality rates in sows, but the herd vet has still referred to this outbreak as “devastating” for this producer. At the same time the Manitoba sow herd was affected, the USDA reported that a sow processing plant in Tennessee had experienced an outbreak of 40% sow mortalities in lairage. Subsequently, it was learned that there was a connection between the infected Manitoba herd and the processing plant in the U.S.A. The U.S.A also reported a case of *Strep. zoo* in pigs in 2019 in Indiana, Ohio and Pennsylvania. Most recently, another case was report of *Strep. zoo* ST 194 in Indiana in January of 2021.

There is a lot of unknowns with regards to *Strep. zoo* ST 194 in pigs. More research is needed to determine the following: What is required for pathogen adherence? How does this pathogen invade the host? How can it spread so quickly? How can it escape the immune response? Why is there no cross-protection between different strains? Can we develop a way to prevent and mitigate disease? Dr. Costa is working on research that is trying to answer some of these questions. So far, his research has found preliminary conclusions that all pigs included in his research trials exhibited similar lesions in the kidneys, spleen and lymph nodes. The incubation period appears to be very short <8 hours. Clinical signs include a fever, huddling, decreased appetite and reluctance to move. All pigs that were inoculated as part of his research trial were positive for *Strep. zoo* on culture at the time of euthanasia. **Take home message: Dr. Costa also mentioned the likelihood of subclinical carriers. There were pigs that were included in his research trial that didn't develop severe disease and only exhibited mild clinical signs.**

The CSHIN team would like to remind producers to **be on the lookout for sudden deaths in breeding stock, lethargy, fever, reluctance to move and decreased appetite. To avoid border disruptions, it is important that if you are seeing clinical signs consistent with a *Strep. zoo* outbreak that you do not to ship cull sows as all go south of the border.** As mentioned above *Strep. zoo* does have the potential to infect humans. In all the cases mentioned in this report there has been no evidence of human infection. Although the risk of zoonotic infection is quite low there are rare cases where this has occurred. Appropriate precautions should be taken to prevent transmission to humans.

Dr. Glen Duizer reminded the CSHIN team that mortality should be expected to increase when this pathogen is detected in high stress circumstances such as at assembly yards and in processing facilities due to mixing of pigs with different health status. He stressed the importance of preventing the spread of this pathogen to this premises.

Influenza A (IAV)

CWSHIN (Western Provinces)

Dr. Glen Duizer from CWSHIN reported that the western provinces saw 2 cases of Influenza A in swine that had transmission to people in Q1. One case was H1N1v and the other was H1N2v (both had initial sequences of H1 of Alpha3 viruses from MB area). Neither case was associated with severe clinical signs. The H1N1v case involved direct contact with pigs. The H1N2v case did not have direct contact but a family member did have direct contact with a swine herd that has endemic flu. Additional testing has been conducted on herds linked to the cases. Several Influenza A positive samples have been identified and full genome sequencing is underway for both viruses. Both cases were identified due to increased surveillance due to compatible clinical sign for COVID-19. In Manitoba, if humans exhibiting clinical signs tests come back COVID-19 negative they are automatically sent for Influenza A testing.

RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that the main sub-types of Influenza A reported in swine in Quebec are H3N2 and H1N2. Quebec has been seeing an increase in H1N2 cases with the highest level of detections being report during this quarter. In May, Quebec has entered a partnership with the National Center for Foreign Animal Disease (NCFAD) for isolating and sequencing positive IAV samples. The goal is to process 200 PCR positive samples per year from Quebec. The hope is that the information generated will be used with decision making on autogenous or targeted vaccines such as *Sequrity RT*.

OAHN (Ontario)

Dr. George Charbonneau reported that H1N2 continues to be the main sub-type of Influenza A viruses isolated in Ontario and has become the dominant IAV, followed by the H3N2 sub-type.

CSHIN Manager Update

The CSHIN team is excited to have recently launched our website! If you haven't already done so please visit our website through this link: [CSHIN website](#). I am excited to share that 150 people downloaded the Q4 reports from the website and we had 877 visits to our website in March alone when the Q4 reports were posted! From these statistics we know that people are interested in the information that we are reporting!

Since Q3 2020, the CSHIN veterinarian and producer/ swine industry reports have been housed on this website and are no longer disseminated in pdf format. The producer/swine industry reports will be posted under the public domain of this website and on the Canadian Pork Council website.

I would also like to announce that CSHIN is now being funded through the Canadian Animal Health Surveillance System (CAHSS), Canadian Pork Council (CPC) and through the Canadian Association of Swine Veterinarians (CASV). Our overall budget has not changed, but we now have three funding organizations.

Christa Arsenault DVM, CSHIN Manager

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. Martine Denicourt

Dr. Isabelle St-Pierre

Dr. Marie-Eve Lambert

Ontario OAHN Representation

Dr. George Charbonneau

Dr. Christine Pelland

Dr. Jim Fairles

Maritimes Representation

Dr. Dan Hurnik

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

Dr. Rajiv Arora

Western Provinces CWSHIN Representation

Dr. Jette Christensen

Dr. Glen Duizer

Dr. Susan Detmer

Dr. Yanyun Huang

Dr. Matheus de Oliveira Costa

Canadian Animal Health Surveillance System (CAHSS)

Dr. Theresa Burns