



Canadian Swine Health
Intelligence Network

Réseau canadien de
surveillance de la santé porcine

CSHIN QUARTERLY PRODUCER REPORT

REPORT Q1 JAN-MAR 2023

HIGHLIGHTS FOR SWINE PRODUCERS

CEZD Disease Signals of Interest Q1

Dr. Andrea Osborn provided a review of disease signals that presented to the Community of Emerging and Zoonotic Disease (CEZD) over the past quarter.

African Swine Fever (ASF)- Global Case Distribution

- During Q1 there were a large amount of ASF events >2148 and in Q2 thus far there are 472 events reported to the World Organization of Animal Health (WOAH) ([source Empress i FAO website](#)).
- On March 15, 2023 media reported that “[China’s pig farms battle new surge in ASF](#)” after the Chinese New Year. It is interesting to note that the last report of ASF by China to the WOAH was in January 2021.
- In February of Q1, Indonesia reported a detection of ASF that was located very close to Australia. Case reporting by Indonesia to WOAH has also been sporadic and it is suspect that this may be due to this countries response to a current outbreak of Food and Mouth Disease (FMD).
- The Dominican Republic has announced that they are shifting from ASF eradication efforts to managing the disease. New regulations will require testing every 21 days if there are >25 pigs on a farm, mandatory reporting of suspicion of disease and prohibition on restocking pigs at positive sites. There has been no communication from either the Dominican Republic or from Haiti on acquiring and using vaccination to control the spread of disease.
- Italy also saw a very big geographical jump in ASF cases being reported in late April early May in the southern part of this country. Cases had only been detected in the northern and central part of this country until this quarter.



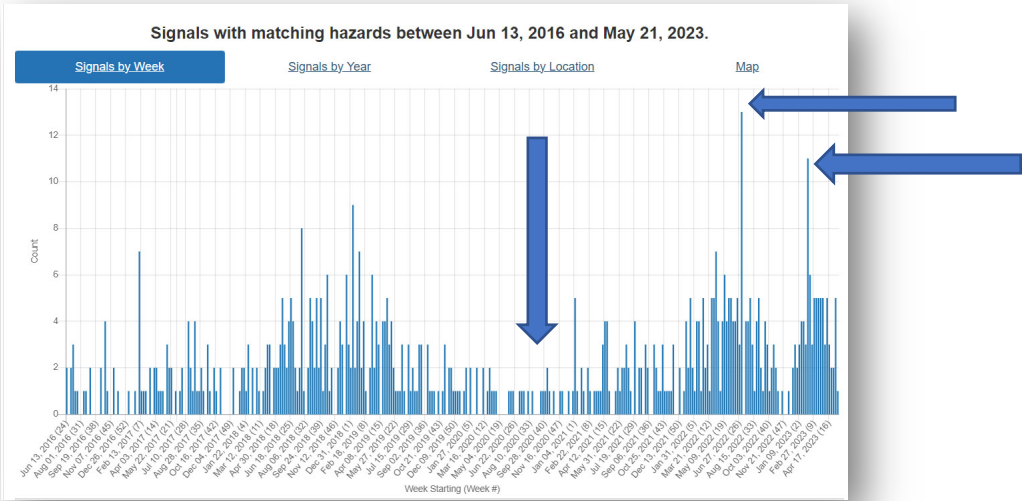
Map 1: Demonstrates geographical jump in ASF detections in Italy. Source: Empress i

CEZD Disease Signals of Interest in Q1 Continued...

- Foot and Mouth Disease (FMD) has spread into the Middle East and Western Asia.
- The serotype SAT-2 seems to be more aggressive than the serotypes normally present in this region.
- Russia has produced 3.5 M doses of vaccine containing strain SAT-2 and released a total of 2.5M doses of vaccine to countries of the Persian Gulf.
- EU FMD vaccine bank released SAT-2 monovalent vaccines to Turkiye. Vaccination strategies have been strategically placed in high-risk areas next to Armenia and Iraq and in Thrace to protect Balkan countries. Iran has a large susceptible population (5.4M cattle and 58.2M small ruminants) so is at risk of disease introduction and spread.
- In May 2023 FMD was reported to reoccur in Korea. This is the first time in four years, as they were about to declare disease freedom. Serotype is not yet known. A total of 6 cases has been detected to date.



Map 2: Stars (red and purple) demonstrate border locations surrounding Turkiye where FMD vaccinations has been concentrated. Source: Empress i



Graph 1: This graph demonstrates FMD signals over time. Points to highlight is the lack of signals during the pandemic, the spike seen during the summer of last year due to detections in Indonesia and the most recent spike due to SAT-2 in the middle east.

Streptococcus Zooepidemicus (Strep. Zoo) Alberta Case Update

CWSHIN (Western Provinces)

Dr. Frank Marshall provided an update on the case of *Strep. zoo* that was reported in a sow herd in Alberta in 2022 Q3 and Q4. This was a 5600-sow unit that initially saw 300 sows die acutely in late 2022. **Clinical signs** included sows off feed, severe depression, severe polyserositis and death within 12 hours of sows going off feed. **Post-mortems** revealed pulmonary edema, froth filled airways, stomachs half full, enlarged kidneys and a dramatically large splenomegaly with fibrin tags over focal infarcted-necrotic areas of the spleen. The herd was placed on antibiotics (Pulmotil) until clinical signs resolved. After the clinical signs were non-existent, the antibiotics were withdrawn. Unfortunately, in February 2023, a rebreak occurred and this herd lost another 400 sows due to acute mortality. Interestingly, 4% of the sows that were involved in the original outbreak were involved again in this second outbreak of disease. A 1.2M project was initiated by Dr. Matheus de Oliveira Costa and determined that this strain was derived initially from humans and was directly related to an Asia human strain cluster. The staff on this farm never changed throughout these two outbreaks. A downtime of seven days was required for all staff after any international travel. This project emphasised the importance of wearing PPE for people working directly with pigs. The project goal will be to generate a vaccine bank that would be available to use in pigs if any future outbreaks occur. This strain in the field would only cause acute death in breeding aged swine, but experimentally it was found to affect all different ages of pigs and was dose dependent. An outbreak with this pathogen in a genetic company would be devastating.

It is important to note that *Strep. zoo* mimics ASF or CSF clinically and that lab confirmation is required to determine the cause of disease. **The lesions seen in the spleen are indistinguishable from ASF and Classical Swine Fever (CSF) on the list of differentials.** If a good response to antibiotics is seen then this makes a bacteriological cause more likely than a viral cause of disease, but if not then CFIA should be contacted for FAD suspicion.

Sapovirus

CWSHIN (Western Provinces)

Dr. Tony Nikkel reviewed a case that presented with neonatal diarrhea in young piglets that looked clinically like Rotavirus. All piglets tested negative for Rotavirus on PCR and had a low CT level indicating positivity for Sapovirus. The treatment of choice was the same regime that is used to treat Rotavirus cases. Dr. Nikkel mentioned that diagnosis of this pathogen was difficult due to limited PCR testing availability. IHC was also supportive of samples being positive for Sapovirus.

Dr. Kurt Preugschas also provided an overview of a more recent case that presented with persistent piglet diarrhea and CT values are supportive of the causative agent being Sapovirus.

The treatment of choice in both herds has been feedback and this has helped a lot with decreasing the severity of clinical signs and for control of disease spread.

OAHN (Ontario)

Dr. George Charbonneau reported that in 2023 Q1, the Animal Health Laboratory (AHL) in Guelph, Ontario reported two cases of Sapovirus in nursery aged pigs that presented with diarrhea and atrophic enteritis. Testing was confirmed with IHC. One veterinary practitioner flagged this as a concern on the OAHN Q4 clinical impression survey in Q1 as well. In Ontario suspect Sapovirus samples are sent to Iowa State University laboratory for PCR and IHC testing. The AHL is working on having these tests in place in house within a few months.

There is no commercially licensed vaccine available to treat Sapovirus in North America. Autogenous vaccinations are a valuable disease prevention measure. These vaccines are being used readily in the U.S.A where multiple viruses and bacteria

strains isolated from an individual farm can be added to a single vaccine. The mixing of bacterial and viral agents in a single autogenous vaccine is not allowed in Canada and the number of viruses that can be included in one autogenous vaccine is limited. With the transfer to loose-sow housing, producers are requesting that the total number of vaccines given is limited to prevent health and safety concerns for workers that are tasked with vaccinating the same animals' multiple times. Also, in Canada the approval times to add new isolated viruses like Sapovirus into an already used autogenous vaccine is slow and often will not help in an outbreak case situation.

Dr. Glen Duizer mentioned that due to the fact that Sapovirus is a relatively new and emerging pathogen, laboratories were not required to report this pathogen provincially. Provinces should look into ensuring that they are kept up to date on detections moving forward.

Take Home Messages: Currently diagnostic testing for Sapovirus is limited in Canada. All sampled need to be sent to the U.S.A for confirmatory diagnostics. Several labs within Canada are currently working on adding this test to in-house testing regimes. Due to current regulations and time delays associated with the production of autogenous vaccines in Canada, these vaccines cannot be used to help in an outbreak scenario.

Swine Influenza Regional Vaccine- Quebec Update

RAIZO (Quebec)

Dr. Christian Klopfenstein provided an update that discussions with the CFIA on the development of a swine Influenza regional vaccine are going well. This is a step-by-step process. Approvals for a regional vaccine will allow for Quebec swine producers to have the choice to use the same vaccine to prevent circulating Influenza strains. Currently there is a need to get more sequences from positive samples submitted to labs and this has been challenging in Quebec due to the fact that most samples submitted are oral fluids which makes sequencing more difficult.

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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