



Compartmentalization and Zoning Tools- Canada needs both

Dr. Egan Brockhoff explained to the CSHIN team how **compartmentalization and zoning are complementary tools** and explained why **in the case of ASF detection in Canada we will need both**.

| ZONING/REGIONALISATION | COMPARTMENTALISATION | |
|---|---|--|
| PROS AND CONS | | |
| <ul style="list-style-type: none"> ✓ Benefits to all animals (including domestic pigs and wild/feral pigs) and business operators within the disease-free zone | <ul style="list-style-type: none"> ✗ Benefits only to the animal sub-population and business operator of the compartment | General considerations |
| <ul style="list-style-type: none"> ✗ Recognised health status of all the animals in the zone would be jeopardised by the occurrence of disease in any animal within the zone | <ul style="list-style-type: none"> ✓ Recognised health status of an animal sub-population within a compartment would not be jeopardised by the occurrence of infection in nearby animal sub-population(s) within the zone/ country where the compartment is located | |
| <ul style="list-style-type: none"> ✗ Implementation of zoning affected by the complexity of epidemiological pathways and the diversity of livestock production systems | <ul style="list-style-type: none"> ✓ Allows functional separation of an animal sub-population from other animals of different or unknown health status through biosecurity, where geographical separation could not be envisaged | |
| <ul style="list-style-type: none"> ✓ Implementation of zoning policies usually requires only very limited investment from the private sector or none at all, or may otherwise be substantially covered by the private sector | <ul style="list-style-type: none"> ✗ Based on principles of robust biosecurity, a compartment requires significant investment in term of facilities, equipment, human resources, etc. from the private sector to initiate and maintain | |
| <ul style="list-style-type: none"> ✗ Restrictions on national and international trade, as well as the movement of animals and animal products, would apply to the geographical extent of the zone (Previous circumstances, in which there was no differentiation of status among herds and high-biosecurity farms, might also be affected to a certain extent) | <ul style="list-style-type: none"> ✓ National and international trade, as well as the movement of animals and animal products, can continue for compartments without interruption, regardless of geographical location | After a disease outbreak in a previously disease-free country or zone |
| <ul style="list-style-type: none"> ✗ Limits spread of the disease to within a defined infected area of the territory based on geographical boundaries, while preserving the disease-free status of the remaining territory | <ul style="list-style-type: none"> ✓ Facilitates maintenance of the health status of the animals of the animal sub-population within the compartment, based on a common biosecurity management system, and not limited by geographical location | |
| <ul style="list-style-type: none"> ✓ In case of disease outbreak in a disease-free country or zone, the establishment of a containment zone under Article 4.4.7, of the <i>Terrestrial Code</i> is a fast instrument that can be applied to recover the disease-free status of the rest of the country or zone outside the containment zone | <ul style="list-style-type: none"> ✗ In case of disease outbreak in a compartment, the disease-free status of the entire compartment would be lost, and the compartment should be re-approved and re-recognised after taking the necessary actions to regain disease-free status | |

- **Take Home Messages: Canada needs multiple and diverse market access tools to minimize border closures and market interruptions. Zoning does not cover all of the bases.** Zoning will be implemented AFTER disease is discovered, has delayed benefits, and is entirely driven by the CFIA. Compartmentalization should have immediate benefits and gives industry the freedom to take on a leadership role in market access and is driven through a private public partnership.

Streptococcus Zooepidemicus (*Strep. Zoo*) Case in Alberta

CWSHIN (Western Provinces)

Dr. Frank Marshall reported on a case of *Strep. zoo* that he had in a 5000 sow 3 site system. This system contains two 2800 head sow barns and is confirmed to be PRRS, *Mycoplasma*, Porcine Circovirus Types 2 and 3 negative. On September 23, 2022, this system saw an onset in sow mortality and saw 69 sows die within 7 days. **Clinical signs** included sows off feed, severe depression, recumbent, reluctant to move, rectal temperatures of 41.7 degrees C plus, red coloured eyes within 12 hours of sows going off feed they would die. **Postmortem** revealed pulmonary edema, froth filled airways, stomachs half full, enlarged kidneys and a dramatically large spleen. **The lesions in the spleen made Dr. Marshall have to place ASF and Classical Swine Fever (CSF) along with the sudden deaths on the list of differentials.** The good response to antibiotics made a bacteriological cause more likely than a viral cause of disease.



Photo Source: Dr. Frank Marshall

ASF test was negative and Dr. Costa at PDS laboratory confirmed that *Strep. zoo* was the diagnosis and isolated 3 strains that included ST194 and two other non-ST194 variants. The **treatments** selected were Pulmotil and Ceftiofur and dexamethasone was used in the more severe cases.

The source of this infection is still unknown. There is a gilt grower on-site that receives 250 gilts per month and a batch of new gilts was received 10 days before clinical signs began in this sow herd. This gilt grower site has continued to test negative for *Strep. zoo*. Investigations into other potential sources of infection have all come up negative.

Brachyspira hamptonii

RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that Quebec still has 3 active outbreaks of *B. hamptonii*. In Q3 Quebec reported that they saw 5 more cases in the largest involved outbreak from Q2 where 4/5 of these sites were nurseries. They also had another site turn positive that is linked with another outbreak identified in March. Currently, there is no economic impact in pigs that test positive, but do not show clinical signs of disease. Even in symptomatic cases, the economic impact is limited to none.

RAIZO reported that they are working on a passive surveillance project in the laboratory where all finishing pigs submitted for necropsy, no matter what the reason is for the submission, would be tested for *Brachyspira hamptonii*. RAZIO is also working on another project that would test trucks arriving at processing plants in Quebec for this pathogen.

Dr. Frank Marshall from CWSHIN reported that he has been able to obtain semi-control in similar cases but has never been able to successfully eliminate this pathogen. The most important aspects are ensuring ongoing monitoring and increasing the attention that is paid to the details of thoroughly cleaning and disinfecting these sites.

On the CSHIN Q2 call Dr. Egan Brockhoff commented that there are two main prevention items that he wanted to communicate as both can trigger the onset of clinical signs: 1) Ensure there is enough fibre in the diet. 2) Prevent out-of-feed episodes. Dr. Kurt Preugschas and Dr. Tony Nikkel also mentioned that feed particle size is important. Coarse particle size and changes in diets will often trigger this pathogen. Even a small amount of antibiotics in the feed or water can completely mask clinical signs. ***Brachyspira hamptonii* acts as an obstacle to decreasing antimicrobial usage and there is no commercially available preventative vaccine.**

Porcine Pestivirus

OAHN (Ontario)

Dr. Christine Pelland shared the specifics of this case. This is a farrow-to-finish flow with internal multiplication, no new gilt entrances for the last 5 years. This outbreak began with seeing only a few litters affected with congenital tremors and over a few months progressed to seeing 75% of litters affected regardless of the sow parity. It was determined that over time this herd had not been implementing the details required to ensure that gilts were acclimatized to normal pathogens within this herd. This in turn affected the passive immunity of the entire sow herd. Since the outbreak they have worked on building up immunity levels in the sows through regular feedback from the farrowing rooms to those animals in gestation. Today, only 40% of litters still are seeing congenital tremors but clinical signs are improving.

Dr. George Charbonneau reported that this is Ontario's first positive case of Porcine Pestivirus in Q3. Lesions were compatible with this diagnosis. In this case Astrovirus was also found but lesions were not consistent with this diagnosis so this pathogen's significance in this case is unknown.

RAIZO (Quebec)

Dr. Claudia Gagné-Fortin reported that 7 cases of Pestivirus have been detected in Quebec since 2018, but mostly affected parity 1 or gilt litters unlike what was seen in this Ontario case. She also reported to the CSHIN team that the St. Hyacinthe Faculty of Veterinary Medicine laboratory is able to perform the Pestivirus PCR testing.

CWSHIN (Western Provinces)

Dr. Susan Detmer reported that Saskatchewan had a confirmed positive case of Atypical Porcine Pestivirus in two piglets with lesion on June 28, 2022.

CanSpotASF Surveillance Q3 Update

CSHIN is excited to announce that as of April 2022 CanSpotASF was launched in federally inspected and licensed abattoirs across Canada. CanSpotASF has received full support from the Canadian Meat Council (CMC) and its associated membership on this initiative leading to a flawless launch of this project. In Q3 Quebec, Nova Scotia and Saskatchewan launched CanSpotASF in provincially inspected and licensed abattoirs. The main objective for CanSpotASF is to enhance early detection of this virus and therefore limit its spread if ASF is ever detected in Canada.

Abattoir CanSpotASF Testing- 2022 Quarter 3 (Jul 1 to Sept 30)

| Province/Region | Number tested in federal abattoirs | Number tested in provincial abattoirs | Number of negative cases | Number of positive cases |
|-------------------|------------------------------------|---------------------------------------|--------------------------|--------------------------|
| Maritimes | 0 | 0 | 0 | 0 |
| Quebec | 13 | 4 | 17 | 0 |
| Ontario | 4 | 0 | 4 | 0 |
| Western Provinces | 56 | 0 | 56 | 0 |

Laboratory CanSpotASF Testing- 2022 Quarter 3 (Jul 1-Sept 30) & Cumulative # of Negative Tests Completed

| Province/Region | Number of eligible cases | Number of negative cases | Number of positive cases | Cumulative number of Negative Tests Completed (since the launch of CanSpotASF in Aug 2020) |
|-------------------|--------------------------|--------------------------|--------------------------|--|
| Maritimes | 1 | 1 | 0 | 22 |
| Quebec | 54 | 26 | 0 | 219 |
| Ontario | 52 | 20 | 0 | 111 |
| Western Provinces | 23 | 25 | 0 | 317 |

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

Porcine Epidemic Diarrhea Virus (PED) / Porcine Delta Coronavirus (PDCoV)

CWSHIN (Western Provinces)

Dr. Jette Christensen, Jenelle Hamblin and Dr. Glen Duizer from CWSHIN reminded the CSHIN team that Manitoba Agriculture continues to send out a weekly report on the current PED outbreak that includes a map of the affected area with the outline of buffer zones. As of Nov 15, 2022, there were 128 total premises that have been declared infected with PED in Manitoba since the end of October of 2021. Half of these sites are now considered transitional or presumptive negative for PED.

This outbreak has now been ongoing for more than a year. Recovered pigs are now moving into finishing operations and further onto processors. **The total number of positive and active cases is declining which is good news. The outbreak now seems to be contained within the buffer areas 1, 2 and 4 in the high-risk SE area of the province.** Dr. Glen Duizer reported that farms within this high-risk area were 13x more likely to be re-infected with PED than in other areas of Manitoba.

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 Q3 NETWORK TEAM

Quebec RAIZO Representation

Dr. Claudia Gagné-Fortin
Dr. Roxann Hart
Dr. Simon Vaillancourt

Western Provinces CWSHIN Representation

Dr. Jette Christensen
Dr. Frank Marshall
Dr. Susan Detmer
Dr. Yanyun Huang
Dr. Tony Nikkel
Dr. Jessica Law
Dr. Glen Duizer
Jenelle Hamblin

Ontario OAHN Representation

Dr. George Charbonneau
Dr. Jim Fairles
Dr. Christine Pelland

Maritimes Representation

Dr. Dan Hurnik

Canadian Pork Council (CPC)

Gabriela Guigou
Dr. Egan Brockhoff

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. Rajiv Arora

Canadian Animal Health Surveillance System (CAHSS)

Dr. Doris Leung
Dr. Judy Hodge