

CWSHIN

Swine Health Surveillance

2nd quarter 2022

CWSHIN serves western swine producers, swine herd practitioners and governments to improve swine health, production, and the economic prosperity of the sector.

Our vision is to have a surveillance system imbedded in an intelligence network that monitors diseases both present and absent.

The surveillance system will be monitoring and assessing trends over time to:

- Detect new emerging swine health issues;
- Detect unusual clinical presentation of known diseases;
- Provide information about endemic diseases; and,
- For diseases absent in western Canada (such as FMD and ASF) the objective is to help provide evidence of the absence of disease to support trade.

In the intelligence network, we seek to exchange experience and knowledge on disease occurrence, treatment, control, and prevention.

<https://www.cwshin.ca/>

Producer Report

Practical Tips

- Extra care with biosecurity needs to be in place for the fall manure spreading season (increased risk of PED in MB).
- Extra care is need for vehicles returning from high traffic facilities such as slaughter plants, assembly yards and rendering (increased risk of PED in MB and Seneca Valley virus A in MB, SK, Ab and BC).
- If you suspect Rotavirus diarrhea you may want to discuss proper diagnosis, options for improved sanitation and vaccination with your herd veterinarian.
- Coccidiosis may be a new cause of diarrhea in AB. Call your herd veterinarian for a diagnosis and treatment options.
- If you have increased sow mortality, call your herd veterinarian to check if gastric ulcers or excess water intake may have contributed.
- If you see blisters or miscoloring of the skin call your herd veterinarian to rule out Seneca Valley virus (SVA), Foot and Mouth Disease (FMD) and African swine fever (ASF).

Surveillance Results

The surveillance resulted in two themes for further exploration and discussion:

- 1) Digestive syndrome
 - a) PED in Manitoba
 - b) Diarrhea
 - c) Non-infectious digestive conditions
- 2) Skin syndrome / Seneca Valley virus

On the next pages we will summarize the analysis and the discussion at the quarterly call. We include a follow up on two conditions discussed at earlier quarterly calls:

- Gastric ulcers
- Excess water intake and sow mortality.

PED in Manitoba

On 26 July 2022 (Sit Rep 79), 122 premises had been declared positive for Porcine Epidemic diarrhoea (PED) in Manitoba since October 2021.

Despite 29 new cases in Quarter 2 the number of premises that achieve transitional or presumptive negative status steadily increased.

The concern is that the risk of new cases of PED may increase in the fall months.

Practical Tips

Extra care with biosecurity needs to be in place for the fall manure spreading season.

Extra care is need for vehicles returning from high traffic facilities such as slaughter plants, assembly yards and rendering.

Porcine Epidemic Diarrhea (PED) in Manitoba

On 26 July 2022 (Sit Rep 79), the status of Porcine Epidemic diarrhoea (PED) in MB was 84 infected, 16 transitional, 21 presumptive negative and 1 full negative premises.

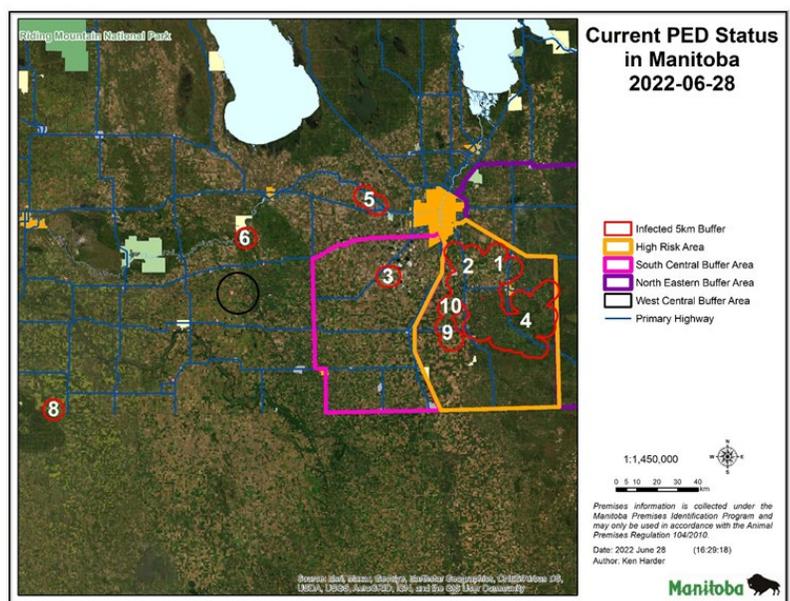
The buffer areas 1, 2, 4, 9, 10 have merged and they are located in an area previously referred to as the high-risk area (orange/yellow in map). Therefore, the analysis has been updated to reflect a high-risk area (1, 2, 4, 9, 10) and other or outside the area (3, 5, 6, 8) leaving out Buffer area 7 where the farm declared positive was later confirmed negative.

Of the 216 premises in the high-risk area 53% have been declared positive since October 2021. Similarly, 46% of premises in buffer areas outside the high-risk area have been declared positive. In Quarter 2, there were new 28 premises declared positive for PED in the high-risk area 8 sow operations, 1 farrow to finish, 2 nurseries and 17 finishers. One was detected on surveillance, 15 on clinical signs and the rest (12) had close contact with an infected premises (typically movement of recovered pigs). The majority of new cases were detected in May/June.

Outside this area 1 farrow to finish operation was declared positive on clinical signs.

The concerns are:

- There will still be many contaminated manure storages (lagunes) when the fall manure spreading season starts. Therefore, we expect the risk of new cases of PED to increase in the fall months.
- Due to the high number of premises declared positive for PED this winter high-traffic facilities such as abattoir docks pose a risk of spreading PED.



Digestive Syndrome

Diarrhea was the clinical disease that dominated the digestive syndrome and in MB, PED clearly dominated.

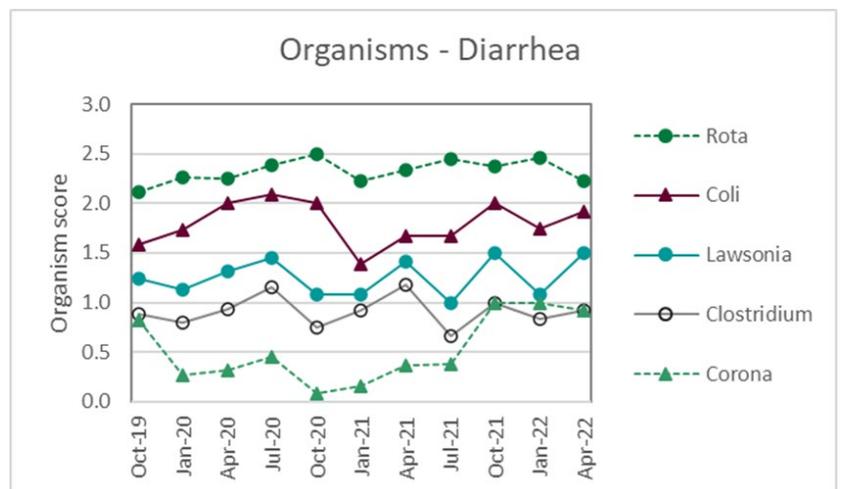
A group of non-infectious conditions (rectal prolapse, torsions/bloat and stomach ailment including gastric ulcers) was ranked high by practitioners.

Digestive Syndrome

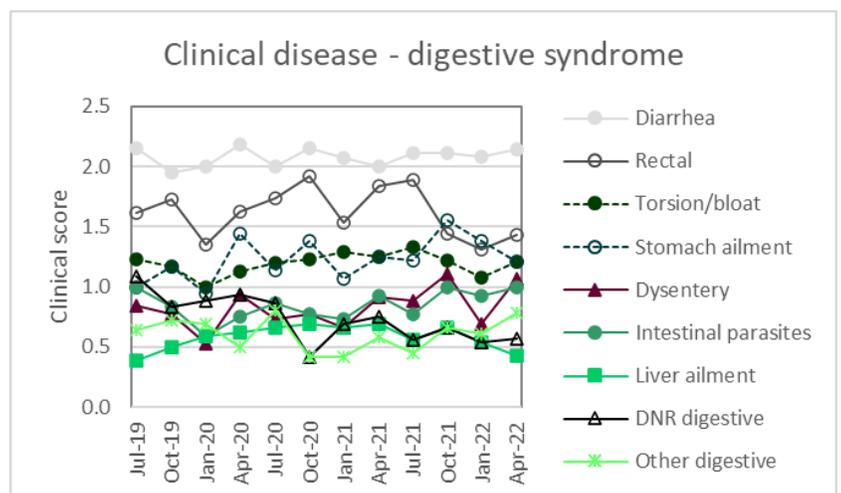
Across our data sources (surveys from practitioners, laboratory data and information on the PED outbreak in MB) we have a cohesive picture of the Digestive syndrome.

It was evident that PED in MB has dominated in the last three quarters and that other digestive conditions were stable throughout the region. The interpretation is that while there is an ongoing outbreak of PED in MB there is no evidence of abnormal levels of other digestive conditions in the region.

Exploring other digestive conditions, we found that diarrhea was the most frequent clinical disease reported by practitioners. Their impression was that Rotavirus was the most frequent cause of diarrhea followed by E Coli. Coronavirus (PED and Delta corona virus) increased in the last 3 quarters.



A set of non-infectious conditions (rectal, stomach ailment, torsion/bloat) had scores 1.25 to 1.9 indicating occasional occurrence. Over the last year, the same conditions have been brought up by practitioners as related to sow mortality.



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Digestive Syndrome by Condition

Rotavirus

Vaccination for Rotavirus has shown some promise in 3 farms.

Coccidiosis

Present in MB for years but reported as a new unusual clinical presentation in AB

Delta Coronavirus

Delta coronavirus has been detected in a sow operation in MB.

Follow up on Gastric Ulcers

It can be hard to convince feed mills to increase particle size of feed.

Practical Tips

If you suspect Rotavirus diarrhea you may want to discuss proper diagnosis, and options for improved sanitation and vaccination with your herd veterinarian.

Coccidiosis may be a new cause of diarrhea in AB. Call your herd veterinarian for a diagnosis and treatment options.

Rotavirus

From AB, practice #1 reported 3 farms with a mix of Rotavirus (ABC) present. The onset of diarrhea was 2-5 days of age. Vaccination for about 1 year showed success measured as pigs responded better to treatment and pre-weaning mortality reduced by 2-4%.

AB practice #2 reported, Rotavirus ABC on 4 farms with onset of disease the first 3-7 days after entering the nursery site. Rotavirus was mixed with E coli F4/F18 pathotype and Salmonella. The mortality was 5-8%. Sanitation had been declining over a period therefore, the focus has been on improving sanitation. Vaccination has been debated but not implemented.

From MB a system reported that they just started vaccination, but it was too early to see results.

Coccidiosis

Coccidiosis has been present in MB for years. Coccidiosis is seasonal in hotter months, in sow herds. It affects pigs > 10 days of age, and it was observed that the diagnosis may be a hit-and-miss, treatment Toltrazuril used.

From AB coccidiosis was reported as a new and unusual clinical presentation.

Delta Coronavirus

About 20 May 2022 a sow operation that ships iso-weans to the US was diagnosed with Delta corona virus. The potential source may be a wash station in the US.

The clinical presentation was milder than PED with preweaning (3-4 weeks) mortality increased to 20-30%, sows off feed and some with loose feces.

For control a modified PED protocol (without aborting sows, no euthanasia of pigs) where animals are exposed to the virus (back feed) has been applied.

Follow up on Gastric Ulcers

Gastric ulcer is a condition that contributes to sow mortality. It has been discussed several times over the last year that small particle size (350-450 microns) contributes to ulcers.

It can be hard to convince feed mills to change their feed to larger particle size. Therefore, a system collected slaughter data from culled sows and post-mortems on sow mortality. This helped convince a feed mill to increase particle size to 650+ microns.

Mashed feed may be an option if the feed system is compatible, and a good feed flow can be achieved.

Digestive Syndrome by Condition

Follow up on Excess Water Intake

Feedback from other provinces on the national CSHIN call was useful to better understand the relationship between low fiber diet and water intake.

There is a relationship between low fiber diet and excess water intake. Excess water intake can contribute to sow mortality with enlarged water filled stomachs, torsions, and bloat.

Practical Tips

If you have increased sow mortality, call your herd veterinarian to check if gastric ulcers or excess water intake may have contributed. Then have your sow feed checked.

Follow up on Excess Water Intake

The condition is sow mortality with enlarged water filled stomachs, torsion, and bloat. The condition was discussed at the last quarterly calls both CWSHIN (regional) and CSHIN (national). At the national call, it was discussed that there is a relationship between “low fiber diet” and large intake of water.

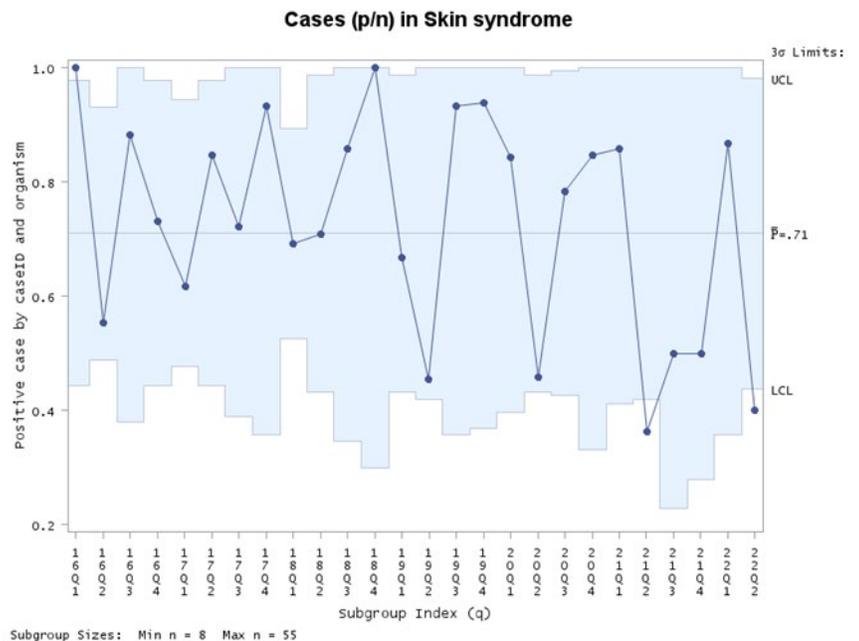
Recent experience from our region: in two 3000 sow-operations that saw 20 dead sows per week with torsion/bloat, and stomachs with enormous amounts of water, increased fiber in the diet helped reduce water intake and mortality.

Other practices observed that the condition has been seen in finishers too, and boars on restricted diet has loose feces.

Skin Syndrome and Seneca Valley Virus A(SVA)

The surveillance yielded a signal for the skin syndrome where the proportion positive (p/n) was below the lower control limit (LCL). That may be a concern for ASF surveillance because discoloring of the skin is listed as a clinical sign of ASF. Therefore, we explored this signal.

The exploration of the laboratory data showed that the drop in p/n could be explained by 8 cases negative for external parasites and 1/8 cases tested positive for SVA (Seneca Valley Virus A).



Skin Syndrome and Seneca Valley virus A (SVA)

Skin Syndrome

A signal in the skin syndrome may be a concern for ASF surveillance because miscoloring of the skin is listed as a clinical sign of African swine fever (ASF).

Therefore, we explored this signal:

One (1) SVA positive test 17 June 2022 at an assembly yard and 8 negative tests for external parasites explained the signal.

Seneca Valley virus A (SVA)

SVA at assembly yards was the reason CWSHIN developed the Blister model and included Blister questions in the CIS. The Blister model may be one piece of evidence to support freedom from Foot and Mouth Disease (FMD).

Practical Tips

If you see blisters or miscoloring of the skin call your herd veterinarian to rule out SVA, FMD and ASF.

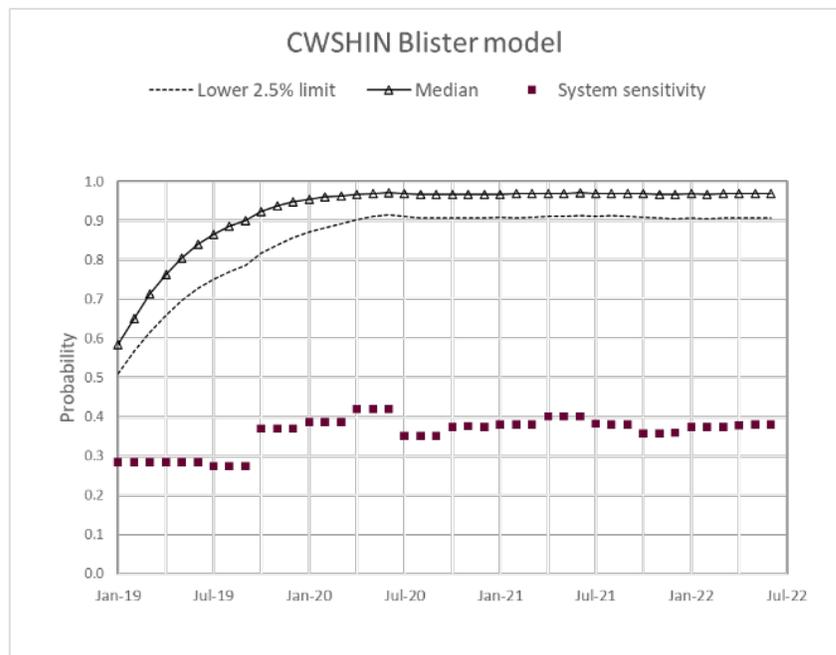
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The SVA positive was a sample from an assembly yard collected on 17 June 2022. Therefore, the signal was not relevant for ASF. However, SVA is relevant for Foot and Mouth Disease (FMD) because:

- The SVA virus cause blisters which is also a clinical sign of FMD. Therefore, SVA can interfere with FMD detection and is an unwanted disease in Canadian swine herds.
- For international trade, documentation of Canada's FMD free status is critical, and it includes surveillance
 - A statement "All clinical signs of FMD (incl vesicles) are investigated by the Canadian Food Inspection Agency (CFIA)" has been sufficient so far.
- SVA is known to be present at assembly yards in MB and Ontario.
- Detection of SVA at slaughter in the US may result in trace-back to Canadian assembly yards or herds (culled sows) and it may cause trade disruption. Therefore, SVA testing at assembly yards is critical to confirm that the presence of SVA is not new and control efforts are in place.

SVA and FMD Surveillance

SVA at assembly yards was the reason CWSHIN developed the Blister Model and included blister questions in the practitioners' surveys. The rationale was that if SVA were to spread to swine herds (outside assembly yards) trade partners may require more documentation of surveillance for FMD.



Since 2019 the Blister Model and surveys have built surveillance evidence of freedom from FMD in commercial and smallholder swine premises in the 4 western provinces. The model may be one piece in documentation of surveillance for FMD. Note that there have been no blisters attributed to SVA in the survey or in the laboratory data therefore, the results would be valid from SVA freedom too.

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Additional information on surveillance may be needed from the rest of the country and other livestock species susceptible to FMD (dairy, beef, sheep etc.).

CanSpotASF

The CanSpotASF rule out testing in the region doing well 43% of all pathology cases at VDS and PDS were tested for ASF.

	Jul-20	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22	Apr-22	Total
Pathology (caseID)	183	228	149	180	141	182	180	100	1343
Eligible disease cases	46	61	53	46	35	58	35	34	368
Cases ASF tested (caseID)	9	37	50	43	53	50	25	43	310
Cases ASF tested (caseID) in % of eligible	20%	61%	94%	93%	151%	86%	71%	126%	na
Cases ASF tested (caseID) in % of pathology cases	5%	16%	34%	24%	38%	27%	14%	43%	na
Samples ASF tested	19	84	73	63	85	73	30	43	470



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