



The WeCAHN beef network met June 14th 2024 with veterinary practitioners, producers, provincial veterinarians, diagnosticians, and researchers in attendance.

Feedlot Animal Health Surveillance Update:

- i. Background: A working group has been seeking funding to establish a feedlot health surveillance system, which is a current beef surveillance gap previously identified by the Canadian Animal Health Surveillance System (CAHSS). This group was recently successful in procuring funding for a 4 year Alberta pilot project supported by Alberta SCAP funding.
- ii. One of the first activities of this group will be to conduct a focus group meeting 17th July in Lethbridge. Currently, confirmed participants include government veterinarians, industry, producers, and practitioners. A major objective for this meeting is to identify which data are most important to collect.

H5N1 in US Dairy Cattle Update:

- Still no H5N1 beef cattle detections in the U.S. (or Canada). One thing we have learned over the spring is that similar to pigs, dairy cattle may be a potential mixing vessel for influenza viruses originating from multiple host species. A recent small study in Denmark also showed avian influenza receptors in beef respiratory tract and brain. The significance of this finding is currently unclear, given no reported beef cases and voluntary testing in the U.S. and Canada restricted to dairy cattle.

Reference: Kristensen et al., 2024. <https://www.biorxiv.org/content/10.1101/2024.05.03.592326v1.full.pdf>

COMMENT:

- Our group have tested thousands of beef deep naso-pharyngeal (DNP) swabs collected in 2021

and 2022, using PCR and metagenomics. We found lots of Influenza group D positives, and some C. However, we found no influenza group A positive samples [H5N1 viruses would fall in this group A].

- NOT finding Influenza A from 2021 & 2022 samples is quite valuable information, especially since late 2021 & 2022 coincided with the first waves of HPAI in poultry in western Canada, with lots of wild waterfowl both dying from and moving the disease. [This observation from 2021 and 2022 samples at least confirms that H5N1 has NOT been present but un-detected in western Canadian cattle since the start of the H5N1 outbreak in 2022 in poultry].

- Takeaway:** Our understanding of the virus will continue to change as it is increasingly studied. However, producers can act to mitigate their risk by employing good biosecurity practices which they may already have in place. READ MORE: <https://www.beefresearch.ca/blog/prevent-a-biosecurity-breach/>

Syndromic surveillance Respiratory system

An increase in Bovine coronavirus (BCoV) associated with respiratory disease was reported noted at PDS. This was also reflected in the practitioners' survey, which reported bovine coronavirus associated with pneumonia rated **Increasing** by one practitioner. An increase in BCoV detections was also seen in submissions to one lab. It's important to note that cattle vaccinated with the live strain of BCoV may be PCR positive for some time, since current PCR tests can't distinguish between field and vaccine strains.

QUESTION: what vaccine is being used for respiratory disease?

ANSWER: There is no specifically licensed vaccine in Canada for preventing respiratory coronavirus. However, there is one in Europe.

QUESTION: Do we know how close respiratory BCoV is genetically to intestinal BCoV?

ANSWER: in our limited data, separate respiratory and scours sequences may cluster together [suggesting the intestinal-scours and respiratory strains may have some genomic differences].

UPDATE: BOVINE CORONAVIRUS (BCoV) SEQUENCING PROJECT AT PRAIRIE DIAGNOSTIC SERVICES

- We are sequencing the BCoV gene for the spike protein, originally targeting intestinal-scours samples.
- Now we are expanding to also study respiratory samples. We are finding a variety of strains, all phylogenetically distant from the original [vaccine] strain.

In contrast with respiratory-associated detections, Bovine coronavirus detections associated with scours infections at PDS continued Stable relative to last year.

Reproductive disease

Case report: *Ureaplasma* abortion

History: roughly 6-month-gestation male bovine fetus that has complete absence of hair and measures 60 cm from crown to rump (weight = 6.36 kg). No placenta submitted.

Post-mortem Diagnoses:

- Joints (right and left hip and left stifle): Severe, chronic, destructive arthritis.
- Lungs: Pneumonia.
- Eyelid: Minimal conjunctivitis (pinkeye).
- Small intestine: Mild inflammation.

Final diagnosis: *Ureaplasma* associated abortion (PCR positive).

Takeaways: *Ureaplasma* bacteria may be found in the reproductive tract of healthy cows, but can also be associated with infertility and abortion. There is no vaccine available. WeCAHN monitors the western Canadian laboratory detections of *Ureaplasma*, and these have remained Stable over time. However, it's maybe a less familiar potential pathogen. A good writeup on *Ureaplasma* appeared in the Western Producer a couple of years ago: <https://www.producer.com/livestock/ureaplasma-may-be-overlooked-diagnosis-for-abortion/>

C3SN benchmarking of calving season performance measures

A recent publication summarized some of the benchmarking work done by the Canadian Cow-Calf Surveillance Network, or C3SN. Reference:

Waldner C, Windeyer MC, Rousseau M and Campbell J (2024) The Canadian Cow-Calf Surveillance Network – productivity and health summary 2018 to 2022.

Front. Vet. Sci. 11:1392166. doi: 10.3389/fvets.2024.1392166

Median* values for calving assistance, based on 379 western Canadian herd calving records between 2019-2022

% Females calving assisted:	Cows = 2.3%	Heifers = 12.5%
% Females with easy pull	Cows = 1.2%	Heifers = 6.7%
% Females with hard pull	Cows = 0.7%	Heifers = 3.3%
% Females with Caesarean section	Cows = 0	Heifers = 0

*Median = the midpoint of the data, with half of the observations falling above, and half below.

Note that median values of zero don't mean that there was no illness or death reported by any participants, but that at least half of the surveyed herds didn't report any.

QUESTION: relative to the above recently published benchmarking, how do you think your clients compared this year?

COMMENT: The published percentage of hard pulls especially in calves looks relatively high compared with our clients.

RESPONSE: the definition of hard pull used in the survey was use of a calf jack, which likely many producers or veterinarians might disagree with.

QUESTION: how did calving season go in your practice considering reproductive performance e.g. % of pulls?

ANSWER:

- Pretty normal.
- Calving numbers similar to usual in our area - lower heifer numbers due to continued drought . Guys with skinny cows don't often call for dystocias.

Takeaway: reassuring to hear performance was relatively normal given the drought last year. With the short interval required between calving and re-breeding to maintain an acceptable length-distribution of calving dates next year, it's tough to maintain momentum if cows/heifers are skinny and/or late.

Median* values for calf sickness and mortality from 24 h to 30 d, based on 565 western Canadian herd calving records between 2019-2022

Waldner C, Windeyer MC, Rousseau M and Campbell J (2024) The Canadian Cow-Calf Surveillance Network – productivity and health summary 2018 to 2022. *Front. Vet. Sci.* 11:1392166. doi: 10.3389/fvets.2024.1392166

% Calves dead 24h to 30d: Cows = 1.3%
Heifers = 0%

% Calves reported treated with antibiotics 24 h to 30 d Scours = 0.9%
Respiratory disease = 0.7%
Navel or joint ill = 0.0%

% Calves dead with attributed cause 24 h to 30d Scours = 0.0%
Respiratory Disease = 0.0%
Navel or joint ill = 0.0%

Median = the midpoint of the data, with half of the observations falling above, and half below.
Note that median values of zero don't mean that there was no illness or death reported by any participants, but that at least half of the surveyed herds didn't report any.

QUESTION: how did calving season go in your practice considering calf health e.g. % of mortality to 30 days?

ANSWER:

- i. Exceptional maybe due to our dry weather.
- ii. Similar to last year; maybe better since clients more interested in treating.



Meeting Takeaways

- HPAI: To date still there have been no detections of HPAI in beef cattle. Our understanding of the virus will continue to change as it is increasingly studied. However, producers can act to mitigate their risk by employing good biosecurity practices which they may already have in place.
- Bovine Coronavirus: Detections of BCoV have been reported from cases of clinical pneumonia, in the absence of other pathogens. The significance of these observations is still unclear. Currently we can't distinguish between vaccine and wild strains of BCoV on diagnostic PCR.
- Network veterinarians reported relatively normal calving season metrics in the aftermath of the 2023 drought.

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