



The WeCAHN beef network met 6th Dec. 2023 with veterinary practitioners, producers, provincial veterinarians, diagnosticians, and researchers in attendance.

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1. Overview of Dataset
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1. Overview of Dataset

Data sources in this report include:

- i. Clinical Impressions Surveys completed by network practitioners.
- ii. Data shared by western veterinary diagnostic laboratories: Manitoba Veterinary Services Diagnostic Laboratory (VSDL), Prairie Diagnostic Services (PDS), and University of Calgary College of Veterinary Medicine Diagnostic Services Unit (UCVM DSU).
- iii. Scan: Bovine surveillance reported by other sources or networks.

2. Interesting Cases

- i. **Reproductive performance problem:** 330 Cow-Calf Simmental farm that had 20% of cows open at preg checking in August. Calves mid January.

DISCUSSION: Pregnancy testing 2023

NETWORK PARTICIPANT COMMENTS ON OVERALL FINDINGS

- i. Our findings for % open cows are all over the map, ranging from 2-3% to 40% +.
- ii. Our open % across herds is a little higher this year (10-12%) than last year (8-10%) , and this is a biased group that's being sampled since they may have gotten rid of some open

- iii. cows before we started testing.
- iii. Open rates from 3-40% varying all over the place. Weaning weights up in some herd and WAY down in others (generally the ones with low preg rates too), cow body condition all over the place this year too. This year I suspect cumulative years of drought, poor water quality, poor forage quality (and in some areas, only weeds really growing) and poor protein/energy this summer causing low to no cycling over the summer. Some guys have said if they put the dry cows on feed before they sell them, within a few weeks the whole pen seems like it starts to cycle.....tells me if they get good nutrition....they start to rebound.

DIAGNOSTICS

QUESTIONS: Are diagnostics being done on these herds [as they are identified having increased % open cows]?

ANSWER1: We did more liver biopsies this year but not enough and would agree with some Cu deficiency for sure. Protein and energy seemed to be the first limiting steps for most repro issues and cows going out and dropping in BCS.

ANSWER2: It's important to note that serum trace mineral testing can be useful to identify problems such as copper deficiency, which may be linked to reproductive problems. Serum testing may be preferred by clients over more invasive/expensive options such as liver biopsies.

SURVEILLANCE

The reproductive data from C3SN for this year indicates that it's different from other years in terms of % of open cows.

ALERT: The new version of C3SN, C3/HPEN (Canadian Cow-Calf Health and Production Enhancement Network) is currently recruiting herds. There is a bonus for anyone enrolling 2 or more new herds!

What's involved when participating is to complete the annual survey. The participant then receives

Interesting Cases (continued)

production data, as well as an opportunity to participate in additional targeted "side" studies.

For more information or to enrol, please contact c3h.pen@usask.ca OR jayce.fossen@usask.ca

Summary: pregnancy rates vary across herds and practices. Some herds with unusually high open rates are being reported across the west.

Consensus is that nutrition, including energy and copper, are problems in many herds with reduced pregnancy rates. Western diagnostic laboratory data do not show any significant difference in detection of reproductive pathogens relative to previous years.

ii. Brassica toxicity in cows

- **History:** About 1 month ago this group of animals grazed oats and brassica. One cow died of interstitial pneumonia and two others were affected but recovered. Pulled off pasture. In past two weeks another group was put on pasture near this.
- On evening of Sept 15th noticed this cow was off. Morning of 16th circling. Treated with antimicrobial and anti-inflammatory.
- Down again on 18th; now off-feed as well.

- Euthanized.
- **Post-mortem:** Brain submitted to lab. Disease changes consistent with polioencephalomalacia.
- Lab: "The most common cause of polio in cattle is thiamine deficiency and other less common causes include salt toxicity/water deprivation, lead toxicity and sulfur toxicity. In this case, the history of grazing on Brassica spp. could indicate sulfur toxicity as the underlying etiology in this case. Brassica spp. plants are known to sometimes be high in sulfur content and can lead to polioencephalomalacia in cattle and small ruminants."

QUESTION: In the context of oats and brassica, does this refer to a cover crop that includes canola?

ANSWER: Likely.

QUESTION: If the popularity of this kind of grazing forage is increasing, what's the attraction? Drought tolerance? Something else?

ANSWER1: Different blends may have variable drought tolerance. The enhanced feed value of the forage is the attraction.

ANSWER2: Broadly the popularity of cover crops is increasing. The degree of problems clients could see with brassicas will vary with soil type.

Summary: While incorporation of brassicas in cover crops may offer attractive advantages, producers need to be mindful of the potential for sulfur accumulation in some circumstances.



iii. *Yersinia pseudotuberculosis* outbreak in grower cattle.

- **History:** Multiple animals dying with blood poisoning signs in conjunction with 'Salmonella like enteritis'. Multiple feedlot crew with vomiting and diarrhea. Goal is to see if *Salmonella* Dublin or other entity cultured.
- Post-mortem diagnosis: Acute and extensive diarrhea with ulceration of intestine.
- **ETIOLOGY:** *Yersinia pseudotuberculosis*.
- No *Salmonella* sp. were isolated from the small intestine, large intestine, liver or lung.

Yersinia pseudotuberculosis has been isolated from a very small number of bovine samples over the years.

QUESTION: How often if ever do you see *Yersinia* isolated from bovine clinical cases?

ANSWERS: Never.

NOTE: An outbreak of bloody diarrhea associated with *Yersinia* was reported by a network practitioner in southwestern Saskatchewan in the winter of 2022, in a pen of purebred bulls.

Discussion followed regarding challenges around protecting winter feed from wildlife, especially deer given population increase in some locations. This is important to preserve scarce feed and also given potential for deer to carry some zoonotic pathogens.



How often do you or your clients report deer contact with cattle/around feed?

ANSWERS:

- We have deer and elk in our pastures and deer routinely in our feed.....
- Central Alberta primarily mule deer.
- Depends on part of province - both mulies and white tail. Also elk and moose.
- In southern AB we see white tail and mule deer but mule deer often more common. Lately also see them in town - probably sometimes in Lethbridge near coulees.
- We get calls (SK ministry) regarding deer affected with CWD being found around feedyards.
- In our area (southern SK) it's heavy with mules destroying feed and mingling in the cattle. Multiple producers dealing with removing several dead deer daily from their silage pits. At least the elk herds nearby just destroy bale stacks and fences but aren't quite as tame.
- We have seen the problems with close contact between cattle and cervid populations in Manitoba especially the Riding Mountain area, where we saw bovine tuberculosis spill over from the cattle to cervid population and then back again. High risk areas are shared feeding spots. So we try to keep them separate. We have found guard dogs are a useful tool.
- SK has a program to support use of game farming fence to protect specific areas of beef farm, and other biosecurity upgrades.
- For more information:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/sustainable-canadian-agricultural-partnership/programs-for-farmers-and-ranchers/animal-health-and-biosecurity-program>

Summary: Bloody diarrhea in cattle may be caused by several different zoonotic pathogens as well as a range of pathogens only occurring in cattle. An accurate diagnosis is important to manage the problem properly and also reduce risks to human health.

3. Syndromic Surveillance

a) Respiratory System

One beef network practitioner reported treatment failure for pneumonia associated with BCoV, and a dairy network practitioner described three beef “problem herds” with pneumonia in pre-weaning calves, despite being well vaccinated and well managed, in which BCoV was the only potential pathogen isolated, or the only viral pathogen isolated.

PDS has a project studying enteric bovine coronavirus sequences from clinical cases. They have developed a method for sequencing the gene for the spike protein. The plan is to gather sequence information and compare this with vaccine strain sequences. So far a variety of phylogenetic clusters have been identified.

b) Reproductive Disease

Abortions or infertility were reported monthly or less, with increased open cows (no further diagnostics applied) seen more frequently than monthly by network practitioners. Non-infectious infertility was reported more than monthly, with energy or calorie deficiency the most frequently reported cause, and rated **increasing** relative to the same time period last year by one network practitioner.

UPDATE: PDS is building a sequencing panel for infectious reproductive disease of cattle. This is supported by two funders. The plan is to gather sequence information and compare this with vaccine strain sequences. So far a variety of genetic clusters have been identified for common reproductive pathogens.



c) Multisystemic Disease

The most frequently seen syndromes of multisystemic disease seen by network practitioners were septicemia and nutritional deficiencies, both reported monthly or less. Septicemia was reported associated with *Histophilus somni* by one practitioner, who rated histophilosis stable relative to the same time period last year.

Energy deficiency was the most frequently observed nutritional problem, and rated **increasing** relative to the same time period last year by one practitioner.





4. Scan

Foot and Mouth Disease outbreaks earlier in the quarter in Indonesia, and later attributable to genotype SAT 2 in the Middle East, were reported in Q3 2023.

Additionally, Bluetongue virus outbreaks continue to be reported in Europe, from Netherlands, Italy, France, Germany, and the UK. For more information: <https://promedmail.org>

Canadian livestock producers traveling over the winter need to be mindful of good biosecurity practices to avoid bringing foreign diseases home.

Podcast: Foreign Animal Disease Planning and Prevention

<https://wecahn.podbean.com/e/foreign-animal-disease-planning-and-prevention-for-cattle/>



Meeting takeaways

Pregnancy testing fall 2023: variable pregnancy rates are reported across herds and practices, with lower rates often associated with energy and/or copper deficiency where diagnostics were done.

Potential problems with brassica crop grazing, depending on soil conditions, may result in sulfur toxicity causing signs including circling, blindness or seizures. Soil and forage testing are important management tools to flag potential problems and optimize feed and forage use.

During the winter feeding period deer are not just a potential nuisance in feedstacks, but are also capable of carrying zoonotic diseases. Saskatchewan has a new program to support fencing feed yards. <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/sustainable-canadian-agricultural-partnership/programs-for-farmers-and-ranchers/animal-health-and-biosecurity-program>