Western Canadian Animal Health Network

WECAHN DAIRY NETWORK REPORT

October - December 2024

The WeCAHN Dairy Network held a quarterly videoconference meeting on January 23rd, 2025, to discuss the animal health events occurring from October to December 2024, with veterinary practitioners, diagnosticians, veterinary college faculty, researchers, and industry representatives in attendance.

Overview

Data sources in this report include:

1. Clinical Impressions Surveys completed by network practitioners.
2. Data shared by western veterinary diagnostic laboratories: Manitoba Veterinary Diagnostic Services (VDS) Laboratory, Prairie Diagnostic Services (PDS), and University of Calgary College of Veterinary Medicine Diagnostic Services Unit (UCVM DSU).
3. Scan: bovine surveillance reported by other sources or networks.

Invited presentation on antimicrobial use and resistance in dairy cattle in Canada:

Dr. Daniella Rizzo, Public Health Agency of Canada (PHAC)'s Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) Dairy Surveillance component
(short biography).

- Details in the Nov. 2024 report (CIPARS Integrated and Key Findings for 2023 and CIPARS AMU and AMR Surveillance: Dairy Cattle 2023).
- Farm-level 2023 antimicrobial use (AMU) results:
  - Decrease in the use of antimicrobials in feed and water.
  - Stable use of high-importance antimicrobials.
  - Decrease in the use of medium-importance antimicrobials.

Interesting cases

The highly pathogenic avian influenza (HPAI) of concern is influenza A virus subtype H5N1 genotype B3.13 and D1.1 in dairy cows.

USA:

- As of February 19, 2025, there were 36 new confirmed cases of HPAI in cattle in 4 states in the last 30 days. USDA's most up-to-date information can be found on their website (LINK).
- HPAI can be detected in bulk tank milk before signs of illness in the herd ("Early Detection of HPAI H5N1 Virus in Bulk Tank Milk," National Milk Producers Federation, 2024).
- "Some California Veterinarians Say Virus-Hit Dairies See More Abortions in First-Calf Heifers and Dry Cows" (Bovine Veterinarian, 2025).
  - It is not necessarily HPAI that is causing disease in these animals, but "the virus amplifies existing health and management issues."
- Fewer dairy workers, compared to poultry workers, affected by HPAI reported wearing personal protective equipment (e.g., eye protection,face mask (Garg et al., 2024)).

Canada:

- As of January 31, 2025, the Canadian Food Inspection Agency (CFIA) laboratories tested 1,944 raw (unpasteurized) milk samples at processing plants; all samples were negative (LINK).

A short history of HPAI was discussed among multiple network members:

- HPAI in dairy cattle is likely a single spillover event from wild birds (Nguyen et al., 2024 (preprint); Worobey et al., 2024 (preprint)). Since the spillover, this strain (B3.13) has been transmitted between cows and back into domestic poultry.
- Implementing biosecurity measures to prevent infected cows from entering Canada reduces the risk of HPAI in Canadian dairy herds (CFIA).
- The genotype affecting Fraser Valley poultry (genotype D1.1) differs from the genotype affecting dairy cattle in the USA.
- Multiple cats have died after eating raw food. Some cases have been linked to a turkey farm in California. (AVMA, 2025)
- There have been no HPAI-related deaths in cats in Canada.
- There is a CAHSS fact sheet with important information on HPAI in cats (LINK).

UPDATE: The Animal and Plant Health Inspection Service of the US Department of Agriculture (APHIS-USDA) confirmed the detection of a D1.1 influenza (i.e., similar to the influenza circulating in birds in North America, both wild and domestic) in dairy cattle in Nevada (LINK) and Arizona (LINK).

Case report: Ketosis outbreak

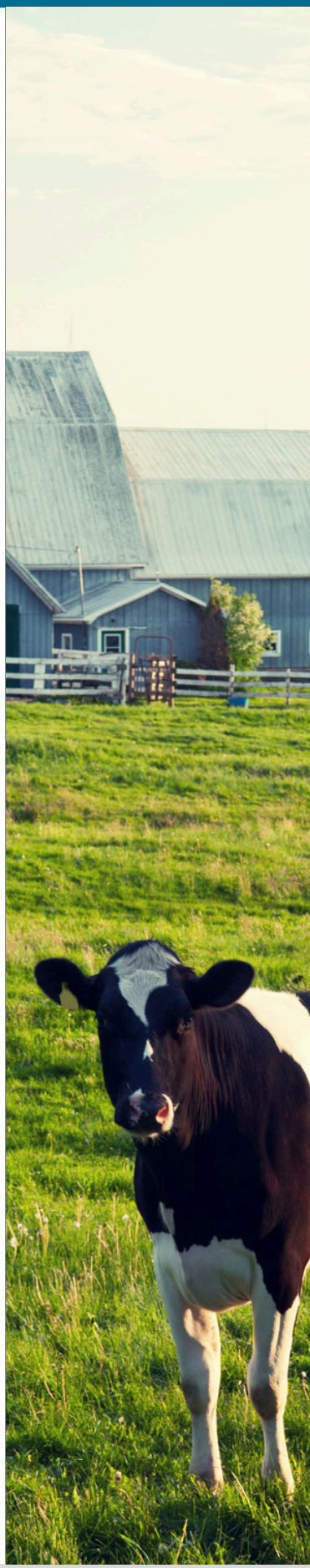
- **History:** The veterinarian was called to the farm for an apparent outbreak of ketosis in many cows.
- Most cows did not have high ketones. There was an error in using the test strips; the user believed the cows had high ketones, but the test measured blood sugar levels.
- The error occurred because the local pharmacy sold the producer glucose strips instead of ketone strips to use with a hand-held measurement device.

Case report: Monensin toxicity in a group of heifers

- **History:** In 2 pens of pre-breeding heifers (aged 9-11 months; 100 animals), there were 10 sudden deaths. A few heifers had signs of swollen hip/leg/joint with fevers of 40°C or higher. Two heifers had signs of heart failure with difficulty breathing.
- The **initial diagnosis** was backleg based on the signs and field post-mortem.
- **Final diagnosis:** Ionophore toxicity.
- The producer did a deep-dive nutrition analysis. There was a miscalculation in the feeding software of the amount of mineral mix (where monensin (Rumensin®, Elanco) is pre-mixed) to be fed to the heifers. After correction, there were only 2 cases of similar illness and no mortalities.

Escherichia coli scours (British Columbia Animal Health Centre (AHC))

- **History** of sudden onset scouring in 2-4 day old calves that were lethargic. The calves were treated with antibiotics, electrolytes and NSAIDs. Two died within 24 hours of the onset of scours and were submitted for post-mortem.
- **Bacteriology:** *E. coli* toxin typing found toxins typical of *E. coli* infection that cause watery diarrhea but do not damage the cells, as seen in this case. The *E. coli* in these calves likely produced an additional toxin not included in the toxin panel.



Syndromic surveillance

Clinical impression surveys

Important note on the clinician impression surveys:

- **Never**
- **Rarely** (1-2 times over the 3 months)
- **Commonly** (1-2 times per month)
- **Very frequently** (3+ times per month)

Clinical impression surveys for dermatological disease

Dermatological disease was reported **Rarely** (3/4) to **Commonly** (1/4).

A practitioner noted in the survey that they are dealing with mange in multiple herds despite applying pour-on once a year.

Clinical impression surveys for respiratory system disease

Respiratory disease was reported **Commonly** (2/3) to **Very frequently** (1/3).

Clinical impression surveys for digestive system disease

Digestive disease was reported **Rarely** (2/3) to **Very frequently** (1/3), compared to **Commonly** (3/3) last quarter.

Clinical impression survey for reproductive disease

Reproductive system disease was reported **Never** (1/3) to **Rarely** (1/3) to **Very frequently** (1/3).

Clinical impression survey for multisystemic and metabolic diseases

Multi-systemic disease was reported **Rarely** (1/2) to **Commonly** (1/2).

- Septicemia was reported **Rarely** (1/2) to **Commonly** (1/2).
  - *Salmonella enterica* ssp. enterica serotype Dublin was **Rarely** but **increasingly** diagnosed in pre-weaning calves (1/1).
- Un-differentiated neonatal loss was reported **Never** (1/2) to **Commonly** (1/2).

Metabolic disease was reported **Rarely** (1/3) to **Commonly** (1/3) to **Very frequently** (1/3).

- Ketosis was reported **Very frequently** (2/2).

Clinical impression surveys for mastitis

Teats and udder disease were reported **Commonly** (2/3) to **Very frequently** (1/3).

- Acute mastitis was reported **Rarely** (1/3) to **Commonly** (1/3) to **Very frequently** (1/3).
- Chronic mastitis was reported **Rarely** (1/3) to **Commonly** (1/3) to **Very frequently** (1/3).

Laboratory diagnoses

Laboratory diagnoses for digestive system disease

The number of positive tests for *Salmonella* ser. Dublin was lower this quarter than the last at Prairie Diagnostic Services (PDS; data not shown). There were fewer tests performed this quarter compared to the previous quarter. However, the percentage of positive cases divided by the total number was higher in Q4 (27%, 6/22) compared to Q3 (18%, 6/34).

There were no cultures of *Salmonella* ser. Dublin at the Veterinary Diagnostic Services (VDS) laboratory this quarter. There were two cases with isolation of *Salmonella* spp., and the reference laboratory identified one case as positive for the serogroup B (e.g., serovar Typhimurium (Cornell University)) and the other
was negative for the serogroups D1 and B (e.g. of D1, serovar Dublin).

Comment: *Salmonella enterica* ssp. enterica serovar Typhimurium monophasic variant is of concern because it can cause disease in humans, and there is an increasing prevalence of multidrug resistance characteristics (Schonfeld et al., 2021).

Laboratory diagnoses for mastitis

Common mastitis bacteria cultures were within the control limits of the control charts at PDS (data not shown). Control charts are a simple way of presenting data collected over time (e.g., increasing or decreasing detection frequencies). Additional information on control limits in control charts can be found in the report.

The number of cultures of the common mastitis bacteria was within the control limits of the control charts at VDS (data not shown).

Scan

1) Foot and Mouth Disease (FMD) was diagnosed in Germany in water buffalo (LINK and United Kingdom's preliminary outbreak assessment LINK).

- No additional cases of FMD were found in the 1 km vicinity of the first case identified, but investigations are ongoing (LINK).
- CFIA's FMD page (LINK)

3) Western Canadian Dairy Seminar from March 4 to 7, 2025, in Red Deer, AB (LINK).

4) In Alberta, a research team at the University of Calgary Veterinary Medicine (UCVM) continue surveillance of various infectious diseases using bulk tank testing.

- Samples tested for antibodies against *Salmonella* ser. Dublin was approximately 10% positive in June 2024.
- In July 2022, approximately 8% of the farms were positive for *Salmonella* ser. Dublin antibodies (Shaukat et al., 2024).

Takeaways

1. The HPAI situation in the US demonstrated cows can transmit viruses to people. To stay safe from bacteria and viruses that cows can pass to people, wear gloves and a face mask, and wash your hands and clothes after working with cows.
2. When Foot and Mouth Disease was identified in Germany it had significant impacts on trade. Please request that visitors to your farm wait one week after visiting a farm in another country.

Financial support was provided under the Sustainable Canadian Agricultural Partnership, a federal-provincial-territorial initiative.