



*The third tele-conference meeting of the Western Canadian Animal Health Network (WeCAHN) beef network was held 24<sup>th</sup> February, 2021*

**Respiratory diseases:** the most consistently diagnosed type was bronchopneumonia, in post-weaning calves and feeder cattle. Pneumonia associated with viruses (Bovine coronavirus and Bovine Respiratory Syncytial Virus) was reported increasing, relative to last year, in one location. AMR / treatment failure was reported for two common bacterial causes of pneumonia or septicemia (blood poisoning): *Mannheimia hemolytica* and *Histophilus somni*.

**Digestive diseases:** Johne’s disease in beef cows was diagnosed commonly from Oct.-Dec. 2020 in two practices.

**Reproductive diseases:** most commonly diagnosis was primary (i.e. individual) disease of the female reproductive tract (e.g. individual cow with uterine disease).

**Musculo-skeletal diseases:** diagnoses were commonly reported (e.g. arthritis, and abscesses).

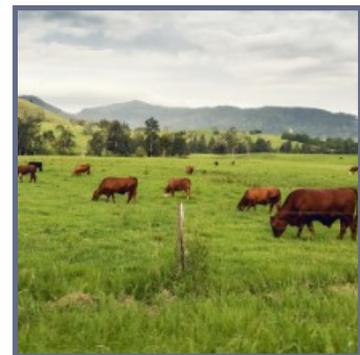
**Novel clinical presentations:** One practice reported increased coccidiosis diagnosed in all ages of cattle, sometimes during treatment.

**Laboratory updates: Prairie Diagnostic Services (PDS):** Dr Huang reported on Influenza D virus PCR detection in bovine respiratory samples at PDS, where they are seeing more success (i.e. viral detection) sampling trachea relative to lung. Prairie Diagnostic Services continues to include Influenza D detection delivered at no charge on samples for which the bovine respiratory panel is ordered.



**Provincial reports:** Manitoba reported some follow-up regarding the 2020 Anaplasmosis outbreak outside the ‘endemic’ zone. No further clinical cases have been detected with this outbreak since the previous (December) network meeting. However, another Anaplasmosis case occurring within the ‘endemic’ zone was identified, with a primary complaint of leucosis associated with Bovine Leucosis Virus (BVL).

**Canadian Cow-Calf Surveillance Network (C3SN):** Dr. Waldner reported that C3SN is currently testing the 2019 group of serum samples for BVL.



**Takeaways:**

- In some areas, Johne’s disease and BVL may be becoming more frequent diagnoses in beef herds.

## INTRODUCTION:

The third tele-conference meeting of the WeCAHN beef network was held 24<sup>th</sup> February 2021, discussing data and events occurring from October-December, in beef animal health in western Canada.

### Participants attending the meeting:

- Beef practitioners representing the four western provinces.
- Provincial veterinary epidemiologists.
- Diagnostic laboratory representatives.
- Faculty from each of the western veterinary colleges.
- Representatives from the Canadian Cow-Calf Surveillance Network (C3SN) and Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS), and Gallant Custom Laboratories.

### Data discussed:

- Beef veterinarians completed an online clinical impressions survey capturing the relative frequency of diagnosis of various clinical syndromes and associated agents, as well as new diagnoses or unusual presentations of recognized clinical syndromes.

- Laboratory data pertaining to beef submissions collected during the period October-December 2020).
- CFIA abattoir condemnations publicly available, originating from the four western provinces.

## FINDINGS:

### Practitioners' survey

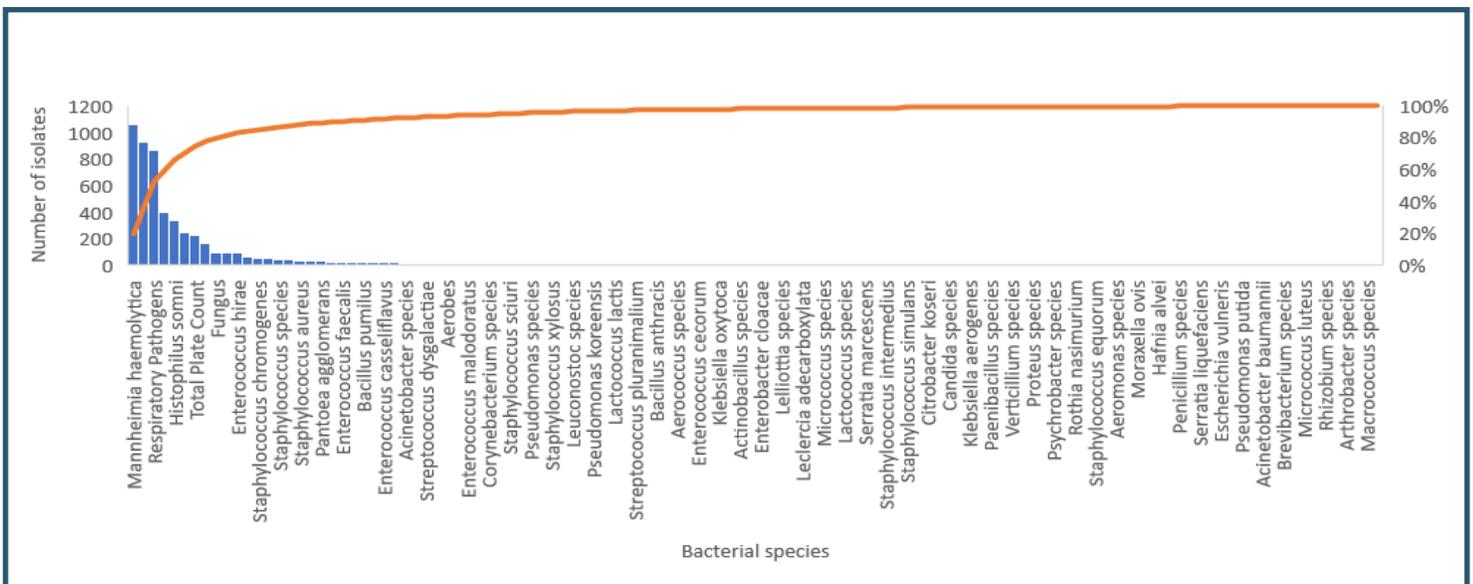
#### i. Respiratory disease:

- Most frequently reported in this time period (October-December 2020):

Bronchopneumonia associated with Bovine coronavirus was reported increasing relative to last year, by one practice. Interstitial pneumonia associated with BRSV was reported increasing in post-weaning calves/feeder cattle in one practice. Antimicrobial resistance (AMR) was reported in *Mannheimia hemolytica* and *Histophilus somni*, in cattle with pneumonia or blood poisoning.

Once again, this quarter, many bacterial species were cultured, underlining the need for careful interpretation of laboratory findings.

Bacterial species cultured from beef samples at Prairie Diagnostic Service Oct. - Dec. 2020



## ii. Digestive diseases:

- Johne's disease was reported diagnosed commonly by two practices. In Manitoba, the PCR for diagnosis was recently improved. The impression is that the diagnosis of Johne's disease in beef cattle is increasing.
- One practice reported an increased level of coccidiosis, occurring in all age groups, in some clinical cases while on treatment.

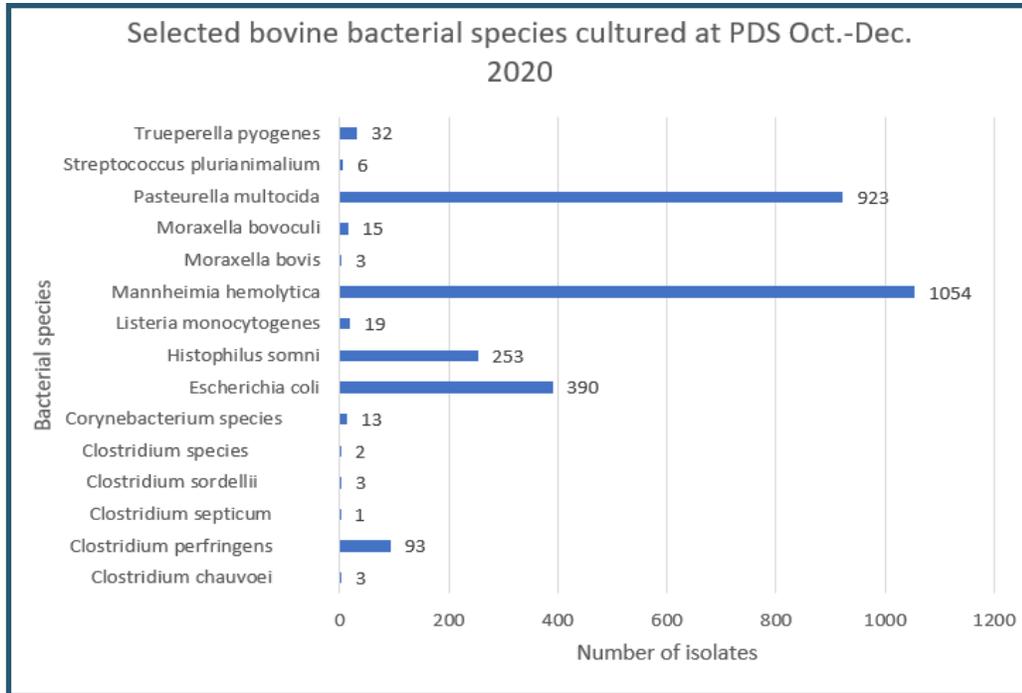


**iii. Reproductive syndromes:** The most commonly diagnosed reproductive syndrome was primary (i.e. individual) disease of the female reproductive tract such as individual uterine infections.

**iv. Musculoskeletal syndromes:** A range of musculo-skeletal diagnoses were commonly reported, (e.g. arthritis or abscesses).



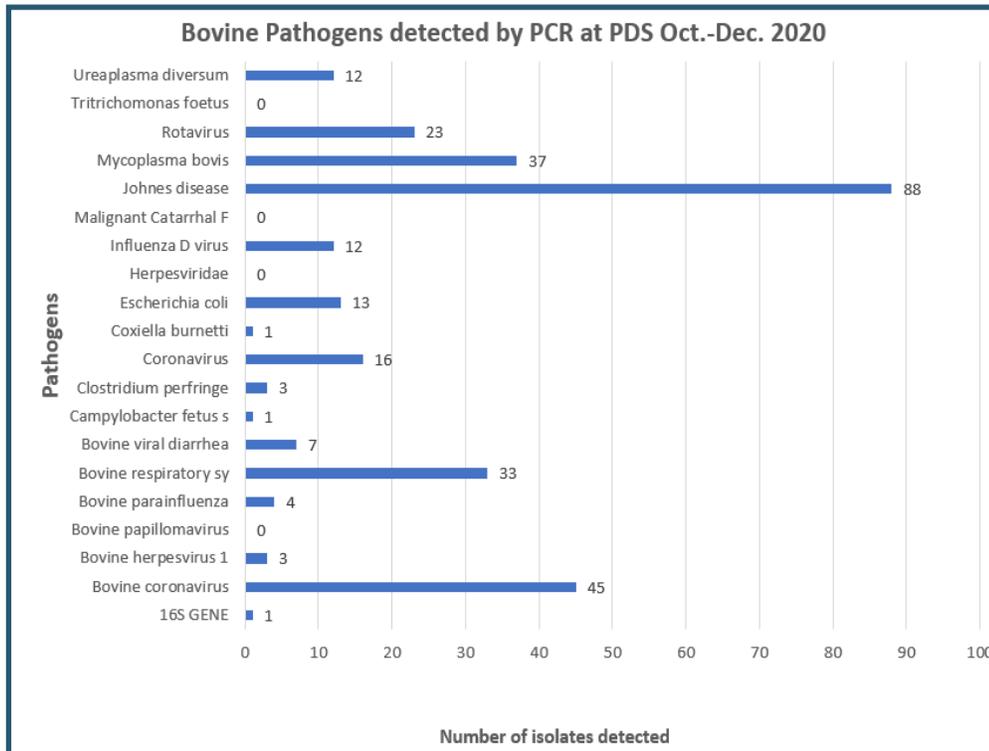
## 2. Laboratory Data: Prairie Diagnostic Services



ii. Respiratory pathogens and syndromes were predominate from bovine cultures, PCR , and pathology across the three contributing western laboratories (Prairie Diagnostic Services, Manitoba Veterinary Services Laboratory and University of Calgary Veterinary Diagnostic Unit).

In general, practitioners’ reporting is mirrored in the laboratory culture/detection data.

Dr Huang reported on Influenza D virus PCR detection in bovine respiratory samples at PDS, where Prairie Diagnostic Services continues to include Influenza D detection delivered at no charge on samples for which the bovine respiratory panel is ordered. The virus is being found associated in some cases of bovine pneumonia and respiratory disease. It is also being found in cases of inflammation/infection of the windpipe.



Selected serum toxicology and trace mineral analyses, October – December 2020

Target	Deficient	High normal	Marginal	Normal	Not suitable	Toxic	Total
Calcium	0	0	0	3	0	0	3
Cobalt	26	17	75	248	0	0	366
Copper	56	11	62	234	0	3	366
Iron	0	8	10	249	99	0	366
Lead	0	3	0	155	11	8	177
Magnesium	4	2	49	311	0	0	366
Manganese	22	2	53	289	0	0	366
Molybdenum	0	50	0	316	0	0	366
Selenium	7	59	27	261	0	12	366
Vit A	4	28	8	57	0	0	97
Vit D	0	3	0	1	0	0	4
Vit E	0	44	1	52	0	0	97
Vit E tissue	0	9	0	2	0	0	11
Zinc	7	134	10	215	0	0	366

Serum samples examined for mineral and trace mineral analysis showed some animals deficient in cobalt, copper, magnesium, manganese, selenium, and zinc, as well as vitamin A.

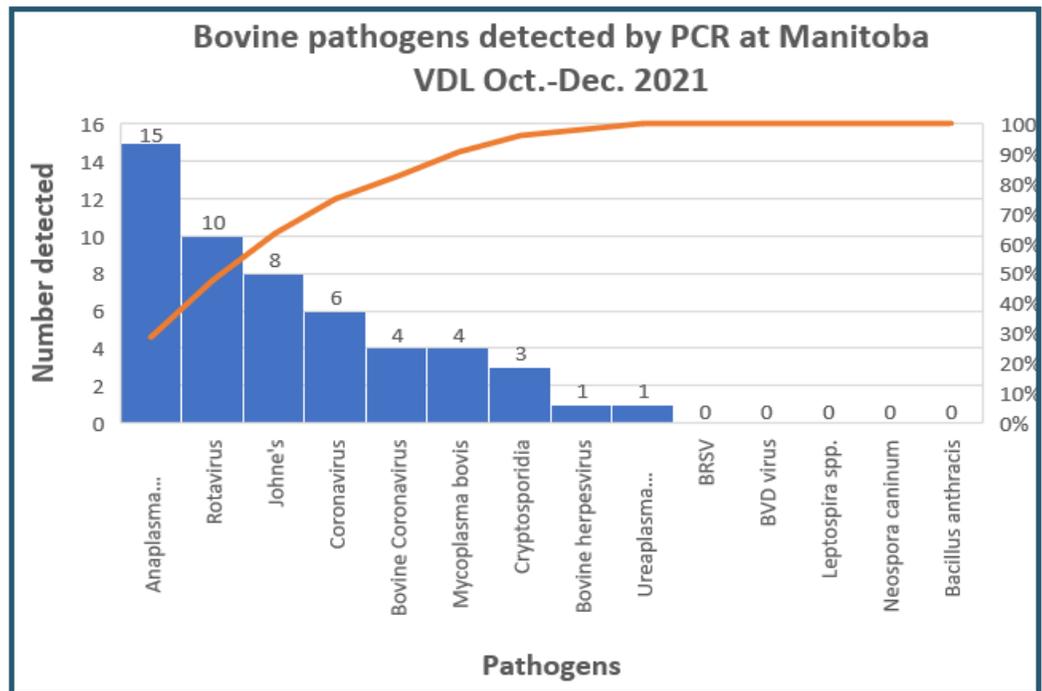
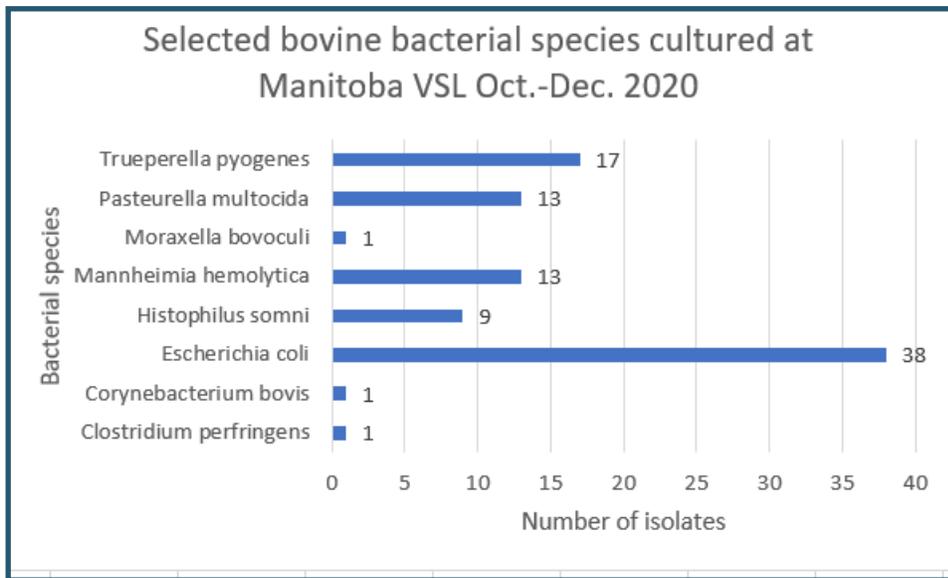
The reasons for sampling these animals are unknown, and so it's difficult to interpret these findings. However, we know that these data were not collected in an active research study of nutritional deficiencies and so may not be closely representative of the western herd.

Several pathogens were investigated via serology (studying blood samples) at PDS this quarter, looking for antibodies as a sign of exposure:

*Anaplasma marginale* (0/1); Bovine viral leucosis/BVL (48/245); *Mycobacterium avium* spp *paratuberculosis* / *Johne's Disease*(203/6349) and *Neospora caninum* (4/81).



## 2. Manitoba Veterinary Services Laboratory:



In Manitoba, the PCR test (detecting a segment of the DNA of the organism) for Johne's diagnosis was recently improved. The impression is that the diagnosis of Johne's disease in beef cattle is increasing.

**Serology:** two major pathogens were investigated at the VSL via bovine serology (detecting antibodies) during this time period: Bovine Leukemia Virus/BVL (n = 37 positive /206 assayed); and Johne's (4/33).

## University of Calgary Veterinary Diagnostic Unit:

Respiratory (e.g. bronchopneumonia, and complications such as heart failure) and neurological (e.g. nervous coccidiosis) syndromes and pathogens were some of the most frequent laboratory diagnoses.

## Manitoba Provincial Update:

Follow-up regarding 2020 Anaplasmosis outbreak outside the 'endemic' zone in Manitoba:

No further clinical cases have been detected with this outbreak since the previous (December) network meeting. However, another Anaplasmosis case occurring within the 'endemic' zone was identified, with a primary complaint of leucosis (Bovine Leucosis Virus).



## Meeting Takeaway:

- In some areas, Johne's disease and leucosis (BVL) may be becoming more frequent diagnoses in beef herds.

Findings from this report should be interpreted carefully: the data are passively acquired from practitioners, laboratories, and other sources. This limits to an unknown extent, the completeness and representativeness of the data for the western Canadian beef herd.

