



INTRODUCTION:

Participants attending the meeting:

The videoconference meeting of the WeCAHN small ruminant network was held Jan. 27, 2022.

Participants attending the meeting: veterinary practitioners, laboratory diagnosticians, veterinary college faculty, and industry representatives.

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1. Dataset Overview:

- i. Practitioners' Clinical Impressions Survey.
- ii. Laboratory data: Manitoba Veterinary Diagnostic Services Laboratory, Prairie Diagnostic Services (PDS), University of Calgary Diagnostic Services Unit (UCVM DSU).
- iii. Scan: Cache Valley Virus investigation in Québec.

For each category of disease, clinical impressions survey findings are followed by relevant laboratory data.



Clinical Impressions Survey and Laboratory Data:

The clinical impressions survey is to be a simple, quick overview of diagnoses by practitioners, which does not require practitioners to extract data from their information management systems to complete.

Practitioners report, for a list of selected pathogens/syndromes how frequently they have diagnosed these pathogens over the time period in question.

Additionally, they are asked whether, compared to the previous time period, their diagnosis of these pathogens is increasing/decreasing/ or stable.

2. New or unusual cases

Wool slip or hair loss associated with stress:

- Seen in fall, associated with especially environmental stress (e.g. cold with inadequate shelter/poor nutrition).
- Literature suggests that this reflects cortisol spikes induced by stress.

Caseous in large flock:

- Flock of 600-800, ~ half purebred, lambing February - April
- In Nov. while swath grazing millet, about 4 found dead; wondered about some kind of toxicity.
- Subsequently 4-5 developed bottle jaw including a purebred ram. This animal ultimately was post-mortem'd, showing:
 - Widespread internal abscesses
 - All other tests negative
- Diagnosis: Caseous lymphadenitis.
- This flock has recently been on Glanvac™; assumed clinical cases had their origin before the vaccination program started.

Discussion regarding Caseous vaccination

- Suggestion: vaccinate breeding animals twice yearly (prior to breeding and prior to lambing), and replacements @ 8/12/16 weeks of age.
- Vaccination in combination with aggressive culling can result in eradication; vaccination alone will not manage problem effectively when prevalence is currently so high.

3. Respiratory Disease

Respiratory disease: was reported Rarely to Very frequently by practitioners.

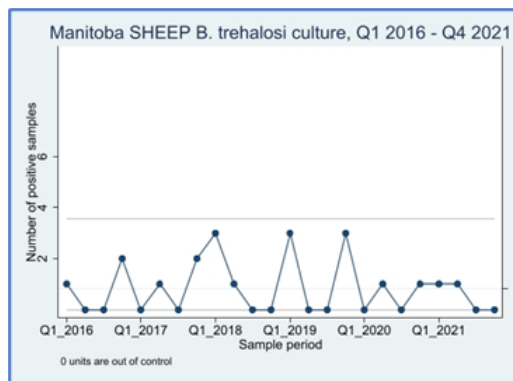
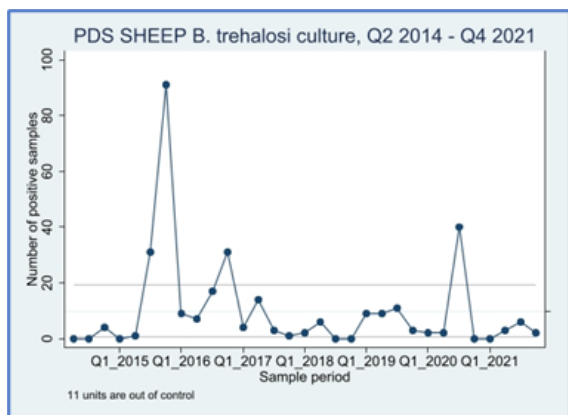
- **Undifferentiated clinical pneumonia**, in which no post-mortem or laboratory information is available, was the most frequently diagnosed syndrome (n = 3 practitioners).
- **Broncho-pneumonia** was the most frequently reported pathologic syndrome, associated with *Mannheimia haemolytica* or *Pasteurella multocida*.
- **Histophilus somni** was less frequently reported. Fibrinous pneumonia was less frequently diagnosed relative to broncho-pneumonia, and associated with *M. haemolytica* or *P. multocida* by one practitioner.
- **Interstitial pneumonia** was seen commonly, and associated with Maedi-Visna virus, by one practitioner.

Respiratory Laboratory Data:

Bibersteinia trehalosi:

PDS:

- Recap on 'control charts': for each of the following graphs, each data point reflects the number of positive samples or cases reported, over a 3 month period. The upper and lower horizontal lines, called control limits, are similar to confidence intervals.
- Control charts are a simple way of presenting data collected over time. Apparent trends (e.g. increasing or decreasing frequencies of detection) over time, or individual points lying outside the control limits, suggest a need for investigation to determine whether/how significant a signal they represent.



While *B. trehalosi* was not reported by practitioners, it is detected in the small and relatively stable number of submissions to PDS.



UCVM:

1. Case: 3 month old ewe lambs: bronchopneumonia associated with mixed culture of *Bibersteinia trehalosi*, *Mannheimia haemolytica*, and *Trueperella pyogenes* bacterial pathogens.
2. Case: a pair of 7 month old ram lambs, one with bronchopneumonia and suppurative hepatitis, and one with congested lungs and suspect blood poisoning, both yielded *B. trehalose* on bacterial culture.
3. Case: One goat was diagnosed with cryptosporidium parasites on Oct 4th. Then they developed pneumonia. There have been several acute deaths despite treatment (oxyvet, zactran). Oct 4th had diarrhea. Oct. 21 developed coughing, and nasal discharge. This group were all new additions, they are all doing poorly. The rest of their goats are all fine. At post-mortem, *Salmonella* Dublin was isolated from lung and liver samples. This potentially zoonotic pathogen may infect people.

4. Digestive Disease

Digestive disease: digestive disease was reported Commonly to Very frequently by 4 practitioners, with diarrhea and parasites most frequently reported.

- Johne's disease was reported as a frequent cause of culling in some flocks by one practitioner.
- Across a small number of submissions, possible trend to increasing Johne's disease blood test positives in sheep and goats at PDS.

Manitoba Johne's disease report:

With a sparse dataset of laboratory submissions to Manitoba, comment from the provincial veterinary epidemiologist was:

" [our] perception is that Johnes is a common diagnosis in old sheep and goats and has been increasing over the last 5-7 years, as reported from the lab submissions. Johnes is provincially reportable, so we are able to receive the direct reports. Several years ago, we assisted one large goat herd and their vet investigate more fully as they "suddenly" (over a year) were losing numerous mature goats to Johnes. The majority of the herd was infected based on the testing we were able to do. "

Saskatchewan report on Johne's disease in small ruminants:

In 2020-21, SK had:

- Goats: 11 herds (5 pos), 361 animals (19 pos)
- Sheep: 8 herds (5 pos), 661 animals (8 pos)
- So far, for 2021-22, just 6 goat herds tested, 3 positive herds, 20 positive animals (17 from one herd of 74)
- With a flock called positive if at least one animal tests positive.

Clinical picture:

- In Manitoba see clinical cases frequently in response to especially environmental stressor e.g. cold/inadequate bunk space. Have done some laboratory confirmation, submitting whole sheep to lab, but now especially in positive flocks, urge culling of skinny animals, and ongoing diagnosis is done based on necropsy, not lab confirmation.



Question: How aware of this problem are your clients/ industry? Need for more educational materials?

A: always room for improvement in education.

There are several publicly funded sites, which have excellent materials available for download free of charge.

[Home - Alberta Lamb Producers \(ablamb.ca\)](http://ablamb.ca)
[Canadian Sheep Federation \(cansheep.ca\)](http://cansheep.ca)

Coccidial infections were also reported Very frequently by one practitioner, and as with cryptosporidia and strongyle infections, were considered increasing relative to the same time period in the previous year, by one or more practitioners.

Q: Coccidia are mentioned regularly, by every network, sometimes associated with treatment failure. Do you see this frequently? Are you experiencing problems with resistance?

A1: see it frequently associated with other stressors.

A2: it's seen a lot and sometimes associated with treatment failure.

A3: the recently concluded Saskatchewan goat parasite study saw lots of coccidia.

A4: clinical disease is multi-factorial, and the parasite is always there.

5. Reproductive Disease

Reproductive disease: reproductive disease was reported Commonly to Very frequently by 2 practitioners.

- Laboratory data from Manitoba VSDL and PDS for reproductive pathogens (*Campylobacter spp.*, *Chlamydophilus abortus*, *Coxiella burnetii*, *Toxoplasma*) supply sparse datasets with no clear time trends from 2016 – 2021.

Cache Valley Virus (CVV): We know that exposure to CVV has been demonstrated in blood testing of Saskatchewan livestock and wildlife. Are we seeing clinical cases of disease, e.g. abortions or birth deformities?

A1: receive calls describing clinical disease (abortions and congenital deformities) but no interest in laboratory diagnosis.

A2: Calls to sheep growers' office describing clinical cases, lots of discussion on social media. There is a need for factsheet or some form of messaging.

A3: Have not seen it personally.

A4: In our experience the majority of abortions have nutritional as opposed to infectious causes.

Suggestions:

- Save abortions in freezer till reach 2%, then submit them all.
- Rule of 3: similar principle, at 3rd sample, submit all 3. (PDS will treat these as a single submission)

6. Neurological Disease

Neurological disease: was reported Commonly by 1 practitioner, including polio-encephalomalacia and seizures.

7. Multi-systemic Disease

Multi-systemic disease: was reported Commonly by 1 practitioner, with Caseous lymphadenitis reported Rarely to Commonly; blood poisoning was reported associated with *Clostridia spp.*, *E. coli*, or *Listeria spp.*

- **Nutritional deficiencies** including energy, protein and copper deficiency were reported Commonly by one practitioner.
- Nutritional deficiencies were also reported by UCVN DSU, in cases involving Bighorn sheep (copper deficiency detected incidentally in an animal with traumatic injury) as well as domestic sheep (iron and manganese deficiency, as well as marginal copper deficiency).

8. Musculoskeletal Disease

Musculoskeletal disease: was reported Very frequently by 1 practitioner, including arthritis as the most frequently reported condition.



9. Scan

- **MAPAQ:** Cache Valley Virus (CVV) in Québec
- There have been two recent reports in Québec, from a veterinarian and goat producer, describing newborn lambs and goats with neurological problems, deformities, and stillbirths.
- The MAPAQ laboratory has also received abortions with deformities suggestive of CVV. Samples from these aborted fetuses have been forwarded to the NML Winnipeg for PCR assay.



10. Meeting Take-aways

Producers:

- Abortions and/or deformed lambs may indicate the presence of viruses on-farm, or other problems such as nutritional deficiency. Discussing these with your flock veterinarian is a good way of improving flock efficiency.
- Many infectious causes of abortions in sheep and goats, or illness in newborns, can be zoonotic (can spread to people). Discussing lambing season procedures ahead of time with your veterinarian can help protect you and your family.