Western Canadian Animal Health Network

WECAHN SMALL RUMINANTS NETWORK REPORT

OCTOBER 2021

Small Ruminants Network

The first meeting of the WeCAHN small ruminants network was held 20th October, 2021, with veterinary practitioners, laboratory scientists, provincial veterinarians, and industry representatives participating.

Overview of dataset:

i. Clinical impressions survey.
ii. Laboratory data: Animal Health Centre, B.C.; Prairie Diagnostic Services, SK; ; University of Calgary, AB;.

iii. Provincial Updates

Clinical impressions survey

The purpose of 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 (as this can be a major barrier to participation).

It asks practitioners to report, how frequently (never/rarely/commonly/very frequently, as defined within the survey) they have diagnosed these pathogens over the time period in question (for this meeting, May – July 2021).

They are asked whether, compared to the previous time period (for purposes of this meeting, May – July 2020) their diagnosis of these pathogens is increasing/ decreasing/ or stable.

Respiratory disease: was reported commonly (n = 3) to very frequently with pneumonia the most frequently reported syndrome. *Pasteurella multocida* and *Histophilus somni* were reported diagnosed by two practitioners, with *P. multocida* also reported increasing in frequency relative to the same time period last year.

ii. Alberta lamb mortality study (investigating causes of death in feedlot lambs):
Recovered several bacterial species , especially *Mannheimia hemolytica*, *Mycoplasma arginine,* from pneumonias.

iii. Pneumonia Vaccine trial:

- starting November
- combined *Mannheimia hemolytica* and *Bibersteinia trehalosi* vaccine
- design:

vaccination ewes twice pre-partum for colostral immunity
vaccination of lambs twice
enrolling 5000 ewes, so aiming for 10000 lambs enrolled

iv. Nasal tumor: may present as respiratory problem, which may go un-diagnosed if examiner is not willing to split the carcass skull to examine sinuses.

Gastrointestinal disease: was reported diagnosed commonly, with diarrhea and parasites reported commonly or very frequently by at least two practitioners. Diarrhea associated with *E. coli* was reported increasing by one practitioner. Coccidia and worm infections were also reported increasing by one practitioner.

Neurological disease was reported commonly by 3 practitioners, with polio -encephalomalacia the most frequently reported diagnosis

Multi-systemic disease involving more than one body system was reported commonly, with anemia (low blood count) and Caseous lymphadenitis reported commonly to very frequently by 2 practitioners.

Reproductive disease: was reported commonly by 2 practitioners.

Musculo-skeletal disease was reported common to very frequently, with foot rot and arthritis the most commonly reported foot and non-foot conditions, respectively.

Other conditions:

Toxicity- rhododendron, night shade.
Conformation issues leading to lameness.
Intestinal disease associated with internal parasites - principally coccidia and worms.
Lots of pneumonia reported.

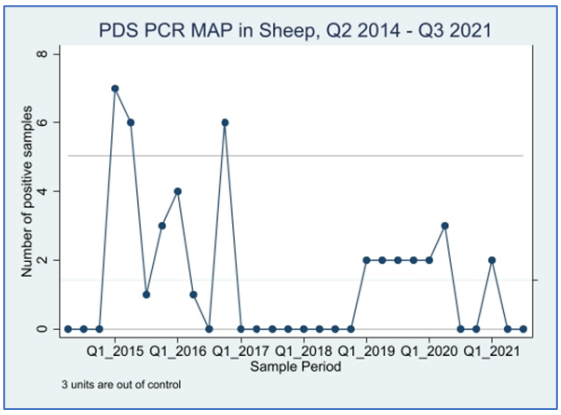
Laboratory Data

Thanks very much to all the participating laboratories for their support in extracting and sharing data, in the case of PDS, from several years back, allowing us to start looking at time trends in diagnosis. Following are a series of 'control charts'. Each plotted point represents the number of cases, or samples diagnosed positive for some pathogen or syndrome, for a given 3-month period. The dotted horizontal lines running across the control charts are the upper and lower control limits, which are based on the variance of that plotted set of points, and are similar to confidence intervals. Generally, any data point falling outside the control limits are unlikely to occur just due to chance, and should be considered for investigation/follow-up. These control charts are widely used in health surveillance and many other settings, largely as an early or 'soft' indicator of a problem which may merit further, more formal, investigation.

In future we will need to identify which outcomes are the most important to summarize and discuss at each network meeting.

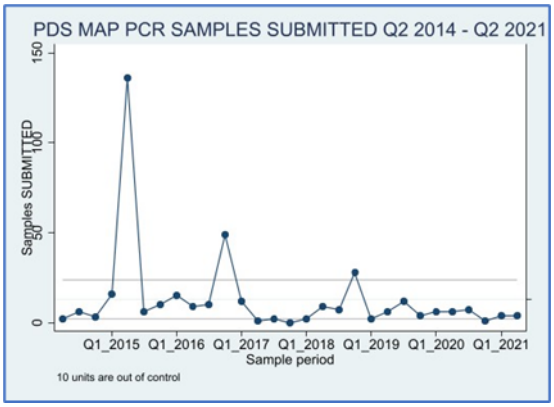
Prairie Diagnostic Services

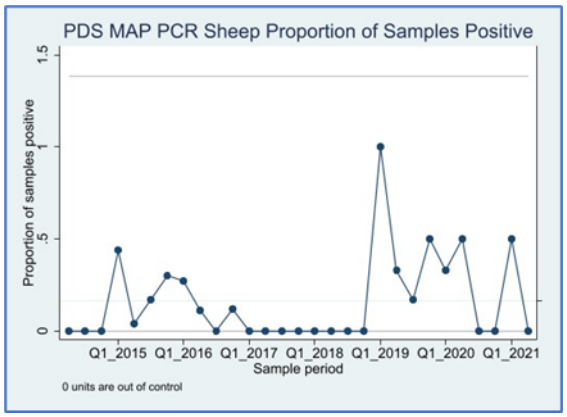
Example to introduce control charts: *Mycobacterium avium spp. paratuberculosis* (MAP), aka Johne's disease.



In this plot, each dot represents the number of samples from sheep testing positive by PCR for Johne's disease, in a specific 3 month period.

In this plot, each dot represents the number of samples from sheep SUBMITTED for Johne's disease testing by PCR, in a specific 3 month period.





In this plot each dot represents the proportion of samples from sheep, assayed for Johne's disease via PCR, which tested POSITIVE, for a specific 3 month period.

Prairie Diagnostic Services

Maedi-Visna Serology at PDS, Q4 2019 – Q3 2021

Quarter	Negative	Positive	Total	Proportion positive
Q4_2019	81	0	81	0.00
Q1_2020	11	1	12	0.08
Q2_2020	11	0	11	0.00
Q3_2020	84	0	84	0.00
Q4_2020	19	4	23	0.17
Q1_2021	23	5	28	0.18
Q2_2021	0	0	0	0
Q3_2021	29	3	32	0.09

Caprine Arthritis and Encephalitis (CAE) Serology at PDS, Q4 2019 – Q3 2021

Quarter	Negative	Positive	Total	Proportion positive
Q4_2019	404	2	406	0.00
Q1_2020	291	0	291	0.00
Q2_2020	471	23	494	0.05
Q3_2020	107	2	109	0.02
Q4_2020	319	6	325	0.02
Q1_2021	164	3	167	0.02
Q2_2021	285	13	298	0.04
Q3_2021	179	3	182	0.04

These charts present the number of samples tested, and also the number positive, for Maedi-Visna virus, and CAE, in sheep and goats respectively, at Prairie Diagnostic Services, from 2019—2021.

Overall good to note that the number and also the proportion/percentage of samples testing positive is relatively low.

University of Calgary Diagnostic Services Unit

Small ruminant diagnoses at UCVM from May—July 2021

Sample Type	Source	Species	Age	Sex	Diagnosis	Etiology
Assorted tissues	Commercial	Caprine	Fetus	M	Bacterial septicemia	Listeria monocytogenes
Necropsy	Pet	Caprine	10 W	M	Enterocolitis and sepsis	E. coli & Clostridium perfringens type D
Assorted tissues	Commercial	Caprine	8 W	M	Open - suspect coccidiosis	Not determined
Abscess swab	Commercial	Ovine	2 Y		Abscess	Mixed infection - contains Corynebacterium pseudotuberculosis
Necropsy	Commercial	Ovine	10 Y	F	Bacterial endometritis & neuronal necrosis	Not determined
Necropsy	Commercial	Ovine	7 D	F	Suppurative meningitis & bacterial septicemia	E. coli
Necropsy	Commercial	Ovine	3 D	M	Bacterial septicemia	E. coli
Necropsy	Commercial	Ovine	3 D	F	Bacterial enteritis	E. coli
Assorted tissues	Commercial	Ovine	2 W		Bacterial septicemia	Suspect E. coli
Assorted tissues		Ovine	3 M	M	Coccidiosis	

The most frequent diagnosis during this time period was infection and blood poisoning with *E. coli*.