

The WeCAHN Beef Network held a quarterly videoconference meeting on December 6th, 2024, to discuss the animal health events occurring from July to September 2024, with veterinary practitioners, diagnosticians, veterinary college faculty, researchers, and industry representatives in attendance.



Respiratory system

Network veterinarians rated **pneumonia** stable relative to the same time period last year, and similarly they rated the occurrence of *Mannheimia haemolytica* and *Pasteurella multocida* bacteria, two common agents of BRD, stable as well. Similarly, lab trends in pneumonia cases and those two agents were also stable. However, the trend for **Bovine coronavirus** PCR detections from respiratory disease is up over the last five years at one lab. A project is underway to study the genomic variation in circulating strains, and compare the genome of circulating and vaccine strains.



Digestive system

Case report: *E. coli septicemia* (blood poisoning) in 6-week-old calf

History:

- Twin calf; other died. Owner treated with two different antimicrobials unsuccessfully. Tubed with electrolytes.
- Slowly declined. Unable to regulate body temperature in clinic.
- Hooked up to IV, calf died in clinic.

Referring veterinarian thinks problem is primarily lung involvement.

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Microscopic tissue exam: structural changes in multiple tissues suggest blood poisoning. When liver tissue is available, the diagnostic lab suggests a vitamin and mineral panel measuring liver levels in these cases to assess whether nutrition contributed to the bacterial infection.

Vitamin A and E and mineral panel on liver tissue showed:

- Vitamin A deficiency: this is evidence of failure of passive transfer ie this calf didn't get sufficient colostrum.
- Copper deficient: at this age he shouldn't be. Calves accumulate copper at the expense of the dam. So a deficient calf suggests that the dam is deficient. Copper deficient calves have been reported to be at increased risk of respiratory disease.

So in terms of disease risk this calf had a double whammy with vitamin A deficiency and copper deficiency.

QUESTION: Do we see nutritional deficiencies associated with the loss of reproductive momentum we've seen in some western cow herds over the past couple of years?

ANSWER: Usually the sequence of events is- problem is identified at pregnancy testing, when it's too late to do anything about. This year [at the lab] we are seeing copper and cobalt deficiencies. The impact drought years would be especially vitamins due to the drought impact on forages. During a drought we could also see copper deficiency with high sulfate in the water, as dugouts are drawn down.



Discussion: Cobalt deficiency

COMMENT 1: usually reflects producer not offering salt.

COMMENT 2: it's possible that cows may not get adequate cobalt from free choice salt.

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COMMENT 3: So many management/genetic components to this [problemof drought impacts on reproductive performance]. Blocks are a terrible way to provide mineral (some research shows it is nearly impossible to intake enough mineral in a block situation vs loose mineral), challenges with crop fertilization (we see it in feed tests on hay we buy), lack of feed testing and enhanced genetic performance of cattle (faster engines) likely means even our requirements used in ration formulations might be low.

Genetic trends (phenotype removed) for all major breeds for heifer pregnancy are actually downward, so the cow matching the environment is also an issue.

Comment on using Resflor for calves with *E. coli* blood poisoning:

"The minimum blood level values required for Resflor to kill bacteria like *E. coli* are MUCH higher than for the BRD pathogens like Mannheimia, and at normal dosages, these high blood values are never reached... . So with the products we have, florfenicol (ie Resflor/Nuflor) is never an appropriate choice for a [young] calf with septicemia/blood poisoning [if this could be caused by E. coli]". This underlines the need for establishing treatment protocols with the herd veterinarian.

Johne's Disease

Johne's disease was reported Rarely by 2 practitioners and rated Increasing by one on the clinical impressions survey. Laboratory data for Johne's disease at PDs and Manitoba VDS, including pathologic diagnosis, serology, and PCR detections were stable relative to the previous quarter, although the longer-term trend to increasing positives in PCR and serology(blood test) cases is still evident at PDS.

DISCUSSION: Johne's disease:

1. Should we be including information on Johne's status in culling decisions?

2. What do we do with diagnosed positive animals once the decision is made to cull them?

ANSWER 1: Regarding use of Johne's status in culling decisions, Yes! People don't realize how pervasive and production-killing it is.

ANSWER 2: this needs some discussion with a professional group like the Western Canadian Association of Bovine Practitioners (WCABP) to draft guidelines using criteria like body condition score (BCS). Culls can be flagged for slaughter.

ANSWER 3: Johne's positivity is 1000% a culling criterion. And you can put on the manifest that she is a butcher cow, but can't stop her being used for breeding. Animal care guidelines for transport and shipping apply. Also we need to remember hundreds go through yards every week that we don't know about!

Meeting takeaways:

One western veterinary diagnostic laboratroy has a trend to increasing bovine coronavirus detections in respriatory case submissions. A project is underway to study the genomic variation in circulating strains, and compare the genome of circulating and vaccine strains.

As well as checking calf mortalities for infectious disease, studying their liver tissues for vitamin-mineral status can be useful in understanding underlying contributing causes of infection.

Johne's disease status of individual cows can be useful information in culling decisions. Known Johne's positive cows appropriate for slaughter should be identified as such and NOT allowed back into the breeding herd. Management guidelines drafted and endorsed by professional groups (e.g. WCABP) and industry could be helpful to veterinarians and producers.

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