



The WeCAHN Poultry network met by videoconference November 2023 to discuss poultry health in western Canada during the third quarter (July-September) of 2023.

Report Contents:

- 1. Interesting Cases and Emerging Issues
- 2. Broiler condemnation trends
- 3. Major disease syndromes in other feather groups
- 4. Research update

1. Interesting Cases and Emerging Issues

i. Reovirus presentations

WeCAHN network veterinarians complete a survey every 3 months reporting how frequently they have diagnosed common diseases, and also whether they have seen any new syndromes.

Recently they have reported seeing more new or merging presentations of reovirus infections especially in turkeys: the more common lameness due to tendon infections, but increasing hear, liver, and neurological disease associated with this virus.

Reovirus disease, like other diseases in turkeys recently, may be increasing due to impacts of HPAI on breeder flocks resulting in reduced poul quality, as well as varied vaccination protocols across breeder flocks, limited availability of effective vaccines, and ongoing challenges in controlling relatively resistant reoviruses in general.

ii. Bacterial infections in broilers

There is a group of infections in boilers which tend to be caused by the same small group of bacteria, including blood poisoning, bacterial lameness, and yolk sac infections. Some of the

network practitioners reported that one or more of these were increasing in Q3 (July – September) 2023, although laboratory data on these same conditions was not significantly changed, except for an ongoing trend to slightly increasing yolk sac infections reported at one lab.

2. Broiler condemnation trends

i. Respiratory condemnations continued significantly higher in BC relative to the other western provinces, which has been attributed by veterinarians to Infectious bronchitis virus circulating in BC.

ii. In contrast, condemnations for abdominal edema were notably lower in BC compared with AB/SK-MB.

iii. Skin condemnations continued to trend higher in AB relative to other western provinces.



3. Major disease syndromes in other feather groups

i. In **Broiler-breeders**, the same infections were seen but were not rated increasing by any of the network practitioners.

ii. In **Turkeys**, similarly Early bacterial systemic infections, were reported Commonly by 3 practitioners, associated with treatment failure by one and *E. coli* by two, and rated **Increasing** by one network practitioner. Late bacterial systemic infections, were reported Commonly to Very frequently by three, associated with treatment failure by one, and rated Stable by all.

iii. In **Layers**: egg yolk -based abdominal infection , and focal duodenal necrosis (discrete points of intestinal damage) were reported by practitioners, but again, were rated Stable.

In environmental sampling, the serovar of *Salmonella* isolated most commonly across the prairie diagnostic laboratories was *Salmonella* Infantis.

4. Research update: potential application of molecular diagnostic methods to poultry medicine:

Our network meeting featured a presentation by Dr. John Gilleard, UCVM researcher, outlining some of his current research. This was followed by a discussion of how these research methods could be applied to the poultry sector.

Coccidiosis: *Eimeria* spp. barcoding to study impact of treatment or vaccination

BACKGROUND: Coccidial management strategy varies with location. In BC there are periods of lower counts. These periods are used to give the birds a break from treatment. Practitioners may also re-populate with vaccine strains and treat this more susceptible population.

Molecular diagnostics could offer the capacity to:

- Monitor *Eimeria* for genomic markers for capacity for treatment resistance.

- Evaluate the impact of vaccination.
- Study how quickly disease-causing strains re-populate after vaccination.

Ascarids: Environmental sampling and resistance detection

BACKGROUND: In the U.S. some nematodes are resurgent. This is likely related to re-use of litter in U.S. flocks. In Canada we tend to de-worm, remove litter and disinfect, although recently this has been to some extent re-thought to consider the value of a healthy barn microbiome.

Molecular diagnostics could offer the capacity to:

- Support environmental sampling, prevalence estimation, and identify epidemiology e.g. important transmission routes.
- Scan for: drug resistance- being reported in turkeys in U.S.

Mites: Environmental sampling and resistance detection

BACKGROUND: currently in cattle, we can swab skin to get semi-quantitative estimate of load and species.

Molecular diagnostics could offer the capacity to:

- Identify resident mite species and resistance markers.
- This technique could be used for environmental monitoring in poultry.

For more information: Gilleard lab homepage <<https://vet.ucalgary.ca/labs/jsgilleard/home>>

Meeting takeaways:

Discussion of varying presentations for reovirus underlines the importance of early accurate diagnoses and ongoing assessment of vaccine protocols, both within-flock and from suppliers.

Use of molecular diagnostics in parasitology offer the potential for improved understanding of within-flock parasite transmission routes and optimal treatment and control strategies.