



The WeCAHN poultry network met March 1st 2024 with veterinary practitioners, producers, provincial veterinarians, diagnosticians, and researchers in attendance, discussing the small ruminant health events of Q4 (October–December) 2023.

Data sources in this report include:

- Clinical Impressions Surveys completed by network practitioners.
- Data shared by western veterinary diagnostic laboratories: Manitoba Veterinary Services Diagnostic Laboratory (VSDL), Prairie Diagnostic Services (PDS), and University of Calgary College of Veterinary Medicine Diagnostic Services Unit (UCVM DSU).
- Western federal poultry abattoir data.

Interesting cases:

i. *Aspergillus* (fungus) infection in pullets 4-5 weeks old.

History: The pullets were five weeks old. At that time mortality increased to 0.24% per day.

Clinical signs: Most of the mortality was for birds culled due to neurological signs. Birds had stiff necks, were paddling, were unable to rise, were walking backwards, had tremors.

Post-mortem lesions: tan nodules throughout the lungs and air sacs suggested fungal infection.

Microscopic exam: seeing fungus microscopically confirmed *Aspergillus*.



Mortality continued to climb to a peak of 0.43% daily mortality on day 43 and then began to drop off and was back to normal by the end of week 8.

Source of infection: hatchery source considered unlikely, since roosters were fine. Feed is suspected as source of fungus although feed tests were negative.

ii. Feeding error in broiler breeders ~ 70 days of age resulting in calcium tetany (muscle stiffness)

History: Most un-uniform batch of birds owner had ever had, with muscle stiffness and mortalities. Initially suspected coccidiostat toxicity. Then learned birds were being fed layer ration with 4% Ca (correct level for birds this age < 1%).

Microscopic post-mortem exam: also showed heart muscle damage.

By having them on the 4% instead of 0.9-1% calcium, they do not develop proper bone. So as they start to lay they are set up for metabolic problems and calcium tetany.



Syndromic surveillance:

Broilers

Network veterinarians complete a survey which reports whether they have identified selected conditions never, Rarely = 1-2 times over the 3 months; Commonly = 1-2 times per month; or Very frequently = 3+ times per month.

Conditions seen frequently by the group (referring to conditions reported Commonly or Very frequently by 3 or more of 5 practitioners completing this section of the report):

Early bacterial blood poisoning (less than 14 days of age) was rated Stable by 4 practitioners and **Increasing** by one, relative to the previous three month period (July - September 2023) and associated with treatment failure by one.

Late bacterial blood poisoning was rated Stable by all practitioners and **Increasing** by one, relative to the previous three month period.

Bacterial Lameness was rated Stable by 3 and **Increasing** by one practitioner, and associated with *E. coli* or *Enterococcus cecorum* bacteria.

Yolk sac infections were seen Never to Very frequently by all network practitioners, and rated **Increasing** by one.

Lab post-mortem diagnoses associated with these bacterial infections continued to be stable at PDS and Manitoba VDS.

QUESTION: do these syndromes still to some extent reflect impact of HPAI on poult quality?

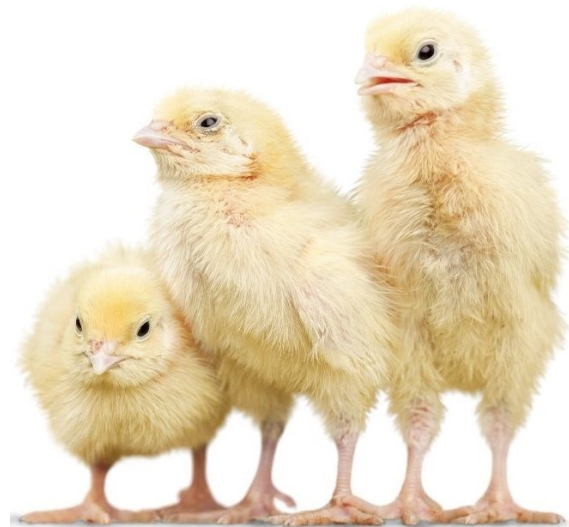
ANSWER 1: in our area we are still seeing its impacts.

Some hatcheries are more notorious. Some are extending the life of hens.

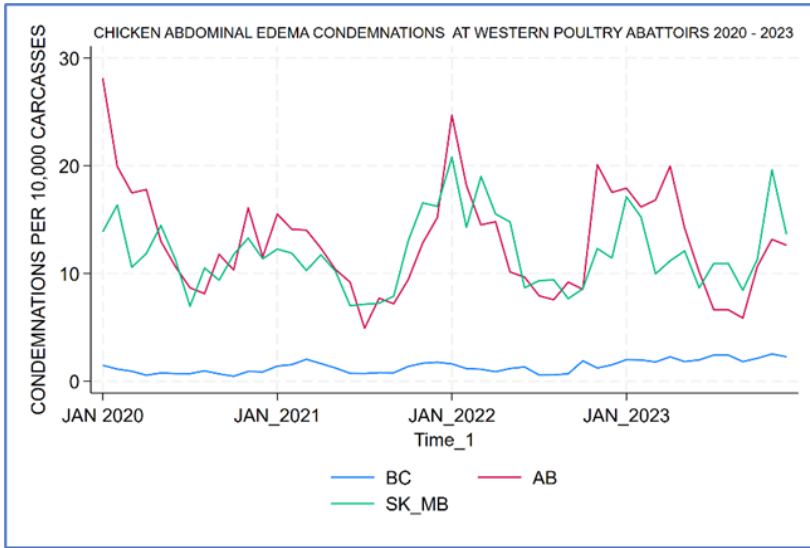
ANSWER2: we had a meeting with our hatchery and it documented that they have had a series of challenges:

- Covid -> staff changes and logistic changes.
- HPAI -> depopulations, changes in suppliers and barn microflora.
- more recently in AB, weather fluctuations.

So lots of things are influencing the level of bacterial infections in poults in our practice.

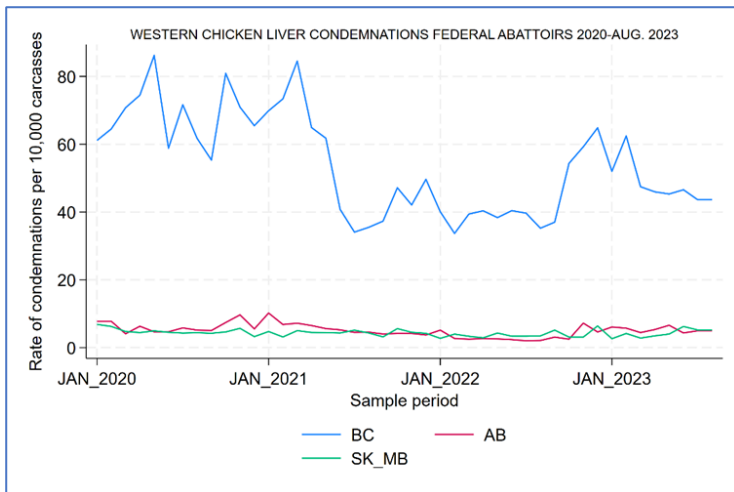
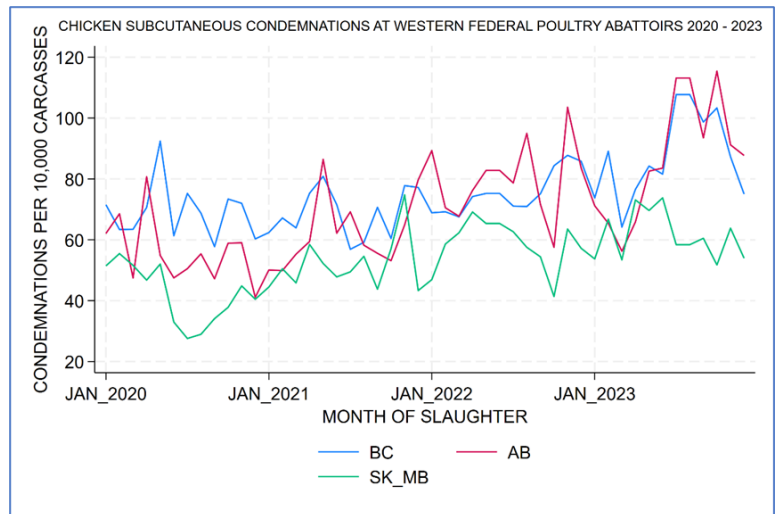


Condemnation issues



Ascites was reported seen never to Commonly (n = 3) and reported **Increasing** by one practitioner. At western federal poultry abattoirs, abdominal edema continued to be stable in BC and relatively lower in Alberta and Saskatchewan-Manitoba (below). Interestingly the time trend is pretty similar across the prairies, with much lower stable rates in BC.

Cellulitis was reported **Increasing** by one practitioner, and trends appear to be broadly increasing across the west. Subcutaneous condemnations appear to be broadly increasing across the west since the start of 2020. Some statistical analysis with the Alberta data (the red plot to the right) confirm the presence of an underlying long-term trend to increasing rates.



Western chicken liver condemnation rates at federal plants continued to be notably higher in BC relative to the rest of the western provinces.

Similarly, respiratory condemnation rates continued relatively higher in B.C.

COMMENT 1: some of this may reflect differences in reporting across provinces. In BC we see IB serological positives more than active clinical infections.

COMMENT 2: We also see lots of respiratory condemnations with seasonal changes, reflecting e.g. *E. coli* air sacculitis

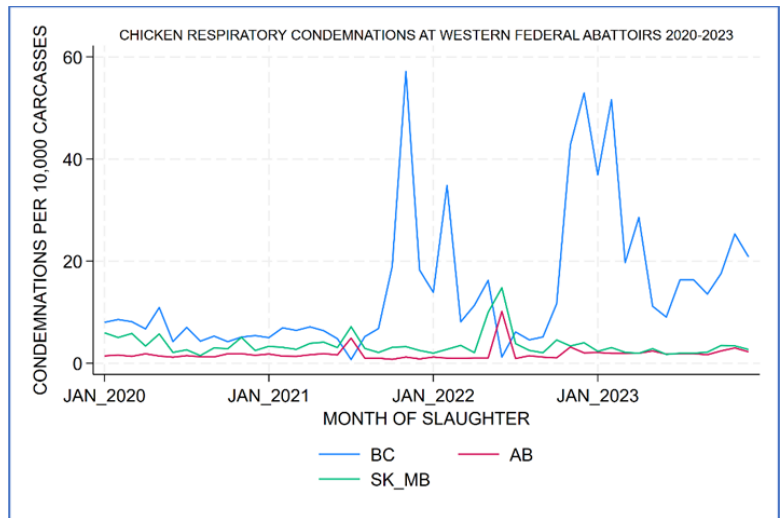
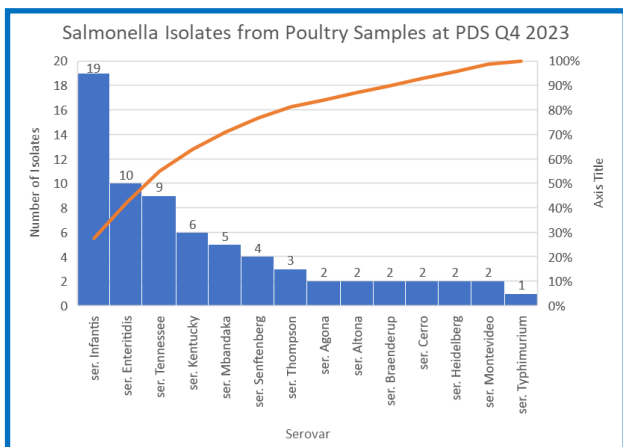
Coryza in layer flocks

Since the network meeting March 1st Coryza outbreaks have been recently reported in layer flocks in AB, SK, and MB. This bacterial respiratory infection is often complicated by the presence of additional pathogens, and your flock veterinarian will have specific recommendations to reduce the risk to your operation.

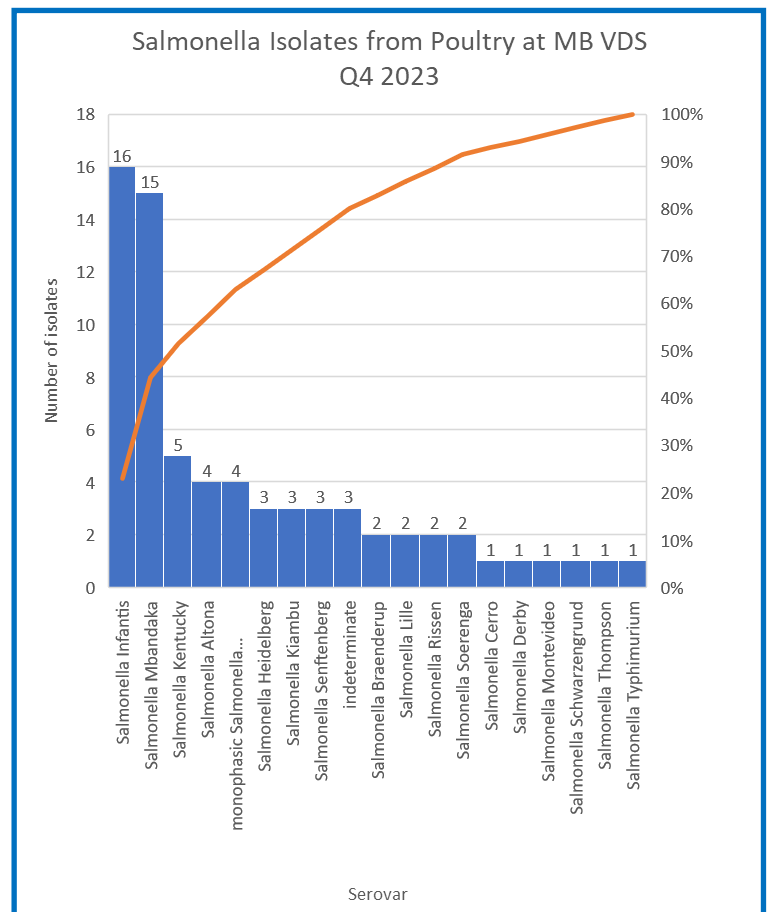
LEARN MORE: <https://extension.psu.edu/avian-coryza>

Salmonella Testing

Salmonella Infantis continued to be the most frequently isolated poultry serovar in Q4 2023 at PDS. At PDS almost all of these *Salmonella* positives originated from hatchery fluff testing.



Isolations of *S. Infantis* and *Salmonella* Mbandaka continued to be the predominate serovars reported at Manitoba VDS. In Manitoba, in contrast with the *Salmonella* testing at PDS, the positives reported originated in a more even split between hatchery and non-hatchery testing.



Manitoba also reported four isolations of monophasic *Salmonella* Typhimurium in Q4 from non-hatchery testing from chickens. This serovar is noteworthy for both its increasing frequency of isolation, and its association with multidrug resistance. In the United States, S. 1,4, [5],12:i:- is the fifth most common *Salmonella* serotype in human salmonellosis according to the Laboratory-based Enteric Disease Surveillance system. Remarkably, the incidence rate of infection with *Salmonella* overall has increased by 33% since a trough in 2001, while incidence rates of S. 1,4,[5],12:i:- infection have increased more than five times over the same period (CDC, 2016). In Canada over 2023 a multi-species and multiprovince outbreak of monophasic *Salmonella* Typhimurium has been reported associated with feeding raw pet food and contact with cattle (<https://www.canada.ca/en/public-health/services/public-health-notices/2023/outbreak-salmonella-infections-under-investigation.html>).

In Q4 2023 monophasic *Salmonella* was isolated from both hatchery and non-hatchery sampling in Manitoba. Historically this has been seen in multiplier flocks- one recently made the decision to de-populate.

In Q4 the transmission path could have gone either way (hatchery to supply flock or vice-versa). However it is likely more probable that the path ran from contaminated supply flock to the hatcher, especially since hatcheries may be sourcing eggs from the U.S.

Meeting takeaways

Across the west practitioners continue to report ongoing challenges with poult quality. This may reflect both downstream consequences of HPAI, as well as other factors such as staffing challenges.

The isolation of monophasic *Salmonella*, generally associated with multidrug resistance, from environmental testing, both hatchery and non-hatchery, in Manitoba, highlights the importance of professional advice in testing interpretation and implementation of responses.

