



The WeCAHN poultry network met 21st November 2024 to discuss poultry health in western Canada during Q3 (July - September 2024) with veterinary practitioners, laboratory diagnosticians, researchers, and provincial veterinarians in attendance.

Overview

Data sources in this report include:

1. Clinical Impressions Surveys completed by network practitioners.
2. 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).
3. Western condemnation data from federal abattoirs.
4. AI testing in domestic poultry and wild birds.

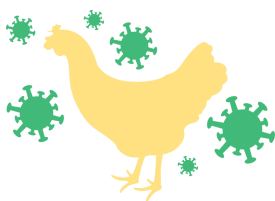


Review of dataset

HPAI Update

BC CDC webinar overview: HPAI transmission in North America, by Dr. Louise Moncla

Dr. Moncla's group (Nexstrain) studies viral genetics. Dr. Moncla presented some of their recent work on the current H5N1 outbreak in North America using viral isolates, largely collected in the U.S. since the outbreak began in 2022. Conclusions to date:



- There was detectable viral movement between the major wild bird flyways, and this occurred almost entirely from east to west.
- Viral transmission was largely driven by wild birds, primarily ducks and geese.
- In a given area, viral detections occurred first in backyard flocks, followed a couple of weeks later by detections in commercial flocks. An experiment conducted to help understand this observation showed that in the vast majority of these clusters, both backyard flocks and commercial poultry were infected by wild bird strains. A transmission pathway of wild birds to backyard flocks to commercial poultry was very rarely observed in this dataset.
- Based on this observation the researchers concluded that while backyard flocks are unlikely to be an H5N1 infection source for commercial poultry, they could potentially be part of an early warning system.
- READ MORE: <https://nextstrain.org>

Syndromic Surveillance

Network practitioners complete a survey which captures whether they have identified selected conditions:

- Never
- Rarely (1-2 times over the 3 months)
- Commonly (1-2 times per month)
- Very frequently (3+ times per month)



Broilers:

Conditions seen frequently by the veterinarians (referring to conditions reported Commonly or Very frequently by 3 or more of the 6 practitioners completing this section of the report).

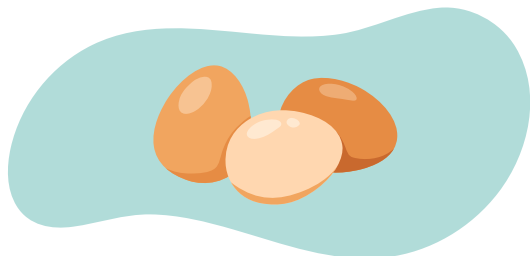
Early bacterial infection was seen *Commonly* (n=1) to *Very frequently* (n=5), rated *Stable* by 2, and **Increasing** by 3, associated with hatchery issues by one practitioner.



Late bacterial infection (greater than 14 days of age) was seen *Rarely* (n=3) to *Commonly* (n=3) and rated *Stable* by all.

Yolk sac infections were seen *Commonly* (n=2) to *Very frequently* (n=4) and rated *Stable* by all.

Lab diagnoses potentially associated with these infections continued to be stable at PDS and Manitoba VDS.



Case Series:

This is not a new presentation, but we have seen several cases recently of *Enterococcus cecorum* bacteria implicated in systemic infection (throughout the body) causing lameness/poor mobility.

History: elevated first week mortality. Subsequently see lameness.

COMMENT: Québec reports increased clinical cases of septicemia and lameness with *E. cecorum* since 2022, more recently associated with yolk sac infections.

Clinical syndromes associated with *E. cecorum*:

- Blood poisoning.
- Lameness.
- Spinal cord infection and abscesses.
- Yolk sac infection.



Update from Réseau d'alerte et d'information zoonositaire (RAIZO)

"*Enterococcus cecorum*": The number of *Enterococcus cecorum* (*E. cecorum*) infection diagnoses in broilers in MAPAQ laboratories continued to increase in 2022 and in 2023. The observable clinical signs are mainly locomotor, leading to a lack of uniformity as well as an increase in selection in breeding. These signs appear especially from the second or third week of age and worsen with time. A preventive therapeutic approach is recommended, in particular by:

1. Control of environmental conditions (temperature, humidity, air quality);
2. Strengthening the immune system by a correctly administered vaccination for infectious disease of the bursa (Gumboro disease);
3. A Chick Starting Program helping to reduce various stresses (e.g., Poussin Podium).

In 2022, many positive cases of *E. cecorum* were simultaneously infected with *Escherichia coli* bacteria. These two bacteria act synergistically and produce biofilms difficult to eliminate, especially in lines of water, which allows them to persist. It is therefore important to carry out a good washing (appropriate detergent and de-scaler) followed by adequate disinfection of water lines after contact with each batch of birds"

From: Bilan Réseau Aviare 2022-2023. Gouvernement de Québec.

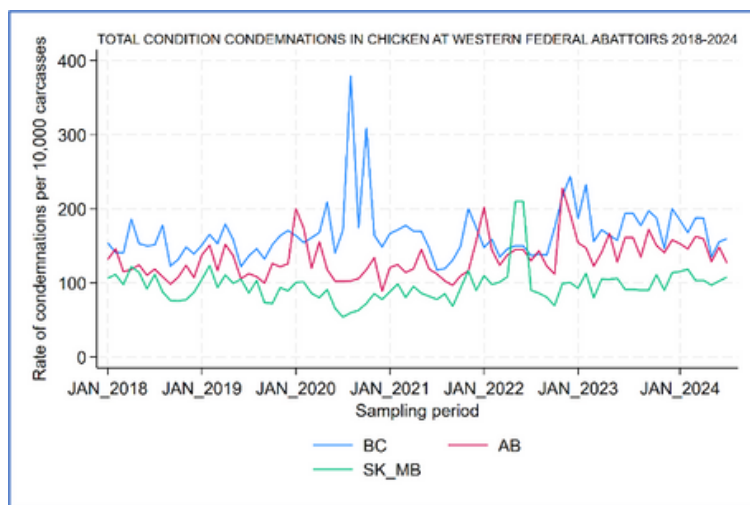


Condemnations

Poultry condemnations at federal abattoirs are described by network practitioners in the WeCAHN clinical impressions survey and also publicly reported by CFIA.

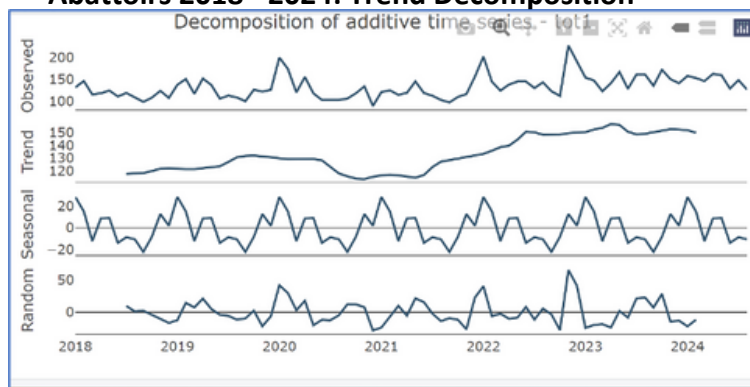
(<https://agriculture.canada.ca/en/sector/animal-industry/condemnations>).

Total Chicken Condemnations at Western Canadian Federal Abattoirs 2018 - 2024



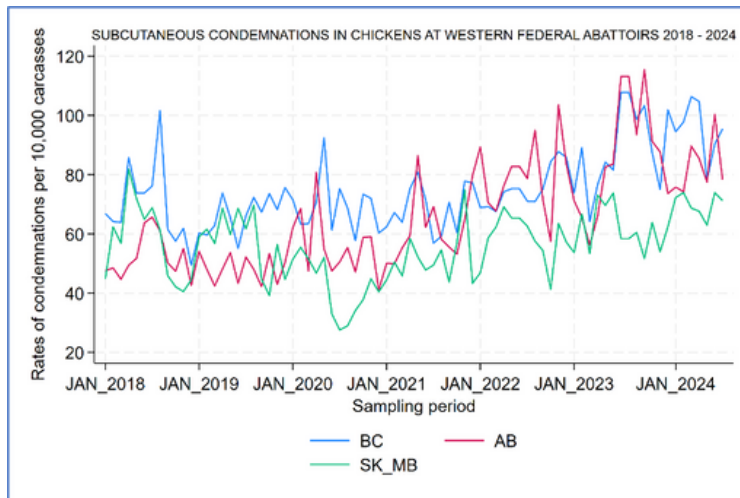
Below, processes involved in the raw data presented above are separated: top row is the raw data; third row is the seasonal trend, bottom row in the long-term trend, and second row is random variation.

Total Chicken Condemnations at Alberta Federal Abattoirs 2018 - 2024: Trend Decomposition



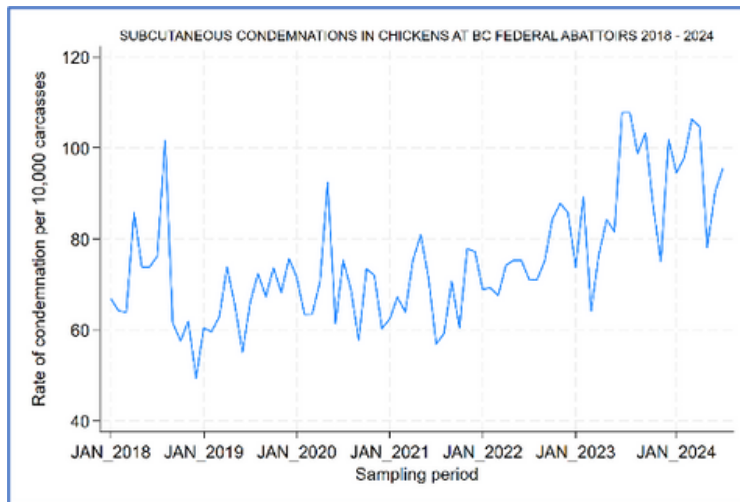
Cellulitis was reported *Never* (n=2), *Rarely* (n=1), *Commonly* (n=3) and rated *Stable* by all network veterinarians.

Subcutaneous Chicken Condemnations at Western Canadian Federal Abattoirs 2018 - 2024

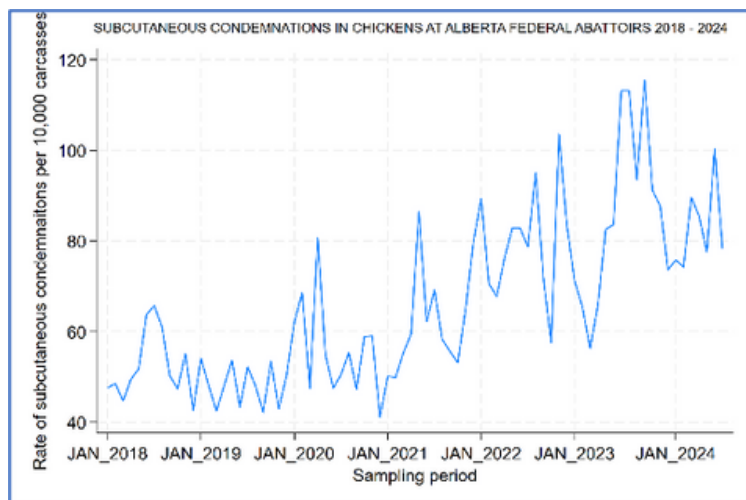


Federal data on subcutaneous condemnations (the category in which cellulitis cases are placed) appear to have a clearer trend to increase, which is easier to appreciate in provincial plots presented individually. Below is a plot of data from B.C.

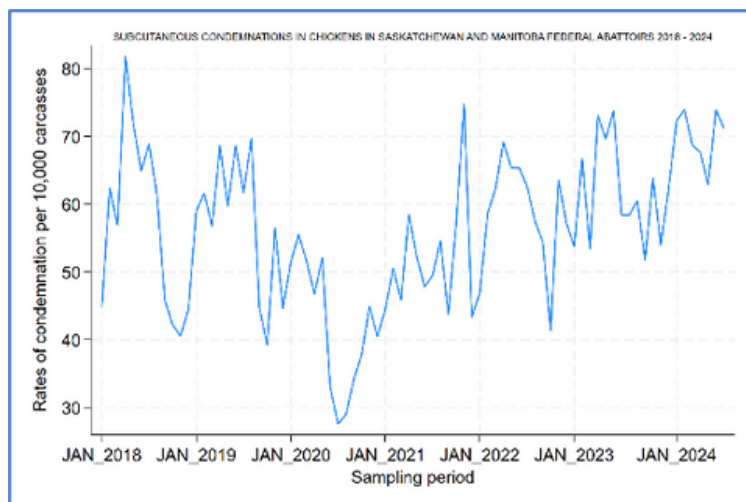
Subcutaneous Chicken Condemnations at BC Federal Abattoirs 2018 - 2024



Subcutaneous Chicken Condemnations at Alberta Federal Abattoirs 2018 - 2024



Subcutaneous Chicken Condemnations at Saskatchewan-Manitoba Federal Abattoirs 2018 - 2024



Subcutaneous condemnations tend to be the largest category of federal poultry condemnations, with cellulitis being one of the major specific conditions included in this category. Network discussion has identified some common potential problems underlying elevated cellulitis condemnations in specific problem flocks, including:

- problems with chick quality resulting in persistently reduced immune response to infection.
- problems with flock and barn hygiene.
- inadequate management of viruses within the flocks (permitting increased impact of avian pathogenic *E. coli* infecting scratches prior to slaughter).

Research reports describe additional cellulitis risk factors:

- Broad range of farm-specific factors including staff, management, and physical characteristics of the barn (Buzdugan et al., 2018).
- Factors post-farm: timing and staffing of abattoir lines (Buzdugan et al., 2018).
- Specific types of *E. coli* bacteria (Kromann et al., 2023).

Events with the potential for broader (regional) impact on prevalence of *E. coli* and broiler cellulitis:

- Change in regulation of antimicrobial drugs in 2018.
- Impact of Covid on staff and barn operations.

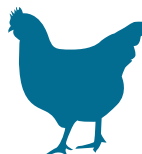
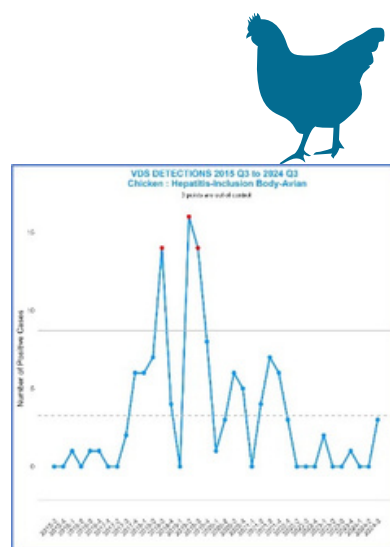
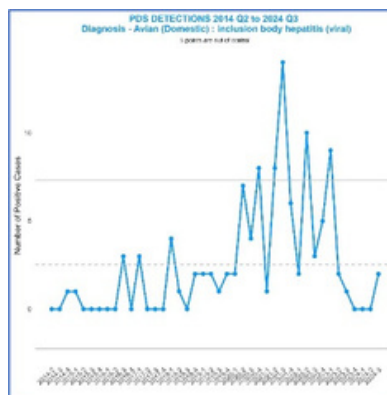
Other clinical syndromes

Other early mortalities were reported *Rarely* to *Commonly* to *Very frequently* and rated *Stable* by all, including conditions such as dehydration, reported by two veterinarians.

Bacterial Lameness was seen *Never* (n=1) to *Rarely* (n=4) to *Commonly* (n=1) and rated *Stable* by 4 and *Increasing* by one network practitioner, associated with *Enterococcus* (n=3), *Staphylococcus* (n=1) and *E. coli* (n=1).

Inclusion Body Hepatitis was reported *Rarely* (n=1) to *Commonly* (n=3) to *Very frequently* (n=2), and rated *Increasing* by three, *Decreasing* by two, and *Stable* by one network practitioner.

Pathologic Diagnoses of Inclusion Body Hepatitis at PDS and Manitoba VDS



Nutritional lameness was reported *Never* to *Rarely* (n=4) to *Commonly* (n=1) and rated **Increasing** by one network veterinarian.

Broiler-breeders

Case report: Increased mortality and testicle infections in a broiler-breeder flock associated with *Enterococcus cecorum* bacteria

History: in a flock with 850 roosters, owner started noting skin irritation and scalding around vents.

Necropsy:

- Vent skin scalded and thickened.
- Protruding vent- condition called “vent gleet” from which yeast *Candida albicans* was cultured
- Testicles yellow, hard, and abscessed. *E. cecorum* cultured from testes.
 - this is of significant impact in this flock since affected testes will not heal.
- Intestines enlarged but not impacted or blocked.



Layers

Case: Avian metapneumovirus (aMPV) in layer flock

History: 27-week-old layers at 80% production.

Presenting complaint: poor performance, under target weight.

Ruleouts:

- pullet management
- Coryza

Diagnostics: serological (blood) testing for aMPV as part of respiratory workup since potentially at risk for Coryza.

- Very high levels of antibodies.

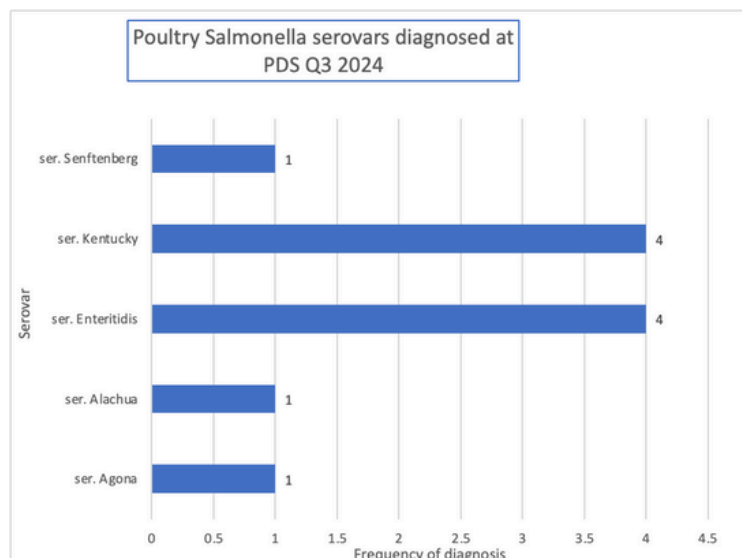
Currently, performance is improving.



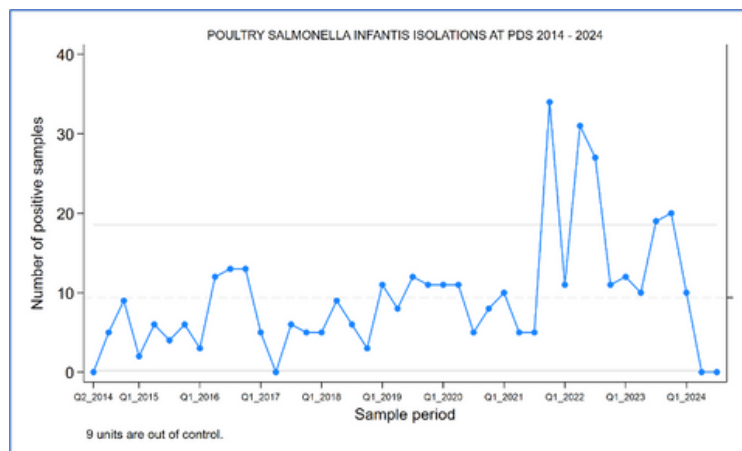
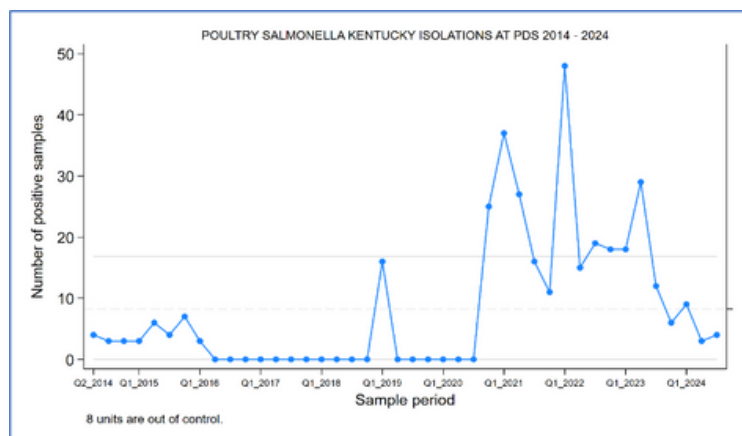
COMMENT: we've seen flocks similar to the one described, e.g., 98% production dipped to 92%. Currently ~30 barns in Manitoba have had aMPV and are dealing with it, and we are going to see more of these downstream impacts of poor performance.

Salmonella testing

WeCAHN is grateful to have access to Salmonella testing data submitted to PDS and Manitoba VDS.

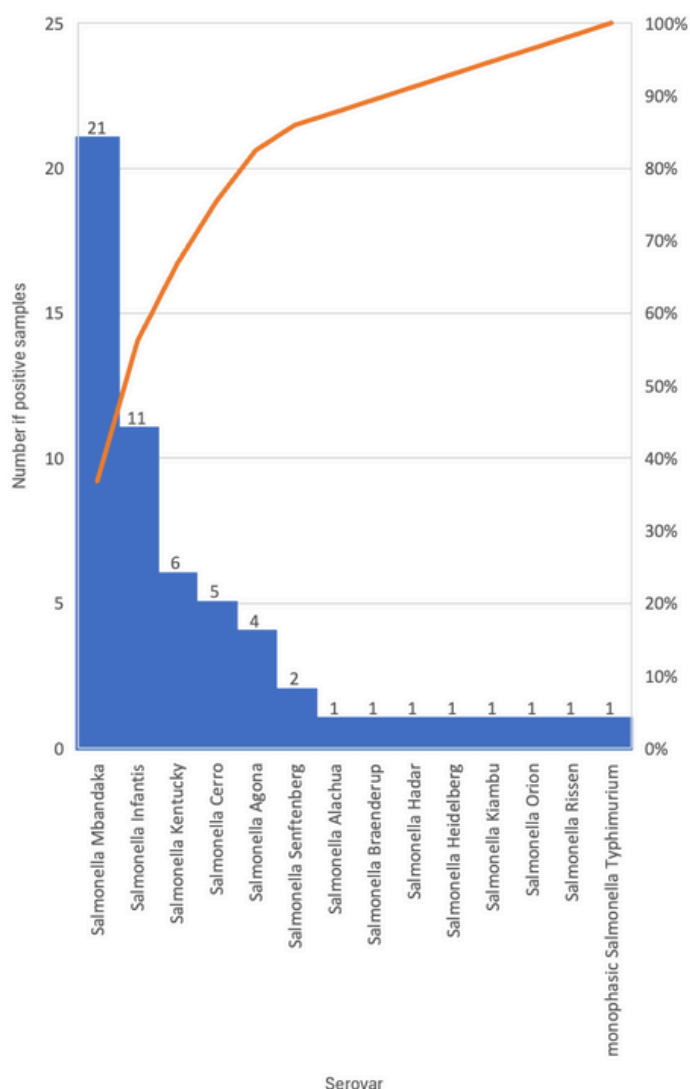


Across a small number of poultry Salmonella-positive samples identified at PDS in Q3 2024, S. Kentucky and S. Enteritidis were most frequently isolated.



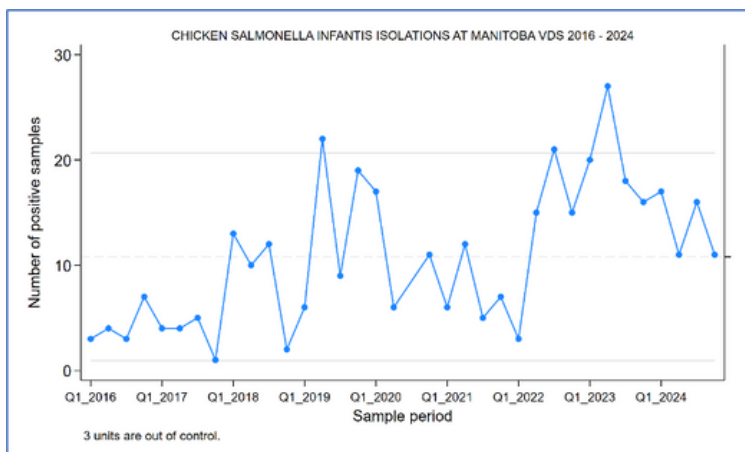
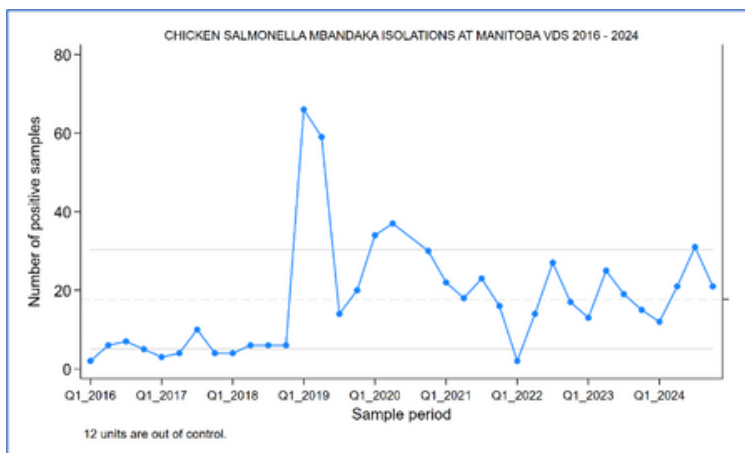


Chicken Salmonella Serovars Isolated at Manitoba VDS Q3 2024

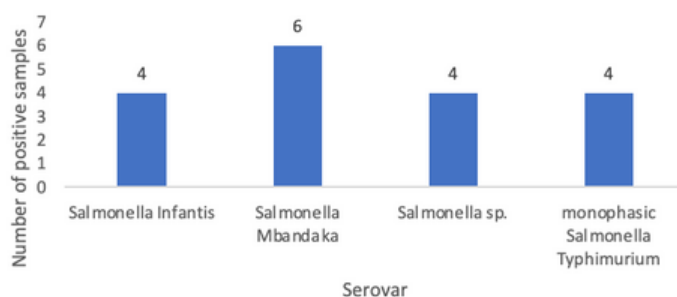


In contrast, *S. Mbandaka* continued to be the most frequently identified *Salmonella* types in chicken samples at Manitoba VDS in Q3 2024, in both chickens (above) and turkeys (below).

Monophasic *Salmonella* Typhimurium (a multi-drug resistant type of *Salmonella*) was isolated from both chicken and turkey samples this quarter.



Salmonella Serovars in Turkeys at Manitoba VDS Q3 2024



Turkeys

Enteritis was reported *Commonly* by 3 practitioners and rated *Stable* by all.

Less frequently reported conditions:

- **Early bacterial systemic infections** were reported *Never* (n=1) to *Rarely* (n=1) to *Commonly* (n=1) to *Very frequently* (n=1), associated with *E. coli*, and rated *Stable* by all.
- **Necrotic enteritis** was reported *Never* (n=1) to *Rarely* (n=2) to *Commonly* (n=2) and rated *Stable* by all.

Smallholders

Marek's disease was reported *Rarely* (n=1) to *Commonly* (n=3) and rated *Stable* by all practitioners completing this part of the survey.

Less frequently reported conditions:

- **Mycoplasma** was reported *Never* (n=1) to *Rarely* (n=1) to *Commonly* (n=2) and rated *Stable* by all.

Scan

Nov. 8th: The U.S. Centers for Disease Control updated their interim guidance to employers to reduce influenza exposure in livestock workers.

This includes recommendations for PPE:

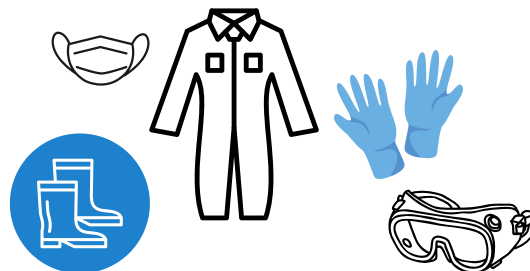
High-risk workers (e.g. contact with live or dead animals confirmed or potentially infected):

- NIOSH Approved® particulate respirator
- Fluid-resistant coveralls
- Safety goggles
- Boot covers or boots
- Head cover or hair cover
- Disposable gloves
- Optional items:
 - Waterproof apron over the top of coveralls to prevent cross-contamination during PPE removal
 - Face shield over the top of goggles and respirator to protect against large amount of liquid splashing onto the filtering facepiece respirator
 - Outer work gloves to protect the disposable gloves

Medium-risk workers (e.g. contact with apparently healthy animals on farm with no AI diagnosis, but within an AI control zone (defined as 10 KM by USDA):

- [NIOSH Approved® particulate respirator](#)
- Safety goggles
- Disposable gloves with optional outer work gloves

For more information: https://www.cdc.gov/bird-flu/prevention/worker-protection-ppe.html#heading-fjb_qnbqe7



Meeting Takeaways

- **HPAI:** research suggests transmission to wild birds in parallel to both the backyard and commercial compartments, with transmission to backyard flocks occurring earlier than to commercial flocks.
- **Avian metapneumovirus:** practitioners shared multiple reports of layer flocks positive on blood tests to aMPV although PCR negative, and no respiratory signs. Common features in presentation: reduced performance and target weights.
- **Enterococcus cecorum:** practitioners report presentations beginning with blood poisoning followed by lameness and birds unable to rise. Québec reports increasing incidence of *E. cecorum* cases since 2022.



Financial support was provided under the Sustainable Canadian Agricultural Partnership, a federal-provincial-territorial initiative.