



The meeting of the WeCAHN poultry network was held Mar. 3, 2023 reviewing Q4 (Oct.—Dec.. 2022)

Report Contents:

1. Dataset Overview
2. Interesting Cases
3. HPAI Overview
4. Syndromic Data:
 - a) Broilers
 - b) Broiler-breeders
 - c) Layers
 - d) Turkeys
 - e) Smallholders

1. Dataset Overview

i. HPAI data: Publicly available wild bird testing; laboratory and clinical impressions survey data, other sources.

ii. Practitioners: Clinical Impressions Survey

iii. Laboratory Data:

- Animal Health Centre
- UCVM Diagnostic Services Unit (DSU)
- Prairie Diagnostic Services (PDS)
- Manitoba Veterinary Diagnostic Services Laboratory (VSDL)

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, for a list of selected pathogens/syndromes how frequently (never/rarely/commonly/very frequently, as defined within the survey) they have diagnosed these pathogens over the time period in question. Additionally, they are asked whether, compared to the previous time period) their diagnosis of these pathogens is increasing/decreasing/ or stable.

2. Interesting Cases

1. Reduced egg production as result of mixing error at on-farm feed mill

- History: layer flock experienced ~ 20% drop in production. Infectious Bronchitis Virus (IBV) was suspected but ruled out by the lab.
- Diagnosis: Follow-up was to investigate feed as possible contributor to clinical signs.
- When switching bins, the bin thought to contain soy was found to actually contain wheat.
- Recovery of birds: took roughly 3 weeks.

2. Case of Infectious Bursal Disease (IBD) in flock which stopped vaccinating:

- History: In the Fraser Valley there is a high degree of Bursal Disease virus persisting in the environment given the high density of birds and close proximity of adjacent flocks.
- Most boiler-breeders receive a live IBD vaccine at the hatchery.
- Typically IBD cases which we see present with vague signs, not the severe/Gumboro disease form.
- With IBD in the presence of immune-suppression, we see:
 - ◊ Weak chicks
 - ◊ High levels of Inclusion Body Hepatitis in the flock

We detect IBD problems on serology (blood tests).

(Interesting Cases continued)

3. Multi Drug Resistant *E. coli* (MDRE)

- Overview: recently this is seen most in turkeys.
- Diagnostics: typically we diagnose based on post-mortem, submit samples to lab, and start treatment based on flock history [of what has worked previously].
- In this case (of multiple flocks) we found initial treatment not successful, and supporting culture confirmed very limited susceptibility of the case strain of *E. coli*.

3. HPAI

i) Wild Bird Testing

- As of Feb. 7 2023, Canadian Wildlife Health Cooperative website:
 - ◊ Dead Bird Testing: 0 positives for 2023
 - ◊ Wild Bird Testing: 0 positives for 2023
- From Canadian Wildlife Health Cooperative (CWHC), at www.cwhc-rccsf.ca/avian_influenza_biweekly_reports.php
- As of Feb 12, CWHC UCVM
 - Dead Bird Testing: 2 positives for 2023
 - Die-off of Canada geese reported around Oldman River late Dec. 2022-Jan 2023. Some of these were sampled and were HPAI positive.
- As of Feb. 2, BC Wildlife AI Surveillance:
 - Waterfowl, 8 of 35 birds tested positive
 - Non-waterfowl, 12 of 28 birds tested positive
 - Mammals, 0 of 1 wild mammals tested positive

ii) Domestic Poultry AI testing Q4 2022 AI detections in domestic poultry Q4 2022, at Prairie Diagnostic Services (PDS) and Manitoba Veterinary Services Diagnostic Laboratory (VSDL)

Laboratory	Negative	Positive	Total
PDS	89	16	105
Manitoba VSDL	14	1	15

iii) Saskatchewan Update:

- In February a letter was sent to all premises associated with poultry production.
- This underlined the need for careful biosecurity [to prevent introduction of HPAI].
- It also stated that once HPAI is reported on the prairies during the spring migration, a “stop movement” order will be made prohibiting activities such as poultry shows.

A stop movement order can be expected to apply to:

- a. Bird shows;
- b. Bird Buy Sell Trade (BST) events, sales or swaps which are locations where birds from multiple locations are brought together and may be exchanged or purchased;
- c. The portion of any agricultural or other fair where birds are exhibited;
- d. A site where birds from multiple locations are brought together for the purpose of sport;
- e. A site where birds are brought from multiple locations for the purpose of education (but does not include the place where the birds are commonly housed);
- f. Vaccination gatherings (bringing birds from multiple sources to a single premises for vaccination); and
- g. Transport of birds via broker-transporters to attend the events described in clauses (a)-(f).

A stop movement order is not expected to include:

- a. Normal business carried out at:
 - i. A slaughter plant operating in accordance with provincial or federal regulation;
 - ii. A registered research facility or a licensed supply facility;
 - iii. A permitted wildlife rehabilitation centre;
 - iv. An entity that provides animal sheltering services;
 - v. Pet stores or other permanent retail locations where birds may be bought, sold or traded;
 - vi. Retail outlets and similar places that sell or distribute live chicks;
 - vii. An accredited veterinary facility under The Veterinarians Act;
 - viii. Zoos and similar businesses at the location where the birds are permanently housed.
- b. Any activity where a person is lawfully exercising existing aboriginal or treaty rights.

4. Syndromic Data

a) Broilers

Commonly reported conditions (seen Commonly or Very frequently) by **3 or more of the 5** practitioners answering this section:

- **Early systemic bacterial infection:** reported Commonly to Very frequently by network practitioners, and rated Stable by network practitioners, associated with *E. coli*.
- **Late systemic bacterial infection:** reported Rarely to Very frequently, and rated Stable by the network practitioners, and associated with *E. coli* and *Enterococcus cecorum*.

(Syndromic data, Broilers, continued)

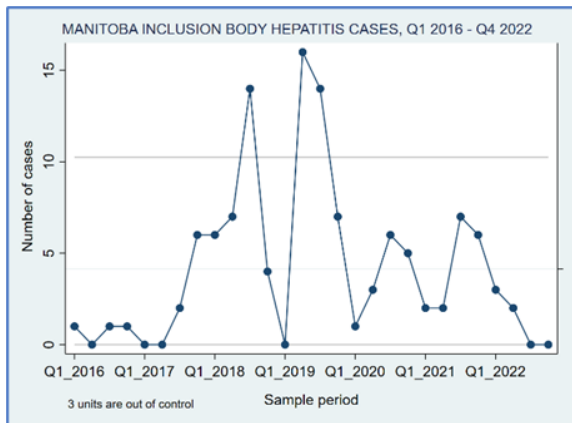
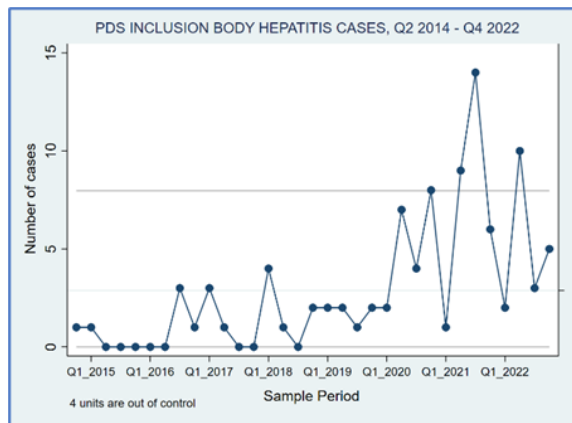
- UCVM reported *E. coli* in 8 week old turkeys and 4 day old turkeys, 4 day old broilers and 69 day old turkeys, and *Enterococcus cecorum* and *Salmonella* Enteritidis co-infection in 27 day old broilers. Submissions at PDS and Manitoba VSDL continued to be Stable.
- **Yolk sac infections:** reported Commonly (N = 4) to Very frequently (N = 1) by practitioners, and rated Stable by all.

Antimicrobial sensitivity of *E. coli* isolates at Prairie Diagnostic Services (PDS):

- Overall: at this relatively high-altitude perspective studying time trends in resistance to the selected antimicrobials:
- Broadly, % of **resistance** has declined for each antimicrobial examined.
- Similarly, broadly, the total number of *E. coli* isolates assayed quarterly (in a 3 month time period) for antimicrobial susceptibility testing has also declined from 2014 – 2022 (data not shown).
- **Bacterial lameness:** Reported Rarely to Very frequently by network practitioners, and rated and Stable by all, associated with *E. coli* and *E. cecorum*.
- **Inclusion Body Hepatitis:** reported Never to Commonly to Very frequently by practitioners, and rated Stable by all.

Recap on ‘control charts’: For each of the following graphs, each data point reflects the number of positive samples or cases reported, over a 3 month period. The upper and lower horizontal lines, called control limits, are similar to statistical confidence intervals.

Control charts are a simple way of presenting data collected over time. Apparent trends (e.g. increasing or decreasing frequencies of detection) over time, or individual points lying outside the control limits, suggest a need for investigation to determine whether/how significant a signal they represent.



- Slightly different apparent time trend reported from Manitoba VSDL relative to PDS.
- **Infectious bronchitis:** reported Never to Commonly by network practitioners, and rated Increasing by 1 and Stable by 3.



b) Broiler-breeders

Following were diagnosed commonly (defined in this section as **3 or more of 5** individual practitioners responding, reporting a syndrome diagnosed once or twice a month, or more frequently):

- **Bacterial lameness:** reported Commonly by three practitioners, associated with *Staphylococcus*.

c) Layers

Commonly (defined for purposes of this report as **2 or more of 4** more individual practitioners reporting a syndrome diagnosed once or twice a month, or more frequently, in the practitioners' survey) **reported diagnoses:** None.

- **Egg drop due to feed mill error** was reported this quarter (October – December 2022).

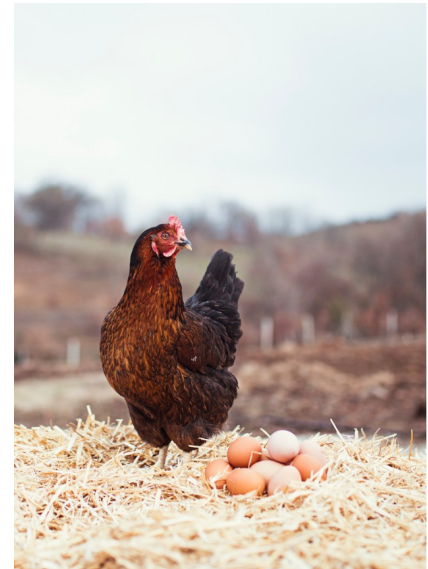
d) Turkeys

Commonly (defined for purposes of this report as **3 or more of 5** individual practitioners reporting a syndrome diagnosed once or twice a month, or more frequently, in the practitioners' survey) **reported:**

- **Early systemic bacterial infection:** reported Never to Rarely to Commonly by practitioners, and rated Increasing by 3, associated with *E. coli* and MDRE.
- **Late bacterial systemic infection:** reported Rarely to Commonly by practitioners, and rated Increasing by 1, also associated with *E. coli* and MDRE.
- **MDRE in turkeys:** this level of increase in a turkey syndrome is a first since WeCAHN started polling practitioners. Does this somehow reflect the impact of AI on the sector?

COMMENT:

- Over the past 3 - 6 months we've seen increasing cases of *E. coli* infections in poults, which seems to reflect reduced poult quality. This varies with:
 - ◊ Age of breeder
 - ◊ Stress
 - ◊ Immune-suppression
 - ◊ Gut health
 - ◊ Other factors
- This [reduced poult quality] presents in increased frequency of yolk sacculitis and omphalitis predisposing to increased frequency of systemic bacterial infection.
- Impact of AI has been very reduced supply of turkey poults.



e) Smallholders

Commonly (defined for purposes of this report as **2 or more individual practitioners out of 4** reporting a syndrome diagnosed once or twice a month, or more frequently, in the practitioners' survey) **reported:** None.

Less frequently seen syndromes:

- **Egg yolk peritonitis:** reported Commonly by 1 practitioner, and Stable by all.
- **Lameness (bacterial):** reported Very Frequently (N = 1), and Stable by all.
- **Marek's Disease:** reported Very Frequently (N = 1), and Stable by all.

Marek's Disease in small flocks:

- Problem is that most small flock birds aren't vaccinated
- The vaccine is difficult for them to source and/or administer:
 - vaccine needs to be maintained in a nitrogen tank
 - timing- generally is administered in ovo
- One practice offers the service of vaccinating small flock chicks if they are presented to the

Meeting takeaways

Recent uptick in early bacterial systemic disease, and multi drug resistant *E. coli* is thought to be associated at least in part with reduced poult quality. Especially in the turkey sector, this in turn is associated with impacts of HPAI on poult supply.