



The WeCAHN Poultry network met by videoconference 15 September 2023 to discuss poultry health in western Canada during the second quarter (April-June) of 2023.

Report Contents:

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1. Overview of Dataset

- i. Clinical Impressions Survey completed by network practitioners.
- ii. Laboratory data shared by Prairie Diagnostic Services (PDS), Manitoba Veterinary Services Diagnostic Laboratory (VDSL) and UCVI Diagnostic Services Unit (DSU).
- iii. Wild Bird testing: provincial testing, Canadian Wildlife health Cooperative (CWHC), UCVI CWHC node.

2. Interesting Cases

- i. **Turkey poults with neurological signs: Alberta**
 - **History:** Increased mortality: first 2 weeks: 6% first 16 weeks: 15%; birds were underweight.
 - At 4 weeks old started showing neurological signs (e.g. crooked neck). Number of affected animals increased daily.
 - Post-mortem's were done in the field and tissues submitted.
 - Laboratory findings on tissues: main findings were in the brain: mild inflammation (1/5 birds submitted).
 - PCR test on pooled brain tissue – Avian Encephalitis (AE) virus negative, avian

reovirus positive.

- Subsequently birds developed lameness.
- Second set of tissue submissions to lab included tendons and heart from some affected birds.
- PCR on tendons: also positive for reovirus.
- Blood: drawn at 6 weeks for reovirus antibodies. Repeat at 11 wk -> demonstrated rising antibody levels suggesting recent infection.

QUESTION: could the original virus have mutated, or two different strains moved through flock?

ANSWER: currently unclear.

ii. Turkey poults with neurological signs: B.C.

- **History:** Practitioner heard of flock of 500 with neurological problems in an operation in business since the '50s, operating with limited facilities. This group of poults had problems from the start, with
 - leg problems including slipped tendons by 3 days of age.
 - bacterial septicemia -> *Salmonella* Enteritidis (SE) which resulted in severe culling (10-30%).
 - started showing neurological signs (circling and crooked neck) at 7 weeks.
- PCR: Reovirus and AE negative.
- Microscopic study on brains from birds with neurological signs: mild inflammation.
- Remaining Ruleout *Salmonella* Enteritidis:
 - *Salmonella* Enteritidis.
 - Toxicity: salt poisoning [causing brain swelling]? Unclear since the owners replaced the feed when problems started.

QUESTION: how many brains were examined on histopath?

Interesting Cases (continued)

ANSWER: one of five birds.

Comment: Prairie Diagnostic Services (PDS) has capacity to apply analysis of genomes to samples where mystery virus might be suspected.

iii. Turkey poults with neurological signs: Saskatchewan.

- AE (Avian Encephalomyelitis) virus like disease in turkeys.
- 2 flocks with similar clinical presentation and necropsy lesions within 1 week. Poults were 24 days old at post-mortem for the one case, and 35 days old at post-mortem for the other case. However, in both cases, the poults had showed clinical signs of neurological disease for a similar duration (approximately 2-3 weeks of age until 6-7 weeks of age).
- Both cases negative by PCR test for AE. No definitive diagnosis was determined for the turkeys.

3. Avian Influenza Testing

Wild bird testing

- B.C: HPAI H5N1 detected in one peregrine falcon collected in the period May 9 – June 16 2023.
- AB UCVM node of Canadian Wildlife Health Cooperative (CWHC): No detections in wild birds April- June 2023. Alberta ministry testing reported in CWHC report (below).
- CWHC

Dead Bird Survey 2023

*Matrix positive includes all birds that tested ‘not negative’ by PCR for one or more Influenza A viruses. The number of positive test results included both those birds that tested POSITIVE (Ct value less than 36) and those that had an INCONCLUSIVE test result (Ct value greater than or equal to 36).

**The CFIA has confirmed the presence of High Pathogenic Avian Influenza (HPAI), subtype H5N1. Any samples found to be matrix POSITIVE or INCONCLUSIVE are then tested by PCR for H5 and H7 strains at the regional level. Any samples that are then found to be either H5 or H7 POSITIVE or INCONCLUSIVE are immediately sent to the NCFAD for confirmation and identification. Authorities from the province or region where the bird was sampled will be notified when preliminary H5 or H7 positive results are found at the regional lab. When the CFIA confirms and identifies the virus, authorities from across the country will be notified. This update reports all POSITIVE or INCONCLUSIVE PRELIMINARY matrix results unless otherwise stated.

From: www.cwhc-rccsf.ca/avian_influenza_biweekly_reports.php



Region	August 1-14 2023		Year to date				
	Tested	Matrix Positive*	Tested*	Matrix positive*	H5 positive*	H7 positive*	HPAI**
B.C.	0	0	0	0	0	0	5
Alberta	0	0	102	10	10	0	7
Saskatchewan	25	0	203	1	1	0	0
Manitoba	20	0	158	2	2	0	1

AI Testing (continued)

Live Bird Survey

Number of live birds tested and number matrix, H5 and H7 PCR positive* since January 1, 2023

Province	Tested*	Matrix positive*	H5 positive*	H7 positive*	HPAI**
B.C.	15	1	1	0	0
Alberta	0	0	0	0	0
Saskatchewan	47	0	0	0	0
Manitoba	0	0	0	0	0

*Matrix positive includes all birds that tested ‘not negative’ by PCR for one or more Influenza A viruses. The number of positive test results included both those birds that tested POSITIVE (Ct value less than 36) and those that had an INCONCLUSIVE test result (Ct value greater than or equal to 36).

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Poultry testing

AI PCR Detections in Poultry at PDS and Manitoba VDSL. Q2 2023

Laboratory	Negative	Positive	Total
Prairie Diagnostic Services	32	0	32
Manitoba VSDL	12	0	12

4. Syndromic Surveillance

a) Broilers

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.

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 septicemia was rated Stable by three practitioners and **Increasing** by two, relative to the previous three month period (January – March 2023). It was also associated with AMR by one practitioner.

Bacterial Lameness was rated Stable by four and **Increasing** by one practitioner, and associated with *E. coli* septicemia by one.

Yolk sac infections were seen Commonly to Very frequently by all network practitioners, and rated **Increasing** by two. These were also associated with *E. coli* by one practitioner.

Syndromic Surveillance (continued)

There has been a longer-term trend to increasing yolk sacculitis cases at PDS since 2017, across a relatively small number of diagnoses quarterly.

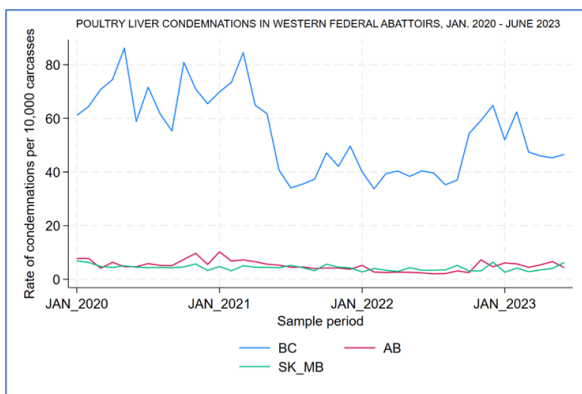
Early bacterial infections: understanding was that the uptick in these last year reflected impact of HPAI resulting in reduced poult quality.

QUESTION: are we still seeing this?

ANSWER: in our practice (B.C.), mostly associated with US-origin hatching eggs.

In the west the rate of federal condemnations of chickens for respiratory condemnations continued to be notably higher in B.C. Last quarter, B.C. veterinarians associated this with an incursion of Infectious Bronchitis virus into the province.

Inclusion Body Hepatitis was rated Stable by three, Decreasing by one, and **Increasing** by one WeCAHN poultry network practitioner.

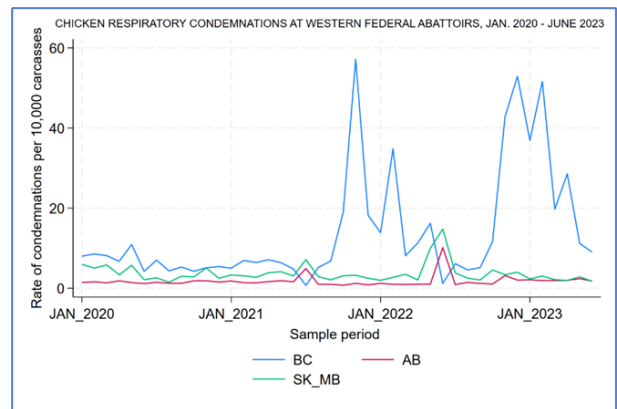


The rate of liver condemnations at slaughter in federal abattoirs continued to be notably greater in B.C. relative to the other western provinces. This has been related to humid B.C. climate being conducive to coccidiosis and resulting dysbiosis, with subsequent

movement of toxins from the intestine back to the liver via the bile duct. It will interesting to see whether the drier summer this year in B.C. is reflected in a change to this trend.

Cellulitis condemnations were seen Commonly to Very frequently by all network practitioners, and rated **Increasing** by one. In contrast with liver condemnations, the rate of federal subcutaneous poultry condemnations were more similar across the west.

Respiratory condemnation rate continues to be notably higher in B.C. than on the prairies. Last quarter, B.C. veterinarians associated this with an incursion of Infectious Bronchitis virus into the province.



However, the rate of skin condemnations continued to be greater in Alberta relative to B.C. and Saskatchewan-Manitoba.

b) Broiler-breeders

Conditions seen commonly included:

In-lay bacterial septicemia, rated Stable by four and **Increasing** by one practitioner.

Bacterial lameness, seen commonly to Very frequently by all network practitioners, was rated Stable by all, and associated with *E. coli* or *Staphylococci* by one.

One case of Inclusion Body Hepatitis in broiler-breeders was reported by a network practitioner.

Syndromic Surveillance (continued)

- Presenting Concern: there was an increase in mortality in broiler breeder males and pullets at approximately 16 days of age. The cockerels (males only, not pullets) had gross and histopathological lesions consistent with IBH.
- Placement Date: March 16/23. The cockerels were likely vaccinated for: Marek’s Disease, Reovirus, and Coccidiosis at Day 0 at the hatchery then Salmonella (Modified Live Virus) at day 7 via spray or drinking water, then reovirus and Infectious Bursal Disease Virus at 14 days of age.
- Inclusion Body Hepatitis was diagnosed in 18 -day old broiler breeder males (FAdV11 as per U of Guelph Animal Health Lab Fowl adenovirus sequencing). The males had been imported from the U.S.A. FAdV11 is the field strain of Fowl adenovirus. Overall, the total cockerel mortality from the IBH disease event was approximately 1-2%.



c) Turkeys

Frequently seen conditions included:

Early bacterial systemic infections, reported Commonly by 4 practitioners, associated with AMR by one, *E. coli* by two, and rated **Increasing** by one network practitioner.

Late bacterial systemic infection, reported Commonly by five, rated **Increasing** by one, and associated with chick quality by one network practitioner.

Roundheart, reported Commonly by 3 practitioners.

As noted above, neurological syndromes across a range of ages were reported in turkeys across the west this quarter.

5. Meeting Takeaways

- Disease in turkey poults was reported across the west, including:
 - Reovirus-associated, with both neurological and cardiac presentations.
 - Neurological presentations without definitive diagnosis, occurring from 2-7 weeks of age.
- WeCAHN is pleased to report that having had funding support confirmed for the life of the new 5-year SCAP cycle, we will be launching a smallholders’ production network later this fall. Of course small flock medicine and clinical presentations will be a major focus of this network. Our hope is that this can have a positive impact on commercial poultry practice by helping support mixed and large animal practitioners in the west in serving this group of clients.