

Eastern Disease Update 2022

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Production Poultry
Veterinary Services



PRODUCTION POULTRY VETERINARY SERVICES



**POULTRY
SERVICE
INDUSTRY
WORKSHOP**

Agenda

- Broiler Breeders
- Layers
- Turkeys
- Broilers
- Avian Influenza
- Acknowledgements



Poultry Disease Update

High Performance

High Performance Under Pressure

- Disease pressure is everywhere
 - Viruses, bacteria, parasites, fungus
 - Close proximity
 - Host susceptibility
 - Modern production demands

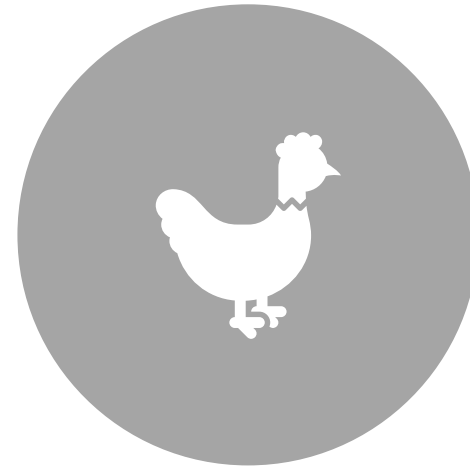
High Performance Under Pressure

- Health
 - Difference between stress level & stress threshold
- Resilience
 - Capacity to continue performing while facing disease challenge
- Successful health program
 - Balancing immunity & health to maximize resilience
 - Focuses on enhancing & developing protective response to prevent clinical disease

High Performance Under Pressure



RESILIENCE VS. STRESS



CURRENT DEMANDS OF
POULTRY PRODUCTION

Broiler Breeders – Bacterial Challenges

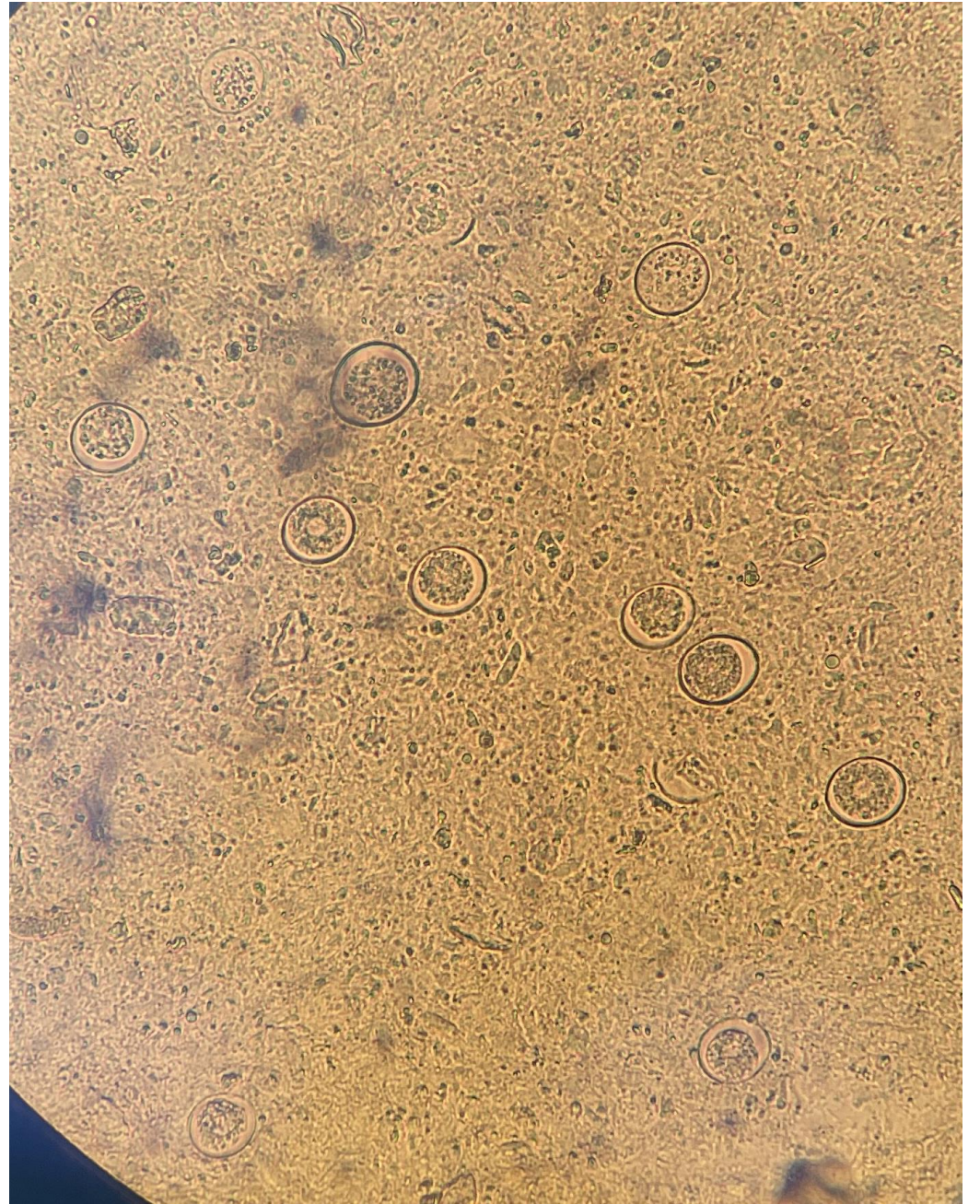
- Early bacterial infections (yolk sacculitis & omphalitis)
 - *E. coli* +/- *E. cecorum* or *C. perfringens*
- Pre-lay infections
 - *S. aureus* +/- *E. coli* or *E. coli* +/- *E. cecorum*
- In-lay septicemia
 - *E. coli*, *E. cecorum*, *G. anatis*, *S. aureus* & *C. perfringens*
 - Multi-drug resistant *E. coli* & mixed infections
- Bacterial lameness in males at 7 weeks of age (QC) & before/after transfer (ON)
 - *S. aureus*, *E. coli*, *E. cecorum*, *P. multocida*, *P. aeruginosa*
- Salmonella
 - *S. Kentucky* & *S. Kiambu* (ON)



Broiler Breeders – Additional Challenges

- Mycoplasma synoviae
- Mycotic pneumonia
- IBV
 - DMV (ON_21-017385 most common)
 - Severe fever in non-vaccinated flock (QC)
 - Cystic oviducts (ON)
 - California, ON AHL19-032390, CU82792
- Intussusception
- Cannibalism
- Blackhead (ON)
- Mareks
- Coccidiosis





Layers – Bacterial Challenges

- Early bacteria infections (yolk sacculitis & septicemia)
 - *E. coli*
- In lay septicemia
 - *E. coli*, *E. cecorum*, *G. anatis*, *Streptococcus gallolyticus*
- Bacterial peritonitis/salpingitis
 - *E. coli*, *E. cecorum*, *G. anatis*
 - Multi-drug resistant infections
- Necrotic enteritis
 - Increased at transfer of birds to aviary (QC)
 - Associated with coccidiosis
- Salmonella
 - *S. Enteritidis*; some flocks destroyed (ON)

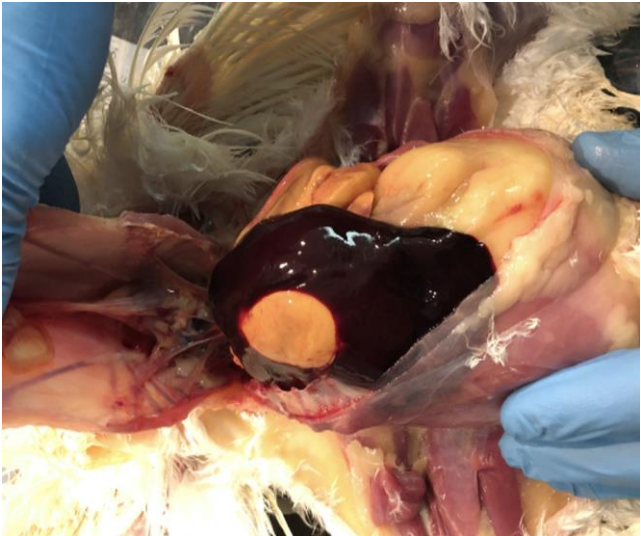


Layers – Additional Challenges

- Focal Duodenal Necrosis
 - Common & increasing
- IBV
 - Less impact in the industry compared to previous years
 - Severe in non-vaccinated flocks (QC)
- Fowl Pox in lay (QC)
- Fatty liver
 - Increased in QC; mainly driven by nutrition, potentially tied to grain prices
- Cannibalism
 - High light intensity (AC)
- Roundworms

Layers – Additional Challenges

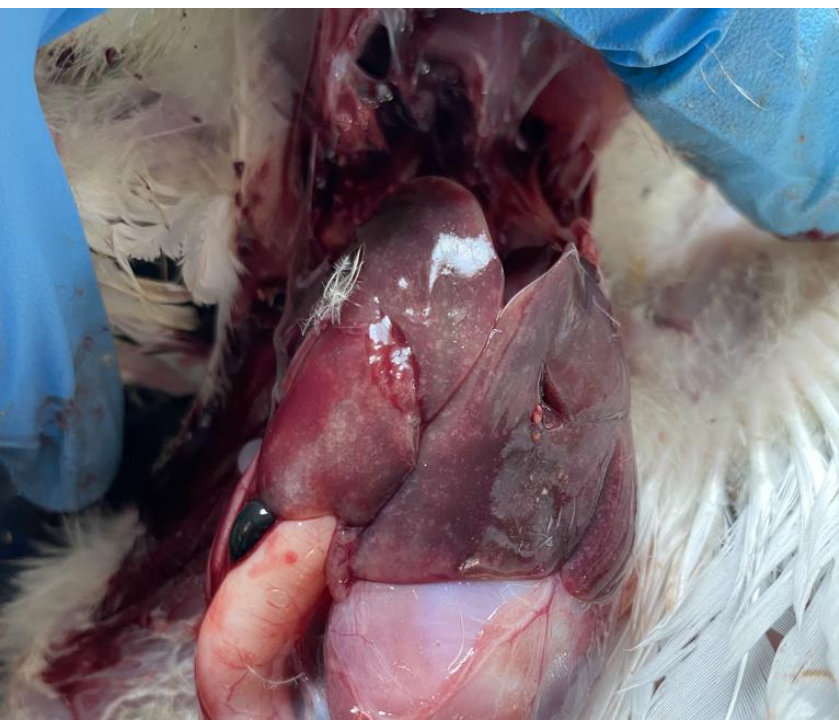
- Ergotism
- Mycoplasma synoviae
- Mareks causing blindness
- ILT in pullet flock
- Increased mortality in aviary associated with bone fractures (QC)
- Calcium tetany/Hypocalcemia (AC)
- Increased starve-outs in free run operation (AC)
- Coccidiosis





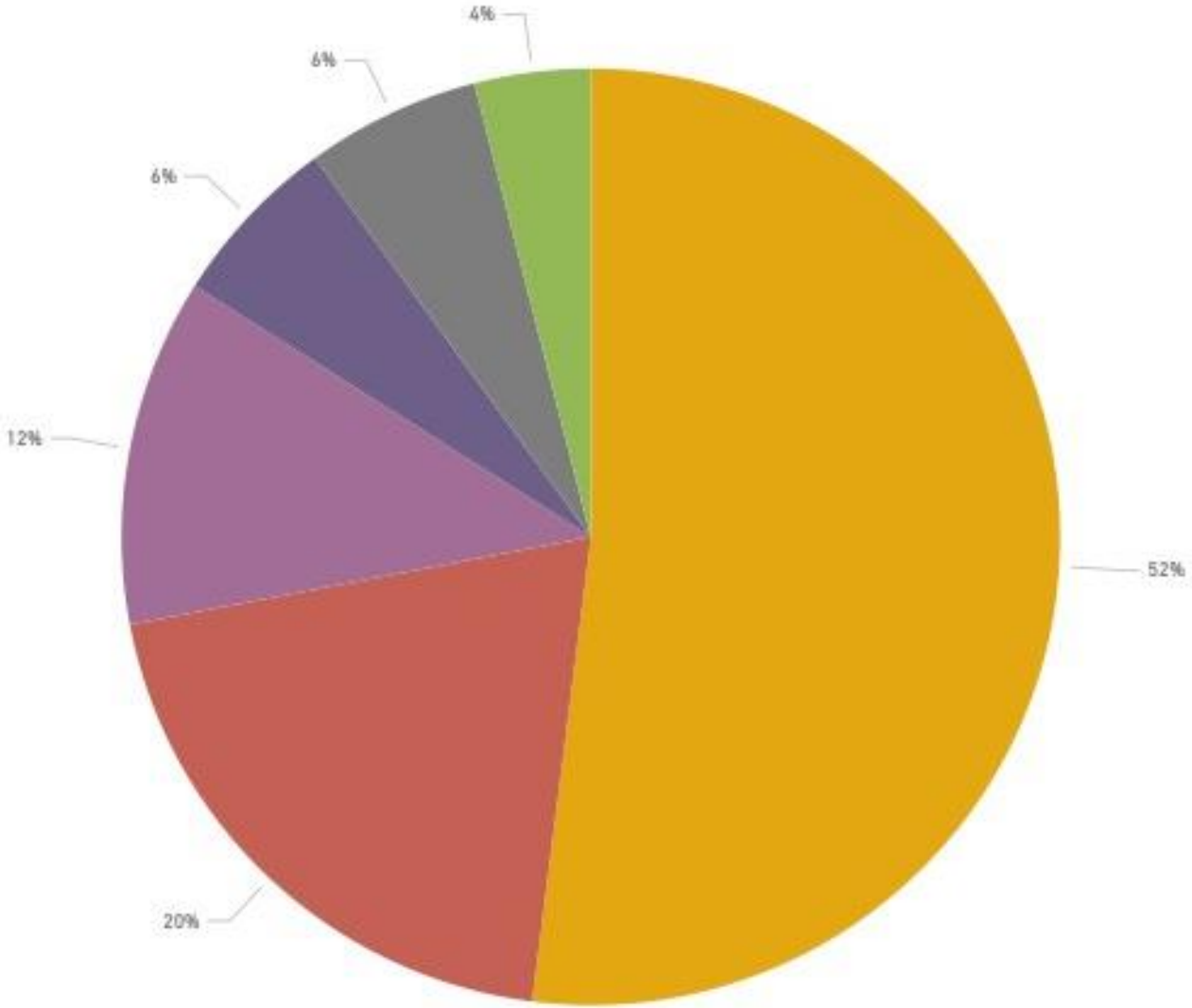
Turkeys – Bacterial Challenges

- Early bacterial infections
 - *E. coli*, *S. aureus*, *P. aeruginosa*
- Late bacterial infections
 - *E. coli*, *E. cecorum*, *P. aeruginosa*, *S. aureus*
- Necrotic enteritis
- Gangrenous dermatitis
- *Salmonella Muenchen*, *Hadar*, *Uganda*



2022 Bacterial Culture Results (Turkeys)

- Bacteria Cultured
- E. coli
 - E. cecorum
 - Pseudomonas
 - Salmonella
 - Staphylococcus aureus
 - C. perfringens



Turkeys – Additional Challenges

- Blackhead
- Coccidiosis
- Reovirus (QC)
 - Hepatitis at 2 weeks
 - Tenosynovitis at 15 weeks
 - Vertical transmission
 - In ON autogenous vaccines has had significant impact on control
- Turkey Viral Hepatitis
- Necrotizing ventriculitis





Broilers – Bacterial Challenges

- Early bacterial infections
 - *E. coli*, *E. cecorum*, *C. perfringens*, *P. aeruginosa*
 - Scarcity of hatching eggs; USA eggs higher & breeder flocks >63 weeks
 - *Salmonella* stable
 - *S. Enteritidis* in 2 day old chicks; eggs sourced from US, hatched in ON
 - Clostridial enteritis & hepatitis in 5-7 day old chicks
 - No anticlostridial medications in feed



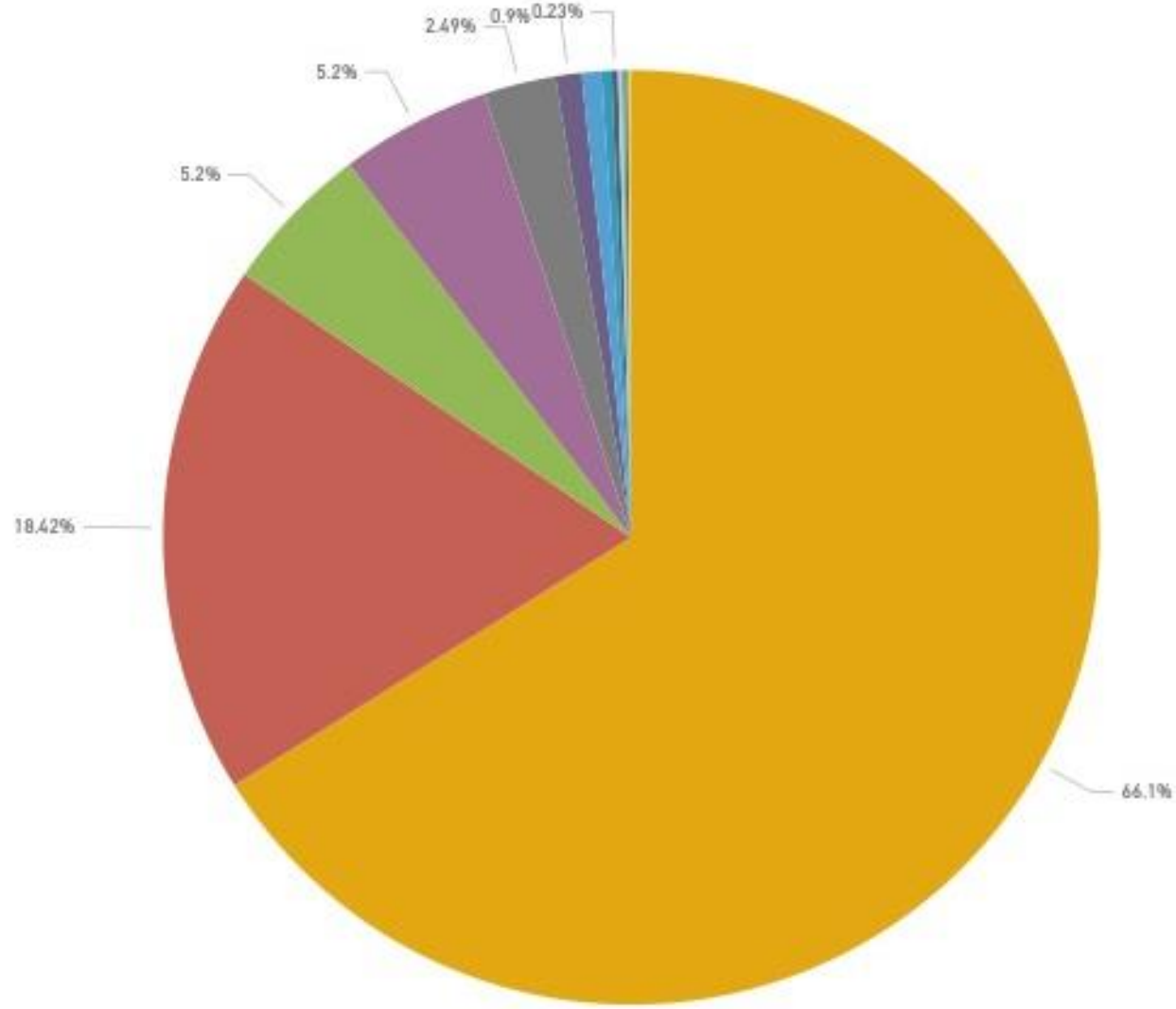
Broilers – Bacterial Challenges

- Late bacterial infections
 - *E. coli*, *E. cecorum*, *C. perfringens*, *G. anatis*, *P. aeruginosa*, *S. aureus*
 - *Salmonella Typhimurium* & *Enteritidis*
- Increased osteomyelitis, bacterial lameness
 - *E. coli*, *E. cecorum*, +/- *S. aureus*
- *E. cecorum* main concern in QC; cases increasing since 2019
 - Seeing clinical pattern shift from kinky back (28-30d) to osteomyelitis & septicemia as early as 15 days
 - Sensitive to penicillin & ampicillin
 - qPCR and PCR for *E. cecorum* available through University of Montreal



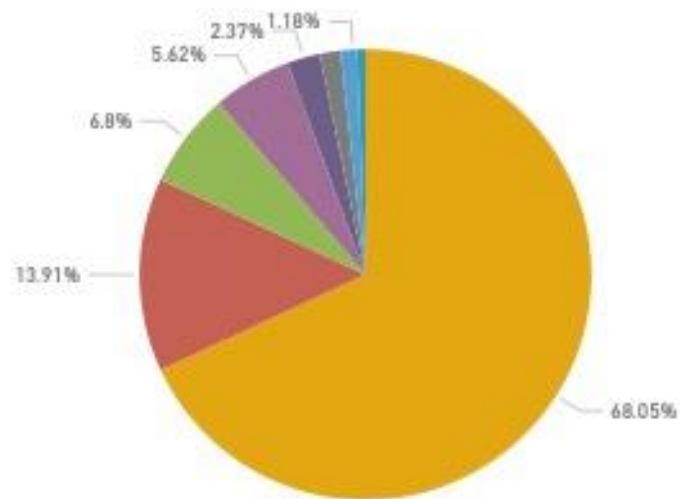
2022 Bacterial Culture Results (Broilers)

- Bacterial Cultured**
- E. coli
 - E. cecorum
 - C. perfringens
 - Pseudomonas
 - Staphylococcus aureus
 - Salmonella
 - Salmonella group D
 - Salmonella group B
 - Gallibacterium anatis
 - Bacteroides fragilis
 - Enterococcus faecalis
 - Erysipelothrix rhusiopathiae
 - Proteus mirabilis



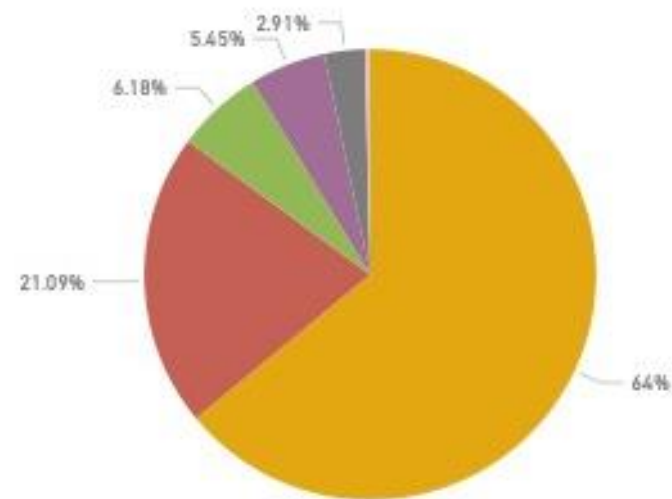
Bacteria Cultured from Yolk Sac Swabs (Broilers)

- E. coli
- E. cecorum
- C. perfringens
- Pseudomonas
- Salmonella
- Staphylococcus aureus
- Salmonella group D
- Salmonella group B



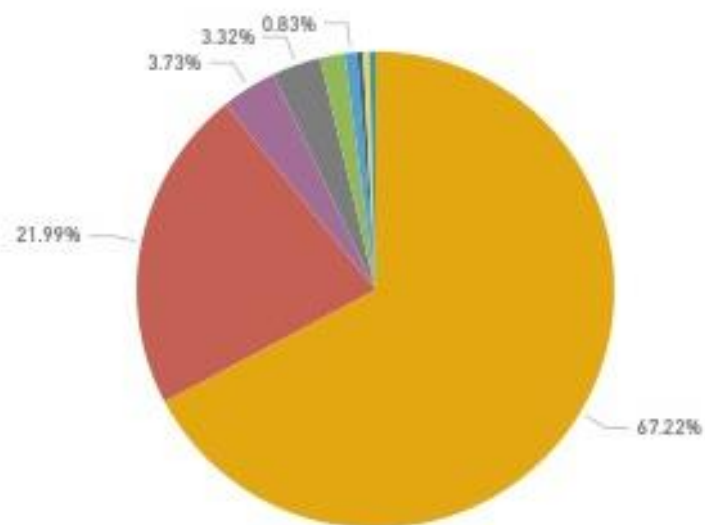
Bacteria Cultured from Heart Swabs (Broilers)

- E. coli
- E. cecorum
- C. perfringens
- Pseudomonas
- Staphylococcus aureus
- Bacteroides fragilis



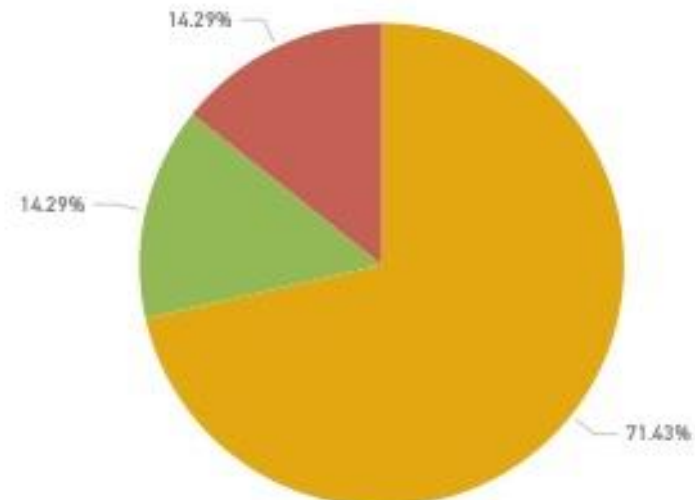
Bacteria Cultured from Bone Marrow Swabs (Broilers)

- E. coli
- E. cecorum
- Pseudomonas
- Staphylococcus aureus
- C. perfringens
- Salmonella group D
- Gallibacterium anatis
- Proteus mirabilis
- Salmonella group B



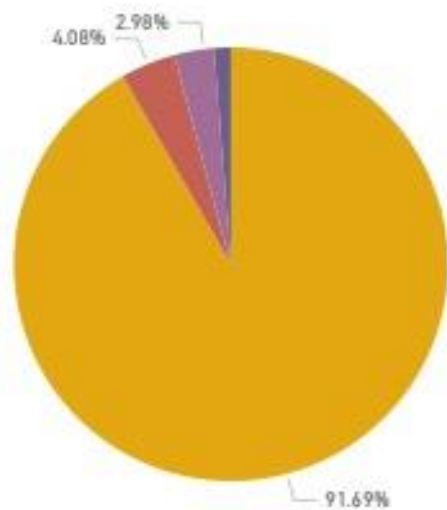
Bacteria Cultured from Liver/Spleen Swabs (Broilers)

- E. coli
- C. perfringens
- E. cecorum



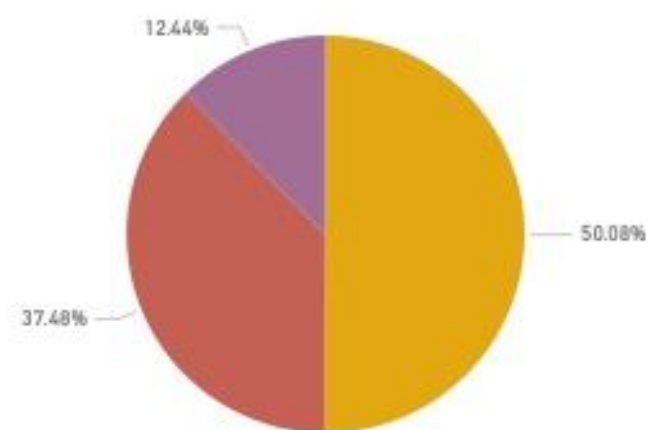
E. coli by Species

● Chickens ● Turkeys ● Chicken Breeders ● Chicken Layers



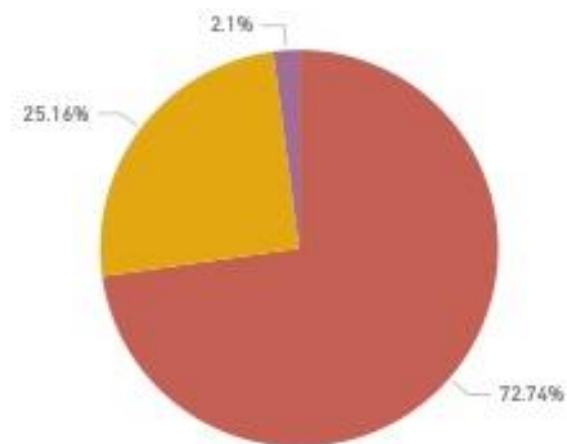
Amoxicillin Sensitivity

● Resistant ● Sensitive ● Intermediate



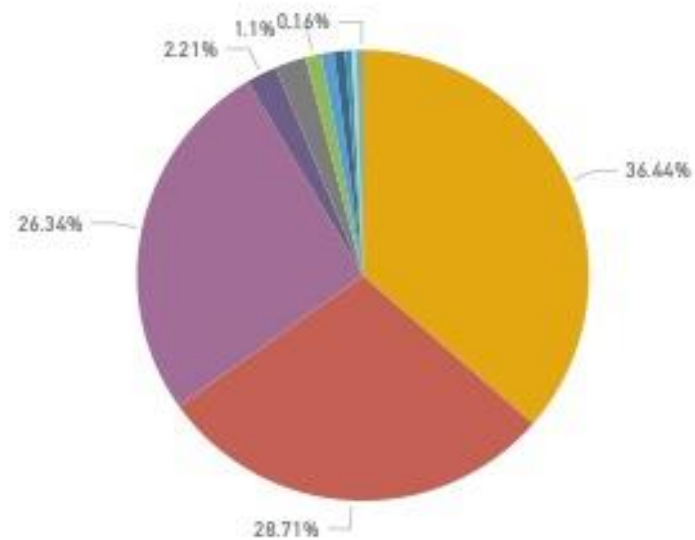
TMS Sensitivity

● Sensitive ● Resistant ● Intermediate



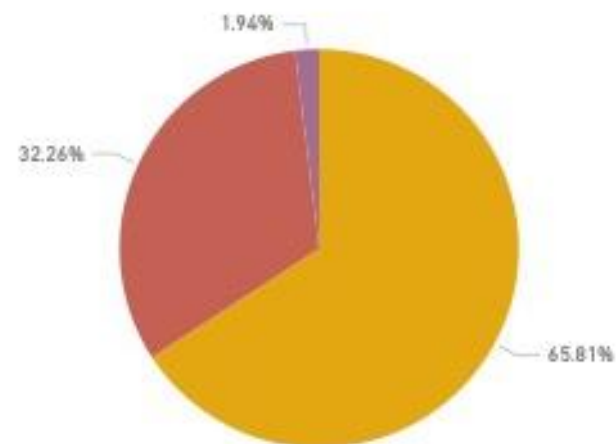
E. coli by Tissue

● Yolk sac ● Heart ● Bone marrow ● Air sac ● Liver/spleen ● Hock ● Liver ● Sinus ● Lung ● Joint ● Spleen ● Spine



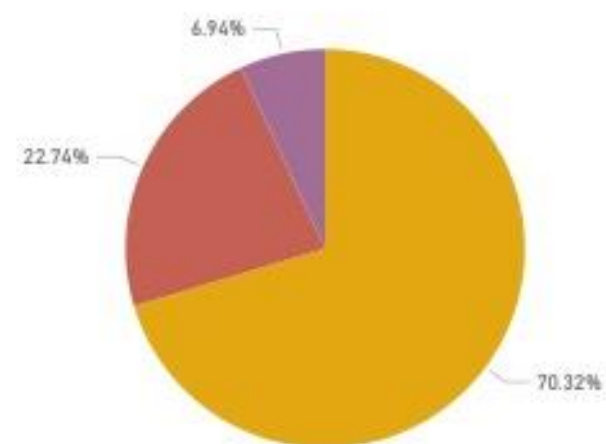
Tetracycline Sensitivity

● Resistant ● Sensitive ● Intermediate



NeoTet Sensitivity

● Resistant ● Sensitive ● Intermediate

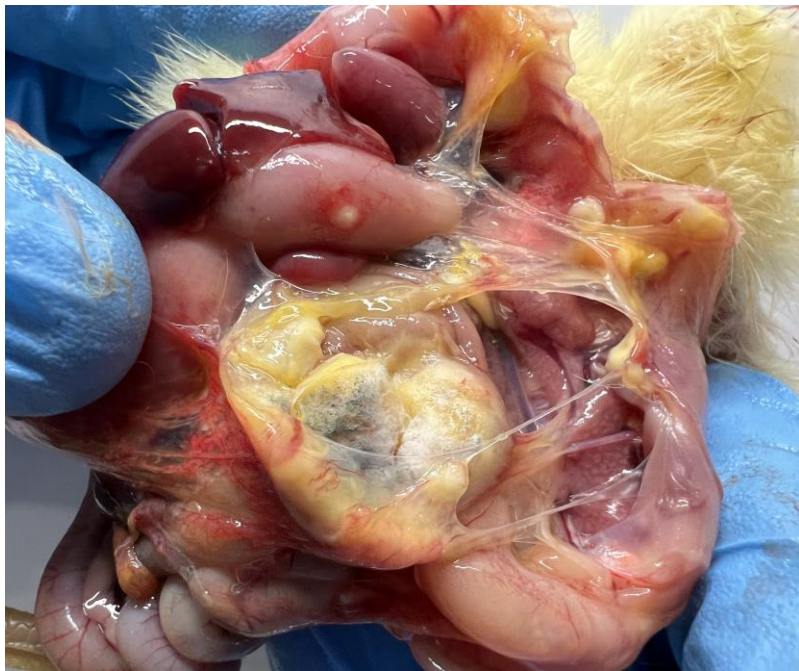


Broilers – Viral Challenges

- IBH most common cause of high mortality (ON)
 - QC: at end of 2021 increase of clinical cases that were likely vertical transmission
 - MAPAQ believes it is mainly horizontal transmission now
 - QC: Serotype 8b most prominent strain
 - suspect mutation
 - Most companies have added new strain to autogenous vaccines
 - ON: Serotype 8b & 11 identified
 - 8b most common

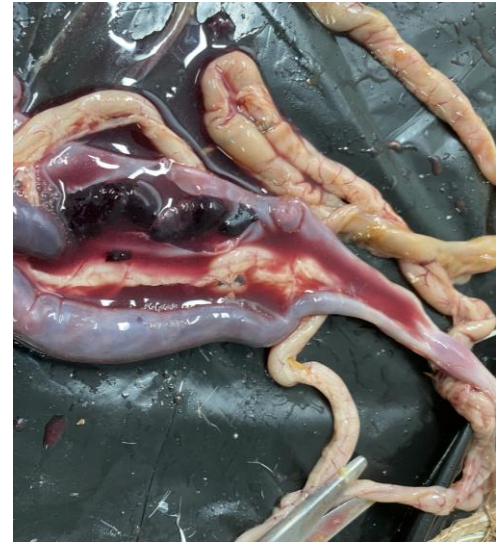
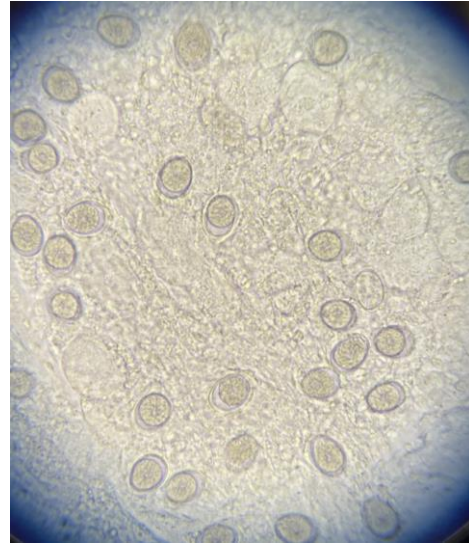
Broilers – Viral Challenges

- IBDV – both field and vaccine strains isolated
 - Pennsylvania (USA PA105-2014 field strain), SA-08, BC_586-03-42857
 - Increase may be due to increased testing from industry research
- Reovirus stable to decreased
 - QC: vertical transmission from US eggs causing issues between 13-21 days
 - ON: decrease in variant D; Alberta 14-0838 field strain
- IBV stable
 - 2 strains of DMV; 017385 most common
 - Some cases with no increased mortality, just decrease in feed & water intake
- RSS stable to increased
 - Confirmed diagnosis <14 days & >14 days



Broilers – Additional Challenges

- Coccidiosis
 - Cecal coccidiosis (AC)
 - Drug program changes, litter moisture & ventilation challenges
 - Subclinical NE noted during cocci challenges
- Heat stress causing issues
 - ON: mortality
 - AC: poor growth in facilities with inadequate ventilation (no mortality)
- Severe pecking in 5 day old organic flock (unknown cause)
- Ascites increased
 - IBV, heat stress, condemnation
- Mycotic pneumonia



HPAI – Spring 2022

- ON (March 27-May 18): 20 commercial; 6 small flock
- NS (February 1-March 15): 2 commercial; 2 small flock
- NFLD & LAB (December 20-Jan 9): 2 small flock
- NB (April 25): 1 small flock
- QC (April 12-August 1): 9 commercial, 3 small flock



High Performance

Resilience vs. Stress

Acknowledgements

- Quebec

- Dr. Linda Lallier
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- RAZIO

- Atlantic Canada

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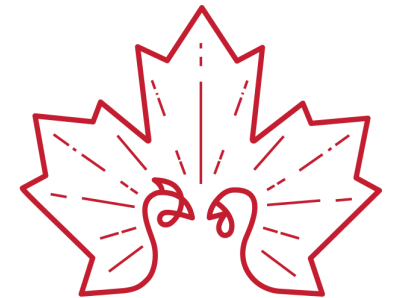
- Ontario

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Thank You

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