



PRAIRIE LIVESTOCK
V E T E R I N A R I A N S



Poultry Service Industry Workshop 2023:

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#3521441**

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Broiler Breeder Case Presentation

- Broiler Breeder Operation
 - 11 week cycle
 - 4 breeder layer barns
 - Various feed companies
 - 2 pullet barns
 - Various feed companies
 - Great farm biosecurity and management
 - Weekly vet and RVT visits and ongoing blood work



History Prior to the Presenting Complaint

- January 4: 24 weeks of age
 - Barn visit notes:
 - Some small hens that need to be removed from the flock as they will not go into lay
 - Titres from the pullet barn are appropriate



As a Industry Service Person, what do you want to think is most important once birds are moved into the lay barn?

- A) Body weights of males and females according to the curve
- B) Are the males mating yet and what are the pin bones on the females?
- C) Diets and lighting programs
- D) All of the above



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As a Industry Service Person, what do you want to think is most important once birds are moved into the lay barn?

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Broiler Breeder Case: History

- January 18: 26 weeks of age
 - Hand weights show birds are on track
 - Measured pin bones on 30 birds: 20 % were >3, 65% were 3, 15% were 2.5
 - Some evidence of males not yet mating – recommended a “males rest pen”
 - Barn management is optimal – no concerns at this time
- February 15: 30 weeks of age
 - Egg production appears to have stalled



Broiler Breeder Case: Production Case

- March 1: 32 weeks of age
 - Production has dropped 5% in the last few days
 - Hatchability has dropped 4% in the last few days
 - Barn manager is noticing wrinkled eggs



What is your first response?

- A) Put the flock on calcium and/or vitamin D and monitor response for a few days
- B) Take blood sample for Infectious Bronchitis, Newcastle disease, and Avian Encephalomyelitis
- C) Submit whole birds for histological work up and then PCR
- D) Test the Feed
- E) All of the above



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What is your first response?

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Broiler Breeder Case: Production Case

- March 1: 32 weeks of age
 - Production has dropped 5% in the last few days
 - Hatchability has dropped 4% in the last few days
 - Barn manager is noticing wrinkled eggs
 - Put them on Caltech: minimal improvement
 - Feed submitted for a feed test
- March 6: Production is now down 9%



Other barns on site

- Some decrease in production but not like this barn
 - Younger pullets (11 weeks younger) not coming into production as well as other barns but could be feed company -> producer has never fed with this company before so not sure what production should look like



What is your top differential before diagnostics?

A) Feed Issue

B) Bronchitis Issue

C) Management issue! (Lighting, Temperature, Ventilation, Water Pressure)

D) Bacterial disease or viral disease other than bronchitis

E) All of the Above



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What is your top differential before diagnostics?

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Broiler Breeder Production Case

- **March 10:** Producer pulls the feed and feeds another feed company over the weekend (feed test results pending)
 - Result: no improvement



Post Mortem Findings

March 8:

- Post-Mortems were done on 2 cull and 1 dead hen
 - Dead hen – inflamed follicles, no shell development
 - Cull – Regressive follicles
 - Cull - enlarged proventriculus, regressive follicles, bacterial hepatitis
 - Blood tests pending



Summary:
Regressive
Follicles

March 15:

- Post-Mortems were done on 2 cull and 1 dead hen
 - Dead hen – inflamed follicles, no shell development
 - Cull – Regressive follicles
 - Cull - enlarged proventriculus, regressive follicles, bacterial hepatitis
 - Birds sent to pathologist (pending)



Broiler Breeder Production Decrease

- Feed and water consumption
 - Feed: birds were being fed 175 g/bird, which is normal for this site but manager has increased to 185 g/bird to push up hatchability and production
 - No improvement
 - Feed clean up time is reported to be approximately 30 minutes
- Water: difficult to say, some issues with recording water consumption lately



Broiler Breeder Production Case

March 24: Production has decreased by 30%, hatchability is steadily decreasing



What is your top differential before diagnostics?

A) Feed Issue

B) Bronchitis Issue

C) Management issue! (Lighting, Temperature, Ventilation, Water Pressure)

D) Bacterial disease or viral disease other than bronchitis

E) All of the Above



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What is your top differential before diagnostics?

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Feed Test Results

Analysis:	As Received	Dry Matter
Moisture (%) (test date 03/30/23)	10.72	
Dry Matter (%) (test date 03/30/23)	89.28	
Crude Protein (%) (test date 03/30/23)	20.28	22.72
Crude Fibre (%) (test date 03/31/23)	5.54	6.20
Fat (%) (test date 04/03/23)	5.94	6.66
Ash (%) (test date 03/30/23)	11.68	13.08
Calcium (%) (test date 03/30/23)	3.92	4.40
Phosphorus (%) (test date 03/30/23)	0.70	0.78
Magnesium (%) (test date 03/30/23)	0.22	0.24
Potassium (%) (test date 03/30/23)	0.77	0.87
Sodium (%) (test date 03/30/23)	0.34	0.38
Copper (mg/kg) (test date 03/30/23)	77.46	86.76
Iron (mg/kg) (test date 03/30/23)	183.84	205.91
Manganese (mg/kg) (test date 03/30/23)	190.18	213.01
Zinc (mg/kg) (test date 03/30/23)	212.48	237.99
Non Fibre Carbohydrates (%) (test date 04/03/2023)	45.84	51.35
Total Digestible Nutrients (%) (test date 04/03/2023)	64.06	71.83
Digestible Energy for Swine (kcal/kg) (test date 04/03/2023)	2,619.61	2,934.08
Gross Energy for Swine (kcal/kg) (test date 04/03/2023)	3,822.38	4,281.24
Metabolizable Energy for Swine (kcal/kg) (test date 04/03/2023)	2,502.48	2,802.89
Metabolizable Energy for Poultry (kcal/kg) (test date 04/03/2023)	2,899.47	3,210.29
Digestible Energy for Cattle/Sheep (Mcal/kg) (test date 04/03/2023)	3.38	3.79



Pathologist's Diagnostic Results



Summary:
Regressive
Follicles

FINAL DIAGNOSIS(ES):

1. **Out of Production**

Case Summary

On postmortem examination, 4 of the 5 birds have similar findings. All 4 birds have fully regressed ovaries and the oviducts are involuted. There are no gross lesions of bacterial infection (i.e. generalized septicemia, salpingitis, peritonitis), no evidence of a parasitic infection (i.e. external or internal), and no specific reproductive lesions (i.e. cystic oviducts). The Egg Drop Syndrome (Duck Adenovirus) PCR is negative.

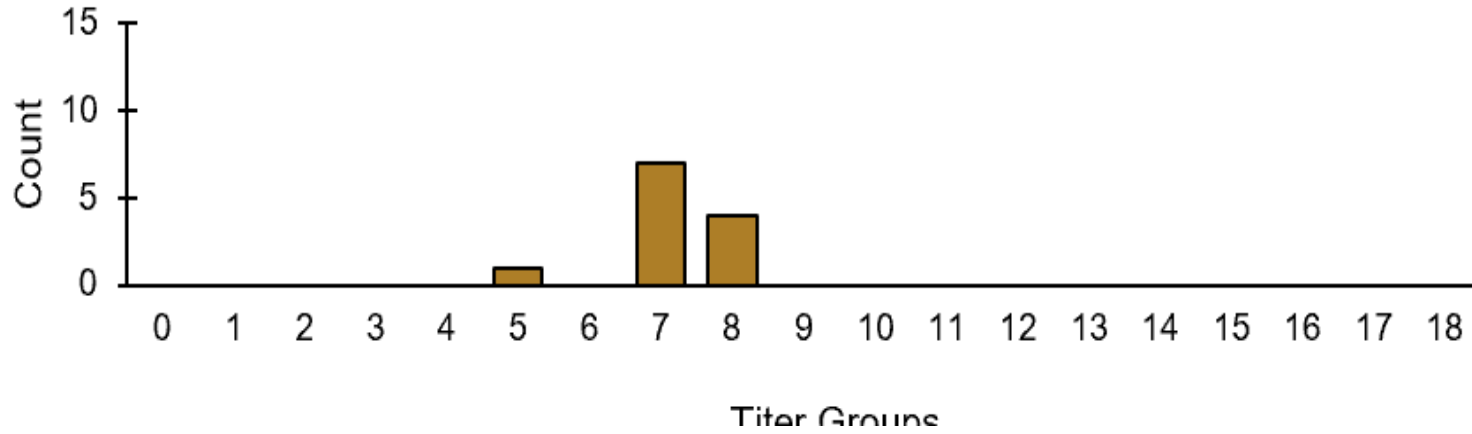
PCR positive for bronchitis in the lungs

Negative for Avian Influenza (low and high path)



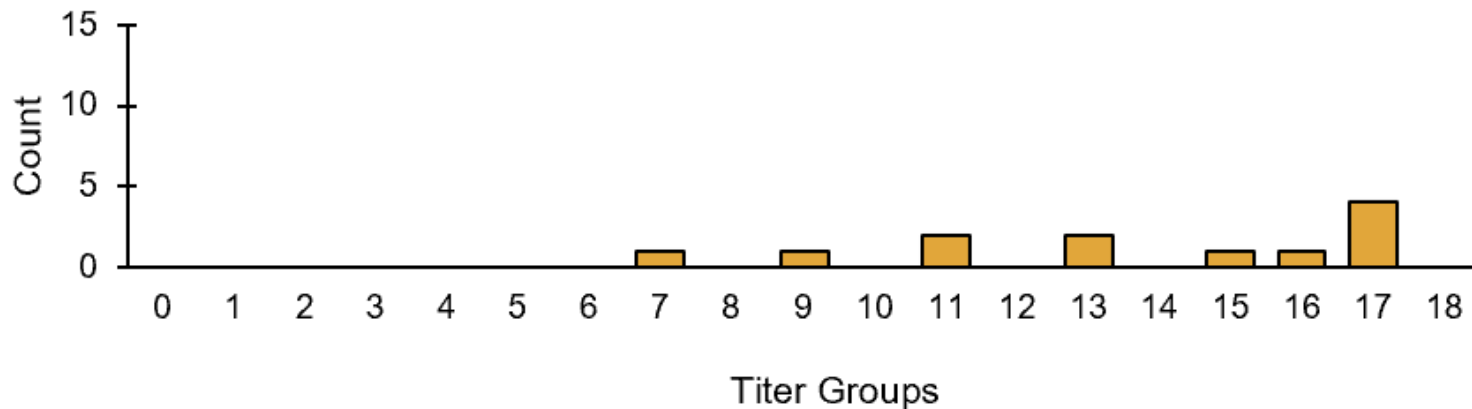
Diagnostic Results

32 weeks - Infectious Bronchitis Virus (IBV)



Genotyping of IBV strain
found in lungs: Field
strain

35 weeks - Infectious Bronchitis Virus (IBV)



Ongoing Investigation

March 28:

- Hand weighed birds
 - Severely underweight
- Checked feed scale
 - 50% out of where it is suppose to be
 - Before the younger flock was moved into the layer barn, the scale got wet during barn washing; water damage to the load cell



Now what do we do?

- A) Give the birds the correct amount of feed and monitor
- B) Slowly begin to increase feed amounts in small increments
- C) Develop an autogenous bronchitis vaccine
- D) Euthanize the flock, they will not come back into production



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Now what do we do?

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Ongoing Investigation

April 4

- After meeting with Aviagen, determined the best way to re introduce the correct amount of feed to the birds
 - Production started to come back up
 - Wrinkled eggs decreased



An Update of How the Flock Did?

- Flock is still currently above chart!
 - After dropping 30%, came back to 80% production
 - Currently above chart
 - Hatchability has been above average

