

## Interesting Cases and Virtual Lab Tour

Rocio Crespo

## Outline

- How to collect choanal samples
- Interesting cases
  - Silkies (ethnic market)
  - Ducks
  - Pullets
  - Layers
- Lab Tour - updates

### Choanal sampling (respiratory pathogens)



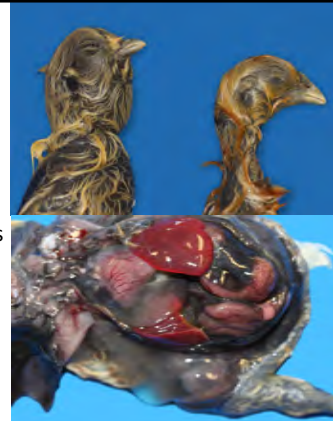
Video available at AHFSL Facebook:  
<https://www.facebook.com/AvianHealthFoodSafetyLaboratory>

- Avian Influenza
- Newcastle disease
- Infectious bronchitis virus
- Infectious Laryngotracheitis
- Mycoplasmas

### Case 1:

#### Salt poisoning

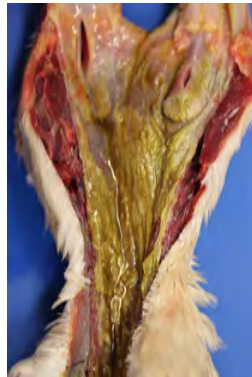
- Silkies (ethnic market)
- 3-week-old
- High mortality
- Subcutaneous edema and ascites
- Pathogenesis:
  - Pulmonary hypertension and ventricular hypertrophy



### Case 2:

#### Duck viral enteritis

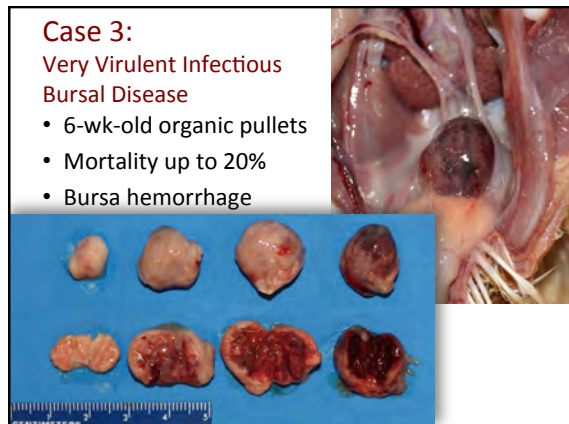
- Necrosis of esophagus
- No other lesions
- Typically DVE:
  - Lesions throughout digestive tract
  - Annular necrosis, associated with lymphatic tissue



### Case 3:

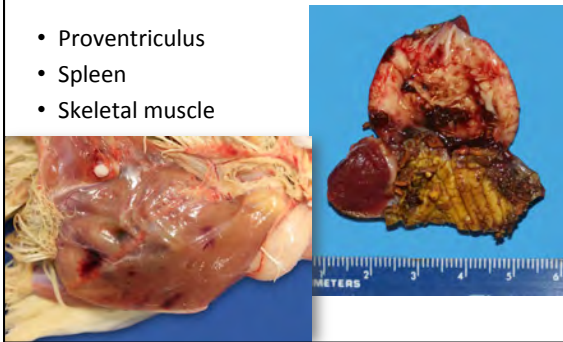
#### Very Virulent Infectious Bursal Disease

- 6-wk-old organic pullets
- Mortality up to 20%
- Bursa hemorrhage



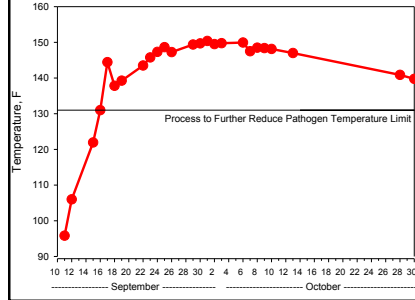
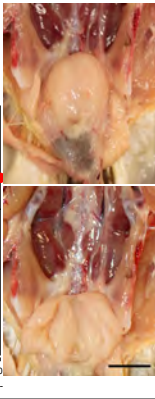
### Other gross lesions...

- Proventriculus
- Spleen
- Skeletal muscle



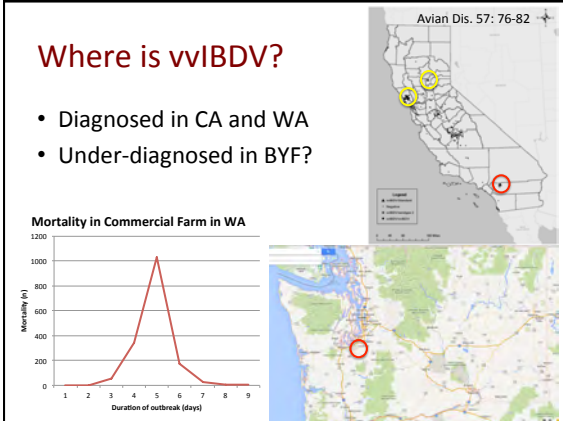
### IBDV Compost Study -

Preliminary results are promising! – further tests pending

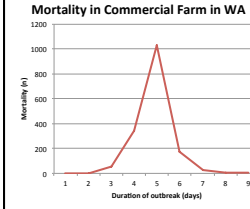
### Where is vvIBDV?

- Diagnosed in CA and WA
- Under-diagnosed in BYF?



Avian Dis. 57: 76-82

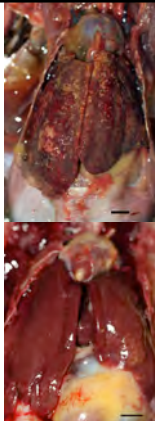
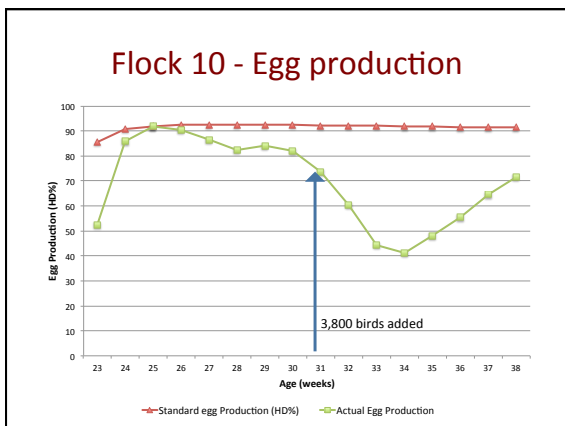
Mortality in Commercial Farm in WA



### Case 4

#### Hepatitis E Virus Infection

- Dec 2012-Mar 2014
- 10 flocks
- Organic layers
  - *Non-organic flocks not affected*
- Up to 40% drop in egg production
- Increased mortality, 1%
- No age relation (28-97 wks)
- No related to weather

### Gross pathology

Case	Age (wks)	#	Hepatitis	Splenomegaly	Regressed ova	Abdomen	Other findings
1	39	9	7	6	1		Mites, ILT (3)
2	28	10	6		10		Mites
3	31	9	4		9		Mites
4	33	6	4				Mites
5	NA	9	5		7		ILT (5)
6*	85	22	3	1	15	1 (H)	Septicemia (6), cannibalism (3)
7	72	10	6	3		1 (A)	Cannibalism (2), ascarids (1)
8	97	8	2		7		Salpingitis (3), ascarids (2)
9	53	8	1	1	4		
10*	33	31	20	3	7	2 (S)	
		122	58	14	60	4	

### Bacteriology

- Aerobic (all tested):
  - Negative or
  - *E. coli* in 2 submissions
- Anaerobic (5 submissions):
  - Negative or
  - *Clostridium sp.*: *C. sordalli*, *C. bifermans*, *C. tetani*-like isolated... BUT negative immunohistochemistry
- Campylobacter (2 submissions):
  - Negative by culture
  - Only 1 liver positive by PCR
- Vibrio (3 submissions):
  - Negative by silver stain

### Serology

- All negative for AI, MG
- 4 flocks positive for MS
- All positive (and vaccinated) for AE, NDV, IBV

### Toxicology

- Two feed samples – mycotoxin test (Alltech 37+ analysis) – ND or low risk

### Virus detection

- 10 livers (with gall bladder), in pools of 2 or 3
- 26 sera samples from 3 flocks
- Dr. Darrell Trampel and Priscilla Gerber (Iowa State University)
- All POSITIVE for avian hepatitis E virus
  - Molecular test: Nested RT-PCR, helicase gene
  - ELISA
- Sequencing of the virus – pending

### Avian Hepatitis E Virus Infections

- Synonyms: hepatomegaly-splenomegaly
- Signs:
  - Drop in egg production up to ~~20%~~ <sup>4-5%</sup>
  - mortality up to 1%
- Lesions
  - Enlarged ~~liver~~ <sup>No</sup> and spleen
  - <sup>A few</sup> – Red fluid or clotted blood around liver or in abdomen
  - <sup>Yes</sup> – Regressed ova
  - Hepatic necrosis, ~~phlebitis, amyloidosis~~ <sup>Yes No No</sup>

### Lab Updates

- Poultry Institute 2013



## BIG THANKS TO...

- WADDL & WSU
- WSDA
- USDA-APHIS
- Poultry Industry

