

California Animal Health and Food Safety Lab (CAHFS) Common Backyard Poultry Diseases



Dr. C. Gabriel Senties-Cué
California Animal Health and Food
Safety Laboratory
Turlock Branch

March 30, 2016



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Objectives

- CAHFS mission, organization, branches, disciplines
- Most common diseases in backyard poultry flocks
- Submission samples to CAHFS



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CAHFS Mission:

To provide the citizens of California with the highest quality diagnostic laboratory support for

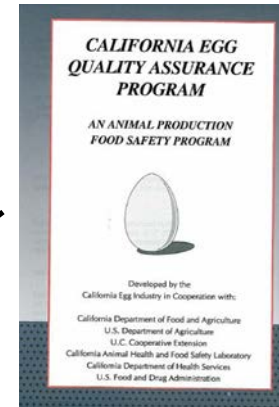
Surveillance & Disease Control



Health Management



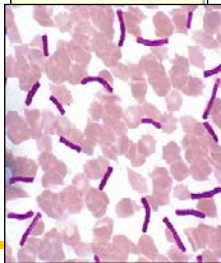
Food Safety



Public Health



■ BYRON
Anthrax Kills
35 Cattle in
Contra Costa



Dissemination of new knowledge

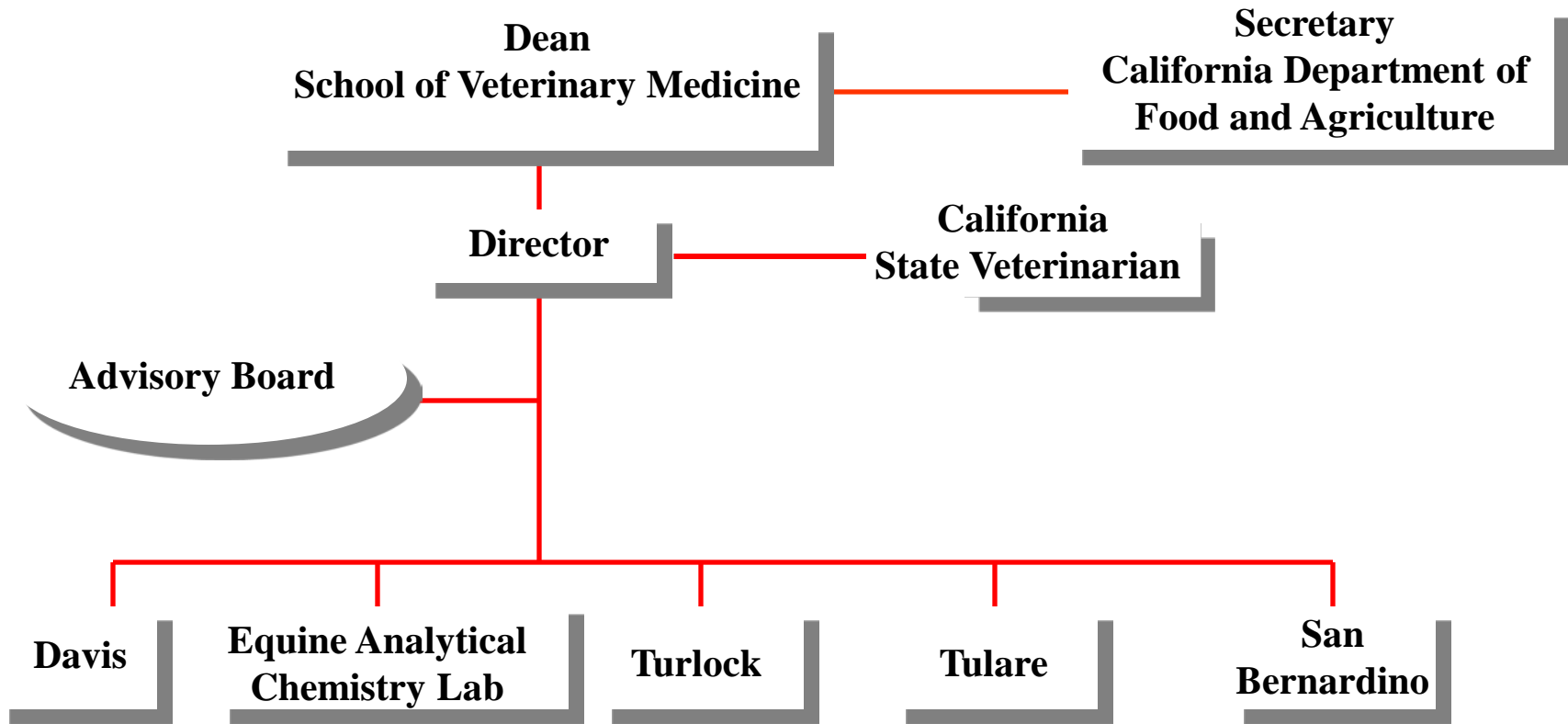


Equine Health



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Services Offered by CAHFS

Each of our four laboratories offer services to match the needs of the animal populations located within the immediate vicinity of that laboratory

	Davis	Turlock	Tulare	San Bernardino
Immunology	X	X	X	X
Biotechnology	X	X		
Path/Histol.	X	X	X	X
E. Microscop.	X			
Toxicology	X			
Avian/Mamml. Virology	X			



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National Animal Health Laboratory Network (NAHLN)

Laboratories Approved to Conduct AI Testing



▲ AI Approved Laboratory
★ NVSL Lab Site

June 2014

- Early detection
- Rapid response
- Rapid recovery



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Specimens Necessary for Diagnosis

- Animal(s); live, sick, dead
- Tissues (fresh, frozen, fixed)
- Swabs, blood, feces
- Feed, Water, Egg, Soil, etc.

**DIAGNOSIS IS AS GOOD ONLY AS THE
SPECIMENS SUBMITTED!**



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Test for Disease Diagnosis

- Clinical history
- Necropsy
- Serology
- Bacteriology
- Virology
- Histopathology
- Parasitology
- Toxicology



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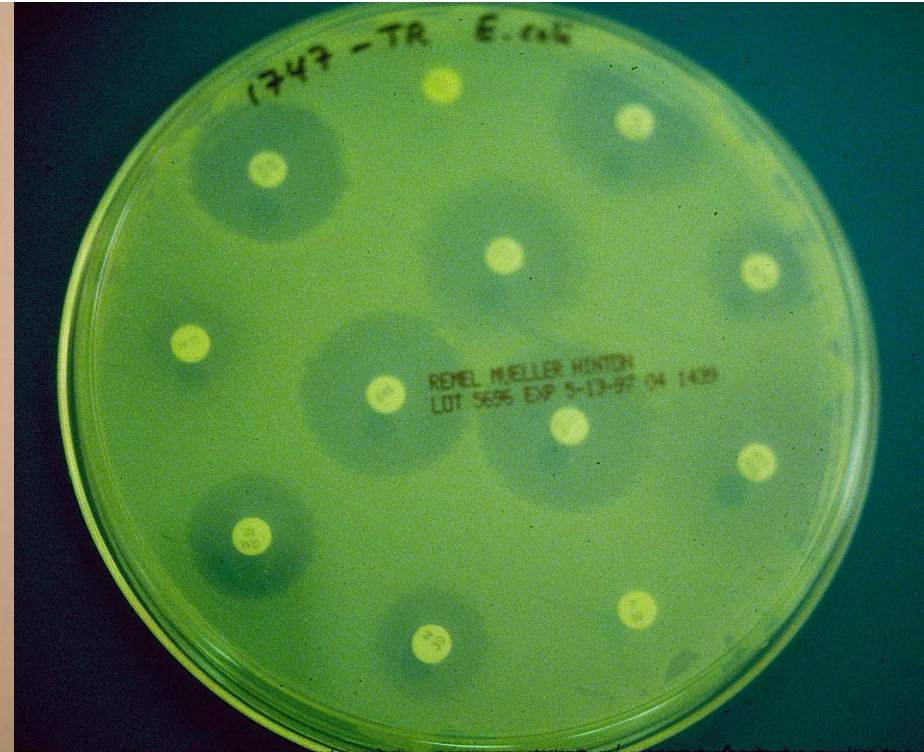
Test for Disease Diagnosis (cont.)

- Electron microscopy
- Hematology, blood chemistry, cytology
- Biotechnology
- Pathogenicity tests



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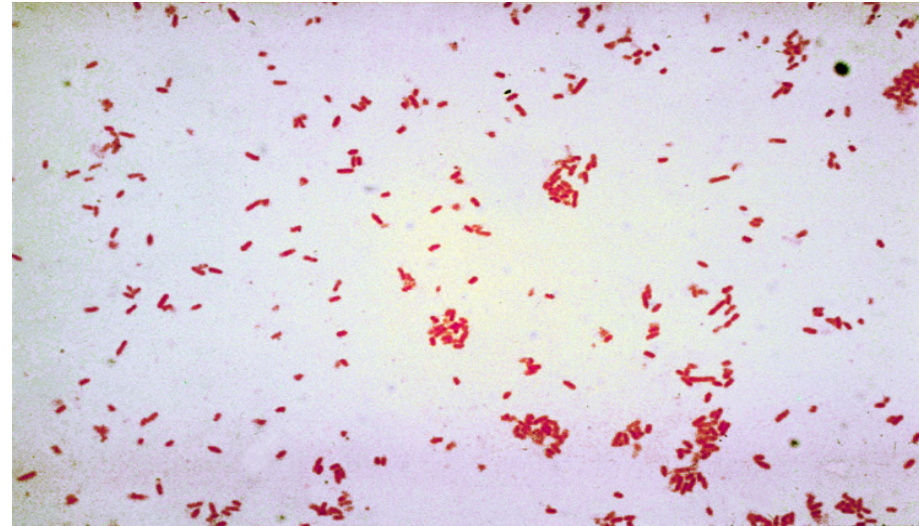
Bacteriology



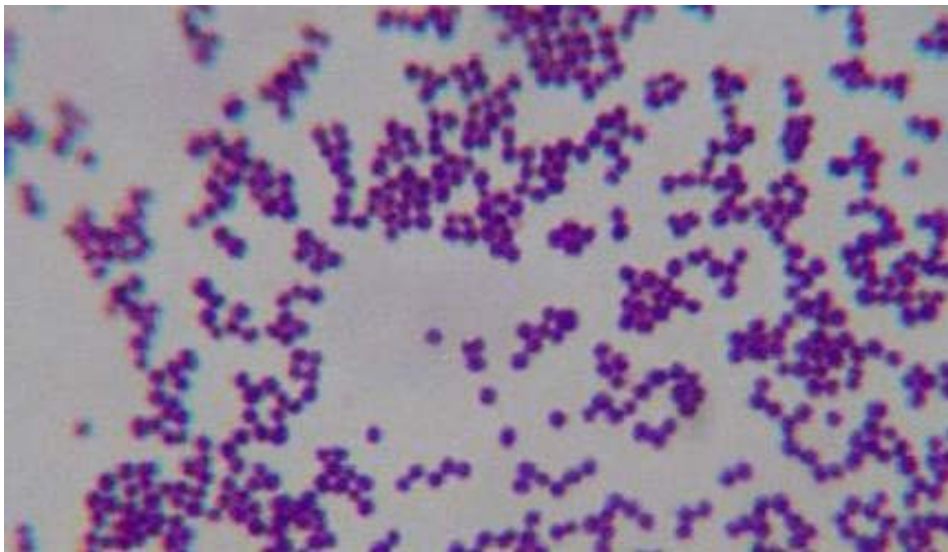
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Bacteriology

Bacilli Gram Negative



Cocci Gram positive



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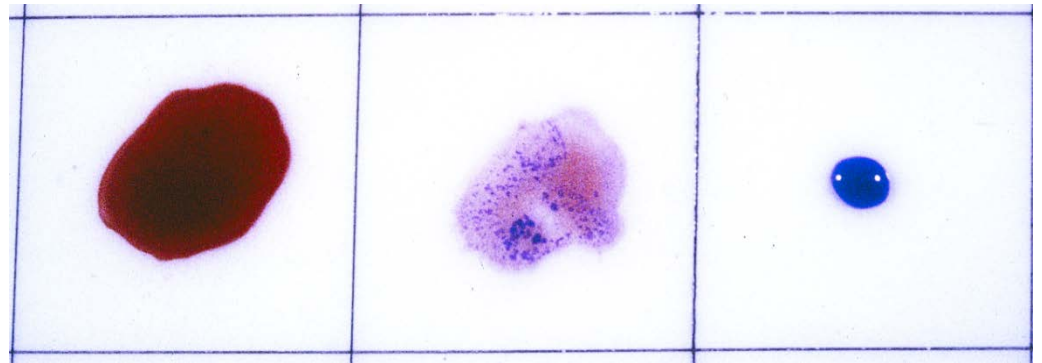
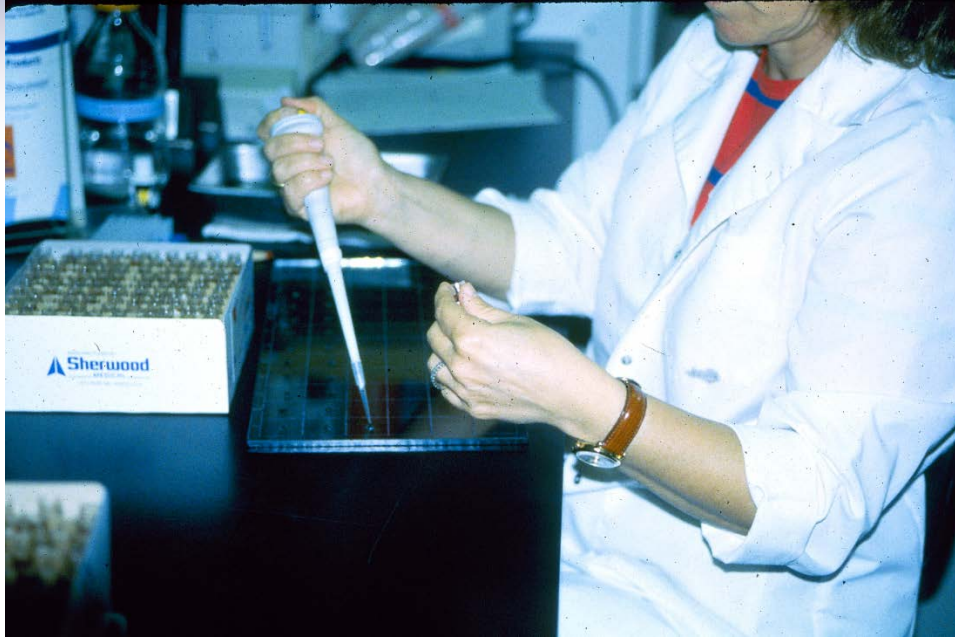
Mycology



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Serology

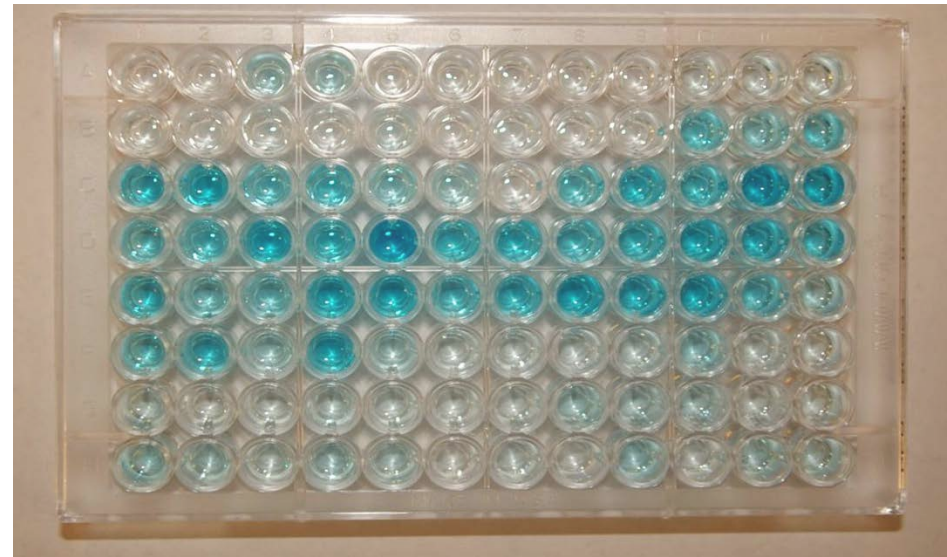
Plate agglutination test for *S. pullorum*



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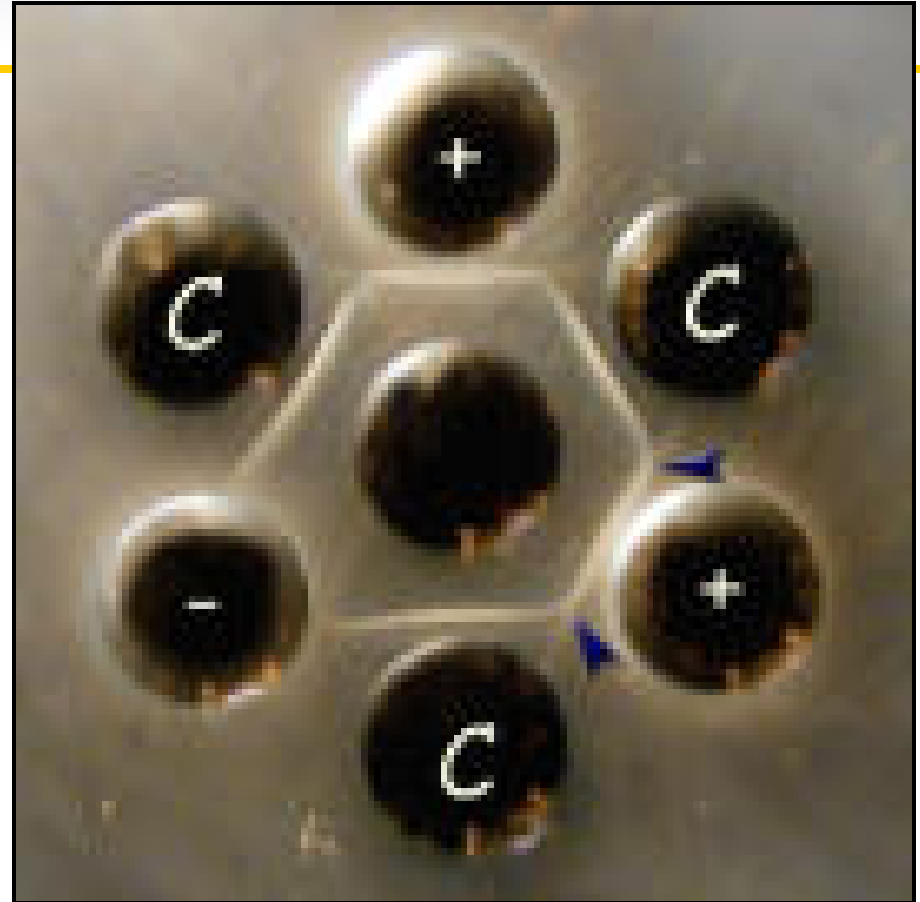
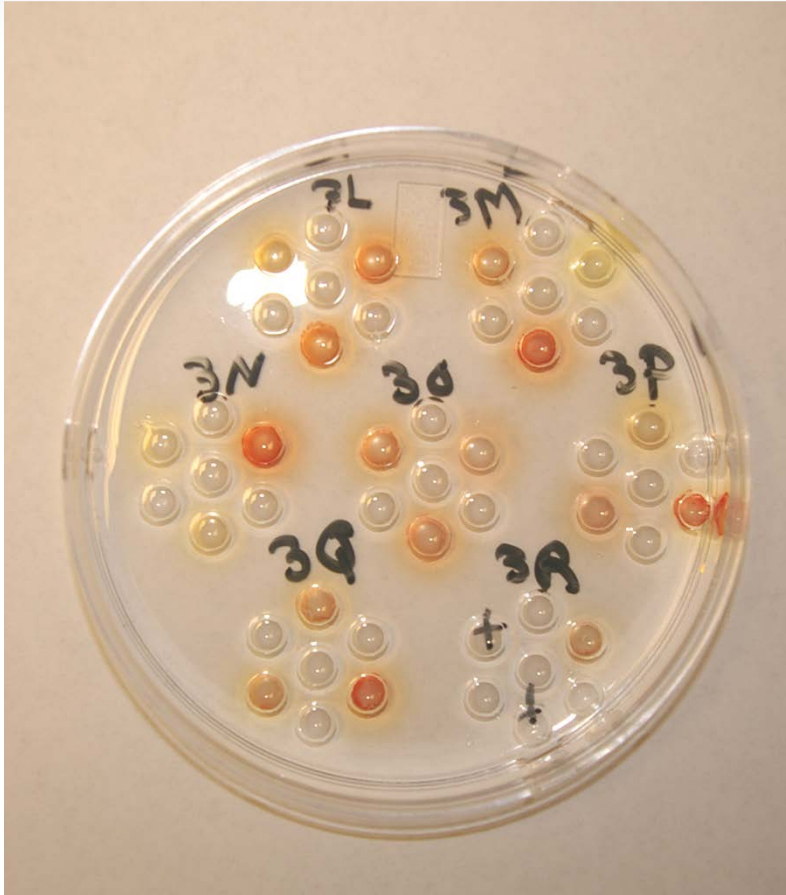
Serology

ELISA test



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Serology – AGID Test



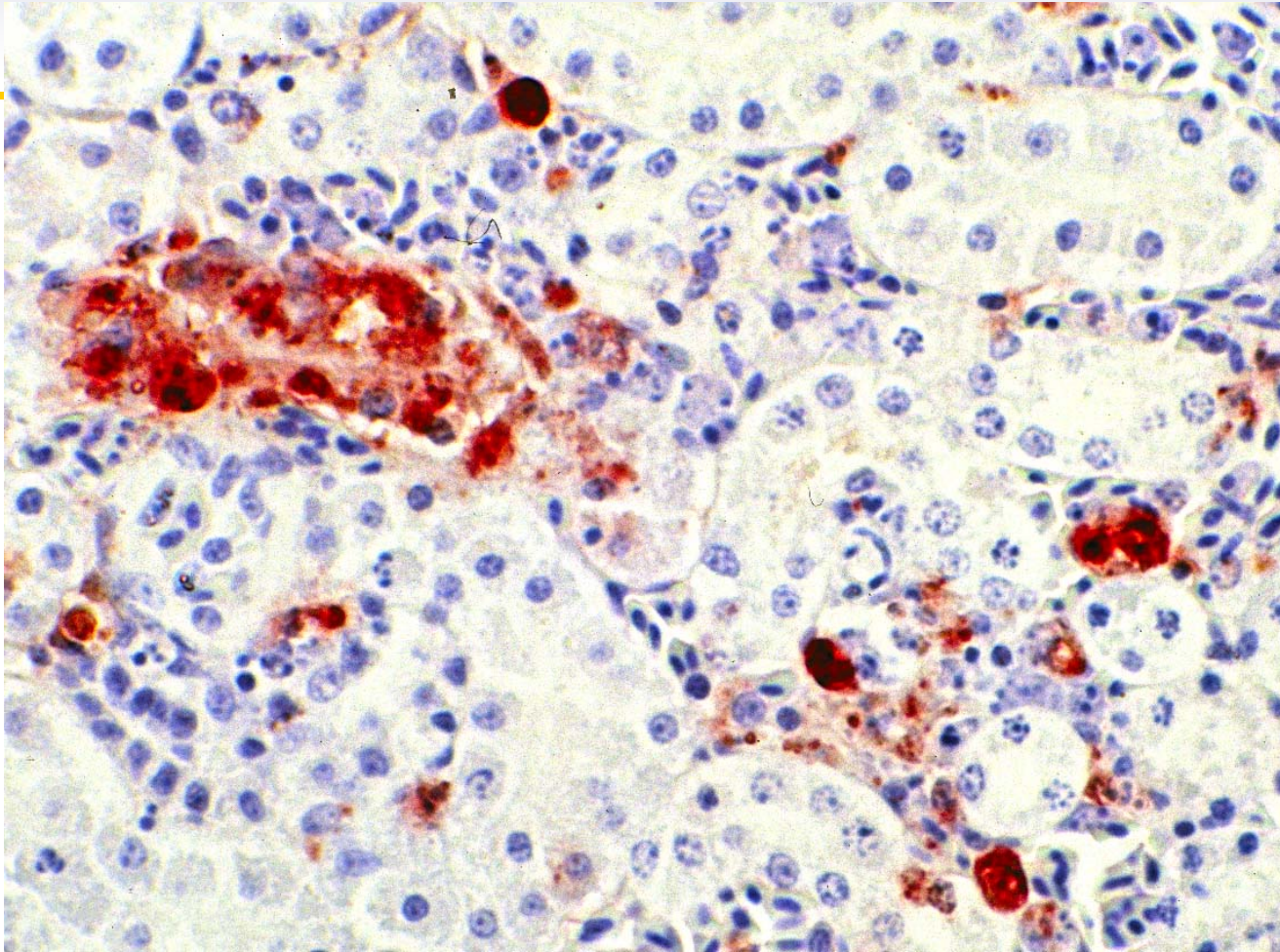
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HISTOPATHOLOGY



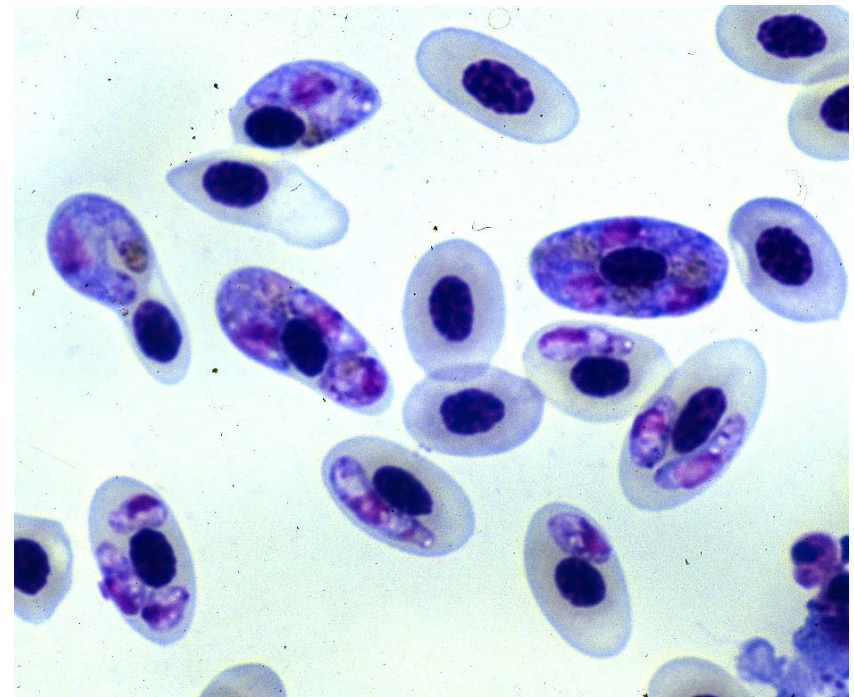
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Immunohistochemistry



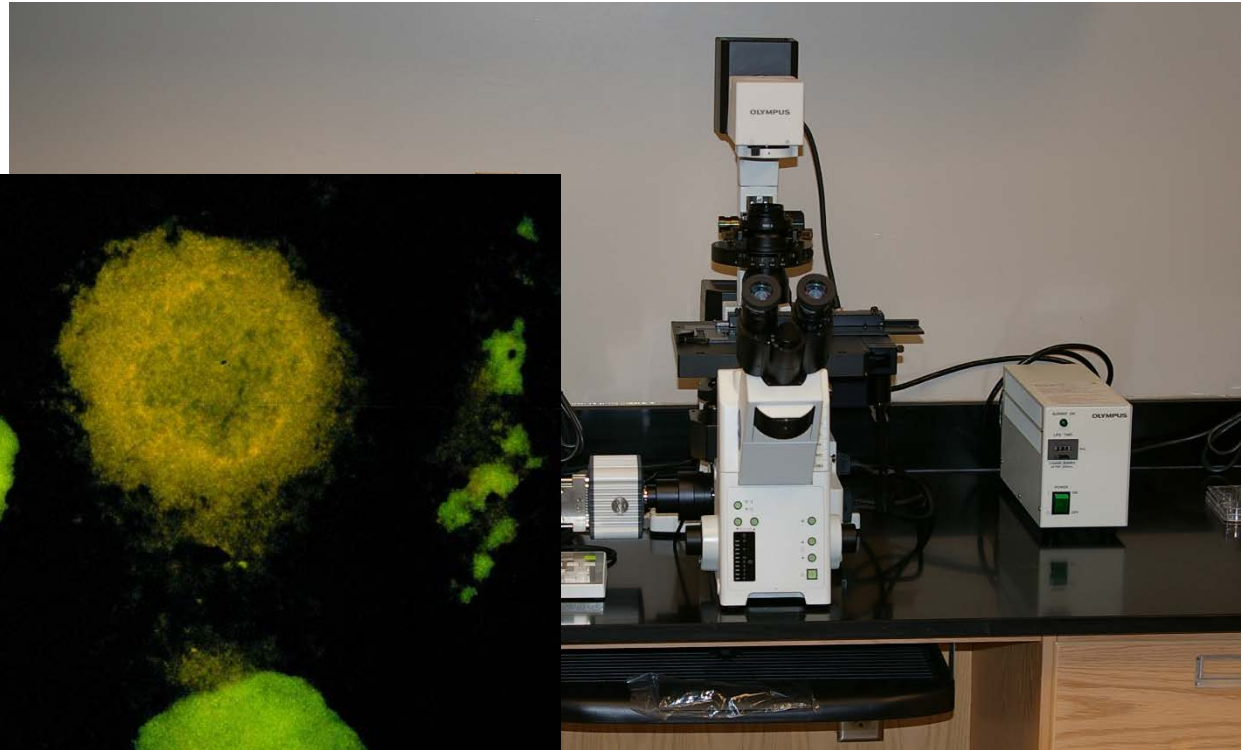
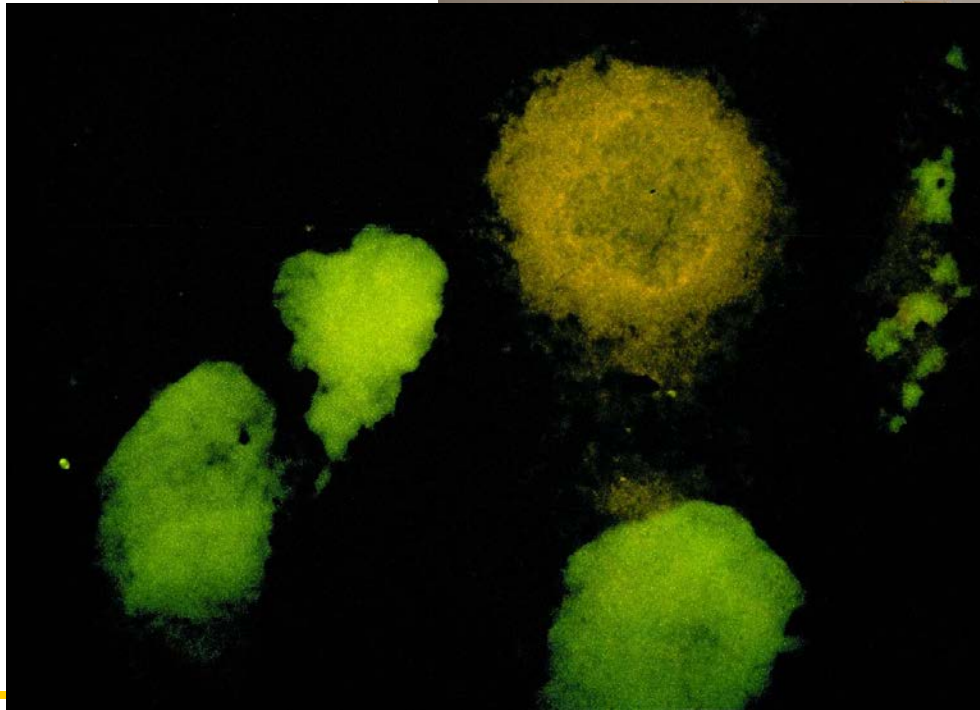
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CYTOLOGY



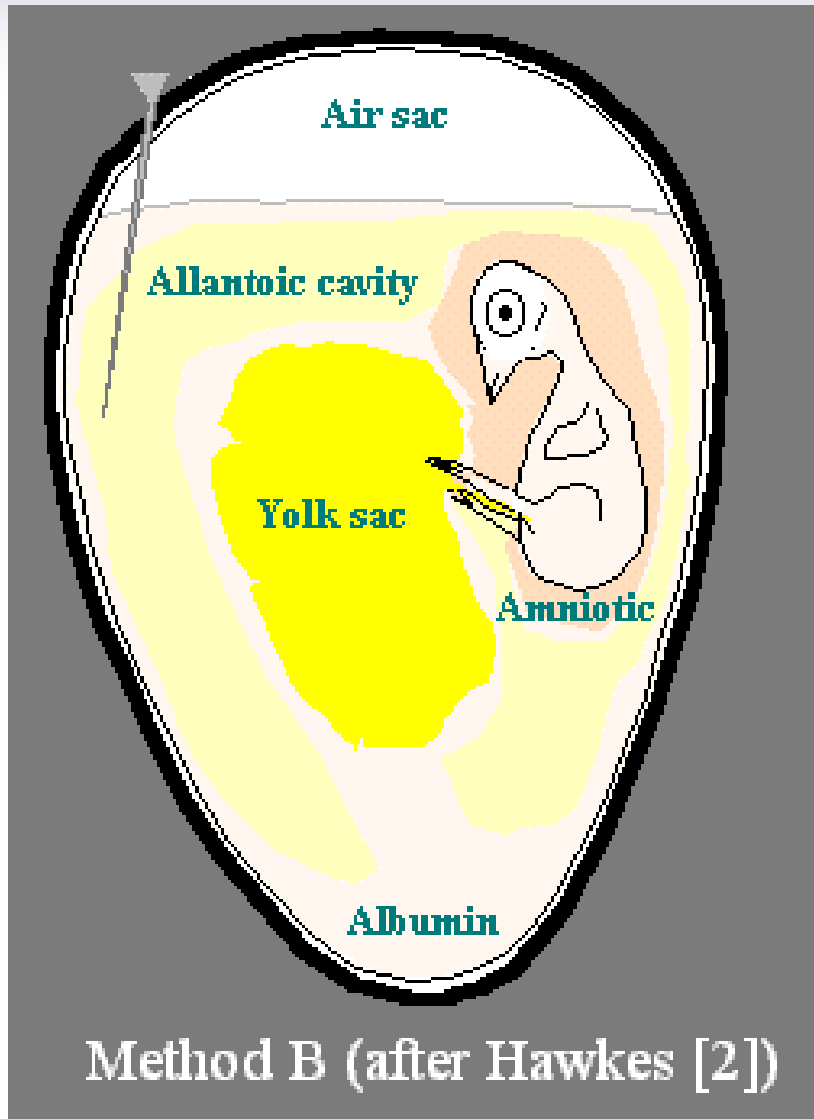
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Immunofluorescence



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Viral Isolation



Allantoic route of Inoculation

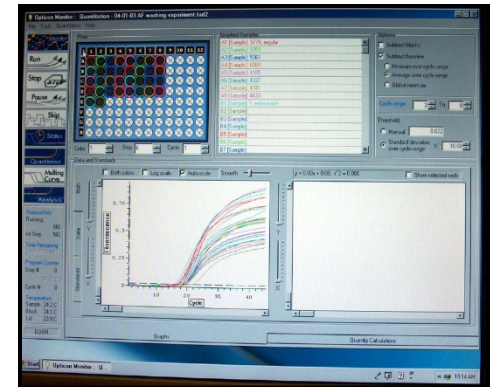
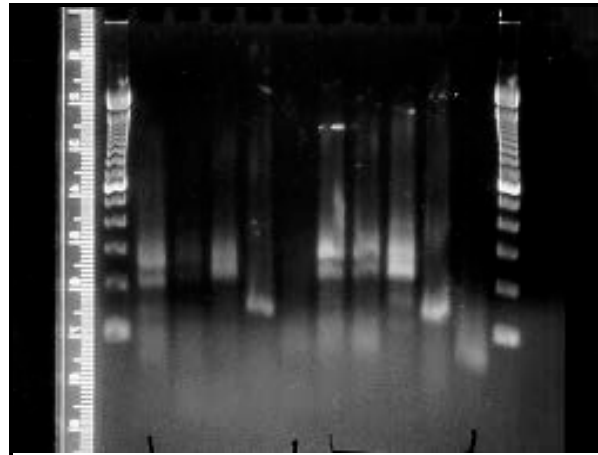


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Virus isolation
& characterization
6-12 days

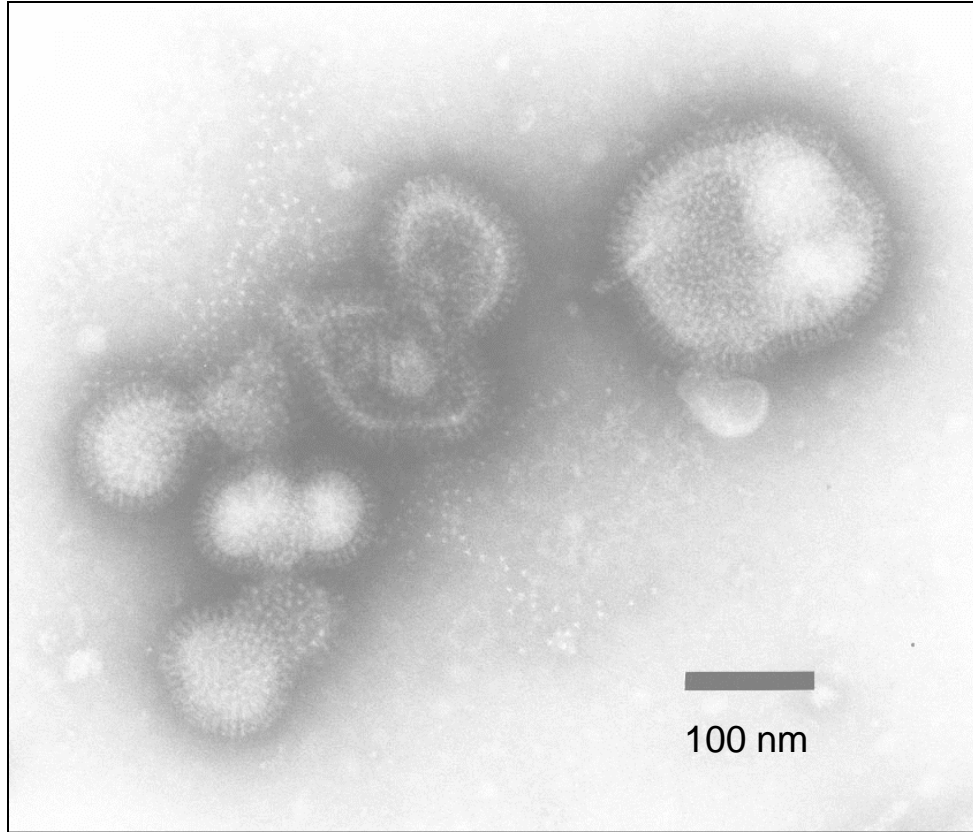
Standard PCR
1-3 days

Realtime PCR
4 – 6 hours
Automated
Time/cost efficient



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Electron Microscopy

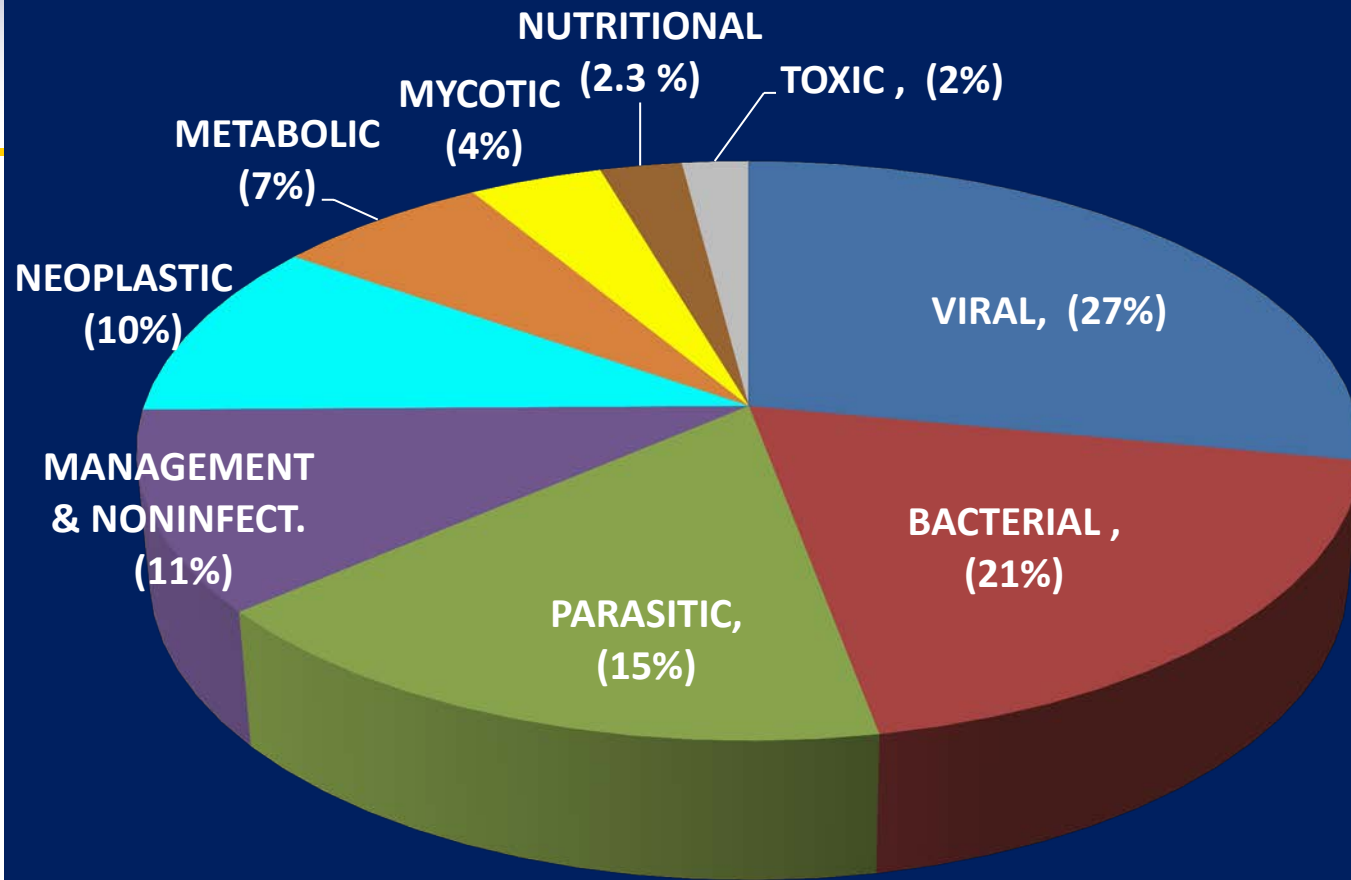


Avian Influenza virus



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Frequencies and Percentages of Diagnoses by Etiological Types



TOTAL = 3893 DIAGNOSES



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The most common viral diseases

- 1) Marek's disease
- 2) Avian leukosis
- 3) Fowl pox
- 4) Infectious laryngotracheitis
- 5) Infectious bronchitis



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Marek's Disease



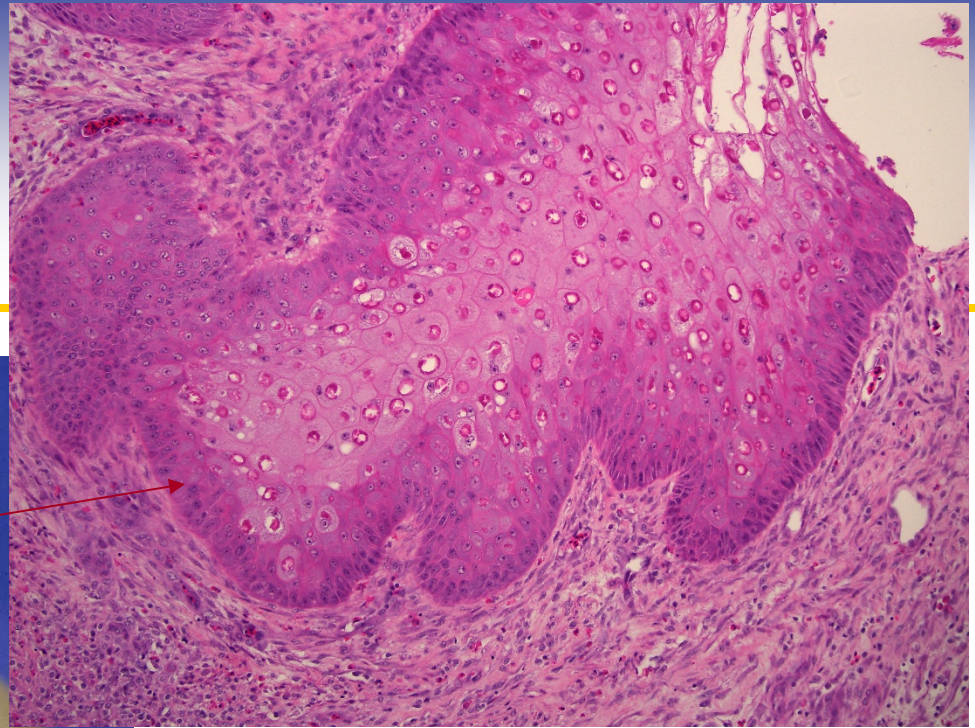
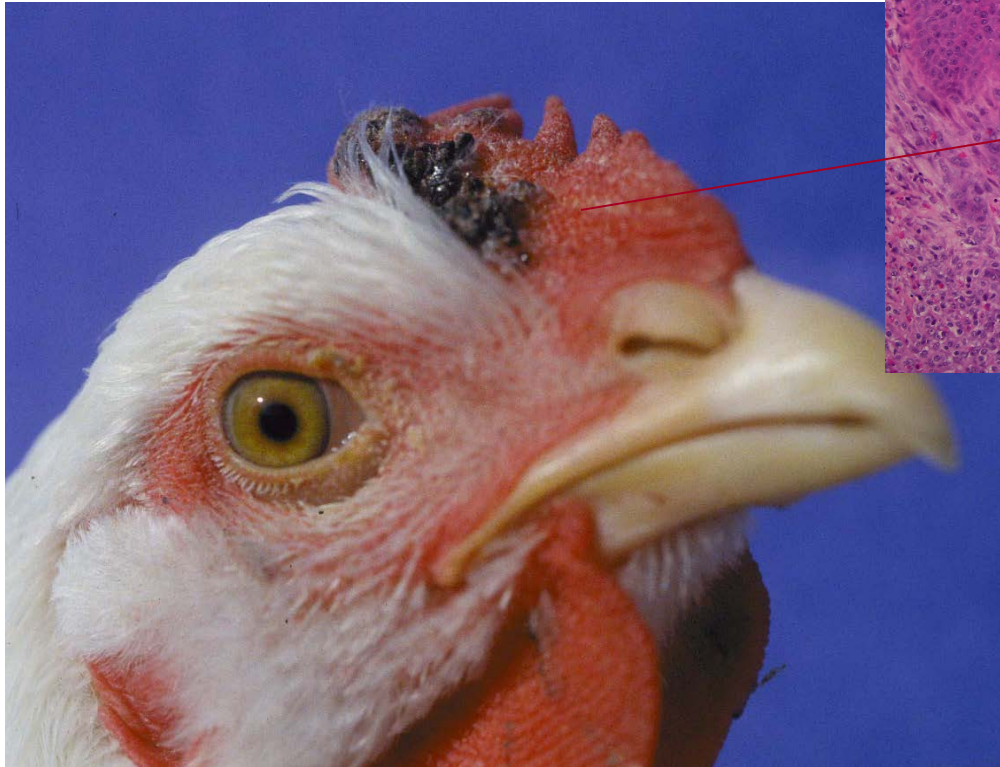
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Lymphoid Leukosis - Osteopetrosis -



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Fowl Pox



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Fowl Pox



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Infectious Laryngotracheitis



The most common bacterial diseases

- 1) *Escherichia coli* infection
- 2) *Mycoplasma gallisepticum* infection
- 3) *Mycoplasma synoviae* infection
- 4) *Pasteurella multocida* infection
- 5) *Staphylococcus aureus* infection



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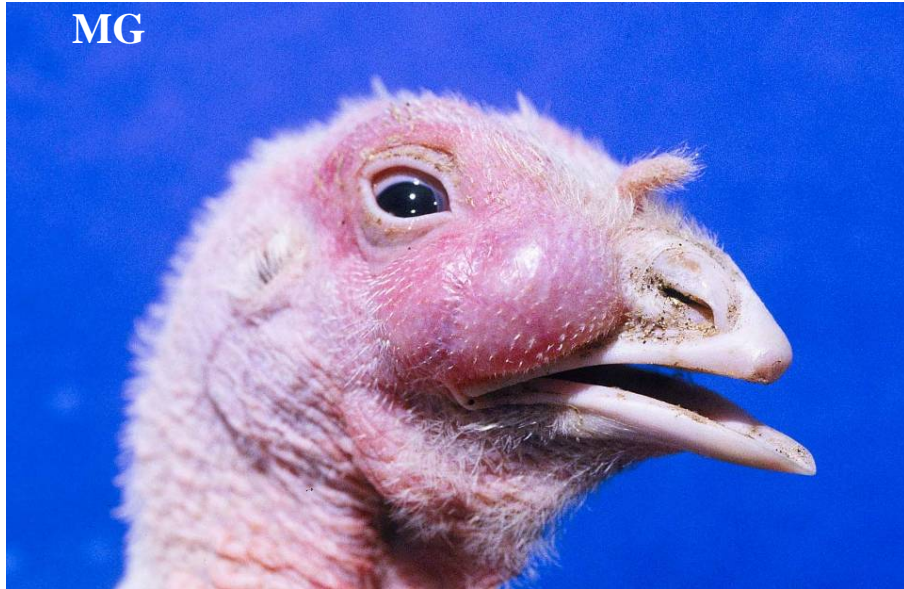
Panophthalmitis



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Mycoplasmosis

MG



MS



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Chronic fowl cholera

Otitis media



Wattles enlarged (cellulitis)



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The most common parasitic diseases

- 1) Coccidiosis
- 2) Ascariidiasis (round worms)
- 3) Cestodiasis (tape worms)
- 4) Histomoniasis
- 5) Trichomoniasis



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Scaly leg mite – chicken, *Knemidocoptes mutans*



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The most common management and non-infectious diseases

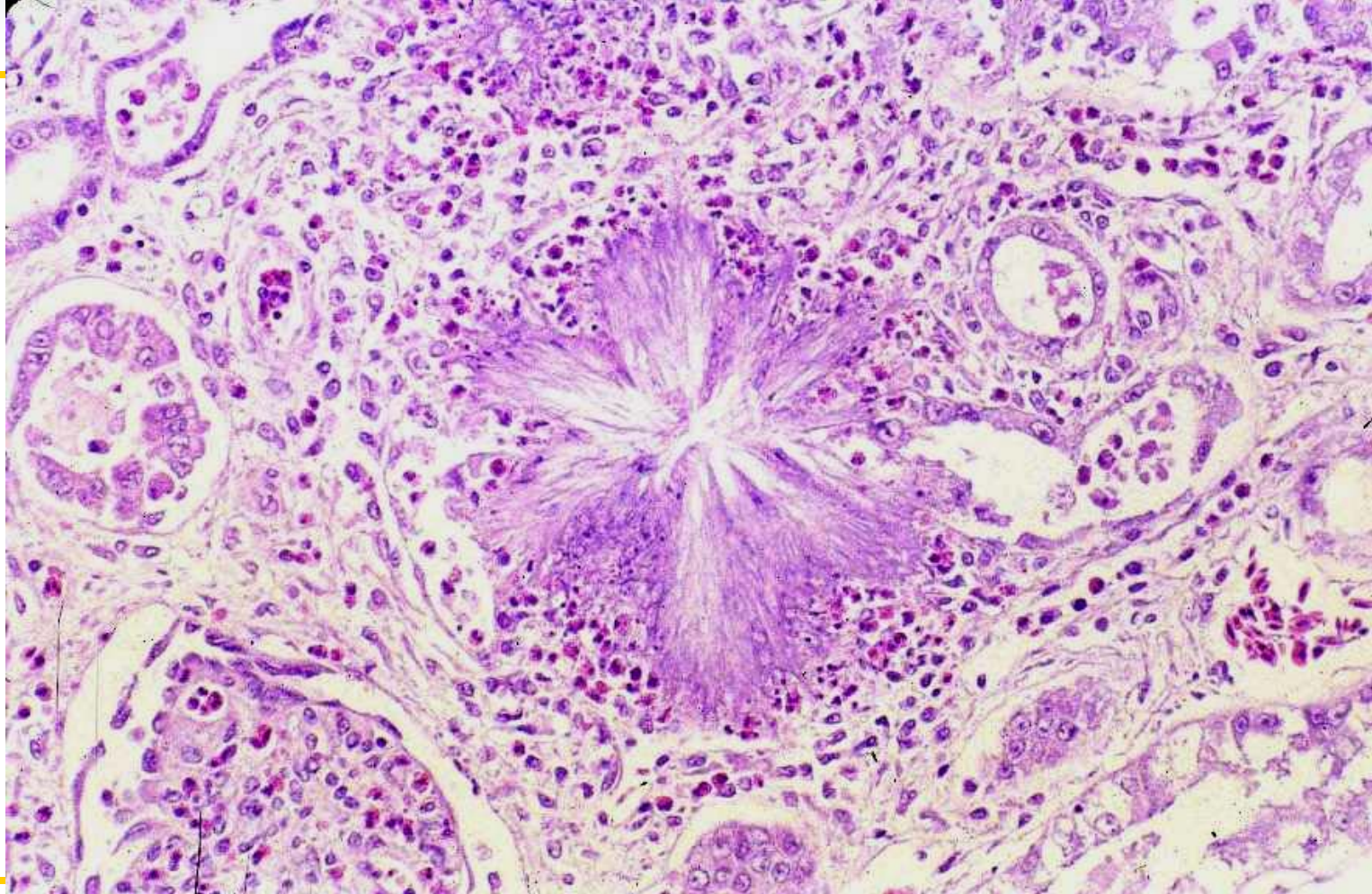
- 1) Yolk peritonitis
- 2) Trauma
- 3) Visceral gout
- 4) Foreign body
- 5) Heart failure



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Visceral urate deposits – kidney

Tophus, nephritis/nephrosis



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The most common neoplastic diseases

- 1) Reproductive neoplasia
- 2) Adenocarcinoma
- 3) Metastatic neoplasia
- 4) Carcinoma
- 5) Gastrointestinal neoplasia
- 6) Peritoneal neoplasia



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The most common metabolic diseases

- 1) Fatty hemorrhagic liver syndrome
- 2) Ascites
- 3) Amyloidosis



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The most common mycotic diseases

- 1) Aspergillosis
- 2) Candidiasis
- 3) Dermatophytosis



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Aspergillosis



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Favus – *Microsporium gallinae*



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The most common nutritional deficiency diseases

- 1) Rickets
- 2) Vitamin E
- 3) Vitamin A
- 4) Riboflavin



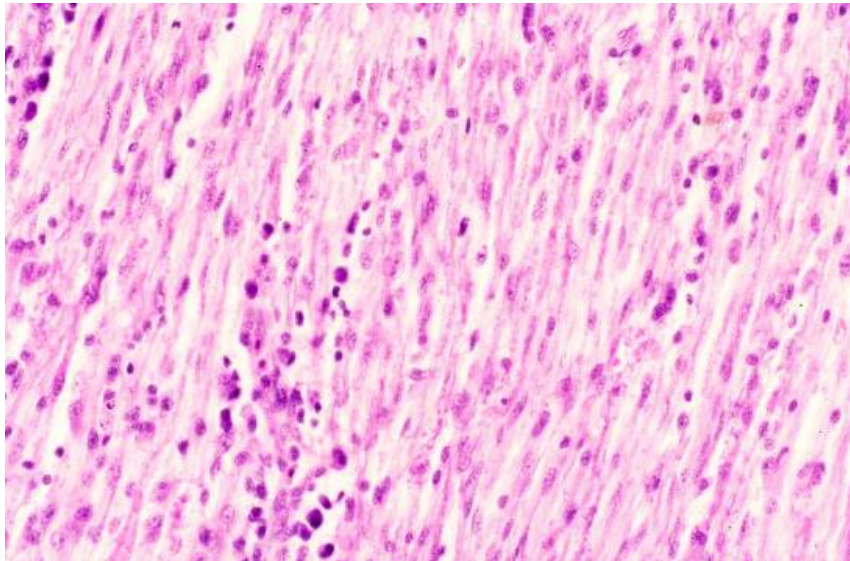
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Rickets – pliable beak, chicks



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Riboflavin deficiency – curled toes



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The most common toxic diseases

- 1) Lead
- 2) Zinc
- 3) Silica
- 4) Anticoagulant
- 5) Sodium



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Lead toxicity



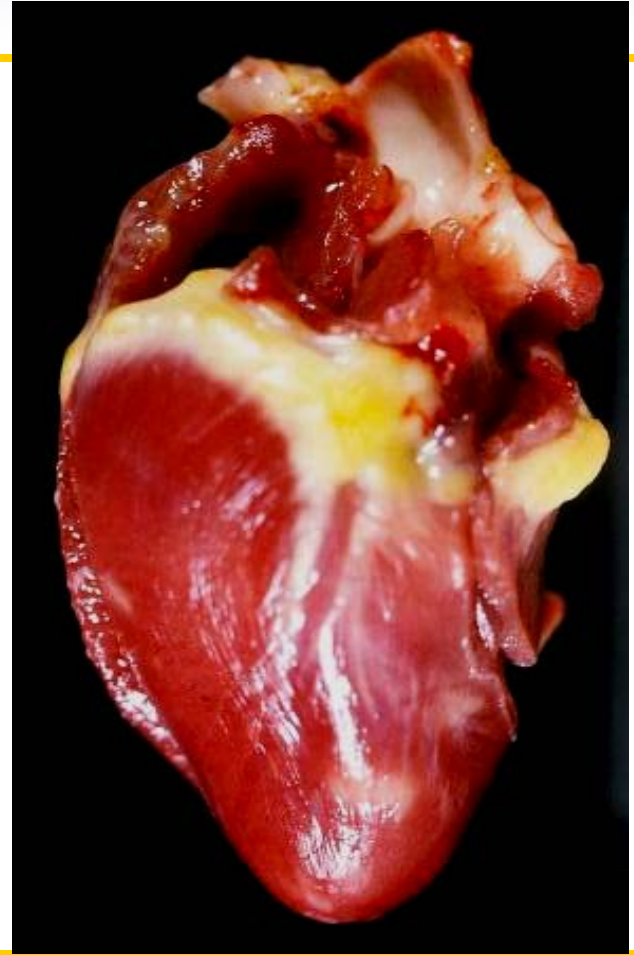
Gizzard contents



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Lead toxicity

Myocardia degeneration - duck



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Amonia toxicity



Corneal erosion/ulceration



Submission Process

Available on the web:

<http://cahfs.ucdavis.edu>

or

Google - CAHFS



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CAHFS Website

- Submission forms
- Submission form guidelines
- Packing guidelines
- Shipping and courier services
 - FedEx, UPS, Golden State, USPS, etc.
 - Overnight on ice



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Google Custom Search Search

California Animal Health & Food Safety Laboratory System

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Client Guide	Testimonials	Employment	Related Links	Contact Us		



CAHFS

The California Animal Health and Food Safety (CAHFS) Laboratory System is the backbone of California's warning system that helps to protect the health of California's livestock and poultry. CAHFS serves the people of California by safeguarding the public health with rapid

QUICKLINKS

CAHFS role in One Health benefits Californians through our work on wildlife providing environmental




Submission Forms

A completed specimen submission form must accompany samples submitted to CAHFS for testing. It is important to complete the form as thoroughly as possible. This form is comprehensive and asks for information that may not seem important but it is. Our goal at CAHFS has always been to provide the highest quality diagnostic laboratory support service to our clients. We appreciate your efforts to provide us with the information we need to accomplish this goal. The information below should help you properly complete the submission form. Materials submitted or isolates derived from those samples become the property of the California Animal Health & Food Safety Laboratory System (CAHFS), UC Davis.

Click on one of these form images for the printable Submission Form needed.



Standard flock submission form (used for BY flocks)

 UC DAVIS VETERINARY MEDICINE California Animal Health and Food Safety Laboratory System http://calhfs.ucdavis.edu		For Lab Use Only Accn # _____ Rec'd by: _____ Case Coordinator: _____ Accn Type _____ # of Samples _____ Date rec'd _____ Section _____ Bill to: <input type="checkbox"/> Vet <input type="checkbox"/> Clinic <input type="checkbox"/> Owner <input type="checkbox"/> Other Carrier _____																																											
Veterinarian's Name _____ Clinic Name _____ Address _____ City _____ State _____ Zip _____ Phone _____ Fax _____ Email _____ <input type="checkbox"/> fax, <input type="checkbox"/> email, or <input type="checkbox"/> mail		Owner's Name _____ Ranch _____ Address _____ City _____ State _____ Zip _____ Phone _____ Fax _____ Email _____ <input type="checkbox"/> Add'l Copy to _____																																											
Reference # _____ Date sample(s) taken _____ Date shipped _____ <input type="checkbox"/> Cattle <input type="checkbox"/> Turkey <input type="checkbox"/> Movement Sample <input type="checkbox"/> Horse <input type="checkbox"/> Chicken (Specify test methods below) Destination / Date of movement <input type="checkbox"/> Swine <input type="checkbox"/> Psittacine Location of Animal(s) _____ <input type="checkbox"/> Sheep <input type="checkbox"/> Goat (county, state) <input type="checkbox"/> Rabbit <input type="checkbox"/> Plant or Feed Project/Trial <input type="checkbox"/> CAHFS contact _____ <input type="checkbox"/> Other Production Class _____ (i.e. beef, dairy, call ranch, etc.)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>#in group/see</td> <td></td> </tr> <tr> <td>#in herd/flock</td> <td></td> </tr> <tr> <td>#sick</td> <td></td> </tr> <tr> <td>#died</td> <td></td> </tr> </table>		#in group/see		#in herd/flock		#sick		#died																																			
#in group/see																																													
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#sick																																													
#died																																													
History (clinical signs, nutrition, housing, vaccination, treatment, production level, etc. Use next page if more space is needed.) Duration of illness _____ Date of death: _____ Euth? Yes <input type="checkbox"/> No <input type="checkbox"/> Insured? Yes <input type="checkbox"/> _____ _____ _____ _____ (continue on next page if necessary)																																													
Disease(s) or condition(s) suspected: _____ Animal/Specimen Information (continue on back)																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Animal ID/Name</th> <th>Breed</th> <th>Sex (F/M)</th> <th>Age</th> <th>Qty</th> <th>Specimen Type</th> <th>Test(s) Requested</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				Animal ID/Name	Breed	Sex (F/M)	Age	Qty	Specimen Type	Test(s) Requested																																			
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CAHFS, Davis University of California, Davis 620 W. Health Sciences Dr Davis, CA 95616 General Info: (530) 752-8700 FAX (530) 752-4252		CAHFS, Turlock University of California, Davis 6550 N. Soledad Rd Turlock, CA 95381 General Info: (209) 634-5837 FAX (209) 667-4261																																											
CAHFS, Tulare University of California, Davis 18820 Road 112 Tulare, CA 93274 General Info: (559) 688-7543 FAX (559) 686-4231		CAHFS, San Bernardino University of California, Davis 105 West Central Avenue San Bernardino, CA 92408 General Info: (909) 383-4287 FAX (909) 854-5980																																											


I understand that specimens submitted are the property of CAHFS. Client information provided to CAHFS, and the test results from samples submitted to CAHFS, will be treated as confidential information consistent with applicable legal standards, including, but not limited to, California Business and Professions Code section 4957 and Evidence Code section 1040. Such confidential information will not be divulged to third parties without written consent of the client, except when required by law, which includes requirements that test results be provided to regulatory agencies. University, its officers, employees, and agents shall not be accountable for any loss, expense (including attorneys' fees), damage, or liability of any kind resulting from or arising out of services provided hereunder unless caused by negligent or willful acts or omissions by University, its officers, employees, or agents.

Signature of Submitter: _____ Date: _____
 Standard Submission Form 5-2013



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Commercial poultry submission form

 UC DAVIS VETERINARY MEDICINE California Animal Health and Food Safety Laboratory System http://cahfs.ucdavis.edu		Commercial Poultry Form		Accession # 	
Owner's Name _____ Address _____ City _____ State _____ Zip _____ Phone _____ Fax _____ Email _____ Ranch/Collection Site _____ Reference#/Flock Profile _____ Date Sample(s) Taken _____ Date Shipped _____ Sample Carrier & Contact # _____		Submitter/Vet _____ Address _____ City _____ State _____ Zip _____ Phone _____ Fax _____ Email _____ Bill To: <input type="checkbox"/> Owner <input type="checkbox"/> Submitter/Vet <input type="checkbox"/> Other (list below) _____ Report To: <input type="checkbox"/> Owner <input type="checkbox"/> Submitter/Vet <input type="checkbox"/> Other (list below) _____ Report By: <input type="checkbox"/> Email <input type="checkbox"/> US Mail <input type="checkbox"/> Fax			
Number & Type of specimens being submitted: _____ Specific Test(s) requested: _____					
<u>Species/Production Class</u> <input type="checkbox"/> Turkey <input type="checkbox"/> Breeder <input type="checkbox"/> Meat <input type="checkbox"/> Chicken <input type="checkbox"/> Breeder <input type="checkbox"/> Layer <input type="checkbox"/> Meat <input type="checkbox"/> Other _____		<u>Flock Information</u> Breed _____ Age _____ (days / weeks) Sex _____ Flock ID _____ House #/ID _____ Animal location (county) _____ # of birds on ranch _____ # of birds in house _____ % of # of birds sick _____ % or # mortality _____ (D / W / M)		<u>Vaccination History</u> (Age/Date) Marek's _____ NDV _____ IBV _____ IBDV _____ AE _____ Pox _____ MG _____ HE _____ B. avium _____ ILT _____ Haemophilus _____ Coccidi _____ SE _____ Other _____	
History (clinical signs, nutrition, housing, production level, etc.) Use next page if more space is needed. _____ _____ _____ _____ _____					
Disease(s) or condition(s) suspected _____ Treatments/Medications (type & when given) _____					
CAHFS, Davis W. Health Sciences Dr. Davis, CA 95616 (530) 752-8700 FAX (530) 752-8253		CAHFS, San Bernardino 105 West Central Avenue San Bernardino, CA 92408 (909) 383-4287 FAX (909) 884-5980		CAHFS, Tulare 19030 Road 112 Tulare, CA 93274 (809) 888-7943 FAX (559) 886-4231	
CAHFS, Turlock 1550 N. Soledad Turlock, CA 95380 (209) 634-5837 FAX (209) 667-4261					
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Signature of Submitter: _____			Date: _____		



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Client Guide

- [Packaging Guidelines](#)
- [Shipping and Courier Services](#)**
- [Supply Request](#)

Shipping and Courier Services

Packaging Samples

Shipment of diagnostic materials is subject to government regulations. If you want to contact one of our labs with questions about proper packaging of samples, visit our Contact Us page for our laboratory phone numbers and email addresses and see our Packing Guidelines page for CAHFS recommendations for proper, safe packaging of specimens for submission.

Delivery Services



Packaging Samples

NO Freezing!

- **Styro-foam container / Box with ice packs** to keep the samples from spoiling
- **Submission Form**. It is best if you insert the Submission Form in a Zip-loc plastic bag to prevent it from getting wet



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LAB TESTS & FEES

SPECIMEN SUBMISSION & FORMS

- Submission Forms
- Packaging Guidelines
- Specimen Delivery
- After-hours Submissions

Leading Diagnostics California Locally

Alex A. Ardans Tulare Branch Laboratory opening Summer 2016



Thank you



March 30, 2016



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