

OADDL E-News

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Faculty

Director:

Dr. Keith L. Bailey – Pathology

Assistant Director/Quality Manager:

Emily J. Cooper

Microbiology:

Dr. Akhilesh Ramachandran

Parasitology:

Dr. Yoko Nagamori

Pathology:

Dr. Melanie A. Breshears

Dr. Anthony A. Confer

Dr. Brad Njaa

Dr. Grant Rezabek

Dr. Jerry Ritchey

Dr. Tim Snider

Serology:

Dr. Grant Rezabek

Virology:

Dr. Sanjay Kapil

Graphic Design/Layout:

Clarissa Walton

A Summary of Poultry Necropsy Cases at OADDL in 2015

Backyard poultry are increasing in popularity in the United States. However, a major challenge for bird owners is finding veterinarians who are knowledgeable about poultry diseases.

In 2015, OADDL received 53 poultry cases for necropsy, representing a total of 83 birds. The majority were chickens (42 cases), along with fewer peafowl (4), quail (4), guinea fowl (3) and a turkey (1).

With the exception of one case, the cause of illness and/or death was

identified at necropsy (Table 1). The most common causes of illness and/or death were Marek's disease (15), coccidiosis (13), upper respiratory disease (8), poxvirus (3), trauma (3), egg-yolk peritonitis (3) and reproductive tract cancer (3).

Marek's disease was only identified in chickens and most birds were at least 4-5 months of age. In the younger birds, the most common clinical sign was attributed to peripheral neuritis (Figure 1). In mature birds, illness or

continued on page 2



Figure 1. Six- to 9-month-old chickens with clinical signs of peripheral neuritis associated with Marek's disease. Sciatic nerve involvement is often unilateral. Wing paresis/paralysis and brain lesions may also be seen. Lymphoma is more common in mature birds with Marek's disease.

Heat reversal heartworm antigen testing – new low price

Surprised that a canine or feline patient tests negative for heartworm? As many as 5-10% of dogs and cats with antigen of *Dirofilaria immitis* may test negative on standard antigen assays, but pre-treatment of serum or plasma reveals the presence of blocked antigen, confirming a diagnosis. To support efforts to diagnose heartworm accurately, OADDL offers heat pre-treatment of canine and feline samples prior to

heartworm testing at a new, reduced price. This assay is available alone or in combination with microfilaria testing (for dogs) or antibody testing (for cats.) Maximize the likelihood of detecting infection in your patients – especially the ones you suspect have heartworm – by requesting pre-treatment of serum or plasma samples with a heartworm antigen test.

— Dr. Susan Little



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Healthy Animals — Healthy People

Poultry Necropsy Cases continued from page 1



Figure 2. Adult chickens with clinical signs of infectious coryza. Note the discharge from the nares, open-mouth breathing and periorbital edema. These signs can also be seen with mycoplasmosis.

death was attributed to viral-associated lymphoma.

Coccidiosis was identified in chickens, quail, peafowl and guinea fowl. Clinical disease was most common in young birds (generally 1-3 months of age), with signs of enteric disease.

Upper respiratory disease was also a frequent clinical complaint in 2015. A common cause of upper respiratory disease in backyard poultry is infectious coryza, caused by *Avibacterium paragallinarum* (Figure 2).

In all 53 cases submitted to OADDL, the tracheas were tested for

avian influenza virus as part of a disease surveillance program sponsored by the Oklahoma Department of Agriculture, Food and Forestry (ODAFF). Under the current program, ODAFF will subsidize testing fees on poultry necropsy cases so that Oklahoma can remain vigilant in our efforts to test for this devastating disease.

— Dr. Keith Bailey



Table 1: Poultry Necropsy Cases at OADDL in 2015

Disease/Condition	Number of cases
Marek's disease	15
Coccidiosis	13
Upper respiratory disease	8
Poxvirus	3
Trauma	3
Egg-yolk peritonitis	3
Uterine/ovarian carcinoma	3
Histomoniasis (Blackhead)	2
Mites	2
Bacterial septicemia	2
Gout	1
Pneumonia	1
Cardiomyopathy	1
Egg bound	1
Aspergillosis	1

Receiving Vestibule – Open 24/7

Did you know that you can drop off samples 24 hours a day, 7 days a week at OADDL? The Receiving vestibule offers a convenient option for after-hours submission and provides three storage options to best maintain your samples integrity. Forgot your submittal form? No problem, blank forms are available in the drop-down table on the north wall of the vestibule.

— Carolyn Johns and Courtney Gray

B
Fridge

- Fresh tissue
- Swabs (bacteria/viruses)
- Small (<5 lb) carcasses
- Clotted blood/serum
- Feces

A
37°C Incubator
Trich pouches only

C
Pass-through

- Fixed tissue (biopsies)
- Campylobacter vials
- Blood culture bottles
- Supplies

2015 BVDV PI IHC Data at OADDL

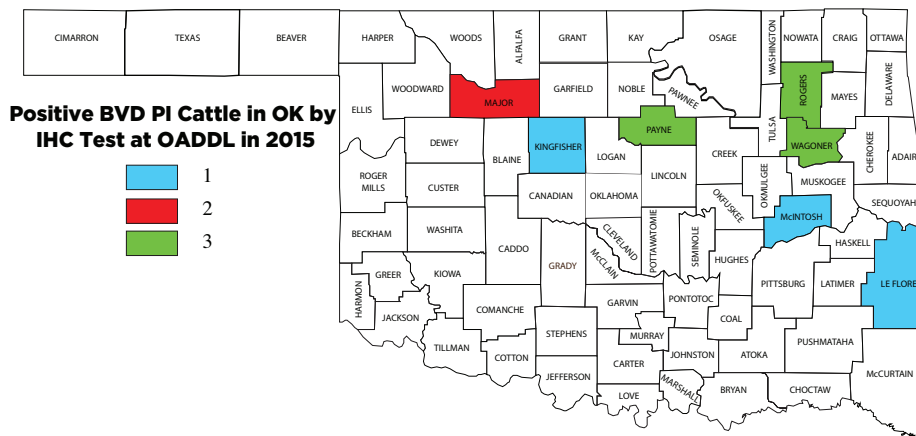
Infection with bovine viral diarrhea (BVD) virus remains a continued threat to Oklahoma cattle, particularly because infected calves may be subclinical carriers and shedders for several months prior to illness. Since these calves were infected in utero prior to developing an immune response against the virus, they are born persistently infected (PI) with BVD virus. PI cattle are generally more efficient transmitters of BVD virus than acutely (transiently) infected cattle because they shed higher virus levels over a longer period of time.

Testing ear skin (ear notches) from all calves facilitates the early identification and removal of PI calves from the herd.

In 2015, OADDL tested ear notches from 1703 animals for BVD by IHC. Of the 1703 ear notches, 20 (1.2%) were positive for the presence of virus, confirming these animals were persistently infected (Table 1). The counties from which the samples were submitted are depicted in the map.

Table 1: BVD IHC on Ear Notches for Detection of PI Cattle in 2015 at OADDL

Total Number of Animals	Positive IHC (%)	Negative IHC (%)	Unsuitable for IHC ¹	No IHC Performed ²
1703	20 (1.2%)	1666 (97.8%)	16	1
¹ Samples were unsuitable due to freezing/thawing prior to testing (1) or advanced ear notch decomposition from inadequate formalin (16)				
² No IHC performed on one ear notch that contained only hair				



Of the 20 positive animals, 3 were from Arkansas and 2 were from Ohio.

While the overall percentage (1.2%) of BVDV PI-positive cattle is low, it represents a significant threat of infection to the entire herd.

— Dr. Keith Bailey

Feline Tularemia

Tularemia continues to pose a health risk to Oklahoma cats and their owners. On January 20, OADDL confirmed the first case of feline tularemia in 2016. Tularemia is an important zoonotic disease caused by the bacterium *Francisella tularensis*.

Most cases diagnosed at OADDL involve young adult cats with access

to the outdoors. Clinical signs in affected cats include fever, lethargy, vomiting and lymphadenopathy. The clinical signs may mimic cytauxzoonosis, although cats with cytauxzoonosis usually exhibit icterus.

At necropsy, the characteristic lesions of feline tularemia include splenomegaly with multifocal splenic

necrosis (see photograph below).

OADDL offers polymerase chain reaction (PCR) testing or immunohistochemical (IHC) staining for tularemia; both tests can be performed on formalin-fixed tissues.

— Dr. Keith Bailey



Image courtesy M.J. Sula

Mycoplasma bovis in cattle

Mycoplasma bovis is a ubiquitous pathogen of cattle known to cause pneumonia, arthritis, tenosynovitis, mastitis, otitis media and urogenital infections.¹ This organism is well adapted to colonize mucosal surfaces but may not cause disease. Increased shedding of *M. bovis* has been associated with stressful events (transportation, co-mingling, excess cold) and co-infections with bacteria and/or viruses. Once this pathogen is present in a herd, it can be spread from animal to animal through shedding from mucous membranes. Large dairy herds have a much greater risk of mycoplasma-positive bulk tank samples related to endemic mycoplasma mastitis. There is currently no effective treatment for mastitis related to *M. bovis* infection. Respiratory infections manifest as fever, decreased appetite, nasal discharge and coughing. Likely related to



impaired auditory (Eustachian) tube function, upper respiratory infections may be associated with otitis media evident as ear pain, as well as Facial nerve deficits such as drooping ears. Related to respiratory and middle ear infections, there are several antimicrobials with label claims of effect against *Mycoplasma bovis* infections. However, most of the commercial *M. bovis* vaccines or autogenous vaccines produced are ineffective at prevention.

— Dr. Brad Njaa

[1. Maunsell, FP, et al. \(2011\) ACVIM Consensus Statement: Mycoplasma bovis infections in cattle. J Vet Intern Med 25:772-783.](#)

Getting to Know Us

Chelsea Baker is originally from Oklahoma City. She received her BS in Zoology from Oklahoma State University in 2012, and her MS in Zoology in 2015. Chelsea has been working at OADDL since mid-January. In her free time, Chelsea enjoys gardening, baking, and watching movies.



Robin Madden grew up in Edmond, Oklahoma. She received her BS and MS at Oklahoma State University and worked as the Senior Research Specialist for the Insect Biochemistry Laboratory in the Entomology and Plant Pathology Department for 18 years. Robin's life is centered around family and church and she loves spending as much time as possible with her husband and two sons. In her free time, Robin enjoys reading, sing-



ing, playing with her two dogs and being outdoors.

Letter from the Director

It has been said that your most important client is your current one. In a time when all of us have more options than ever, that statement has never been truer.

As many of you know, state funding to OADDL continues to shrink while we are in the midst of the largest budget shortfall to ever face Oklahoma. Despite this additional challenge, we are committed to identifying ways to better serve you.

One of our primary initiatives over the past 2 years has been to add transparency to our fees. In addition to providing you with an overview of testing costs attached to your final report, we have tried to eliminate or avoid hidden fees (e.g. accession fee, sample prep fee, biohazard fee and most other creatively-named fees).

At OADDL, we are constantly trying to improve. To that end, we seek your input on how we might better meet your needs. The current financial situation facing the state requires us to work smarter and more efficiently. Fortunately, we have a very resilient team in our lab. As the old saying goes, tough times never last, but tough people do.

— Dr. Keith Bailey


Ideas/Suggestions for Future Content

We want to hear from you. Send us your ideas and suggestions to oaddl@okstate.edu.

Contact Us

Oklahoma Animal Disease
Diagnostic Laboratory
Ph: 405-744-6623
Fax: 405-744-8612

www.cvhs.okstate.edu/oaddl

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