



**UC DAVIS**

**VETERINARY MEDICINE**  
California Animal Health and  
Food Safety Laboratory System

# CAHFS CONNECTION

August 2013

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## Holiday Schedule

CAHFS will be closed on **Monday, September 2, 2013** in observance of Labor Day.

Please contact your laboratory to plan your testing needs accordingly.

## Bovine

**Vitamin A deficiency** was the cause of **blindness** in two, 3-week-old Holstein heifers submitted to the laboratory. Both calves were from first calf heifers and were born blind. At necropsy, there was coning of the cerebellum where it extruded through the foramen magnum. This occurred due to closure of the bone plates of the skull preventing brain growth. On histopathology, the retina lacked ganglion cells and the optic nerves had possible degeneration. Liver vitamin A was severely deficient (6 and 9ppm; normal 120-280ppm) in the two calves. In the past, cases of vitamin A induced blindness in newborn calves have been only those born to first calf heifers on dairies and in beef operations where heifers have been grazing brown pastures for prolonged periods of time.

*Histophilus somni* caused **myocarditis** in 5-, 7- and 10-month-old Angus calves on three separate premises recently. Three of 70, 10-month-old calves in a drylot pen were found down and unable to rise while other calves had respiratory signs. The 5- and 7-month-old calves were on pasture and the 5-month-old exhibited **lethargy and disorientation** before death. Two other animals in the group of 230 had died and five were lethargic. Other lesions found on histopathology in the two younger calves included thromboembolic **meningoencephalitis** and **glossitis**. The 7-month-old also had vegetative endocarditis, laryngitis, embolic pneumonia and nephritis. *H. somni* was isolated from the cerebral spinal fluid of the 5-month-old and from heart lesions on the other two animals.



Papillary muscle myocarditis due to *H. somni*

**Oleander toxicosis** caused sudden death of a pregnant 7-year-old

Angus cow on grass pasture and lethargy in another cow that survived. Hemorrhage was found in the wall of the heart on necropsy and greater than 10 oleander leaves were found in the rumen contents. On a second premise, two yearling beef show steers were found down, unable to rise and off feed the morning following access to grass clippings and new batches of hay and grain. The steers developed diarrhea and straining to defecate followed by mild bloat before they died three days later. Oleander bushes were present on the premise but no problems had occurred previously. Oleandrin was found in the rumen contents. The source was presumed to be oleander leaves which may have blown onto the grass due to high winds and become mixed in the grass clippings. A 2-year-old lactating Angus show cow on a third premise developed diarrhea, muscle tremors and anorexia prior to death. Myocarditis was found at necropsy and oleandrin was the confirmed cause based on testing of the rumen contents. The meat from cows that survive oleander toxicosis may contain minute levels of oleandrin for a few days after exposure.

## Fee Change

On July 1, 2013, CAHFS changed its policy to allow necropsy of only two (2) birds from backyard flocks (<1,000 birds on premise) at no charge. Additional birds up to eight will be charged the standard poultry rate of \$120.

## CAHFS Lab Locations

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Your feedback is always welcome. To provide comments or to get additional information on any of the covered topics or services, please contact Sharon Hein at [slhein@ucdavis.edu](mailto:slhein@ucdavis.edu).

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### Bovine (cont'd)

**K99 *E. coli*** caused severe **watery diarrhea** and death in calves 2-5 days of age on three premises in late June and early July. K99 *E. coli* usually only causes diarrhea in calves <6 days of age as the intestinal mucosal attachment factors for the organism are lost by 6 days of age.

### Equine

***Rhodococcus equi*** was the sole cause of **embolic pneumonia** in a 7-week-old Quarter horse and an 8-week-old Thoroughbred foal on separate premises. Both foals were lethargic with **fevers** of 105-106°F, the Quarter horse also had a severe **cough** progressing to ataxia and gait abnormality before death. At necropsy, both had nodules up to 2cm in size throughout the lung. Equine herpes virus PCR was negative on nasal swab and lung. *R. equi* was isolated in large numbers from the lung in both and from the mesenteric lymph node in the Quarter horse.

### Small Ruminant

***Chlamydia pecorum*** caused the **abortion** of twin 130-day gestation fetuses from a 16-month-old Boer doe in a herd of 34 goats. Pathological findings included inflammatory lesions in placenta and fetal tissues. *Chlamydia* was detected by direct fluorescent antibody test and/or immunohistochemistry on the placenta and fetal tissues. Chlamydia abortion in small ruminants is usually associated with *C. abortus* infection. However, sequencing of the 16s rRNA from this case indicated the organism was *C. pecorum*, a rarely reported cause of abortion in goats.

**Bronchopneumonia** due to *Bibersteinia trehalosi*, *Pasteurella multocida*, *Trueperella pyogenes*, *Streptococcus* sp. and *Mycoplasma* sp. resulted in the death of a 2-month-old lamb housed on pasture with its dam. The lamb also had severe copper deficiency and moderate selenium deficiency. The initial complaint was diarrhea. Some cases of severe bronchopneumonia are accompanied by diarrhea with no primary enteric pathogen found. ***B. trehalosi*** was the sole cause of **pneumonia** in a 4-month-old lamb from a flock of 1000 sheep in which 18 lambs had died.

### Poultry

***Mycoplasma gallisepticum* (MG)** infection in **chickens and turkeys** can result in respiratory disease, decreased egg production and a greater susceptibility to other respiratory pathogens. Though vaccination for MG is fairly common in California egg-layer operations, occasionally a field strain of MG will break through the vaccination and cause problems. Diagnostically, it is difficult to identify these field strains since serologic titers may be the result of vaccination or field infection. The bird's immune system may also interfere with attempts to isolate MG. The MG real-time PCR assay can facilitate the diagnosis by identifying positive MG respiratory samples to culture. Once an isolate of MG is obtained, a MG multi-locus sequence analysis (MLSA) can be utilized to differentiate the field strain of MG from the three live MG vaccine strains. The MG MSLA assay has also been used numerous times to demonstrate the same MG strain is re-occurring in successive flocks on a single ranch or is occurring on closely located ranches.

**Necrotic enteritis** due to ***Clostridium perfringens*** infection and associated with coccidia caused increased mortality in 9-week-old turkeys in one flock and coccidiosis alone caused intestinal necrosis in 4- to 6-week-old broilers in several flocks. It is not unusual to find both pathogens together as coccidia are a major predisposing factor for necrotic enteritis. CAHFS has seen an increase in necrotic enteritis with concurrent coccidia infection in poultry this year.

### Reptile

**Gastric cryptosporidiosis** infection was diagnosed in a Pacific gopher snake housed in public display. The snake had recurrent mid-body swelling. Post mortem exam confirmed the stomach wall was markedly thickened and had large numbers of cryptosporidia. *Cryptosporidium serpentis*, which is a snake specific species, was identified. The species identification allowed appropriate management decisions to be taken and alleviated public health concerns.