



UC DAVIS

VETERINARY MEDICINE
California Animal Health and
Food Safety Laboratory System

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Holiday Schedule

In observance of the University of California's winter holidays, CAHFS will be closed on **Wednesday 12/25/13** and **Wednesday 01/01/14**.

We will have limited services available (submissions will be received from 8 am - 12 pm) on **Tuesday, 12/24/13** and **Tuesday 12/31/13**.

Please plan your testing needs accordingly as some test set ups will be changed or reduced.

CAHFS CONNECTION

December 2013

BOVINE

Selenium deficiency resulted in mineralization and chronic ongoing **heart lesions** in a 100lb Hereford calf that went into convulsions and died after 10 minutes as the herd was being moved. Selenium and copper deficiency are the most commonly diagnosed conditions in pastured beef cattle and goats in California. These deficiencies also contribute to immune suppression and ill-thrift.

Abomasitis with ulcers due to **fungal hyphae** was diagnosed in Holstein and Jersey calves from three premises in the last two months. Calves ranged from 4- to 22-days-old and had a history of diarrhea. The calves also had enterocolitis due to one or more of the following agents: coronavirus, rotavirus, *Cryptosporidium* spp., *Salmonella* spp, K99 *E. coli* and/or attaching and effacing *E. coli*. Use of oral antibiotics suppresses normal GI flora and can predispose to mycotic abomasitis and yeast overgrowth in the rumen.

Pinkeye outbreaks were reported on three premises in dairy breed calves since October. Calves ranged from 3- to 6-months-old. Corneal swabs were submitted and ***Moraxella bovis*** was isolated from 16, 42 and 60 percent and ***Moraxella bovoculi*** from 100, 84 and 40 percent of swabs respectively by premise. One premise was also tested for **IBR** and two of four swab pools were positive.

EQUINE

Sarcocystis neurona, the cause of **equine protozoal myelitis (EPM)**, was diagnosed recently in three unrelated Thoroughbred horses ranging from two to four years of age. Clinical signs in the first horse were a stiff gait and pain progressing to recumbency over two weeks; the second had ataxia progressing to recumbency; and the third ran into a fence resulting in head and neck trauma followed by progressive **neurologic deficits** over the next five days ending in recumbency and dilated pupils. All three horses had substantial localized inflammation (in T1-T5 cord in the first horse, brain stem/medulla in the second, and T11-18 cord in the last). EPM was confirmed by IHC on the affected sections of brain or cord. EPM may have caused the third horse to run into the fence with subsequent muscle and soft tissue trauma.

Equine lower motor neuron disease (EMND) was diagnosed in a 4-year-old Quarter Horse gelding with a history of **illness** for over two years, weight loss, lethargy and recent onset of **muscle fasciculations**. Histopathology revealed degenerative neuron lesions in the brain stem and the spinal cord motor horns and nerve roots. There was degenerative myelopathy of nerve roots, sciatic and femoral nerves resulting in denervation myopathy. The animal was deficient in Vitamin E. The cause of EMND has not been determined definitively, but the disease has been reproduced experimentally in horses fed a vitamin E deficient diet for a prolonged period (3-4 years). Most cases have been reported in the northeast in horses without access to pasture or other green feed.

PIG

E. coli and coagulase negative ***Staphylococcus*** were isolated from the ureter, urine and kidney of a sow that developed **cystitis, ureteritis and pyelonephritis**. The sow had reduced appetite for several days prior to death.

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We're on the Web
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SMALL RUMINANT

Bunyavirus was the probable cause of scoliosis, kyphosis, arthrogryposis, hydrocephalus and cerebellar hypoplasia in a near-term lamb from a flock in which 3 of 15 ewes had given birth to six **deformed lambs**. Brain tissue sent to NVSL for Schmallenberg virus and Bunyaviruses PCR was positive for the latter. Cache Valley virus is a Bunyavirus which causes deformities in lambs. Partial sequencing of the PCR products supported but was not specific for Cache Valley virus.



Lamb—scoliosis (arrow), poor muscle development, contracted front legs, lax rear fetlocks and deformed chest

Campylobacter jejuni resulted in near-term **abortions** in ~20 percent of Vibrio- vaccinated yearling ewes on one premise and in 4 of 50 Boer goats on another premise. Abomasal fluid from fetuses and placentas were culture positive for the organism and placentitis was present.

POULTRY

Avian encephalomyelitis (AE) is a viral disease primarily of chickens characterized by ataxia, paralysis or fine tremors of the head and neck. Usually outbreaks occur in chicks one to three weeks of age. Vaccination of breeder birds has been very successful and this disease is rarely seen today. Recently, AE was diagnosed in pullets between 10 to 14 weeks of age. These birds were showing **fine tremors of the head**, had very characteristic histologic lesions in the brain and gizzard and had no serologic evidence of protection. The AE virus was demonstrated in brain tissue by molecular techniques. Other disease agents capable of producing central nervous signs, such as Marek's disease, Newcastle disease or Equine Encephalomyelitis virus, were not detected. Virus isolation is required to distinguish between a vaccine virus strain and the ubiquitous field virus.

Vitamin A deficiency was the cause of white spots on the mucosa of the proventriculus in a hen submitted with a history of mild respiratory signs. Histologically there was hyperparakeratosis of the proventricular glands. Liver vitamin A was well below the normal reference range for chickens. No lesions were seen grossly or microscopically in the respiratory tract and no viral, parasitic or bacterial respiratory pathogens were detected.

Enterococcus hirae septicemia was diagnosed in 7-day-old **chicks** from two separate premises. On one premise some chicks presented with bent necks and the other premise had increased mortality. **Encephalomalacia** due to this organism was found in birds with bent necks. This same organism was also isolated from infected yolk sacs in 2-day-old **turkey** poults experiencing 4.5 percent mortality and from the air sac, heart sac and liver in 18-day-old turkeys with septicemia due to *E. coli* and *E. hirae*. *E. hirae* is part of the normal intestinal flora and occasionally, when contaminated eggs are hatched, *E. hirae* will infect the yolk sac leading to septicemia.

OTHER AVIAN

Lymphoma was the cause of death in a wild pigeon that was found in the street, unable to fly. Initially the pigeon responded to supportive therapy at a wildlife care center but died suddenly. Necropsy revealed solid masses in most organs that microscopically consisted of sheets of neoplastic lymphocytes. Immunohistochemistry identified most neoplastic cells as T lymphocytes. The etiology of lymphoma in pigeons is undetermined.

Vitamin E deficiency and concurrent **West Nile virus (WNV) infection** were diagnosed in two ganders submitted from a group of nine red breasted geese in which five died after developing **wobbly gait and trembling**. Both ganders had **encephalomalacia** associated with vitamin E deficiency which was confirmed by low liver levels. Both were also positive for WNV by PCR.