



UC DAVIS

VETERINARY MEDICINE
California Animal Health and
Food Safety Laboratory System

CAHFS CONNECTION

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Holiday Schedule

In observance of the University of California's winter holidays, CAHFS will be closed on **Monday 12/24, Tuesday 12/25, Monday 12/31 and Tuesday 1/1/13.**

Please plan your testing needs accordingly.

BOVINE

Attaching and effacing *E. coli* (AEEC) caused **diarrhea**, often bloody or with blood flecks, in 4- to 21-day-old calves on 14 premises in the past three months. The mean age was 11 days and nine of 14 farms reported blood in the feces of affected calves. This organism is diagnosed based on typical histologic lesions in the ileum and colon.

EQUINE

Equine Protozoal Myelitis (EPM) resulted in persistent **hind leg lameness** beginning after a workout in a 2-year-old Thoroughbred race horse at a Southern California racetrack. Seven days after onset, during transportation, the still lame horse went down, was unable to rise and had **no hind limb nerve reflexes**. Gross examination of the spinal cord revealed multifocal areas of spinal cord softening and discoloration in the lumbar 3-4 and 5 segments. Histologically, the affected lumbar spinal cord segments had subacute to chronic, multifocal, severe, meningomyelitis compatible with EPM. *Sarcocystis neurona* IHC on sections of the affected spinal cord was positive, confirming the diagnosis of EPM. This disease is one of the most common inflammatory diseases of the central nervous system (CNS) of horses in the U.S. All horses are susceptible to *Sarcocystis neurona* infection, but only a few horses develop CNS lesions. The neurological clinical signs can be acute or chronic and extremely variable, depending upon the location of the lesion within the spinal cord.

DEER

Bluetongue virus infection was diagnosed in a 4- to 5-year-old **mule deer** doe found dead in an oak woodland east of Gilroy. Two other deer were found dead in the same area over the previous 10 days. Necropsy revealed emaciation, oral and rumen mucosal ulceration, intestinal serosal hemorrhage, subcutaneous hemorrhage and pale foci in the muscles. A foreign animal disease investigation was initiated and testing for all FMD-like endemic diseases was performed. Bluetongue virus type 10 was identified in spleen and oral ulcers.

SHEEP

Bluetongue virus was the cause of **illness and some deaths** in adult sheep in seven flocks over the past two months. Serotypes 10 and 11 were identified among the three flocks that were tested, one of which had both types. Lethargy, anorexia and reluctance to move were the most common signs. A fever ranging from 102-107°F, frothing at the mouth, clear nasal discharge and sore feet were reported in some flocks and one flock each reported swollen head and ulcers at the corners of the mouth. The most common necropsy findings were pulmonary congestion and edema and hemorrhages in the heart. The papillary muscle of the heart had areas of myocarditis and necrosis. Several animals were also selenium deficient which contributed to heart lesions. PCR testing was positive on spleen from dead animals or whole blood (EDTA) from live affected animals. Two sheep also had toxic copper levels and one of these had typical lesions of copper toxicosis.

CAHFS Lab Locations

CAHFS - Davis

University of California
West Health Sciences Drive
Davis, CA 95616
Phone: 530-752-8700
Fax: 530-752-6253
cahfsdavis@cahfs.ucdavis.edu

CAHFS - San Bernardino

105 W. Central Avenue
San Bernardino, CA 92408
Phone: (909) 383-4287
Fax: (909) 884-5980
cahfsanbernardino@cahfs.ucdavis.edu

CAHFS - Tulare

18830 Road 112
Tulare, CA 93274
Phone: (559) 688-7543
Fax: (559) 686-4231
cahfstulare@cahfs.ucdavis.edu

CAHFS—Turlock

1550 Soderquist Road
Turlock, CA 95381
Phone: (209) 634-5837
Fax: (209) 667-4261
cahfsturlock@cahfs.ucdavis.edu

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.

We're on the Web
www.cahfs.ucdavis.edu

ELECTRON MICROSCOPY FEE INCREASE

Please note that the cost for electron microscopy has increased. Direct electron microscopy of negative stained preparations of feces/tissues is \$110. Thin section electron microscopy of tissue which includes examination of six thick sections and interpretation on three thin sections with high definition digital images is \$250.00.

OTHER AVIAN

Cryptosporidiosis was the cause of a chronic, ongoing problem of **swollen eyelids, ocular discharge**, lethargy, weight loss and death in **cliff swallows** at a rehabilitation center. There was no response to antibiotic and supportive therapy. The postmortem examination showed swollen, edematous eyelids and ocular discharge. Microscopically, the conjunctival, nasal, tracheal and bronchial epithelium had attached microorganisms compatible with *Cryptosporidium* spp. Cryptosporidiosis has been reported in more than 30 avian species worldwide, and is considered one of the most prevalent parasitic infections in domesticated and wild birds. Avian cryptosporidiosis may manifest in any of three main clinical forms: intestinal, respiratory and renal. However, usually only one of these clinical forms is displayed during an outbreak. Four different species of *Cryptosporidium* have been identified in avian species: *C. baileyi*, *C. meleagridis* and *C. galli* and *C. parvum*.

West Nile virus (WNV) infection was diagnosed in September in a flock of 1,000 2-day-old **chukar partridge chicks**. Over a period of six weeks, 200 birds died suddenly or after showing ruffled feathers and anorexia for 24 to 72 hours. Two of the three birds submitted had hemorrhagic tracheitis at necropsy, and all three birds had myocarditis on histopathology. WNV was detected by PCR and immunohistochemistry in several tissues of all birds, including trachea and heart. Additionally *Salmonella* sp. was detected by PCR in intestinal contents of all three birds, although only one bird had lesions consistent with *Salmonella* septicemia (hepatitis with intralesional bacteria). WNV infection is reported very rarely in birds of the order Galliformes.

Pigeon herpesvirus, Pigeon circovirus, Pigeon paramyxovirus and Trichomonas spp were identified in three racing pigeons submitted from an aviary with a history of several birds not flying, losing weight, drooling and not eating normally. The three birds submitted had inflammation of multiple tissues including mouth, tongue, pharynx, respiratory sinuses and bursa. It was thought that a primary infection by Pigeon circovirus was responsible for immunosuppression, which allowed the other infections to become established.

POULTRY

Runting and Stunting Syndrome (RSS) also called Malabsorption Syndrome and Cystic Enteritis is a common condition seen in broiler **chickens**. The onset of this syndrome is typically around five days of age and it is most obvious around two weeks of age. The affected chicks fail to gain weight and the chicks can be uneven in size with 5 to 15 percent of the chicks affected in a flock. Other clinical signs such as diarrhea, lethargy, anorexia and increased mortality can also be observed. Gross pathology includes pale serosa and watery contents in the small intestine. Microscopically there is increased cellularity of the lamina propria, blunting and fusion of the villi and cystic dilatation of the crypts. The cause of RSS is not known but has been attributed primarily to viruses such as Rotavirus, Astrovirus, Reovirus, Parvovirus and other small round viruses.

Respiratory problems and increased mortality in 48-day-old turkey poults was due to mixed **bacterial** respiratory infection, **vitamin A deficiency** and **Hemorrhagic enteritis virus (HEV) viremia**. Gross lesions consisted of unilateral and bilateral conjunctivitis and/or sinusitis, air sacculitis and pneumonia. *Bordetella avium* and *E. coli* were isolated from respiratory tissues. Toxicology revealed vitamin A deficiency in liver and feed samples while histology revealed concurrent Hemorrhagic Enteritis virus (HEV). Both of these findings were contributing factors in the severity of the respiratory problem. Vitamin A is partially responsible for the integrity of the respiratory system lining and HEV can cause immunosuppression.