UCDAVIS
VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

Bovine Special Edition CAHFS CONNECTION

November 2012

Inside this issue:

Bovine herpesvirus-2

Hair loss and scabs on face, edge and base of ear

Bovine herpesvirus-2 (Bovine herpes mammilitis virus, BoHV-2) caused **facial and ear dermatitis** with alopecia, scabs and crusting of the skin on the ears and around the eyes of 3-week-old calves (see photo) on one dairy in September. Lesions resolved over 3-6 weeks. Almost 100 percent of the calves were affected. The scabs from one animal had numerous herpes-like syncytial cells with intranuclear inclusions on histopathology. PCR testing of the scab material confirmed BoHV-2. Infections by this virus cause mammilitis and pseudo-lumpy skin disease and have been associated with identical lesions in calves in the past in California. On affected premises face flies probably serve as mechanical vectors transmitting the virus between calves.

Clostridial myositis and cellulitis

Clostridial myositis and cellulitis in eight postpartum Holstein heifers was secondary to injections in the neck muscle. Severe neck swelling followed by death occurred. *Clostridium septicum* was isolated from the necrotic and edematous skeletal muscle. The opened bottles of the injectable product were negative on culture for anaerobic and aerobic bacteria. The organism was probably introduced from skin contamination and damage from the injections allowed it to proliferate. On a second dairy, three postpartum heifers died suddenly. The one submitted had ***C. septicum* myocarditis**. Though clostridial myositis and cellulitis can affect any age animal, at CAHFS the disease is most commonly seen in unvaccinated cattle from 8 to 24 months of age. At CAHFS, the most common clostridia isolated from the necrotic muscle are *Clostridium septicum* and *Clostridium chauvoei*. Both organisms can cause acute fibrinous pericarditis and heart necrosis. *Clostridium septicum* is also associated with severe swelling (cellulitis) below the vulva and the escutcheon area post-calving in heifers. Anaerobic culture and fluorescent antibody testing of affected sites are used to diagnose these diseases.

Retropharyngeal cellulitis

Submandibular swelling due to **retropharyngeal cellulitis secondary to traumatic perforation** of the back of the throat was found in one postpartum cow submitted. The trauma probably occurred one week earlier when treating the cow for ketosis with an oral preparation. In the preceding 2 months, 6-7 postpartum cows had developed pneumonia with submandibular swelling. Though none of the pneumonia cows were submitted, aspiration pneumonia can be secondary to oral dosing which may damage the back of the throat causing cellulitis and allowing aspiration into the trachea. Also swelling from the cellulitis around the larynx can result in respiratory distress.

Holiday Schedule

CAHFS will be closed on Thursday, **November 22, 2012** in observance of Thanksgiving Day, but will be open on **Friday, November 23, 2012** with limited services.

Please contact your laboratory to plan your testing needs accordingly.

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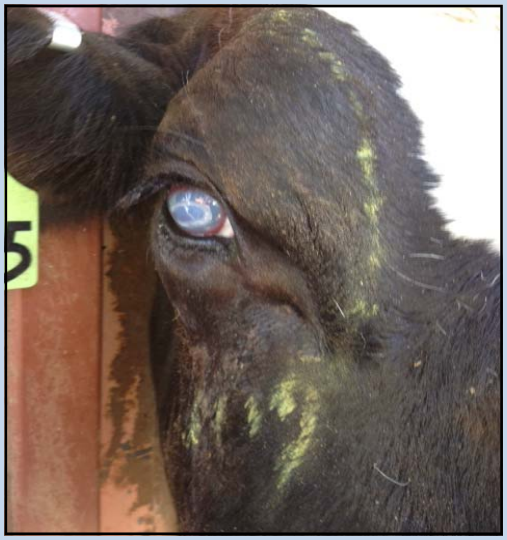
Your feedback is always welcome. To provide comments or to get additional information on any of the covered topics or servics, please contact Sharon Hein at slhein@ucdavis.edu.

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

Epizootic hemorrhagic disease virus and Bluetongue virus



Corneal edema and keratitis in EHD-positive cow

Epizootic hemorrhagic disease virus (EHDV) and **Bluetongue virus** (BTV) were detected in September in Holstein cows. Five cows on one dairy developed corneal edema of both eyes over the past few months. One animal had a severe anterior uveitis along with the corneal edema (see photo). Whole blood from three cows was tested by PCR for MCF, IBR, BVD, EHDV and BTV. One cow was positive for EHDV and the other two were positive for BTV. EHDV and BTV are closely related orbiviruses transmitted by midges (*Culicoides* sp.). Many outbreaks of Epizootic hemorrhagic disease (EHD) in cattle and deer have caused morbidity and mortality in the Midwest and the East coast this year. This case was the only confirmed case of EHD infection in cattle in California. A follow-up visit to the dairy revealed a progression to corneal ulcers more typical of pinkeye (*Moraxella*) in some cows. Clinical disease with EHDV and BTV in cattle typically causes ulceration of the oral mucosa, slight corneal edema with tearing, and lameness with reddening and edema along the coronary band. Most infections with BTV are subclinical in cattle but can present with coronary band lesions and fever.

Nitrate and nitrite toxicosis

Nitrate and nitrite toxicosis caused sudden death in a 2-year-old Angus steer that was housed with three others in a dirt corral. The animals were fed oat hay, a small amount of corn, and city water. Necropsy revealed dark brown blood (methemoglobinemia), and brown discoloration of internal organs and skeletal muscle. Ocular fluid had a toxic level of nitrate (110 ppm; toxic level >25ppm) and nitrite (9 ppm). A submitted sample of oat hay contained 35,000 (3.5 percent, toxic level = 1 percent) ppm of nitrate. Nitrate accumulation in oat hay is more likely to occur if the hay is harvested soon after rain or irrigation, before nitrate taken up from the wet soil can be converted to plant nitrogen. High nitrate levels in oat hay, at the bottom of stacked hay bales, is thought to be a consequence of soaking in nitrate-rich fluid such as fertilizer run-off.

Yew (*Taxus*) ingestion

Yew (*Taxus*) ingestion caused acute death of seven adult Angus cattle in a group of 140 within 24 hours after movement to a new pasture which had a burn pile containing some ornamental plants. Yew leaves and its cardiotoxin, taxine, were found in the rumen contents of all four animals tested. Grayanotoxin, found in Rhododendron spp., was detected in two of four animals and one of these also had trace amounts of coniine, the toxin found in Poison hemlock which was also present in the new pasture. Surviving herd mates were reportedly lethargic and more docile initially but recovered. Yew does not typically cause gross or histologic lesions so a detailed history, examination of the environment and the rumen contents is critical to diagnosing this plant toxicosis. When a toxin is suspected, samples of rumen content, feces, liver, kidney, brain, eye fluid, serum, EDTA blood and urine should be submitted as different samples may be needed depending on the toxin suspected.

New CAHFS Fee List Now Available

The new in-state and out-of-state fee lists of frequently requested tests were included with your November invoice. If you did not receive one or need more, please contact your local laboratory.