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VETERINARY MEDICINE

California Animal Health and  
Food Safety Laboratory System

# CAHFS

# CONNECTION

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## Bovine

**Monensin toxicosis** caused **myocardial necrosis** in three, 4- to 6-month-old Holstein heifers submitted from a dairy where five out of 200 heifers died in two days with either no clinical signs or mild diarrhea. Pulmonary hemorrhage and edema, and necrosis in the heart were observed. The oldest of the three heifers submitted also had liver necrosis. Monensin levels in the feed submitted were about three times recommended levels. Acute toxicosis can occur at five times recommended levels but toxicosis can also occur due to the cumulative effect of excessive monensin in the feed at the level observed in this case.

**Bovine viral diarrhea type I**, diagnosed by PCR and isolation, was the cause of severe **oral ulceration** and sloughing of the mucosa, erosions of the nasal planum, **conjunctivitis** and marked edema of the cornea in four, 10-month-old Angus heifers in a group of 500 on pasture. Oral and ocular swabs, EDTA blood, serum and heparin blood were collected from all four animals by the CDFA foreign animal disease diagnostician (FADD). All animals had been vaccinated two months earlier for BVDV, and three of four affected animals had titers to BVDV. Within five hours of sample arrival at the CAHFS Davis laboratory, PCR testing was completed and was positive for BVDV and negative for seven other endemic diseases (EHD, MCF-OvH2, BTV, IBR, BHV-2, BPSV and pan-parapox) and screening tests for Foot-and-Mouth disease (FMD). Testing by NVSL at Plum Island confirmed the negative FMD test result and ruled out Vesicular Stomatitis virus and MCF-African form on the following Monday.

**Bovine papular stomatitis virus** (BPSV) was the cause of **oral lesions** in eight calves from a calf ranch where 3% of hutch calves between 6- and 32-days-old were drooling and had ulcers of the tongue, oral mucosa and nasal planum. Mortality had increased due to dehydration among calves that were unwilling to drink and/or had developed deep tongue abscesses. The calf ranch submitted four, 22-day-old live calves for necropsy and a CDFA FADD visited the premise and sampled four additional animals. PCR testing was positive for BPSV and/or Pan-parapox in all eight animals and BVDV in two calves. PCR testing was negative for FMD and five other look-a-like endemic diseases (EHD, MCF-OvH2, BTV, IBR, BHV-2). Oral swabs from all eight animals were positive for coronavirus by PCR which is of unknown significance in this case.

**Clostridium myositis and/or cellulitis** resulted in the death of Holstein heifers and cows on four dairies. Submandibular edema, hard feces and “twitchy” signs were reported in eight of 100 yearlings on one dairy in one week. Five had died. Necropsy on one heifer revealed marked submandibular, neck and shoulder edema and dark red to black, emphysematous shoulder muscles that were positive by FA for *Clostridium chauvoei*. Two dairies had several 2-year-old heifers develop marked peri-vulvar and perineal edema within 1-3 days postpartum. Fibrinous pleuritis, perineal cellulitis and localized myositis were found on necropsy. *Clostridium septicum* was isolated, but FA on direct tissue smears was negative. The fourth dairy reported 15 deaths in one month among cows within four days postpartum. A 6-year-old cow submitted had severe subcutaneous edema from the left shoulder to the hip, severe **heart necrosis**, fibrinous **epicarditis** and multifocal **myositis** of the right and left hip. *Clostridium septicum* was isolated and *C. septicum* and *C. chauvoei* FA test results were positive on heart and muscle smears.

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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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## Equine

**Gastric impaction leading to rupture** resulted in **sudden death** of an adult male Friesian horse that was found dead in the stall. No clinical signs were observed before death. Postmortem examination showed a greatly distended stomach with approximately 25 kg (55 lbs.) of dry, well chopped roughage and a 20 cm tear with hemorrhagic margins along the greater curvature. Gastric impaction and distention occurs infrequently in horses and usually is associated with signs of colic. However, some horses are very resistant to pain and clinical signs may be difficult to detect. Although the inciting cause frequently remains obscure, the ingestion of certain feedstuffs such as beet pulp, bran, straw, wheat and barley or eating when there is impaired intestinal motility may predispose to gastric impaction.

**Pyrrrolizidine alkaloid (PA) toxicosis** was the presumptive cause of **liver disease** in a 4-year-old Quarter horse with acute liver failure, marked icterus and hemoglobinuria. The liver had numerous megalocytes and lipidosis but no fibrosis. A 10-year-old female miniature donkey on a separate premise had a one month history of lethargy followed by three days of anorexia, weakness and recumbency prior to death. The liver of the donkey had extensive dissecting fibrosis and nodular regeneration without megalocytes suggesting that PA exposure probably occurred months earlier. CAHFS can test suspect feed material for PA but no assay is available on tissues. Frequently the contaminated feed is no longer available for testing due to delay in onset of liver failure. Common groundsel and fiddleneck are the plants commonly associated with PA toxicosis.

## Small Ruminant

**Corynebacterium pseudotuberculosis** was isolated from an **esophageal abscess** in a ram with a history of **choking**, feed regurgitation and weight loss for several days. On postmortem examination, the esophagus just proximal to the mural abscess was dilated and impacted with roughage. The abscess protruded into, and partially occluded the esophageal lumen. Additional abscesses were observed in the mediastinal lymph nodes and liver. *C. pseudotuberculosis* is the etiological agent of "**Caseous lymphadenitis**", a common disease of sheep and goats.

**Rotavirus enteritis** was the cause of **diarrhea** in a 1- and 4-day-old goat kid from a dairy where 100% of kids developed watery diarrhea by 1-2 days of age. Mortality was low due to extensive supportive care. Moderate atrophy in the small intestine supported a viral cause and rotavirus was detected by direct electron microscopy on the feces but rotavirus ELISA, which only detects group A, was negative suggesting this was a group B rotavirus.

## Poultry

**Omphalitis** (severely swollen umbilicus-navels) and mild yolk sac infections in 3-day-old turkey poults was the cause of increased mortality to 3% in three days in a flock of 20,000 poults. A few birds also had meningitis and *E. coli* was isolated from the yolk sacs and livers.

**Ammonia toxicity** was diagnosed in several 18- to 21-day-old broiler chicks. The chicks appeared sleepy and had their eyes closed. The eyelids were edematous and congested and the cornea had erosions. Reused and wet litter in combination with poor ventilation is the main contributing factors for this condition.

**Rickets** due to calcium to phosphorus ratio imbalance in the feed (normal 2:1, actual 10:1) was the cause of weakness and reluctance to walk in 3-week-old **ducks** in a small flock of 10 ducks. Radiographs of the long bones revealed bilaterally symmetrical fractures of the proximal tibiotarsus. Two birds submitted for necropsy had very soft bones and microscopic fractures of the proximal tibiotarsus.

## Fish

**Disseminated mycobacteriosis** was identified in several fish from a multispecies exhibit tank. Fish were emaciated with distended coelom, few exhibited exophthalmos and had pallor in coloration. Beaded acid-fast bacilli were identified in viscera, gills, extradural sinus, and eye.