



UC DAVIS

VETERINARY MEDICINE

California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • OCTOBER, 2022



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Bovine

Severe copper deficiency was the presumptive cause of poor reproductive performance in an Angus herd where one third of the cows were open at pregnancy check. Liver copper levels ranged from 2.9-4.8ppm (normal 25-100ppm) in three, 2-4-year-old cows in adequate nutritional state that were culled. There were no significant gross or histologic lesions or bacteria isolated from multiple tissues (including uterus) submitted. Copper deficiency can cause infertility and embryo death in cattle due to enzymatic dysfunctions.

***Histophilus somni* septicemia** was diagnosed in a 6-day-old Holstein bull calf from a calf ranch during routine calf surveillance. Myocarditis and interstitial pneumonia were seen microscopically. The calf had an umbilical vein abscess extending to the liver from which *H. somni* was isolated in pure culture.

Severe coccidiosis was the cause of hemorrhagic diarrhea in a group of 5-month-old Holstein steers. The animals developed clinical signs soon after arrival at the feedlot, and 5 steers died in 2 weeks. More than 30,000 oocysts per g of feces were detected in the McMaster fecal exam of two individuals submitted for necropsy, and there was very severe enterocolitis with abundant coccidian forms histologically. Coccidiosis is a common disease of cattle that usually affects animals from 3 weeks to 6 months old; cattle in the older end of this range usually get infected when moved from pastures to crowded feedlots.

Oleander intoxication was diagnosed in a 2-month-old crossbred beef calf that died 4 hours after sudden onset of difficulty breathing and nasal congestion. The calf was standing in oleander leaves. Microscopically, there were mild degenerative changes in the heart and severe diffuse alveolar damage with hyaline membranes and emphysema in the lungs. The lung lesions are not typical of oleander poisoning and their cause was undetermined. Oleandrin, the toxic principle of oleander, was found in the rumen content of the calf.

Equine

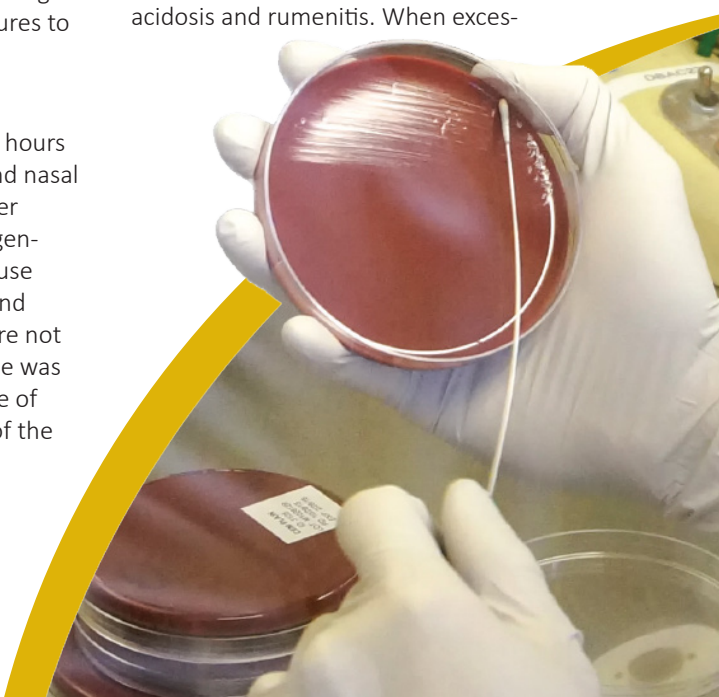
Severe gastric ulceration resulted in septicemia and sudden death of a 7-year-old Friesian stallion. On postmortem examination, the margo plicatus was diffusely obliterated by ulcers measuring up to 2 cm wide. Some ulcers were deep and covered by a pseudomembrane, and one of them was perforated. Histology confirmed peritonitis with bacterial colonies.

Porcine

Swine erysipelas was the cause of death of a 4.5-week-old pig that was weak and had open mouth breathing for less than 24 hours before it died. Four pigs from the same litter had recently died. Postmortem examination revealed pulmonary edema, congested lungs and lymph nodes, and slightly enlarged spleen. Microscopic lesions included disseminated microthrombi, and foci of necrosis in the liver and heart, which are compatible with septicemia. *Erysipelothrix rhusiopathiae* was isolated from several organs.

Small Ruminants

Congenital cleft palate, acidosis and rumenitis were diagnosed in a 30-day-old La Mancha goat kid. The animal had been tube fed to avoid aspiration pneumonia, but abundant, putrefied milk had accumulated in the rumen, causing acidosis and rumenitis. When exces-





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sive milk pools in the reticulorumen for sufficient time, it ferments and putrefies due to bacterial digestion, and lactose is turned into lactic acid, thus causing both ruminal and metabolic acidosis. Bucket-, tube- and force-feeding can predispose to this condition in neonatal and young preruminant animals.

Camelids

Polioencephalomalacia (PEM) was the cause of neurologic disease in an adult male alpaca. The alpaca had acute onset of head tremors, blindness, and difficulty to stand up, which progressed to grand mal seizure activity within hours. Thiamine administration was to no avail and the alpaca was euthanized. Gross examination, including examination of the brain under UV light, revealed no abnormalities. Microscopy demonstrated multifocal cortical necrosis in the brain, diagnostic for PEM.

Poultry and Other Avian

Salt toxicity associated with dehydration was diagnosed in a group of **broiler chickens**. The chickens had arrived to a live market in the evening, and in the morning 14 of them were found dead. On post mortem examination of 3 birds submitted, there was congestion of multiple organs. Sodium levels in the brain were elevated suggesting dehydration.

Trichomoniasis was diagnosed in an adult female **turkey** that was found dead without clinical signs having been observed. On post-mortem examination, the bird had severe necrotizing laryngitis in which many protozoan organisms were observed histologically. These parasites stained positive with the *Trichomonas* spp. immunohistochemistry, which cross reacts with *Histomonas* spp. However, based on size and location they were most compatible with *Trichomonas* spp.

Hemorrhagic stroke caused the sudden death of a 17-year-old male **caique**. On postmortem examination, there was severe atherosclerosis of the aortic trunk and branches, and a large blood clot was found overlying the right dorsal cerebral hemi-

sphere. Histopathology revealed acute infarction and hemorrhage in the cerebrum at the site of the blood clot, and a secondary chronic focal infarction in the cerebrum. While atherosclerosis is a common and often incidental finding in psittacine birds, extensive lesions affecting the major branches of the aorta, including the brachiocephalic arteries, can be fatal if there is embolism and infarction.

West Nile virus (WNV) was detected in a group of **crows** that appeared disoriented, weak and unkempt, and in three **hawks** with neurologic clinical signs. Histologically the crows had myocarditis, while the hawks had myocarditis and encephalitis. WNV was diagnosed by PCR and immunohistochemistry of the brain, heart and/or kidney. WNV is a mosquito-borne disease that was first introduced in the northeast United States in 1999. At CAHFS, cases are detected in several avian species every year, and the disease may also affect horses, humans, as well as other mammalian and reptilian species.

