UCDAVIS VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • JUNE, 2022

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HOLIDAY SCHEDULE

In observance of Juneteenth, CAHFS will be closed on Monday, June 19, 2022.

Rabbit hemorrhagic disease (RHD) update

Photo provided by U.S. Fish & Wildlife Service

Rabbit hemorrhagic disease (RHD) was diagnosed in two rabbits (an endangered riparian bush and a desert cottontail rabbit, respectively) from Stanislaus county. One of the rabbits was found dead while the other was moribund and was euthanized. Hepatic necrosis was observed, and rabbit hemorrhagic disease virus 2 was detected by real time PCR in both animals. This is the first diagnosis of RHD in Stanislaus county, and in the endangered riparian brush rabbit.

Please report dead domestic and feral domestic rabbits to the California Department of Food and Agriculture at 909-947-4462 and wild rabbits to the California Department of Fish & Wildlife at 916-358-2790 or on their **website**. Keep up your biosecurity measures to prevent infection of domestic rabbits and to avoid spreading the disease to naïve wildlife populations. For additional information on this disease and its control visit **CDFA's website**.

Bovine

Malignant catarrhal fever (MCF) was diagnosed in a yearling Angus steer with a history of rapid onset of wobbly gait, bleeding from the nose, and keratin sloughing from the horns. On postmortem examination there was severe fibrinous rhinitis and sinusitis. Microscopically, lymphocytic vasculitis was found in several organs, but most pronounced in the brain which also had encephalitis. PCR testing of the spleen confirmed the presence of ovine herpes virus type 2, the cause of MCF.

Hypomagnesemia was the cause of excitability, aggression, head butting and kicking in an adult Holstein cow. There were no significant postmortem gross or microscopic lesions, but the animal had markedly low serum (6.6ppm, normal 18-35ppm) and urine (2.5ppm, normal ≥20ppm) magnesium levels indicating hypomagnesemia.

Coccidiosis caused anemia and death of a 6-week-old, male goat after a day of anorexia and lethargy. On postmortem examination, the blood was watery and the organs were markedly pale, suggesting anemia. The small intestine was filled with clotted and unclotted blood. The small intestinal mucosa was effaced by many hyperplastic nodules that could be seen as pale foci from the serosa. The large intestine contained tarry stool. Scrapings of the intestinal mucosa revealed innumerable coccidia oocysts, and microscopic examination of the tissues revealed severe coccidiosis. Greater than 30,000 coccidia oocysts/gram were detected in the feces.

Small ruminants

***Staphylococcus aureus* mastitis** resulted in sudden death of an adult ewe. The left mammary gland was more than 10 times bigger than the right one. The affected mammary gland was firm, diffusely red to dark purple and blue, and had severe hemorrhage, edema and necro-suppurative exudate filling the ducts. Microscopically, there were large aggregates of cocci, and *S. aureus* was isolated. As it likely occurred in this case, the blood supply to the udder can be affected in severe cases, resulting in blue discoloration, giving the name “blue bag”.

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Equine

Klebsiella pneumoniae was the cause of **meningoencephalitis** and **septicemia**, leading to the death of a 2-week-old, Dutch Warmblood foal. The animal had difficulty drinking and moving since birth. At necropsy, there was severe fibrinosuppurative meningoencephalitis, arthritis and omphalitis, coupled with necrotizing splenitis. *K. pneumoniae* was isolated from brain, umbilical cord, liver and lung.

Pig

***Streptococcus equi* subspecies *zooepidemicus* septicemia** was diagnosed in a 4-month-old KuneKune gilt that died suddenly. On post-mortem examination, the intestine contained bloody fluid, and numerous tissues had pinpoint multifocal to coalescing hemorrhages. *S. equi* subspecies *zooepidemicus* is considered a commensal and opportunistic pathogen of humans, horses, dogs and pigs, but it can also cause severe disease characterized by pneumonia, septicemia, and meningitis. Strains virulent to pigs have also been reported, particularly associated with outbreaks of sudden death and respiratory disease.

Poultry/Other Avian

Turkey hemorrhagic enteritis (HE) virus and necrotic enteritis (NE) were diagnosed in a 10-week-old commercial turkey flock that experienced elevated mortality in a house of 8,600 birds, with no clinical signs observed before death. On post-mortem examination of four birds, there was hemorrhage and edema throughout the intestinal tract and the spleen was markedly enlarged and mottled. Microscopically, numerous large viral intranuclear inclusions were observed in the spleen and intestine, and there was intestinal mucosal necrosis with intralesional large bacilli. Moderate numbers of *Clostridium perfringens* were isolated from the intestine, and the spleen was positive for HE virus by PCR. Sudden death together with a drop in feed and water consumption are often the first signs of HE in a flock. Additionally, birds may exhibit signs of depression and have bloody feces. The disease usually runs its course in a flock in 10-14 days. Secondary infection by *C. perfringens* and *E.coli* often follow HE virus infections.

Fungal pneumonia was diagnosed in a euthanized, 6-month-old female duck from a small backyard flock that had breathing issues of several weeks duration. On necropsy, there were multiple tan nodules in the lungs, and the air sacs were thickened. Pneumonia and airsacculitis with fungal hyphae were detected histologically, and *Aspergillus* spp. was identified in fungal culture. Respiratory aspergillosis is common in ducks. Stress, poor litter management and environmental sanitation, exposure to infected bedding, chronic disease, antibiotic or corticosteroid treatment amongst others, may predispose to this infection.

Histomoniasis was diagnosed in an adult peahen that died after a brief bout of lethargy. The peahen was the second of four peafowl to die. All these birds were housed in an enclosure next to chickens. One month prior to this episode, new chickens were added to the adjacent pen. On gross exam the peahen had enlarged, markedly thickened and bloody ceca. Microscopically, there was severe typhlitis and moderate hepatitis, both with intralesional protozoal trophozoites compatible *Histomonas* sp. On fecal flotation, eggs of cecal worms (*Heterakis* sp.) were detected. *Heterakis* sp. acts as the intermediate host for *Histomonas* sp, and although chickens may be infected and show little or no clinical diseases, they act as carriers and can infect highly susceptible species such as turkeys and peafowl.

Zinc toxicosis was diagnosed in an adult duck submitted after a week-long period of episodic paralysis followed by death. On necropsy, there were several small metal fragments, including a round, half an inch diameter washer within the gizzard. Histologically, there was renal tubular and pancreatic necrosis. zinc levels were 310 ppm (normal value < 40 ppm). Most hardware is zinc coated (galvanized) to prevent rusting; consumption of these parts can lead to zinc toxicosis.