



UC DAVIS

VETERINARY MEDICINE

California Animal Health and
Food Safety Laboratory System

CAHFS CONNECTION

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CAHFS Staff Presentation Day

The 2023 CAHFS Staff Presentation Day was held in San Bernardino on September 25. Staff from all 4 branches of CAHFS met to present and discuss their daily work. Representatives of the CDFA Animal Health Branch and the California Horse Racing Board also spoke. The meeting showcased the knowledge and expertise of our staff as well as their dedication to our mission of providing quality services that protect animal health and performance, public health and the food supply.



Bovine

Hypovitaminosis A was diagnosed in nine, 14-22 month old Holstein heifers after a group of 20 first calf heifers delivered small, premature calves with neurologic deficits that died within a few days; abortions and stillbirths were also observed. Serum vitamin A was 0.07-0.13ppm (adequate is 0.3-0.7ppm). Vitamin A precursors (in the form of plant carotenoids) are required in the diet of cattle, and can vary widely, with green forages generally containing higher levels, and brown forages usually containing lower (often inadequate) levels. Vitamin A deficiency can be associated with a wide variety of syndromes in both calves and adult cattle, including reproductive losses, calves born with neurologic signs, reduced feed intake and growth, rough hair coats, abnormal bone growth, diarrhea, and increased susceptibility to infectious diseases.

Camelids

Black oil sunflower seed overload was the presumptive cause of death of 4 alpacas. One 15-year-old female submitted for postmortem examination had been down, anorexic and only sipping small quantities of water for 2 days prior to death. On necropsy there was extensive ulceration of the esophagus and first gastric compartment (C1). There were very large numbers of sunflower seeds in the distal esophagus and all 3 gastric compartments. The pH of the C1 content was normal (7.0). One of the affected alpacas was taken to the hospital and died the next day. On intubation, a large quantity of sunflower seeds were recovered. A fifth alpaca showing similar clinical signs

recovered with symptomatic treatment. The affected alpacas had accidentally consumed a large amount of black oil sunflower seeds (38% fat content) that were being fed to the chickens in the property. The mechanism of action of black oil sunflower seed is unknown but similar cases have previously been reported in camelids. Alpaca diets should typically be under 4% fat.

Small Animal

A healthy 2-year-old Norwegian Elkhound dog died suddenly. Prior to death, the owner had noted that the dog had eaten oleander (*Nerium oleander*) leaves. The primary postmortem finding was myocardial necrosis, which is consistent with oleander intoxication. Submitted liver and stomach content samples from the dog were positive for oleandrin, the toxic cardiac glycoside found in the plant. Although camelids, horses and cattle are most often diagnosed with oleander intoxication, intoxications in dogs and other species are occasionally confirmed.

Small Ruminants

Avocado toxicosis was diagnosed in a 4-month-old Anglo Nubian goat kid that died soon after sudden onset of lethargy and slow breathing. This animal had escaped the day before and was browsing a young avocado tree plantation next door. On necropsy, the lungs were congested and edematous. Histologically there was severe myocardial necrosis, compatible with avocado intoxication. Diagnosis of avocado toxicosis was based on history of



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exposure to the plant, clinical signs and post-mortem lesions. Unfortunately, there are no readily available specific tests to confirm the diagnosis. Other causes of myocardial necrosis in goats include: ionophores, oleander, yew and gossypol toxicosis, and vitamin E and selenium deficiency. All these conditions were ruled out based on clinical history and/or laboratory testing

Equine

A 10-week-old Thoroughbred filly had **bacterial arthritis**, osteomyelitis and septicemia. The animal had a one-week history of mild left hind limb lameness followed by marked swelling of the leg that became non-weight bearing, and failed to respond to treatment. Euthanasia was performed 2 weeks after onset of clinical signs. Necropsy revealed abundant caseous red exudate in the left stifle joint, distal femur metaphyseal fracture associated with osteomyelitis, and an abscess in the left inguinal lymph node. Histopathology was consistent with septicemia, and *Salmonella* group B (likely *S. Typhimurium*) was isolated from the stifle joint and feces, while *Rhodococcus hoagii* (formerly *R. equi*) was isolated from the stifle joint and inguinal lymph node.

Avian

Egg drop syndrome '76 (EDS'76) was detected in 28-week-old commercial white leghorn layers experiencing a 20% reduction in egg production. An increase in the number of soft-shelled eggs was noted in the affected flocks. Eggshell and shell membrane samples from affected houses were PCR positive for Duck adenovirus 1 (DA-1), the causative agent of egg drop syndrome EDS'76. Seroconversion for this virus was also noted. Transmission of DA-1 occurs either vertically from infected breeders or horizontally during the lay period. There is currently no treatment for EDS'76 and biosecurity and serological surveillance are integral to reducing the occurrence and spread of disease.

West Nile virus (WNV)-infection was the cause of death in 2 juvenile red breasted geese from a group of 16. High viral loads were detected in kidney tissue, the sample of choice in avian cases, by RT-qPCR. Pancreas were mildly gray mottled at necropsy, and variable

combinations of necrotizing and inflammatory lesions associated with WNV antigen detected by immunohistochemistry, were observed histologically in the brain, spleen, heart, adrenal glands and kidneys. WNV circulates between mosquitoes and multiple bird species, but it can also infect mammals, including humans.

Wildlife

An adult black bear was diagnosed with **multiple abscesses caused by foxtail** seeds in both front paws. The animal had a history of lameness, loss of condition and absence of fear to humans, and was humanely euthanized. The subcutaneous tissue of several interdigital spaces of both front paws had abscesses connected by fistulae to the skin. Multiple foxtail seeds were found within those abscesses. These lesions were the likely cause of lameness and loss of condition.

CAHFS is Hiring!

Lab Research Supervisor Toxicology (56256) Davis

Manage diagnostic testing and related activities in the Organics Analysis Group in the CAHFS Toxicology Section.

[Careers \(universityofcalifornia.edu\)](https://www.universityofcalifornia.edu/careers)

SRA 1 (Bacteriology Technician) (59516) Davis

Prepare and evaluate direct smears for bacteria, fungi and parasites.

[Careers \(universityofcalifornia.edu\)](https://www.universityofcalifornia.edu/careers)

