



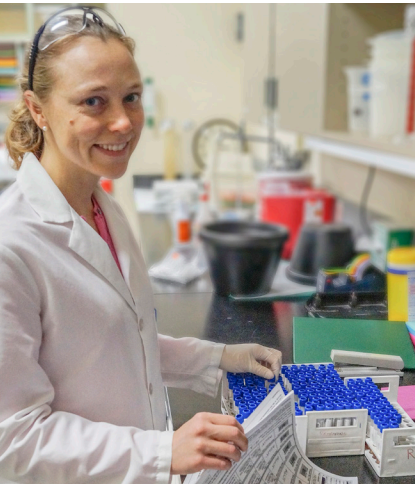
UC DAVIS

VETERINARY MEDICINE

California Animal Health and
Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • FEBRUARY, 2022



Abortion season is here

Our laboratories have been receiving increasing numbers of abortion cases, mostly in sheep and goats, followed by cattle, horses and other species. While there are overlapping diseases we look for in all these species, we also perform some species-specific tests on our abortion panels. Nevertheless, there is a common approach in specimen collection and submission in all cases, as explained below:

1-Placenta is critical to determine a cause of abortion in many cases, and essential in the diagnosis of zoonoses such as Q fever (*Coxiella burnetii*) and chlamydiosis (*Chlamydia* spp.) in ruminants. For diagnostic purposes, please submit a specimen as large as possible from any part of the placenta, including cotyledons and intercotyledonary spaces. The amnion is usually not useful for the determination of the cause of abortion.

2-Fetuses (one or more), preferably intact, are also key specimens to submit for the diagnosis of abortion. If a field necropsy is performed, the following tissues are recommended to be collected and submitted to the laboratory: i) abomasal fluid, lung, liver, spleen, thymus, heart, kidney and brain refrigerated or frozen for cultures and PCR tests, ii) a set of the same tissues mentioned above in formalin for histopathology, iii) fetal fluid collected from the thorax, or fetal blood, for serology and IgG detection.

3-Dam's blood for serology and comparison of these results with the serology of the fetal blood/fluid when tested in parallel.

If you have any questions about what tissues to collect in a specific case, do not hesitate to contact us for guidance.

Congratulations Dr. Heather Fritz

CAHFS is pleased to announce that Dr. Heather Fritz has been appointed as the CAHFS' systemwide Bacteriology Head. Dr. Fritz received both her DVM (2005) and PhD (2011) degrees from UC Davis. In 2017 Dr. Fritz joined the CAHFS laboratory as a Specialist focusing on antimicrobial resistance. In 2019 she became the Antimicrobial Monitoring Program Manager to support the California Department of Food and Agriculture's Antimicrobial Use and Stewardship program.



Dr. Heather Fritz

Small Ruminant

End-stage kidney disease was diagnosed in a 7.5-year-old Ouessant ewe that died after losing body condition over several weeks. The kidneys were diffusely tan to white with radiating white streaks traversing the medulla to the cortex. Microscopic examination revealed all the histologic hallmarks of end-stage kidney disease. Whether an underlying condition was present that predisposed to the renal damage is not known.



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Holiday Schedule

In observance of Presidents' Day, CAHFS will be closed on Monday, February 21, 2022.



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Small Ruminant (cont'd)

Asphyxia/choke was the cause of death in a 6-year-old, Nigerian dwarf buck in poor nutritional condition, which had a 1-month history of upper respiratory signs. Necropsy revealed ingesta impacted in the nasal cavity, nasopharynx, and larynx. There was a missing upper molar tooth in an area where there was a defect in the maxillary bone communicating the oral and nasal cavities. The remaining teeth were worn out and movable. A large amount of fibrous ingesta was present in the periodontal area. The gums were reddened and thickened. Pulmonary edema, congestion and feed material in the airways was found. Grazing on rough pastures may predispose small ruminants to dental periodontitis, dental attrition and loss, and maxillary/mandibular osteomyelitis.

Bovine

Anaphylaxis due to a vaccine reaction was the suspected cause of death of a 2-year-old Holstein heifer that was part of a group of 107 animals that had been recently vaccinated. Within hours of vaccination, approximately 14 animals started breathing heavily and foaming at the mouth. The submitted heifer died before treatment could be commenced. All but two of the remaining sick animals recovered following treatment with epinephrine. On gross exam the lungs were wet and heavy, and histologically they showed pulmonary edema and hemorrhages. Aerobic bacterial cultures and PCR for bovine respiratory viruses were negative. Given the acute nature of the process, clinical history and lack of pathogen detection; the gross and microscopic changes were considered to be compatible with anaphylaxis associated with a vaccine reaction.

Bluetongue virus (BTV) was the probable cause of hydrocephalus and stillbirth of a term beef calf from a cow-calf operation that had two abortions among 50 cows. Bluetongue virus antibodies were detected in the fetal serum, confirming in utero exposure. This virus can cause brain lesions such as hydrocephalus

in affected bovine fetuses. PCR testing for BTV was negative, which is not uncommon, because when fetuses are infected early in gestation the virus may be cleared before delivery.

Equine

Ruptured middle uterine artery with intra-abdominal exsanguination was the cause of sudden death in a 16-year-old Friesian mare. The animal had foaled six days prior to being found dead in the stall.

Avian

Tetrodotoxin was the presumed cause of death of a juvenile great horned owl found dead in Contra Costa County and necropsied by the California Department of Fish and Wildlife's Wildlife Investigation Laboratory. The only unusual gross finding was the remains of a newt in the gastrointestinal tract. The newt was positive for tetrodotoxin. Subsequent testing detected the neurotoxin in both liver and kidney tissues of the owl. Tetrodotoxin is highly toxic (10,000 times more toxic than cyanide) and is found in approximately 140 animal species including fish (pufferfish), octopi, frogs, and newts. Several species of poisonous newts in California have tetrodotoxin in their skin glands. Tetrodotoxin inhibits the propagation of nerve impulses through inhibition of voltage-gated sodium channels leading to paralysis and death. Animals (e.g., dogs or wildlife) ingesting newts in California can be intoxicated. A diagnosis of intoxication is difficult in the absence of known ingestion but testing is available at CAHFS in suspected cases.

