UCDAVIS
VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

January 2013

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Holiday Schedule

CAHFS will be closed on Monday, January 21, 2013 in observance of Martin Luther King Day.

Please contact your laboratory to plan your testing needs accordingly.

Equine

Corynebacterium pseudotuberculosis is a clinically and economically significant disease in horses in dry regions, especially California and Texas, although the geographic range is expanding. Several clinical forms are observed in horses: external abscesses often in the pectoral and sheath regions; internal abscesses; both internal and external abscesses; and ulcerative lymphangitis of the distal limbs. Serology (serum synergistic hemolysis inhibition – SHI test) is the most commonly used method to detect the presence of internal abscesses, but **interpretation of the titers** remains challenging. In a retrospective study of horses at the UC Davis Veterinary Medicine Teaching Hospital, high *C. pseudotuberculosis* titers were present in horses with active infection (internal and/or external). Thus, high titers on SHI without presence of external abscess are suggestive of internal abscessation. Moderate titers were observed in horses with external abscesses (with or without concurrent internal abscesses), and in some uninfected horses. Recently, a serologic result of 1:64 was found in a 3-year-old mare with a resolving external abscess due to *C. pseudotuberculosis.* The horse was improving when she lost hind limb control, collapsed and was euthanized. On necropsy exam, **multiple abscesses** in the lungs, heart and liver were positive for *C. pseudotuberculosis*.

Other Mammalian

CAHFS Pathology and Toxicology have been working with wildlife biologists at Integral Ecology Research Center monitoring the cause of **mortality in the Pacific fisher** (*Martes Pennanti*), a candidate for listing under the federal Endangered Species Act in the Pacific states. This work demonstrated that **anticoagulant rodenticide poisoning** and exposure was a significant concern for conservation and management of non-target wildlife on public forest lands in Redwood National Park and Southern Sierra Nevada near Yosemite National Park. Seventy-nine percent (46/58) of fishers examined had been exposed to anticoagulant rodenticide. A spatial distribution analysis of positive animals performed by Integral Ecology Research Center suggested the likely source was illegal marijuana cultivation on public lands within the fisher's forested habitat. Law enforcement agents have found rodenticides, as well as some carbamates, that are illegal for use on crops for human consumption. Carbofuran is acutely toxic to people endangering law enforcement officers and volunteers that clean up the sites. Based on this information, a federal grand jury returned superseding indictments in two drug cases in September charging alleged marijuana cultivators with bringing illegal insecticides and rat poisons to marijuana cultivation operations in Sequoia National Forest underscoring the dangers to the environment posed by the large scale cultivation of marijuana on public lands poisoning the land, killing wildlife and endangering people.

Small Ruminants

Coxiella, Chlamydophila **and** ***Campylobacter jejuni*** have been diagnosed as the cause of **abortions** in sheep and goats over the past month. Placenta is critical for a diagnosis of the first two agents which typically do not affect the fetus directly. *Coxiella* and *Chlamydophila* are diseases that can be transmitted to humans; therefore, caution must be used when collecting the placentas and fetuses for submission to the laboratory.

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Your feedback is always welcome. To provide comments or to get additional information on any of the covered topics or servics, please contact Sharon Hein at slhein@ucdavis.edu.

We're on the Web
www.cahfs.ucdavis.edu

Bovine

CAHFS investigated a dairy with 40 **downer cows** over a 10-day period. The dairy started **feeding pomegranate** remains (after juice removed) two weeks earlier. Increased numbers of non-responsive down cows in the high producing string coincided with an increase in pomegranates to 15 lbs./head/day as fed. Blood samples from affected cows had significantly low blood calcium (milk fever) and high liver enzymes. One cow that died had severe liver necrosis and another had mild liver necrosis. Based on the liver disease and the fact that some of the pomegranates were moldy, the dairy discontinued feeding pomegranates to high producing cows after which the problem resolved in this group. Later lactation cows continued to receive fresh (not moldy) pomegranates at 6 lbs,/head/day and no deaths or down cows were reported. A specific hepatic toxin was not identified, but CAHFS has had several similar cases in past years where moldy pomegranates were fed and animals that died had liver necrosis. CAHFS has not seen the problem in association with non-moldy pomegranates.

Poultry

Diphtheritic Fowl Pox, commonly called wet pox, was diagnosed in 11-week-old layer-type chickens experiencing increased mortality and respiratory signs. On gross exam, the birds had pinpoint hemorrhages of the conjunctiva and thick yellow diphtheritic plaques on the upper larynx and tracheal mucosa, which in the dead birds completely occluded the lumen. The diagnosis was confirmed by histopathology of trachea and larynx which had typical pox lesions. Interestingly, the birds had been vaccinated in the wing web for Pox and had only the diphtheritic form unaccompanied by skin lesions.

***Erysipelothrix rhusiopathiae* septicemia** was diagnosed in a 15-week-old Broad Breasted White turkey. Eleven out of 150 turkeys developed a stiff, **stilted gait** with gradual loss of motion, neck extension and **purple skin** before they died one to three days after onset of signs. Gross exam of the one bird submitted revealed bluish discoloration of the skin and generalized congestion of the organs. An acute septicemia was identified based on histopathology findings of Gram-positive bacteria in white blood cells and vessels in the lung, liver, spleen, kidney, and heart. *Erysipelothrix rhusiopathiae* was isolated from lung, liver, spleen, joint and nasal cavity swabs. This disease is occasionally diagnosed in turkeys and has zoonotic potential.

Other Avian

Avitrol poisoning was confirmed in a dead pigeon submitted from a **group of pigeons and a seagull** with **seizures** at a premise in Southern California. Three pigeons died spontaneously and the seagull was euthanized by animal control officers. Based on the clinical signs and more than one avian species affected, poisoning was suspected. No gross or microscopic lesions were seen in the pigeons and the seagull to explain the seizures. The crop content from one pigeon tested positive for Avitrol. This toxin was most likely ingested by the other affected birds. Avitrol (4-Aminopyridine) is formulated as grain baits or powder concentrates and is toxic to all species of birds and mammals, including humans. This compound is marketed for control of avian pests, but must be used with caution to avoid poisoning of non-target species such as raptors and migratory birds. Based on the Migratory Bird Treaty Act (1918), U.S. Fish and Wildlife Services will prosecute if placement of poison baits cause die-offs of migratory and protected bird species.

H3N2 Avian Influenza. During routine surveillance as part of the Avian Health program, Influenza virus was detected in a quail housed at a Southern California feed store. The Influenza virus was further characterized as subtype H3N2 and tested to rule out high-pathogenic virus strains of importance to the poultry industry, but also to obtain information regarding zoonotic potential of the virus. Quail, a widespread-farmed poultry species, possess the potential for serving as an intermediate host for the zoonotic transmission of influenza viruses. Both, intestinal and respiratory cells in quail are known to bind avian and human influenza viruses and can potentially provide an environment for the spread of reassorted influenza viruses. Based on sequence analysis, this particular virus did not have the pandemic markers found in the H3N2 viruses associated with human illness.