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Holiday Schedule

In observance of Memorial Day, CAHFS will be closed on **Monday, May 28, 2012.**

Message from the Director

Richard E. Breitmeyer, DVM, MPVM

As you know by now, CAHFS has been very involved in the recent case of Atypical BSE found in a California dairy cow. As one of the six National Animal Health Laboratory Network (NAHLN) laboratories providing testing for BSE nationally, we were responsible for finding the fourth U.S. case during our routine surveillance testing last week. All together, the six NAHLN labs test about 40,000 samples each year in cooperation with USDA. This is a targeted surveillance program, testing high risk animals such as those that have symptoms of neurologic disease or die of unknown causes. If a sample is a reactor on our screening assay, it is classified as "inconclusive" and immediately sent on to the USDA National Veterinary Services Laboratory (NVSL) in Ames, IA, for confirmatory testing and characterization. In this case, NVSL confirmed that the sample was indeed positive and determined that it was the Atypical form of BSE. The good news is that this form of BSE is very rare and not known to be associated with contaminated feed or with the earlier outbreaks of Classical BSE in the UK, Canada, etc. The fact that this animal was over 10 years old is consistent with other cases of Atypical BSE, which have been found in older animals worldwide. Further information on this investigation will be posted as it becomes available on the CDFA and USDA BSE websites: http://www.cdfa.ca.gov/ahfss/animal_health, <http://www.usda.gov/wps/portal/usda/usdahome?navtype=SU&navid=BSE>

The United States has been very successful in addressing the risk of BSE, primarily by implementing three key safeguards. The most important is to protect public health and food safety by requiring the **removal of specified risk materials** – or the parts of an animal that would contain BSE should an animal have the disease – from all animals presented for slaughter in the United States. The second safeguard is a **strong feed ban** that protects cattle from the disease. The third safeguard—which led to this detection—is our ongoing **BSE surveillance program** (as described above) that allows us to detect the disease if it exists at very low levels in the U.S. cattle population and provides assurances to consumers and our international trading partners that the safeguards in place to prevent BSE are working.

Finally, I want to recognize and thank all of the staff at CAHFS that played a pivotal role in detecting this case of BSE. We are indeed fortunate to have such talented faculty and staff that work every day to protect animal health, public health and the safety of our food supply. It is truly a pleasure to serve as the director of such a fine organization.

Equine

Sudden death in race horses. Three Thoroughbred horses were submitted to the San Bernardino laboratory within an approximate 2-month period with a history of sudden death during exercise. The diagnoses included pulmonary hemorrhage, inflammation of the atrio-ventricular (AV) node within the heart and encephalomyelitis due to *Sarcocystis neurona*, respectively. Pulmonary hemorrhage, of yet undetermined cause, is not an uncommon cause of sudden death in race horses. The inflammation of the AV node of the heart conduction system is an unusual lesion, the etiology of which also remains undetermined. Encephalomyelitis due to *S. neurona* (Equine protozoal myelitis) is a common cause of neurological disease in horses; however, this case was unusual because the horse had been apparently asymptomatic (and exercising!) until it died. The ultimate cause of death could not be determined but it was speculated that lesions affecting the respiratory center of the origin of the phrenic nerve (which innervates the diaphragm) in the spinal cord could have been responsible for the sudden death.

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

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Goats

Listeria monocytogenes meningoencephalitis affecting the brain stem caused compulsive circling and facial paralysis on one side of the face in an adult goat. The goat was submitted from a dairy where three does were sick and 30 had died with similar signs in a 3-week period. Illness occurred only in goats receiving a new batch of grain mix with clumps of molasses and moldy centers. The organism was isolated from brain stem cultures

Poultry

Conjunctivitis and sinusitis in poultry (chickens and turkeys) are common lesions characterized by ocular secretions, swollen eyelids and swollen infraorbital sinuses. Conjunctivitis and sinusitis can be caused by infectious, nutritional and toxic factors.

Conjunctival sacs and infraorbital sinuses drain into the nasal cavity. Because of these communications, upper respiratory infections usually cause rhinitis (inflammation of the nasal cavity), conjunctivitis and sinusitis. Among 41 cases of conjunctivitis and/or sinusitis in chickens and turkeys diagnosed at CAHFS between January and April 2012, *Mycoplasma gallisepticum* was the most common agent detected (37%) followed by *Mycoplasma synoviae* (24%), infectious laryngotracheitis virus (17%), Poxvirus (12%) and *E. coli* (10%). Conjunctivitis and sinusitis in poultry can be caused by other respiratory viruses such as infectious bronchitis, avian paramyxovirus, avian influenza and avian metapneumovirus.



Conjunctivitis and sinusitis in a chicken with infectious coryza (*Avibacterium paragallinarum*)

Respiratory viral infections are usually complicated with secondary bacterial infections. Other bacteria less frequently detected in cases of conjunctivitis and sinusitis of poultry in California include *Avibacterium paragallinarum*, *Bordetella avium*, *Mycoplasma meleagridis*, *Pasteurella multocida*, *Ornithobacterium rhinotracheale* and *Staphylococcus* spp. On occasion, systemic bacterial and fungal infections, fungal respiratory infections and protozoa such as *Cryptosporidium* sp. may also be associated with conjunctivitis.

Vitamin A deficiency can cause conjunctivitis resulting in a disorder that is called xerophthalmia (dry eye syndrome). Pantothenic acid and biotin deficiencies are rarely seen but can cause inflammation of eyelids and conjunctiva. Ammonia toxicosis is the most common toxic cause of conjunctivitis.

Several diagnostic tests including histopathology, bacteriology, serology, PCR, virology, and toxicology are available at CAHFS to determine the cause of conjunctivitis and sinusitis.

Ruminants

Schmallenberg virus, an orthobunyavirus transmitted by *Culicoides*, has recently been identified in sheep, goats and cattle in Europe. It has been associated with increased premature births, stillbirths, and fetuses or neonates with twisted legs, spine and brain deformities, muscle atrophy or neurologic signs. In cattle, initial entry of the virus into a herd may be associated with short duration of diarrhea, fever and decreased milk production with fetal problems occurring months later. USDA has requested diagnostic labs to submit fetal/calf brain, dam and fetal/calf serum from cases meeting the case definition as part of a national surveillance effort to determine if this virus exists in the United States. A case definition, fact sheet and laboratory guidance document is available at:

http://www.aphis.usda.gov/animal_health/animal_diseases/schmallenberg/index.shtml

Other causes of fetal/neonatal skeletal or brain deformities seen in California include Bovine viral diarrhea virus, Border disease virus, Bluetongue virus, skunk cabbage (*Veratrum californicum*), lupines, locoweed, acorn calves, copper deficiency (goats), vitamin A deficiency and genetic abnormalities (cervical vertebral malformation) linked to specific genetic lines or sporadic gene mutations.