UCDAVIS VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • AUGUST, 2023

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TULARE LABORATORY UPDATE

Work to renovate the necropsy facility at the VMTRC finally has begun. We hope to start accepting carcasses and tissues early in September. Look for an announcement when we open on the CAFHS website and feel free to call the lab for updates or for advice with necropsy needs [(559) 688-7543]. Major repairs to the Alex A. Ardans laboratory have been funded by the legislature and are scheduled to begin later this year. We do not have a timeline for this project yet, but will provide updates as they become available.

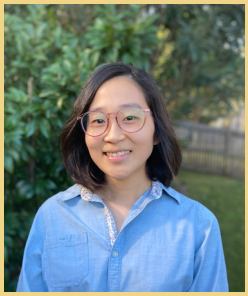
Pig

CAHFS participated in a week-long **table-top exercise** addressing the potential introduction of **African swine fever virus (ASFV)** into the US. The exercise was held in Manhattan, Kansas and included a tour through the new National Bio and Agro-Defense Facility of the US Department of Agriculture, the facility that will replace the current reference laboratory in Plum Island. While the US is free of ASFV, the virus is spreading in Asia and Europe, and it has been recently found in the Dominican Republic. One of the big learning outcomes of the exercise was that in the event of ASFV introduction into the US, detection of the disease might take time. While we are used to fast spreading viruses such as virulent Newcastle disease virus, avian influenza virus and others, ASFV might present itself initially with lower morbidity affecting only a few pigs in the herd. Therefore, by the time the morbidity increases and the diagnosis is made, the virus would have had ample opportunity to spread. As in all disease outbreaks, good biosecurity is the key to keep your pigs healthy.

Bovine

Myositis and cellulitis due to *Paeniclostridium sordellii* and *Fusobacterium necrophorum* associated with skin necrosis occurred in a 5-year-old Holstein dairy cow.

WELCOME DR EMMA TORII



Dr. Torii graduated from the University of Sydney, Australia. She spent 3 years working as a small animal veterinarian prior to starting her training in veterinary pathology at the James Cook University. She spent time at a government laboratory in Sydney performing livestock diagnostic pathology, followed by a residency program at the University of Minnesota. After becoming a Diplomate of the American College of Veterinary Pathologists, she stayed on an extra year at the University of Minnesota doing comparative pathology. She is excited to join the team at CAHFS and pursue her career in diagnostic pathology!

The right hind limb muscles were black, hemorrhagic, edematous and covered with fibrin. The adjacent subcutaneous tissue had abundant emphysema, edema and fibrin. This lesion extended to the inguinal and mammary gland areas. *F. necrophorum* was isolated from muscle, subcutis and mammary gland, while *P. sordellii* was isolated from the muscle. Twenty days prior to death, the cow had received an injection in the right hind leg, and this was the likely port of entry of the infection.

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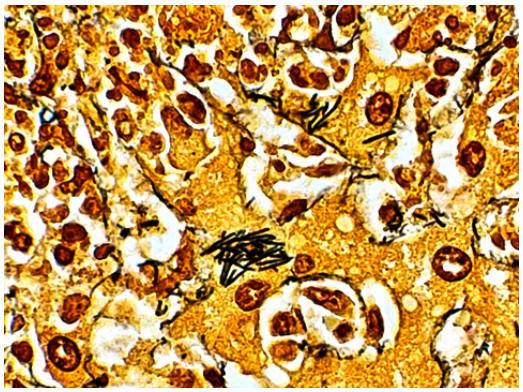
Small Ruminants

Co-infection with **small ruminant lentivirus (SRLV)**, **malignant catarrhal fever virus (MCFV)** and **respiratory bacterial pathogens** was the cause of death in a 4-year-old crossbred ewe with a 4-month history of weight loss, coughing and nasal bleeding. The ewe failed to respond to a 4-week course of antibiotics and anti-inflammatory drugs. Postmortem exam and histopathology revealed extensive necrotizing and proliferative broncho- and interstitial pneumonia compatible with a mixed *Mannheimia* spp. and SRLV infection. Immunohistochemistry on the lung and serology were positive for SRLV (caprine arthritis encephalitis/ovine progressive pneumonia). No bacteria were isolated, which was thought to be consequence of prolonged antibiotic treatment. The lung, heart, kidney and abomasum had vasculitis and ovine herpesvirus type 2 (OvHV-2), the agent of MCF, was detected by PCR in the spleen. This virus was considered the cause of vasculitis; it is uncommon for sheep to develop lesions due to OvHV-2 since they are usually asymptomatic carriers.

Equine

***Corynebacterium pseudotuberculosis* septicemia** associated with more than 20 hepatic abscesses was the cause of death in a 23-year-old gelding with history of weight loss, and elevated white blood cell (WBC) count and liver enzymes. Another horse on the property also had elevated WBC count and liver enzyme values. *C. pseudotuberculosis* causes "pigeon fever", which usually manifests as large subcutaneous abscesses. However, it may also cause internal abscesses in horses, sheep, goats and cattle.

A 30-day-old Quarter horse foal that died unexpectedly was diagnosed with **Tyzzer disease**. The submitting veterinarian observed icterus and an enlarged mottled liver at necropsy. Microscopically, the liver had disseminated areas of acute necrosis and inflammation, with characteristic filamentous bacteria within hepatocytes observed with a silver stain. Tyzzer disease is caused by the bacterium *Clostridium piliforme*, and affects a variety of domestic and wild animal species. At CAHFS, it is most often observed in young foals (1 to 6 weeks of age) with an abrupt clinical onset, rapid progression to death, and with consistent postmortem lesions in liver, and, more rarely, in the colon and heart.



Liver of a foal with Tyzzer diseases showing the characteristic filamentous bacteria within hepatocytes; silver stain.

Avian

***Streptococcus gallolyticus* septicemia and aspergillosis** were diagnosed in eight, 8-day-old commercial Pekin ducks from a flock that experienced sudden elevated mortality and neurological signs. The affected flock consisted of 16,000 ducks from a ranch with a total of 136,000 birds. The ducklings exhibited paddling, head tremors and lethargy. Necropsy revealed corneal opacity, yellow nodules on air sacs and enlarged livers and spleens. Microscopic findings included severe meningitis and hepatitis with abundant bacterial colonies, and airsacculitis and pneumonia with intralesional fungal hyphae. Moderate to large numbers of *S. gallolyticus* were isolated from the brains, livers, spleens and lungs of several animals. *Aspergillus fumigatus* was isolated from air sacs. *S. gallolyticus* has been previously found associated with neurologic signs in ducklings. Aspergillosis in a common fungal disease affecting ducklings.