



UC DAVIS

VETERINARY MEDICINE

California Animal Health and
Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • NOVEMBER, 2018



Inside this issue:

- **Disease Outbreak Updates:**
 - Low pathogenic avian influenza (LPAI)
 - Virulent Newcastle disease (vND)
- **Bovine**
 - Copper toxicosis
 - Fungal abortion
- **Equine**
 - West Nile virus encephalomyelitis
- **Small Ruminant**
 - Vertebral fracture (sheep)
 - Neospora* abortion (sheep)
 - Staphylococcus aureus* septicemia (goat)
- **Pig**
 - Lawsonia intracellularis* enteritis
- **Poultry & Other Avian**
 - Infectious bronchitis virus (chicken)
 - Vitamin E deficiency (turkey)
- **Holiday Schedule**

Disease Outbreak Updates

Low pathogenic avian influenza

In the October issue of CAHFS connection, we reported the initial detection of a low path avian influenza (LPAI) virus (H7N3) in a California commercial poultry flock. Since then four additional commercial flocks have been diagnosed in Stanislaus and Merced counties. The latest positive case was detected on October 4th by CAHFS and confirmed shortly after by the reference laboratory (NVSL). No new LPAI infections have been reported since. Four of the five positive flocks detected are turkey premises and one flock contained mixed avian species. Multiple housing types with and without outdoor access, as well as organic and traditional flocks, were affected by the virus.

While in previous LPAI outbreaks the only option was to depopulate the flock, other options are now available. In collaboration with USDA, the state/federal taskforce, the national reference laboratory and the producer, controlled marketing is being explored. Because a LPAI infection does not kill otherwise healthy birds, under certain circumstances birds can be allowed to recover from the infection similar to humans overcoming a common cold. Birds participating in these efforts are carefully monitored and tested bi-weekly by serology and PCR. Birds have to test negative within 7 days before marketing date by PCR. Final marketing decisions are made by USDA after consultation with NVSL, CAHFS, the taskforce and the owner. While this effort is time and labor intense for all involved parties, CAHFS is very proud to participate in supporting our industry in this new approach.

Virulent Newcastle disease (vND)

This disease continues to be restricted to backyard chickens. As of October 26, USDA has confirmed 167 cases of vND in backyard birds in California: 103 in San Bernardino County, 27 in Riverside County, 35 in Los Angeles County and 1 in Ventura County.

Bovine

Copper toxicosis resulted in disease in four out of 40 Jersey dry cows on pasture at an organic dairy. Two of these animals died and another one was euthanized. The animal that was euthanized was icteric, dehydrated, and had a friable liver with a marked centrilobular pattern (nutmeg liver). Histologically, the liver had severe centrilobular necrosis. The copper in the liver was slightly elevated (200ppm; normal: 25-150ppm) but the concentration of this metal in the kidney was extremely high (52 ppm; normal: 4-6 ppm) which is consistent with copper toxicosis. The source of the copper was not identified and the remainder of the herd that was moved to another pasture had no additional deaths.

Fungal abortion and neonatal death were diagnosed in two unrelated Central Valley beef ranches. At one of these premises, one of two late-term twin aborted fetuses had severe mycotic encephalitis. At the other premises, a weak 4-day-old calf did not respond

to treatment and died. The calf had a severe meningoencephalitis with vascular thrombosis with fungal hyphae within thrombi and multifocal granulomatous hepatitis with intralobular fungal hyphae. The lesions in both calves are indicative of in utero infection.





UCDAVIS

VETERINARY MEDICINE

California Animal Health and
Food Safety Laboratory System

Lab Locations:

CAHFS – Davis

University of California
620 West Health Sciences Dr.
Davis, CA 95616
Phone: 530-752-8700
Fax: 530-752-6253
daviscahfs@ucdavis.edu

CAHFS – San Bernardino

105 W. Central Ave.
San Bernardino, CA 92408
Phone: 909-383-4287
Fax: 909-884-5980
sanbernardinocahfs@ucdavis.edu

CAHFS – Tulare

18760 Road 112
Tulare, CA 93274
Phone: 559-688-7543
Fax: 559-688-2985
tularecahfs@ucdavis.edu

CAHFS – Turlock

1550 Soderquist Road
Turlock, CA 95381
Phone: 209-634-5837
Fax: 209-667-4261
turlockcahfs@ucdavis.edu

Equine

West Nile virus encephalomyelitis caused nystagmus, inability to rise, increased heart rate, heart murmur, ileus and rapid decline over 24 hours in a 6-year-old Quarter horse gelding. Unusual postmortem findings were marked yellow edema of the subcutaneous tissue of the neck, forehead and nuchal ligament, and pulmonary edema. WNV PCR was positive on brain tissue and the serum was positive for WNV IgM. Neck tissue edema is a change most often associated with botulism.

Small Ruminants

Vertebral fracture resulted in inability to stand of a 5-year-old Southdown ram. At necropsy, complete, transverse fractures of the vertebral bodies of T13 and L1 were found associated with hemorrhage, partial tearing of the spinal cord and extensive tearing and hemorrhage of surrounding ligaments and muscle.

Neospora abortion was diagnosed in a 4-month gestation Southdown fetus from a flock of 70 pregnant ewes, of which 2 others had late term abortions in a 2-week period. The fetus had no gross lesions but meningoencephalitis with intral- esional protozoa, mild hepatitis and glossitis was diagnosed on microscopic exam. *Neospora* IHC was positive on the brain while *Toxoplasma* testing was negative.

Staphylococcus aureus septicemia was diagnosed in an 8-year-old Nigerian dwarf goat doe that recently kidded and had a 2-day history of lethargy with a protruding eye. The periorbital tissues were congested and swollen. The lung had numerous 1-2 mm yellow-white foci in all lobes. Histologi- cally there were multiple micro-abscesses in the periorbital tissues, lung and kidney. *Staphylococcus aureus* was isolated from multiple sites. In addi- tion, the goat had severe copper deficiency.

Pig

Lawsonia intracellularis enteritis caused diarrhea, lethargy, dehydration and vomiting of four days du- ration in a 6-week-old pig from a group of seven in which two had died and one was sick. Post- mortem examination revealed

a pseudomembrane over the distal jejunum and ileum, and histopathology confirmed mucosal hy- perplasia with intracellular silver positive bacteria compatible with *Lawsonia* spp. The pig was also positive for PRRS virus by PCR on spleen.

Poultry and Other Avian

Infectious bronchitis virus (IBV) and **colibacil- losis** were attributed as the cause of respiratory signs and increased mortality in a flock of 19,000 24-day-old broiler chickens. Lesions included sinusitis, tracheitis, otitis media, cranial osteomy- elitis, airsacculitis and pericarditis. A few of the birds also had transmissible proventriculitis due to chicken proventricular necrosis virus and one bird had inclusion body hepatitis due to adeno- virus.

A combination of **cerebral aspergillosis, en- cephalomalacia** due to vitamin E deficiency, myocarditis due to **reovirus** and enteritis were responsible for weak poults, lack of uniformity and increased mortality in a flock of 12,000 2-week-old turkey poults.

Holiday Schedule

CAHFS will be open, but will have limited service on Monday, November 12, 2018 in observance of Veteran's Day.

CAHFS will be closed on Thursday, Novem- ber 22, 2018 in observance of Thanksgiv- ing and will be open from 8 am to 12 noon on Friday, November 23, 2018 as it is a University of California holiday.

Please contact your laboratory to plan your testing needs accordingly.

