



UC DAVIS

VETERINARY MEDICINE

California Animal Health and
Food Safety Laboratory System

CAHFS CONNECTION

June 2014

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Bovine

Neospora caninum was diagnosed in three of four, 3- to 7-month gestation **abortions**, including one set of twins, submitted from an 800-cow dairy that had 40 abortions in one week. At necropsy, all three of the 3-month-old fetuses were severely autolyzed. Histologic lesions (interstitial pneumonia, hepatitis, encephalitis, myocarditis) were suggestive of *Neospora* in three of five fetuses and confirmed by immunohistochemistry in the two older fetuses (4.5 and 7 months). *Histophilus somni* was isolated from the placenta of a singleton 3-month-old fetus and the lung from one of the 3-month-old twins. Both had vasculitis in the placenta. Concurrent infections can increase the incidence of abortion in *Neospora* infected fetuses. Past research suggests, about 95% of seropositive cows transmit the organism vertically to their fetuses but most fetuses recover in utero.

Leptospirosis was the cause of sudden death in several Holstein heifers on two calf ranches and a dairy. **Icterus, hemoglobinuria** and dehydration were found at necropsy of all animals. Kidney impression smears and/or urine were *Leptospira* FA positive in three of four, 5- to 7-month-old heifers submitted from one calf ranch but negative on kidney and urine from a field necropsy of a 6-month-old heifer on a second calf ranch and urine submitted from the 10-month-old from a dairy. However, serology collected two weeks later from pen mates of the 10-month-old including recovered animals revealed high titers in six of eight to *Leptospira pomona* (>1:3200). *Leptospira* PCR was positive on the FA negative kidney from the second calf ranch.

Coccidiosis was the cause of **diarrhea**, often with blood, and deaths in 3- to 10-month-old Holstein heifers and one 9-month-old Angus on eight dairies, one feedlot and one beef operation, in six weeks. Bloody colon contents were often found at necropsy. Two of the eight dairies reported weak calves and sudden deaths without diarrhea noted before death. Seventy five percent morbidity and up to 8.5% mortality were reported in the most severe outbreaks. Several premises were using coccidiostats. The Angus heifer had concurrent BVD infection with oral lesions, ill-thrift and severe copper deficiency.

Multiple vertebral abscesses resulted in pathologic **fractures and cord compression** in a 10-month-old Angus heifer that presented with a crouched abnormal posture and dragging of the rear legs. No bacteria were isolated from the vertebrae.

Equine

Equine coronavirus (ECoV), recently associated with outbreaks of **febrile enteric** and/or **neurologic disease** in horses, was detected in two miniature horses and a donkey from California and Idaho respectively that had returned from the same show. Both horses were submitted for necropsy and intestine tissue blocks from the donkey were received for immunohistochemistry. One horse and the donkey had necrotizing enteritis, while the other horse had hyperammonemic encephalopathy of presumed enteric origin as minimal liver lesions were present. ECoV was detected by qPCR in small intestinal tissue, contents, and/or feces in all cases. Although CAHFS does not offer specific tests for the detection of ECoV in ante-mortem samples, we have been able to detect the virus by use of bovine coronavirus immunohistochemistry test in intestinal tissues collected at necropsy.

Holiday Schedule

CAHFS will be closed on **Friday, July 4, 2014** in observance of Independence Day.

Please contact your laboratory to plan your testing needs accordingly.

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We're on the Web
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Small Ruminant and Camelids

Mycoplasma sp. was the cause of high fever (106.7F), polyarthritis and/or septicemia in 1- to 2-month-old goats from three unrelated premises in the past six weeks. Carpal joints were involved in two goats, while the atlanto-occipital joint was also involved in one of these animals. Both kids were also copper deficient. The third goat with septicemia had diarrhea and a high fever prior to death. This goat also had heart lesions from vitamin E deficiency and parapox (orf) oral lesions. On the fourth premises a doe was severely ill with *Mycoplasma mastitis*. Poor response to antibiotics was reported in all cases.

Mannheimia haemolytica septicemia (pleuritis, pneumonia and peritonitis) caused the sudden death of a 3-week-old lamb from a milking dairy flock in which 80% of 2- to 4-week-old lambs developed fever, lethargy and diarrhea in a 10-day period. Forty-five lambs had become ill and 10 had died. Lambs were fed dairy cow milk beginning 10 days after birth. Copper deficiency was also found.

Polycystic liver was diagnosed in a 14-year-old llama with weight loss for several weeks before euthanasia. Gross findings included multiple, roughly spherical, 1-10cm hepatic cysts that on microscopic examination were dilated bile ducts. Polycystic liver has been described in several animal species but is rarely found in camelids. The pathogenesis is not known though cysts are more common and larger in females suggesting that growth of cysts is associated with estrogen exposure. Most cases are asymptomatic, which was probably the case with this llama. The llama had severe copper deficiency, which was considered to be responsible for the loss of condition.

Pig

Whipworm (*Trichuris suis*) infection caused diarrhea and death in a 5-month-old show pig. The diarrhea had become watery and bloody the last three days before the pig died. A field necropsy revealed hemorrhagic colitis and large numbers of whipworms. On histopathology the worms invaded the cecal and colon mucosa and eggs were found in the feces. The history indicated that the pig had been wormed 2 weeks earlier with Safeguard. Whipworm larvae migrating through the mucosa can cause diarrhea and death before eggs are shed in the feces.

Poultry/Other Avian

Cystic enteritis of unknown cause is being diagnosed increasingly in 8- to 15-day-old turkey poults with a history of increased mortality. Cystic enteritis is a term used to describe cystic dilation of the crypts and inflammation in the intestine and is common in chicks. The cause is not known but various enteric viruses such as astrovirus, parvovirus, reovirus and rotavirus have been proposed.

Infectious laryngotracheitis (ILT) virus caused tracheitis and increased mortality in chickens ranging from 27-day-old to adults on five premises recently. Some premises reported conjunctivitis. Necropsy revealed red trachea with increased tracheal mucus, blood clots and/or necrotic debris. Some birds had thickened and red conjunctiva. Histopathology revealed intranuclear inclusion bodies in the trachea and sometimes the conjunctiva. ILT FA or PCR was positive on the trachea.

Ascites (accumulation of fluid in the abdominal cavity) was responsible for difficulty breathing in three, 3-week-old broiler chicks from a backyard flock. Ascites is a metabolic condition in chicks due to pulmonary hypertension and it can be exacerbated by poor ventilation and /or high altitude. All three birds also had soft bones, rickets. Rickets is due to deficiency of calcium (Ca), phosphorus (P) or vitamin D3 or an imbalance between Ca and P ratio which should be 2:1. Feed was not submitted for nutritional analysis.