UCDAVIS VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • MAY, 2018

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HOLIDAY CALENDAR

In observance of Memorial Day, CAHFS will be closed on Monday, May 28, 2018.

Detection of the bovine viral diarrhea virus (BVDv)

CAHFS regularly receives inquiries on what is the best test for detecting BVDv in live cattle. The type of BVDv infection and age of the animal influence the optimal test to use. The PCR method on whole blood (EDTA) can be used for all types of BVDv infection regardless of age or antibody status*. The antigen ELISA test, however, is primarily designed to detect persistently infected (PI) animals, although some acute infections may also be detected. A repeat antigen ELISA test or PCR is recommended at least 3 weeks after a positive result for either test if you want to make a definitive diagnosis of PI. In calves under 3 months of age, colostral antibodies can interfere with detecting BVDv in serum of PI animals, but not in the ear notch, using the antigen ELISA.

Disease	Age	Sample type	Test method
Acute, chronic or PI	All ages	EDTA whole blood	PCR*
Persistent infection (PI)	>3 months	Serum	ELISA
Persistent infection (PI)	All ages	Fresh ear notch (>1mm)	ELISA

*Note the PCR method is also validated in camelids, buffalo and bison.

Equine

Tyzzer's disease, infection by *Clostridium piliforme*, was diagnosed in a 17-day-old Thoroughbred foal which presented with diarrhea followed by rapid death. On post-mortem examination, the foal had the classic lesions of hepatic necrosis, but also severe necrotizing colitis, something which is not commonly seen in foals with Tyzzer's disease.

Bovine

Trichomonosis and *Campylobacter fetus* ssp. *venerealis* infection were diagnosed as the cause of increased numbers of open cows at reconfirm, abortions and some pyometras in two dairy herds. Both organisms were isolated from uterine aspirates of affected cows.

***Clostridial myositis* (blackleg)** was confirmed in a 5-month-old steer from a herd where six Angus calves ranging from five to seven months of age were found dead. On necropsy of the steer, the muscle overlying the sternum was dark red to black, and expanded by multiple gas bubbles. Additionally, there was fibrinous epicarditis and necrotizing myocarditis. Blackleg was diagnosed based on histopathologic findings and positive *Clostridium chauvoei* fluorescent antibody test. Blackleg can occur in outbreak situations in pastured cattle and often results in death with no premonitory clinical signs being observed.

Pig

Porcine reproductive and respiratory syndrome virus (PRRSv) pneumonia and ***Haemophilus parasuis* polyserositis** (epicarditis, peritonitis and pleuritis) were diagnosed in a 4-month-old Duroc pig that had fever for a few hours prior to death. *Streptococcus suis* and *Bordetella bronchiseptica* were isolated from the lung though lesions were more typical of PRRSv, which was detected by PCR and immunohistochemistry. Meningitis was seen histologically and may have been due to *Haemophilus* or *Streptococcus suis*.

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Actinobacillus pleuropneumoniae was the cause of acute pleuropneumonia in 6-month-old pigs with respiratory signs and increased mortality. Forty to 60% of the lungs was affected in two pigs and one was also infected by the PRRS virus.

Small Ruminants/Camelid

***Rhodococcus equi* abscesses** were detected in the liver, lung and a mesenteric lymph node of a 5-month-old Boer goat with a 3-day history of lethargy and diarrhea. *R. equi* was isolated from the liver. The goat also had a large number of coccidia which probably contributed to the diarrhea.

A large **gastrolith** (stomach concretion) caused the death of a 10-year-old female alpaca by complete obstruction of the third compartment of the stomach (C3). The alpaca had a one day history of recumbency, foaming at the mouth and eventually vomiting copious amounts of stomach contents, and was euthanized and submitted for necropsy. While smaller gastroliths are naturally formed in C1 in camelids and are frequent incidental findings, in this case the gastrolith was very large and extended into the lumen of C3, causing ulcers and inflammation in the mucosa as well as likely bacterial invasion.

Bovine viral diarrhea virus (BVDv) was the cause of death of a stillborn goat kid. BVDv was detected by PCR (spleen) and immunohistochemistry (hydrocephalic brain). Sequencing revealed the virus was a BVDv 1A strain.

Respiratory syncytial virus (RSV) infection resulted in severe bronchointerstitial **pneumonia** and death of a 9-month-old Toggenburg goat. The goat had a high fever (104-106°F), dyspnea, cough and depression and was unresponsive to antibiotics. Similar signs were reported in 11 of 12 kids in the group beginning two weeks earlier and several were relapsing. RSV PCR and immunohistochemistry were positive on the lung.

Poultry and Other Avian

Salmonella enteritidis was detected in a fecal pool and the livers of three of four pasture raised Cornish cross chicks experiencing increased mortality. Gross postmortem and histology revealed hepatitis and yolk sac infections in four and two birds, respectively, and one chick had brain and lung involvement.

Co-infection with ***Riemerella anatipestifer*** and ***Escherichia coli*** was the cause of increased mortality in a flock of 5000, 12-week-old turkeys. The birds had respiratory signs with mortality ranging from 35 to 50 birds per day. Necropsy revealed severe pneumonia, airsacculitis, pericarditis, tracheitis and sinusitis. ***R. anatipestifer*** is normally carried by ducks and it is thought that a duck farm one mile away from the turkey flock might have been the source of infection.

Frequently Asked Questions

Fee Estimates/Billing Statement

Every month CAHFS receives calls from clients asking why they received a fee estimate with their case report or a monthly billing statement when they had already paid for the case on submission. Fee estimates are sent with the case report to the "bill to" client to let them know of any new testing added to a case even if there are no new fees added. The Fee Estimate is not a billing statement nor linked to a payment system. The monthly billing statement is generated the first business day of the month and payments made by check or credit card may not have posted to the account before the statement is generated. Whenever you have questions feel free to call the billing department at 530-752-4613.