



**UC DAVIS**

**VETERINARY MEDICINE**

California Animal Health and  
Food Safety Laboratory System

# CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • JANUARY, 2020



## Inside this issue:

### Happy New Year!

#### Bovine

- Nervous coccidiosis
- Nitrate toxicosis

#### Equine

- Neuroaxonal dystrophy
- Equine Multinodular Pulmonary Fibrosis

#### Small Ruminants

- Corynebacterium pseudotuberculosis* abscesses

#### Pig

- Pleuropneumonia and greasy pig disease

#### Wildlife

- Deer adenovirus

#### Other Mammalian

- Histiocytic sarcoma and uterine adenocarcinoma (rabbit)

#### Poultry & Other Avian

- Reovirus myocarditis and fungal pneumonia (turkey)
- Chlamydiosis (turkey)
- Colibacillosis, *M. gallisepticum*, and *M. synoviae* (chicken)

### Holiday Schedule

In observance of Martin Luther King Day, CAHFS will be closed on Monday, January 20, 2020.



### Happy New Year!

Happy New Year from all of us at CAHFS. We look forward to serving you in 2020.

### Bovine

**Probable nervous coccidiosis** was diagnosed in a 10-month-old beef steer with a history of diarrhea and a high-stepping, somewhat wobbly gait. At necropsy the animal had dark green watery colonic content with mucous. Histologically there was marked coccidiosis affecting the colon and rectum, but no lesions were observed in the brain. The cause of the abnormal gait was thought to be nervous coccidiosis, a condition of which the pathogenesis remains largely unknown.

**Nitrate toxicosis** was the cause of sudden death in two 6-month-old beef heifers from a group of eight in a single pen that had died overnight. Cattle in the adjacent pen appeared normal and both pens had been given the same feed, which included oat hay. Because of the history and exposure to oat hay, screening and confirmation testing for nitrate was performed on the aqueous humor which contained 130-150ppm (toxic is >25ppm). CDFA Animal Health Branch followed up with the owners but the source of the hay could not be identified.

### Equine

**Neuroaxonal dystrophy (NAD)** was diagnosed in a 1-year-old male Quarter horse with 60 day duration of neurological signs which were initially more prominent in the hind legs and progressed to the front limbs despite initial response to steroid therapy. There was no history of trauma, pain was not detected on palpation of the neck or spine and no abnormalities were detected on routine blood work including CBC and liver panel. Negative antemortem tests included Equine herpesvirus 1 and West Nile virus PCR, and Sarcocystis neurona serology. The brain tested negative for rabies and no spinal deformities were observed. Lesions compatible with NAD were observed in the cervical spinal cord and brainstem by histology.

**Equine Multinodular Pulmonary Fibrosis** was diagnosed in an 18-year-old mare submitted following approximately three months of low grade fever, borderline high leukocyte count and fibrinogen levels. On necropsy, the lungs had multifocal and coalescing markedly firm areas that involved approximately 80% of the pulmonary parenchyma. Histologically there were syncytial cells and other lesions compatible with equine multinodular pulmonary fibrosis, caused by equine herpes virus 5. The diagnosis was supported by the antemortem identification of the virus in trans-tracheal wash samples.

### Small ruminants

***Corynebacterium pseudotuberculosis* abscesses** were found in a yearling buck Boer goat with a history of neurological signs. On postmortem examination an abscess was found in the left parotid lymph node. Another abscess involved the left side of the brain stem and extended into the area of the pituitary gland. *C. pseudotuberculosis* was isolated from both abscesses.

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## Lab Locations:

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## Pig

**Pleuropneumonia** and **greasy pig disease** were diagnosed in a 4-week-old male pig with a history of heavy breathing before death. *Pasteurella multocida*, *Streptococcus suis* and *Escherichia coli* were isolated from the lungs which showed severe pleuropneumonia. The pig also had severe crusty, well-demarcated, round, dark red and flat skin lesions mainly on the upper part of the thorax and medial aspect of the front legs. Histologically the skin lesions consisted of necrotizing and pustular epidermitis. *Staphylococcus hyicus*, the cause of greasy pig disease, and *Staphylococcus aureus* were isolated from the skin lesions.

## Wildlife

**Deer adenovirus** (DAV; *Odokoileus adenovirus* 1) infection was diagnosed in an approximately 4-month-old black tailed deer. The fawn died in a wildlife rescue facility following a 3-day history of dark diarrhea and inappetence. Postmortem examination revealed hemorrhage in the large intestine and edema in the lungs. The infection was confirmed by identification of the virus by direct electron microscopy in intestinal scrapings, by PCR of the intestinal contents and sequencing of the amplified fragment, and immunohistochemistry in the lungs and liver. Infection with this virus may cause large outbreaks in different deer species including black tailed deer, with juvenile animals being particularly susceptible. *Salmonella* spp. and orbivirus were not detected in this deer.

## Other Mammalian

A widely disseminated **histiocytic sarcoma and uterine adenocarcinoma** caused the death of a 5-year-old Rex rabbit. Peritoneal effusion and numerous masses infiltrating the lymph nodes, gastrointestinal tract, diaphragm, ovaries, kidneys and lungs, and one of the uterine horns were identified on post mortem examination. The largest tumor was found at the root of the mesentery.

## Poultry and Other Avian

**Reovirus myocarditis** and **fungal pneumonia** were diagnosed in 15-day-old male turkey poults submitted for increased mortality (0.6% for the last three days). The turkeys appeared depressed and dyspneic. At necropsy, moderate to severe dilation of both ventricles of the heart, together with pale myocardium, and yellow nodules in lungs and air sacs were observed. Microscopically, severe myocarditis and fungal hyphae in lungs and air sacs were observed. Reovirus PCR on heart was positive, and *Rhizopus* spp. was isolated from air sacs. Reovirus has been previously documented as a cause of myocarditis in turkeys. *Rhizopus* spp. can cause brooder pneumonia in young turkeys, although less commonly than *Aspergillus* spp.

**Chlamydiosis** affecting only the nasal glands (also called salt glands) was observed in less than 1% of 24-week-old turkey hens in a flock of 5,000 birds. The disease was clinically manifested by mild to moderate swelling above the eyes and was diagnosed based on FAT, PCR and immunohistochemistry. Prompt culling of the affected birds prevented the disease from spreading to other birds of the flock.

A combination of **colibacillosis**, *Mycoplasma gallisepticum* and *Mycoplasma synoviae* infection caused increased mortality (250 to 300 birds per day) and decreased egg production (84% vs expected 92%) in a flock of 80,000, 35-week-old laying chickens. The chickens experienced respiratory signs, associated with airsacculitis, pneumonia, pericarditis and peritonitis.



At the start of 2019, an online survey was distributed to **1,607** CAHFS clients with an email contact resulting in **162** responses. The **CAHFS Client Relations Committee** would like to thank those for taking the time and effort to complete the survey. The committee has reviewed the survey, is addressing results and requests by our clientele so that we can continue to offer the best service possible. Some notable finds to share...

The **most important** reasons for submission to the CAHFS laboratories include:

- AAVLD accreditation
- Full service diagnostics with multiple laboratory specialty sections
- Appropriate turnaround times
- Reasonable rates
- Broad range of subject matter expertise
- The ability to speak directly to faculty diagnosticians

### Test Reports & Turnaround Times

**85%** of responders agreed that test reports were useful, clear, easy to interpret and turnaround time was reasonable.

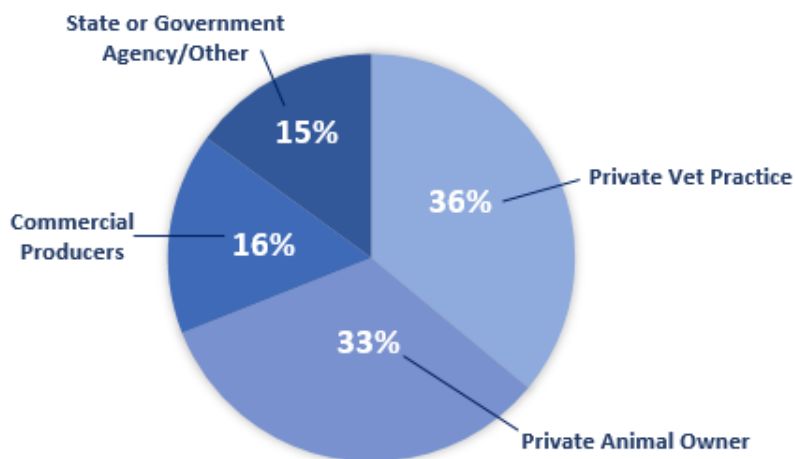
**98%** of responders preferred to receive test reports by email.

**Continuing Education Topic Requests** included a summary of camelid diseases and summaries of diseases by species (disease incidence, nutritional deficiencies by region). Contact your local laboratory to inquire about having a CAHFS faculty member as a guest speaker at your veterinary medical association and producer group meetings.

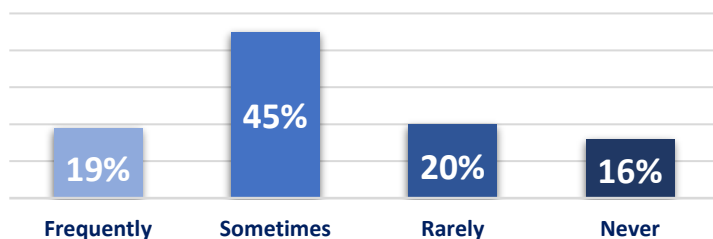
**CAHFS Continuous Plan for Improvement** CAHFS scored lower on **“test results are definitive compared to other laboratories.”** We strive to provide informative reports, and are working to better summarize postmortem findings succinctly to emphasize key findings.

Future access to **online test reports** was noted as very important. We recognize the importance of online access to test results/reports. Providing this access is a near-term priority for CAHFS.

Primary Responses Received By



How often do you use CAHFS Website?



Most found it preferable to call or visit the lab with questions and stated that personnel are very helpful.

Some requested adjustments to the **CAHFS website**, which is an ongoing continuous improvement process for CAHFS.

### Addition useful information on the website

CAHFS has updated all **submission forms** and can be downloaded on the website. While visiting you can also find helpful documents that include:

- **List of Common Tests & Costs by Species**- find frequent test and pricing for llamas and alpacas, beef and dairy cattle, backyard poultry, pigs, small ruminants and horses.
- **Clients Guide to Submitting to CAHFS**- CAHFS overview, submission form requirements, sample shipping & packaging guidelines and sample recommendations.

