



Stock Quotes: Animal Health Newsletter

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Quarterly Newsletter from the Animal Health Bureau of the
Montana Department of Livestock

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WHAT'S NEW

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State Veterinarian Notes

We're on the last half of Montana's 67th legislative session, with promising progress on several fronts. Notably, the request to fund a new veterinary diagnostic laboratory facility is still on track. If you're not familiar with this project, please see the legislative section of our website (<https://liv.mt.gov/Centralized-Services/MDOL-2021-Legislative-Session>) which shows the main priorities for the department, and also provides schematics of the \$26M proposed laboratory building. The laboratory building project, as well as a number of other issues including our main budget, the sale of raw milk, and bills impacting brand inspection are still working their way through the legislative process.

The Board of Livestock (BOL) has four new board members. Gene Curry from Valier is the new Board Chair, and is joined by Jake Feddes (Belgrade), Greg Wichman (Hilger), and Alan Redfield (Livingston). Since Covid-19 has disrupted in-person meetings, watching BOL meetings has never been easier. Please visit our website to see meeting dates, the current agenda, and video streaming links.

This issue is focused on a number of emerging diseases that are either in the state, or are knocking on the border.

In February, we diagnosed rabbit hemorrhagic disease, serotype 2 (RHDV2) and became the ninth state in the nation to detect this highly lethal emergent virus. Samples were collected after a report of multiple deaths in a feral domestic population of rabbits in Billings. While a high mortality is a fairly classic sign of this disease, we were not expecting a positive diagnosis from the foreign animal disease laboratory in Plum Island. Compounding the challenges of responding to a novel disease, is the lack of a licensed vaccine in the U.S., however, we are working with Montana veterinarians to permit the international import of approved vaccine from the European Union. Fortunately, cases of RHDV2 have so far been limited to Yellowstone County.

More on page (3).

Late last year, we received notice of two horses that died of Eastern equine encephalitis (EEE). Two animals on the same premises died acutely after a rapid progression of symptoms leading to recumbency. While both animals resided in North Dakota, they were close enough to the border to have a Montana address. I'm not aware of any prior case of EEE this close to Montana. See additional info on page 2).

In a shift of emphasis from *B. abortus*, we have recently spent considerable time addressing *B. canis* in shelter animals. We have seen this disease sporadically over the last several years, but have identified some recent commonalities in a cluster of cases associated with adoption of dogs from areas with large stray dog populations. The course of illness of *B. canis* is often chronic with subtle clinical signs and, therefore, can remain undetected for years which can be a significant public health concern. Please contact the department if you're interested in instituting a screening program for dogs that may be at risk (please see page 4 for additional information).

I want to close with a plug for regulatory compliance. Recently, DOL has joined USDA in revoking accreditation for a Montana veterinarian for 12 months after numerous violations of the Code of Federal Regulations and accreditation standards. While accreditation is non-essential to conduct veterinary medicine, it is required to perform official disease program or "regulatory" work. A credible veterinary accreditation program is critical to rapid detection, swift eradication, and effective surveillance for diseases. And in Montana, the veterinary accreditation program is especially important for us to detect brucellosis in the Greater Yellowstone Area and maintain confidence in the disease status of animals that originate from any part of the state. Please call anytime if we can be of help. 406-444-2976.

✂ By Marty Zaluski, DVM

Eastern Equine Encephalitis Diagnosed on MT Border

In late October 2020, the Department of Livestock (DOL) was notified of two horses that had been euthanized due to severe neurologic signs and received laboratory results from the National Veterinary Services Laboratory that showed one of the animals with a high titer for Eastern Equine Encephalitis (EEE) on an IgM capture ELISA. Based upon the current case definition for EEE, the animal with the titer results meets the criteria for a confirmed case.

The first horse was clinically normal the morning of October 13, but by evening the animal had begun to show neurological signs including dog-sitting and laying down. The attending veterinarian reported the animal carried his head extremely low to the ground, almost as if wanting to lick the pavement. A work-up was done for a cervical injury but no pain or change in neurological function was noted with either physical exam/manipulation or radiographs. The horse was interested in both food and water and appeared to be able to grab at hay provided but was unable to swallow. Through the night, the horse progressed to lateral recumbency and was euthanized. The brain was submitted for rabies testing and an Equine Herpes Virus-1 PCR. Both tests were negative.

The same day the index animal was euthanized, a second horse (yearling) presented with a similar clinical presentation. This animal was able to stand through Thursday but progressed to lateral recumbency Friday a.m. and was likewise euthanized. A full post-mortem exam was performed, and tissues collected for histology. No gross abnormalities were detected. Blood from both animals was submitted for WNV, EEE, WEE, and additional EHV-1 testing.

The second animal (yearling) had a positive titer on the EEE IgM capture ELISA (positive $\geq 1:400$) consistent with recent exposure to EEE. The combination of compatible clinical signs and positive IgM capture ELISA meets the current case definition for this to be reported as a confirmed case of EEE. The index animal, while negative serologically, is also believed to be a EEE case. Per conversations with USDA staff, animals who succumb to the disease extremely rapidly may not have enough time to mount an immune response that can be detected on the ELISA.

The EEE positive yearling had no prior vaccination history.

Despite the initial report made to DOL, the premises of the affected animals is located in North Dakota (Montana address, North Dakota location). Not an uncommon occurrence for premises so close to state lines. Despite the attribution of this case to North Dakota, Montana veterinarians should still be aware of this diagnosis and the expanding range of EEE.

Horses are not significant virus amplifiers and therefore do not serve as disease reservoirs for further spread of the virus. Based upon the absence of any travel in either animal's history, it is likely that wild birds in the area would have been carrying the virus. Wild birds are the primary maintenance reservoir for EEE. As a reminder, EEE is primarily transmitted between species by mosquitoes and is a zoonotic disease.

Confirmation of EEE along the Montana/North Dakota border is a first for the area, but consistent with the recent expansion of range of the disease. The presence of EEE along the eastern edge of Montana is an important reminder of the need to maintain current vaccination of equids, to prevent mosquito bites in humans and animals, and to manage environments to limit growth of mosquito populations. α By Tahnee Szymanski, DVM

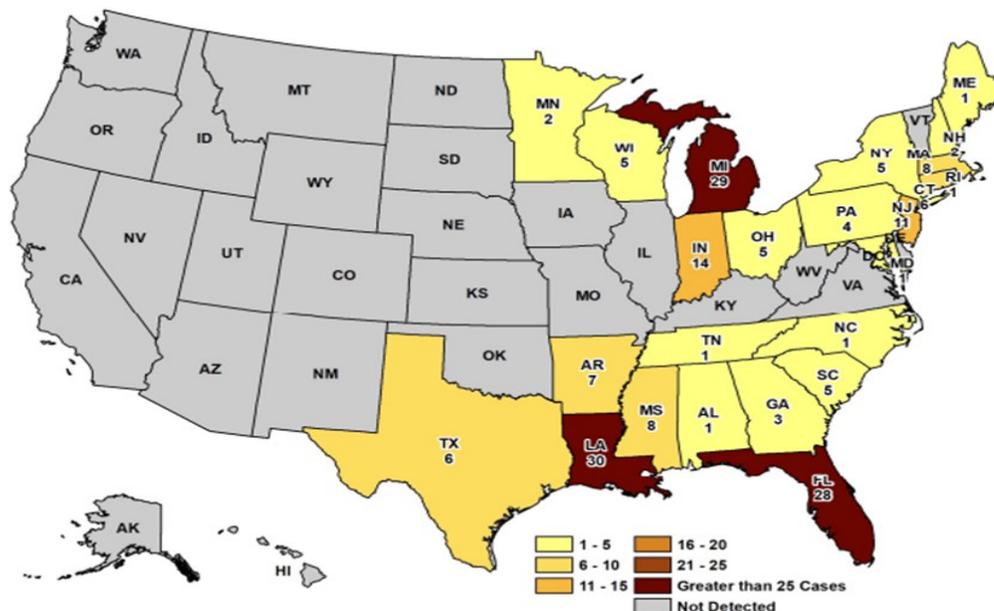


Figure 1. Distribution of reported equine cases (2006-2019).

Source: https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/2019-eee-report.pdf

Rabbit Hemorrhagic Disease Update

Confirmed cases of rabbit hemorrhagic disease (RHD) continue to be limited to Yellowstone County. Since the initial confirmation of disease in four rabbits from a population of approximately 40 that all succumbed to the disease, a second population of rabbits with multiple mortalities has been confirmed for RHD. Both populations were feral domestic rabbits. Montana Fish, Wildlife and Parks has also confirmed RHD in a cottontail mortality outside of Billings but within the county.

Based upon the presence of the disease in multiple locations within the county, United States Department of Agriculture (USDA) and the Department of Livestock (DOL) have classified Yellowstone County as endemic. The endemic designation means that limited additional testing will be conducted for new mortalities within the county, such as lagomorph species in which the disease has not previously been diagnosed and privately owned rabbits. Feral domestic rabbits and cottontail rabbit mortalities from Yellowstone County will no longer be tested.

All mortalities outside of Yellowstone County reported to DOL, have been confirmed negative for RHD. Please remain vigilant and continue to encourage rabbit owners to practice good biosecurity for owned rabbits. Biosecurity is the primary tool to limit transmission of RHD.

The U.S. rabbit industry is worth an estimated \$2.2-2.3 billion, primarily due to the sale of pet supplies and the care of the estimated 6.7 million pet rabbits in the US. Continued spread of RHD would have the potential for significant impact to the pet rabbit industry, in addition to 4-H, FFA, hobby groups, commercial rabbit producers, and wild rabbit populations.

As previously communicated, there is no commercially available vaccine for RHD in the United States. Accredited veterinarians in states with confirmed cases can request permission from the USDA Center for Veterinary Biologics to import one of two available vaccines from the European Union. In addition to the cost of the product, importers must pay a broker to facilitate importation of the vaccine. Therefore, large orders of vaccine (1,000 doses or more) help reduce the per dose cost of vaccine by distributing the broker fees across more doses.

At this time, no vaccine has been imported into Montana. A Yellowstone County veterinarian has agreed to be the primary importer for a group order. If you have clients interested in a vaccine, but not sufficient numbers for a solo order, please contact DOL and we can provide contact information for participation in the group order. In regards to vaccine efficacy, the New Mexico State Veterinarian has reported that for rabbit owners that vaccinated a subset of their population and then experienced an outbreak of disease, vaccinated animals were the only rabbits to survive.

α By Tahnee Szymanski, DVM

Accreditation Violations

The United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA APHIS) Investigative and Enforcement Services (IES) recently completed an investigation of an accredited veterinarian for violations of federal standards as outlined in the Code of Federal Regulations (9 CFR). At the conclusion of the investigation, USDA APHIS Veterinary Services and the Department of Livestock (DOL) agreed upon a one-year suspension of the veterinarian's federal accreditation as well as a fine of \$2500.

During this time, the veterinarian is not allowed to perform any regulatory work including brucellosis vaccination, official disease testing (brucellosis, tuberculosis, trichomoniasis, and equine infectious anemia), or issue certificates of veterinary inspection (CVIs).

Violations included:

- Performing regulatory work with an expired veterinary accreditation, including vaccination for brucellosis and the issuance of CVIs.
- Issuance of CVIs that were not accurate or not fully completed, such as incorrect documentation of the date of inspection, issuing CVIs more than ten days after inspecting animals, failing to document required testing on CVIs, and failure to include dates of inspection and issuance on CVIs.
- Application of MT official ID tags to animals in other states.
- Failure to apply official identification to required animals in interstate commerce.

Overwhelmingly, the veterinarians of Montana do a tremendous job completing regulatory work, but both USDA and DOL identify occasional compliance issues. We are currently working towards a more concerted and consistent approach to following up on noncompliance, including:

- Letters with detailed information about noncompliance, such as the number of violations and citations of appropriate regulations.
- Follow-up communication from USDA and DOL staff, including visits from USDA field Veterinary Medical Officer (VMO's) for repeat violations.
- Letters of information or more formal actions for veterinarians with three repeat violations.

Examples of violations that have received communication and/or letters from our office in the past few months include: the use of 900-series tags in heifers at the time of brucellosis vaccination, failure to list official identification of animals with existing identification when shipping animals to an approved tagging site, and issuance of greater than 20 paper CVIs since the January 1, 2021 transition date.

Please be attentive to feedback received regarding non-compliance. DOL and USDA are committed to stepping up enforcement but hope that education and relevant feedback will be all that is needed.

α By Tahnee Szymanski, DVM

Kuna Brucellosis Slaughter Trace

In 2020, Montana received a brucellosis trace from the Caviness/Simplot slaughter plant in Kuna, Idaho. The animal in question was a mature cow in a group of 40 Montana animals harvested. Brucellosis blood test results on the sample collected at slaughter, categorized the animal as suspect.

In 2010, approximately 5.45 million blood samples were collected at slaughter establishments across the United States. Collection was done to meet the brucellosis program's requirement of sampling 95 percent of cattle two years of age and older. Slaughter surveillance at that level significantly contributed to decreasing the incidence of brucellosis in our national herds. However, testing at that level is no longer necessary, except for wildlife in the Greater Yellowstone Area (GYA), the United States is free of brucellosis. All 50 States, Puerto Rico, and the U.S. Virgin Islands are currently considered brucellosis Class Free.

Program testing continues at four large slaughter plants: one in Idaho (Kuna), one in California, and two bison slaughter plants in Colorado. State and federal inspected facilities in the three GYA states and Texas continue to test for brucellosis.

The lot in question at the Kuna plant originated from a Montana feedlot. The animals had previously been purchased through Montana livestock markets and placed on feed prior to slaughter. Unfortunately, the brucellosis suspect, did not have any official identification present for collection at slaughter. Official identification that can be readily traced include metal or electronic brucellosis vaccination tags or ear tags that are required to be placed during an official test. The only identification collected was a yellow 547, Y-TEX ear tag (see Figure 2).

Because the interstate shipment was direct to slaughter, the movement did not require a certificate of veterinary inspection. The animals instead moved on a Montana brand inspection. The shipment included 18 different brands. Brands, however, are not read, recorded, or maintained with the carcass or blood sample at slaughter.

Eleven of the animals in the shipment had back tags which were listed on the daily slaughter sheet. Backtags are considered official identification when placed on an animal at a livestock market or a slaughter facility. The backtags listed were from three different Montana livestock markets. Twelve of the 40 had official individual identification. Without official individual identification, determination of the ranch of origin can be difficult.

Following DOL's discovery of the suspect animal, the trace investigation included:

- Gathered ownership information of all brands associated with the shipment.
- Evaluated market clearance forms on each animal on

the load that still had a back tag at the time of slaughter.

- Gathered available information for animals that still had official identification.
- Compared backtag information with brand inspection information.
- Confirmed that animals that may have come from the Designated Surveillance Area (DSA) were tested prior to going to the feedlot.
- Contacted all 18 brand owners to determine if they used yellow Y-TEX tags.

Due to a lack of information, the case was initially closed but was reopened in a second attempt to find the ranch of origin.

DOL then sent a memo and risk survey to each of the 18 brand owners believed to have contributed an animal to the group of 40. Producers were asked to complete the survey and return to DOL. Nine of the 18 producers have since completed and submitted the survey. At this time, one of the potential source herds has elected a voluntary herd test that will be conducted in the fall of 2021 and cull cow testing throughout the year. A second herd is a DSA herd that conducts annual testing. None of the other seven risk assessment showed substantial risk that warranted further disease surveillance. Follow-up with all 18 producers is ongoing.

The goal of any trace is to find the ranch of origin as quickly as possible and determine if the herd is impacted by the disease of concern and if so, eliminate the disease to protect both the herd of origin and Montana's livestock industry. If the herd of origin cannot be rapidly identified, the scope of an investigation will involve many more producers and livestock, as evidenced by this trace.

✉ By Eric Liska, DVM



Figure 2. ID collected at slaughter. Source: DOL Staff.

Keep *Brucella canis* on your differential list

The Department of Livestock (DOL) has seen an increase in the number of *Brucella canis* (*B. canis*) cases diagnosed in Montana. Several of the positive cases have a common link to areas with large populations of intact, stray dogs, including reservations.

As a reminder, *B. canis* is a reportable disease in Montana per Administrative Rule of Montana 32.3.104. While the department has quarantine authority, many cases involving single animals or cases isolated to a private residence are not quarantined provided the animals are neutered and DOL is confident the potential risk to human health is being managed.

Clinical signs in intact animals may include abortion, infertility, and orchitis. However, the majority of recent cases have involved neutered dogs with more general signs such as lethargy, lymph node enlargement and lameness/back pain due to discospondylitis. Unfortunately, the infection may go unnoticed for years, especially in animals infected at birth. The bacterium is mainly transmitted by nose/mouth contact with vaginal discharge or birthing fluids from an infected female. Semen, urine, feces, and nasal secretions can also be risks for transmission and puppies can become infected from their mother during pregnancy.

B. canis, like other *Brucella* species, can be challenging to definitively diagnose. Multiple test options are available including the rapid slide agglutination test (RSAT), RSAT-2ME (2-mercaptoethanol), agar gel immunodiffusion (AGID), PCR and culture. Each testing option has advantages and limitations. The diagnostic sensitivity of the RSAT is moderately high, and though the sensitivity for the 2ME is low, the specificity of the 2ME is near 100%. *B. canis* culture is considered the gold standard. But, while a positive culture result is definitive, variation in bacterial shedding by an individual dog makes a negative culture result difficult to interpret. The PCR test too is dependent on the shedding profile during an infection but is said to be approximately five times more sensitive than blood culture and can be used as a screening test or a confirmatory test. Several factors must be considered when interpreting test results including compatible clinical signs, sterility, sex, history of exposure to other positive animals/history of residence in a high-risk area. [DOL considers high-risk animals to be: animals that originate from populations with a high number of intact, stray dogs and mature, intact animals.](#)

DOL recommends stray animals who are considered high-risk, and dogs presenting with compatible clinical signs be screened for *B. canis*. A testing flow chart with a recommended protocol for surveillance of high-risk populations has been developed by DOL. The goal of surveillance is to reduce the risk of positive animals being adopted prior to diagnosis to limit risk to public health. The flow chart is available on the Department's website at <https://tinyurl.com/ha2pmtq4>.

The primary management recommendation for positive cases is euthanasia. Approximately 50 percent of positive cases are

euthanized. Sterilization (if intact), antibiotic treatment and routine testing are offered as a second management option though treating *B. canis* cases can be challenging. Like other *Brucella* species, this bacterium can sequester in areas such as the prostate in male dogs, making it difficult for antibiotics to penetrate and eliminate all the organism. Antibiotic treatment should therefore not be considered curative. Recrudescence may be observed when administration of antibiotics is discontinued. Often, this results in long-term treatment with a combination of medically important antibiotics. Many cases ultimately result in euthanasia of the infected animal due to the secondary clinical signs that cannot be effectively treated.

Owners/facilities who choose not to euthanize infected dogs should manage these pets to minimize exposure to other dogs or people. In particular, owners should not take infected dogs to public use areas including parks, beaches, pet stores or jogging paths. The dog's contacts should be limited to as few people as possible. Infected dogs should not be allowed to lick or "mouth" people or other dogs. And lastly, those caring for positive animals should practice good hygiene. Wear gloves when cleaning up areas that are potentially contaminated by dog feces or urine and wash hands thoroughly when done. Properly dispose of dog waste, and launder potentially contaminated clothing or dog blankets regularly. Contaminated wet areas can be dried and disinfected with a 1% bleach solution.

Client education about the zoonotic risks is of high importance. While human infections are not common, people who have a compromised immune systems, young children, pregnant women, or persons with artificial heart valves are at risk of severe disease if they acquire the infection. Individuals such as dog breeders who assist whelping dogs and encounter birthing fluids, canine abortion products, or vaginal discharges may be exposed to large numbers of bacteria. The organism is typically present in lower concentrations in canine urine, feces, and nasal secretions. *Brucella canis* can be transmitted if these infectious materials contact a person's mucous membranes or abraded skin. The zoonotic risk should be a factor in the decision of how to manage a positive case.

[DOL recommends that *B. canis* positive shelter animals be euthanized and not placed into either foster or permanent homes. Shelters that chose to do so should disclose the risk with foster and adoptive homes and ensure there is an understanding of the risk to other canines and humans in the household.](#)

DOL will be reaching out to animal shelters and rescue organizations throughout the state, encouraging them to work with their local veterinarians to evaluate risk and implement *B. canis* surveillance testing as appropriate. Please contact our office with any questions: (406) 444-2976.

✉ By Anna Forseth, DVM

2021 Live Elk Brucellosis Surveillance

Elk captured in both areas targeted for surveillance for spring of 2021 tested negative for brucellosis. The purpose of the capture is to obtain current information about the incidence and distribution of brucellosis in wildlife.

Each year, the Department of Fish Wildlife & Parks (FWP) and DOL officials meet to determine priority elk populations for brucellosis surveillance. Areas are prioritized for wildlife testing if there is a concern over movement of exposed elk outside of the Designated Surveillance Area (DSA) boundary, or areas with insufficient information on wildlife brucellosis prevalence.

The 2021 capture occurred in January and February and targeted elk populations in Ashland and Manhattan areas. Ashland in southeast Montana was selected because of an increase in elk population and proximity to Wyoming's Big Horn Mountains where seropositive elk have been found.

FWP captured 100 females and 20 males. Forty females and twenty males received GPS radio collars that will be deployed for three years. All

100 females were tested for exposure to brucellosis and tested negative.

Horseshoe Hills near Manhattan was the other area to be picked because of concern that brucellosis positive elk from within the DSA (south of the interstate) may periodically commingle with elk north of I90 (out of the DSA).

All 100 captured females in this area were also test negative for exposure to brucellosis. Thirty animals were fitted with GPS radio collars that will be monitored for one year so FWP can monitor elk movements to better determine their level of connectivity with other elk herds inside of the DSA boundary.

Information from this project is critical for DOL to ensure that the boundary of the DSA includes all livestock at risk to brucellosis infection from wildlife. In the past, when brucellosis positive elk have been found outside of the boundaries of the DSA, the boundary has been adjusted.

By Eric Liska, DVM

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