StockQuotes: Animal Health Newsletter

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

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CALENDAR OF EVENTS:

Board of Livestock:
Oct 27, Helena

Interagency Bison Management Plan Meeting:
Dec 1, Pray

MVMA Meeting:
Jan 27, Bozeman

Montana Stockgrowers Association
Dec 7-9, Billings

State Veterinarian Notes

Our main updates for this fall newsletter issue include several familiar and some new topics.

An equine piroplasmosis outbreak affecting nearly 20 horses in Wyoming gives us an opportunity to highlight this disease including risk factors for transmission.

The legislature meets this January, and we're anticipating that General Fund which covers Designated Surveillance Area (DSA) testing will be difficult to come by. Those funds ($800K/yr) help DSA producers offset testing costs, however, the greatest benefactors of the DSA are the producers who operate outside the DSA. Currently, 95% of Montana producers can export cattle without any brucellosis testing because of DSA producers' compliance with rigorous DSA requirements. These efforts are critical to maintain the confidence in the disease-free status of exported cattle. Please see the brucellosis column for more information on this year's compliance evaluation.

In previous legislative sessions, bills on regulating dog breeding facilities, and statewide rabies vaccinations were considered. Last session, a bill to allow the sale of raw (unpasteurized) milk received much support but failed to receive the 2/3 super majority required for legislation that exempts the state from liability. We expect a bill supporting raw milk sales again this session.

Because of the federal traceability rule, the Department of Livestock (DOL) is responsible for the data included on veterinarians' health certificates. Therefore, we are reviewing these documents carefully. We've partnered with USDA on an article that includes numerous examples of documentation errors.

Dr. Szymanski drafted an article on animal check-in procedures at summer fairs. These best practices may help fair boards address the recent animal and public health challenges seen in the United States including Seneca Valley Virus (SVV), Swine Enteric Corona Virus Diseases (SECD), and swine influenza. ¤ mz

Fair Biosecurity

Seneca Valley Virus (SVV) infections may cause snout and coronary band vesicles that look identical to foot and mouth disease (FMD). Therefore, any evidence of vesicles in swine requires immediate reporting and will likely result in quarantine of all susceptible, exposed animals until FMD and other foreign swine vesicular diseases can be ruled out.

As we enter the winter planning months, the procedures for swine check-in used at the last Madison County Fair present a great template for consideration. The fair has up to 150 pigs on an annual basis.

The protocol developed for swine check-in addressed the risk of SVV and included:

- Notification of exhibitors and parents of assigned check-in times.
- All swine inspected by veterinarian prior to off-loading.
- Exhibitors with swine and other species were not allowed to offload any animals until swine inspected.
- Exhibitors could check in outside of assigned times with a Certificate of Veterinary Inspection issued within 24 hours.

To meet the needs of the concurrently running rodeo, animals were entering and exiting the grounds daily. A stop-movement of animals due to a disease investigation would effectively stop ongoing rodeo performances.

This protocol can be easily adapted for other species or other diseases of concern, such as vesicular stomatitis. ¤

By Tahnee Szymanski

WHAT'S NEW:

1. **Biosecurity protocol for fairs with swine (above).**
2. **Veterinary Feed Directive (VFD) takes effect January 1, 2017 (p2).**
3. **Documentation do's and don'ts (p5).**

Veterinary Feed Directive (VFD)

With the Food & Drug Administration's (FDA) veterinary feed directive (VFD) rule going into effect January 1, 2017 the DOL has received multiple inquiries regarding the new rule and its implementation.

There is increasing global concern about the role of animal agriculture in antimicrobial resistance. The VFD rule ensures veterinary involvement in the use of medically important antimicrobials in animal feed and seeks to better track their use. Medically important antimicrobials, according to the VFD, are those considered to play a key role in treating human infections. There are currently a small number of drugs covered by the VFD rule (avilamycin, florfenicol, tilmicosin, and tylvalosin), but as of January 1, 2017 that list is expanding considerably. A complete list of drugs that are regulated by the VFD can be found on the FDA website (https://goo.gl/ajVQib) or by contacting the FDA at 1-888-INFO-FDA.

A VFD is really a form of a prescription for medications added to animal feed. The FDA has not provided a single form that must be used but has issued guidance for what information must be included. All VFDs must be written and include:

- Veterinarian contact information, date of issuance and expiration of the VFD, number of refills allowed, and veterinarian's signature
- Animal information (premises location, species and production class, number of animals)
- Medication information (medication name, indication for use, withdrawal period, treatment duration, dose)
- Statement "Use of feed containing this veterinary feed directive (VFD) drug in a manner other than as directed on the labeling, is not permitted"

A copy of the VFD must be retained by the veterinarian, the feed supplier and the producer. All three copies of the VFD must be maintained for two years.

All uses of drugs in VFDs must be per label – no extra-label (off-label) use is allowed. This means that all medications covered by the VFD rule may only be given to the types of animals, in the exact doses, and for the exact purposes listed on each drug label. For example, no antibiotics are currently labeled for use in feed for the treatment or prevention of pink-eye and foot-rot, so no antibiotics can be added to feed for these purposes. Some additional information and a sample VFD can be found at https://goo.gl/Kj70Y5. Global Vet Link and the AVMA have also provided VFD forms for those who are interested.

The FDA requires a VFD to be issued "under the professional supervision" of a veterinarian which means a veterinarian must have a valid veterinarian-client-patient-relationship (VCPR) with the producer. The FDA has decided to respect individual states' definitions of a VCPR. The Montana Veterinary Medical Board (Department of Labor) defines a VCPR in administrative rule (ARM) 24.255.301 and stipulates that a VCPR means:

- A veterinarian takes responsibility for clinical judgments about animals and a client agrees to follow the veterinarian's directions
- The veterinarian has recently seen the animals (or makes medically appropriate and timely visits to the premises)
- The veterinarian is available for follow-up

Medicated feed for all food animal species is covered by the VFD rule, regardless of the use an individual owner has for an animal. This means that animals like pet rabbits and small ruminants, backyard chickens, etc. are all covered by the VFD rule. The VFD rule also applies to bees and fish.

Currently the VFD rule only applies to medically important antimicrobials added to animal feed. Other forms of these drugs (injectable) remain available over the counter (OTC) at this time. However, the FDA has indicated that the next step in combating misuse of antimicrobials is to reconsider all forms of these drugs for change to prescription only status.

Veterinarians will play a key role in ensuring the judicious therapeutic use of these drugs so that they continue to remain available for use in our livestock species. ¤

By Emily Kaleczyc

Equine Piroplasmosis

The Wyoming Livestock Board recently announced a race horse tested positive for equine piroplasmosis (EP), *Theileria equi*. The two-year-old Quarter Horse (QH) mare was being tested for entrance into a racetrack in California. Subsequent testing of exposed horses in Wyoming resulted in an additional 17 positive horses; all managed by the same trainer. Two of the animals have been euthanized, with the remainder likely to undergo treatment. It is suspected that an infected horse imported prior to 2013 from Mexico to race in Texas was the source in this outbreak. Iatrogenic transmission through blood-contaminated needles, syringes, or other equipment is likely the cause of disease spread in this group.

EP is a blood-borne infection of equids (horses, donkey, mules, and zebras) caused by one of two protozoan parasites, *Theileria equi* or *Babesia caballi*. Natural transmission occurs when a tick consumes a blood meal from an infected horse and transfers the parasite to a naïve horse or to subsequent generations of ticks. Potential competent tick vectors are found in the United States. Additionally, mares may pass the organism to a foal in utero. Iatrogenic transmission can also occur through the use of contaminated blood, blood products, needles, syringes, and treatment/surgical equipment and products.

Clinical signs of the disease are non-specific and include fever, anemia, anorexia, depression, and jaundice. The incubation period of the disease is five to 28 days although some infected animals may carry the disease without showing any clinical signs. Differential diagnoses for EP include equine infectious anemia (EIA), surra, dourine, African horse sickness, purpura hemorrhagica, and some plant and chemical toxicities.

EP is diagnosed by serologic test. In the United States, testing is performed by complement fixation (CF) and enzyme-linked immunodiffusion antibody (ELISA) for both causative organisms (*T. equi*, and *B. caballi*). Tests are used in parallel, as CF more readily detects acute disease while ELISA is more sensitive for detecting chronic infection.

The United States is considered "free" of the disease and has regulations regarding international importation of equids, however, reliance on the CF as the sole import test in the past likely resulted in importation of EP positive horses. Positive cases, when found, must be reported to state or federal animal health officials.

Horses affected with EP may be treated with a novel regimen using the antiprotozoal drug, imidocarb. Unfortunately, treating horses is expensive and can take up to two years at the owner's expense. The horse must remain quarantined for the duration of the treatment. Other options include lifetime quarantine at a state-monitored location or euthanasia.

All exposed horses are also tested. An exposed horse is any horse that has shared close contact with an infected horse, may have become infected by the use of shared needles, syringes, dental, surgical or tattooing equipment or is the nursing offspring of a positive or exposed horse. Exposed horses are placed under quarantine and retested no fewer than 30 days after the last known exposure.

In recent years, outbreaks have been documented in Florida, Missouri, Kansas, Texas, New Mexico, and California. Since 2009, 247 horses have been confirmed positive for EP in the United States. The primary populations of concern for EP are international imports prior to 2005 due to singular use of CF for import; and horses involved in Quarter Horse racing (198 of 247 positives). EP positive horses associated with quarter horse racing also have a much higher chance of being co-infected with equine infectious anemia (EIA), consistent with iatrogenic transmission.

In response to the most recent Wyoming cases of EP, Utah and Wyoming have implemented test requirements for animals entering race tracks. If you have clients who race in either state, you may be asked to perform this testing. Additional education for your clients to help reduce the risk of disease transmission includes:

- Use a new sterile needle and syringe for all injections; whether into a vein or muscle.
- Clean and disinfect equine dental, tattoo, and surgical equipment between horses.
- Have any horse that will serve as a blood donor tested for EP. ¤

By Tahnee Szymanski

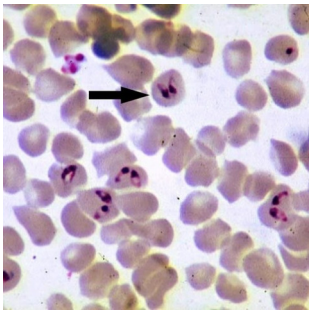

FIGURE 1: Blood smear showing Babesia caballi, one of the causes of equine piroplasmosis.

Source: http://www.thehorse.com/features/34557/beasts-of-burden-africas-working-horses-and-donkeys

FIGURE 2: One of a number of ticks (Amblyomma cajennense) capable of transmitting equine piroplasmosis. However, few tick vectors can transmit the disease as efficiently as re-using needles from infected horses.

Photo source: http://www.thehorse.com/articles/34825/tahc-to-test-brooks-county-equids-for-piroplasmosis

Laboratory Trich Testing Quality Control

Tritrichomonas foetus is a protozoan that colonizes the reproductive tract in cattle, most commonly in bulls that then infect a herd upon sexual contact. Trichomoniasis infection causes abortion and infertility in cows, which results in substantial economic losses.

A quality comparison (QC) panel was distributed to 21 participating molecular diagnostic laboratories across the country to assess the effectiveness of the broad range of *T. foetus* detection techniques and begin discussion toward a more standardized diagnostic approach. The panel consisted of twenty TF InPouchTM samples of positive and negative inoculated smegma in unknown order by Biomed Diagnostics Inc. Positive samples ranged in duplicate concentrations of 10, 50, 100, 200 and 1000 cells total at initial inoculation.

The Montana Veterinary Diagnostic Laboratory (MVDL) correctly identified 19 out of 20 pouches via qPCR, giving 95% accuracy. Thirteen of the 21 participating laboratories scored at or above 95% (7 at 100%, 6 at 95%). The average across all laboratories was 92%. The missed pouch was a low inoculation of 10 *T. foetus* total cells.

Previous testing for *T. foetus* has shown 10 cells/mL to be the limit of detection under the current protocol. There were two low level inoculations, and the other pouch was correctly identified as positive for *T. foetus*. No uninoculated (negative) pouches were misidentified as positive (100% specificity). qPCR in literature has consistently demonstrated a 95% sensitivity for identifying positive samples correctly, and a 99% specificity for identifying negative samples correctly. For comparison, sensitivity of a culture is 50-80%.

In review of the recent panel, there are three critical components to maintain sample quality; clean collection, transport temperature, and reducing sample exposure to air. Generally, a quality sample should minimize any dirt or blood added to the media. Humic acids present in soil and iron in blood are known inhibitors to DNA amplification. To promote *T. foetus* growth in media, samples should be kept warm upon transit to the laboratory. This can be done using thermal pads such as hand warmers and temperature indicator strips to ensure sample integrity, especially in

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Brucellosis

ELK SURVEILLANCE PROJECT: Montana Fish Wildlife and Parks (FWP) released the annual report on the live elk brucellosis surveillance project. This project began in the winter of 2011 to evaluate the prevalence and extent of brucellosis exposure in elk near Montana's DSA boundary and to document elk movement patterns. Since 2011, elk in eleven study areas have been sampled. This information has been used by DOL to determine the extent of potential livestock exposure to brucellosis and to effectively determine the location of the DSA boundary.

In January and February of 2016, FWP recaptured the 27 positive radio-collared elk that still remained on the landscape as part of this study. These animals were tested for continued brucellosis exposure (titers), and pregnancy status. Pregnant animals (n=12) were fitted with vaginal implant transmitters for continued monitoring through the spring.

Three of the recaptured elk were cows initially captured in the Blacktail area in 2011. These elk were euthanized and delivered to the Montana Diagnostic Laboratory for post mortem examination. The annual report is not yet on the FWP web site, but please contact Dr. Eric Liska at eliska@mt.gov for a copy.

FISCAL YEAR 2016 DSA COMPLIANCE EVALUATION: Our annual internal audit examines compliance with DSA regulations. This assessment is nearly complete, and overall compliance is high. In FY16 over 90% of herds within the DSA were in compliance which is consistent with previous years' findings. The evaluation included 337 active producers with cattle in the DSA and approximately 78,500 cattle. 78% of those cattle are from herds that tested ≥15% of the total herd size with an additional 13% from herds that were confirmed in compliance with testing requirements for movement and sale but with lower herd replacement rates (and therefore, sold fewer test eligible animals). The evaluation also includes DSA adult vaccination (AV) statistics. Over 6,000 adult vaccinations were administered in FY16. This accounts for an AV rate which remains well below the goal of 30%. ¤

By Eric Liska and Emily Kaleczyc

Documentation Do's & Don'ts

Now that fall is here, many of you are seeing increased regulatory work including brucellosis testing, vaccination, and cattle exports. For those of you who are using paper forms for this purpose, we see several common errors and provide examples below.

Electronic options are available (many of them at no charge) that minimize or eliminate these common errors and we are happy to assist any veterinarians that want to make the switch.

INCOMPLETE PHYSICAL ADDRESSES: Please always include physical addresses (E911) when issuing ICVIs or vaccination/test charts. This may include all of the following for ICVIs: owner, consignor, origin, consignee, and destination. Mailing addresses, such as PO Boxes, can be included as supplemental addresses.

WRONG BRUCELLOSIS VACCINATION TATTOO AND CERTIFICATES: We continue to receive brucellosis vaccination certificates with the last digit of the tattoo being incorrect. While occasional errors occur early in the calendar year (when the last digit of the tattoo pliers is not changed out), some veterinarians deliberately choose to tattoo with the animal's birth year rather than the calendar year when vaccination is performed. While brucellosis vaccination tattoo can be helpful to determine the age of an animal, this is not the specific purpose (please stop this practice).

The Brucellosis Eradication Uniform Methods and Rules states:

"…the tattoo will include the U.S.Registered Shield and "V," which will be preceded by a letter R and followed by a number corresponding to the last digit of the year in which the vaccination was done."

ACCURATE COMPLETION OF FORMS AND CERTIFICATES: Forms and certificates that are either illegible or incomplete continues to be the most frequent issue identified. In addition to the missing physical addresses (mentioned previously), commonly omitted or illegible information includes DVM signature; date issued; RB51 vaccine serial number and expiration date; indicating calfhood vaccination (CV) vs adult vaccination (AV); and MT Veterinary Medical license number or National Accreditation Number (NAN) (in "Agreement Code" box on Brucellosis Vaccination Certificates). Including one of these numbers is especially important when signatures are either missing or illegible! Reference regulation:

"9 CFR 161.4 Standards for accredited veterinarian duties. b) An accredited veterinarian shall not issue, or allow to be used, any certificate, form, record or report, until, and unless, it has been accurately and fully completed, clearly identifying the animals to which it applies, and showing the dates and results of any inspection, test, vaccination, or treatment the accredited veterinarian has conducted…"

TIMELY SUBMISSION OF CERTIFICATES: Other states depend on being notified of animal movement into their states in a timely manner. Please submit forms and/or certificates (e.g. brucellosis vaccination certificates, TB test charts, and ICVIs) to DOL, APHIS, and state of destination when applicable within 7 days of issuance.

We truly appreciate all the efforts by MT accredited DVMs in providing superior animal care and performing first-class official duties. Fortunately, the "common issues" identified above are the exception, rather than the rule.

The more accurate information that you provide, the better APHIS and MDOL can support you and respond to animal health event/crisis. ¤

By Tom Linfield, Assistant Director, USDA-APHIS-VS, and Tahnee Szymanski

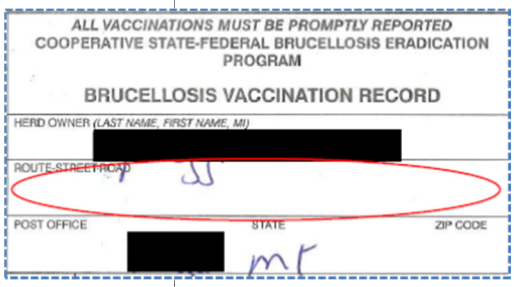

ALL VACCINATIONS MUST BE PROMPTLY REPORTED
COOPERATIVE STATE-FEDERAL BRUCELLOSIS ERADICATION PROGRAM
BRUCELLOSIS VACCINATION RECORD
HERD OWNER (LAST NAME, FIRST NAME, MI) [redacted]
ROUTE, STREET, ROAD
POST OFFICE | STATE | ZIP CODE [redacted] MT

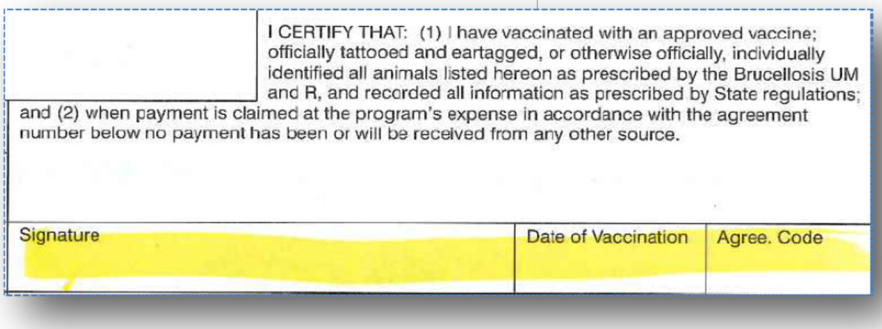
FIGURE 3: Example of brucellosis vaccination chart with no physical address.


VACCINE MFG AND STRAIN: RB-51 | VACCINE EXPIRATION DATE: 11-2-18
SERIAL NUMBER: 2971 | DOSAGE: ☒ FULL ☐ REDUCED | VACCINATION TATTOO: RV5
CERTIFICATION FOR PAYMENT: ☐ FEDERAL EMPLOYEE ☐ FEE BASIS (Federal) ☐ STATE COUNTY ☒ PRIVATE (Owner's Expense)
I CERTIFY THAT: (1) I have vaccinated with an approved vaccine; officially tattooed and eartagged, or otherwise officially, individually identified all animals listed hereon as prescribed by the Brucellosis UM and R, and recorded all information as prescribed by State regulations; [illegible] at the program's expense in accordance with the agreement [illegible] has been or will be received from any other source.
[redacted] | Date of Vaccination: 7/21/16 | Agree. Code [redacted]

FIGURE 4: Example of brucellosis vaccination form with wrong tattoo year.

Higher quality images are available in the PDF version of this newsletter at www.liv.gov.

FIGURE 5: Example of brucellosis vaccination chart with no signature


I CERTIFY THAT: (1) I have vaccinated with an approved vaccine; officially tattooed and eartagged, or otherwise officially, individually identified all animals listed hereon as prescribed by the Brucellosis UM and R, and recorded all information as prescribed by State regulations; and (2) when payment is claimed at the program's expense in accordance with the agreement number below no payment has been or will be received from any other source.
Signature | Date of Vaccination | Agree. Code

Laboratory Trich Testing Quality Control *(cont'd)*

(Continued from page 4)

the colder months. The laboratory incubates samples at 37°C to allow adequate growth over 12-24 hours, but growth is inhibited if the *T. foetus* samples are cold upon arrival. This incubation is critical to allow appropriate detection of low infection rate livestock. If the sample is kept warm, *T. foetus* is able to replicate quickly, doubling its concentration in as little as 2-3 hours. An anaerobic environment is also important to optimize the doubling time, as high oxygen levels are inhibitory to the obligate parasite.

Veterinarians are encouraged to practice good sampling technique: minimizing air in TF InPouchTM or tubes, dirt or blood collected with the sample, and transporting with warmers. These techniques allow the MVDL to retain a high standard of sensitivity, particularly for detecting low level infection.

This is essential if samples are sent to be pooled because the pooling technique inherently dilutes the sample by 80%. Please remember that pooling is completed at the laboratory. Samples are incubated individually to allow maximum growth prior to pooling and thus reduce the impact of the dilution by combining the 5 samples prior to the molecular test. Individual sampling is also vital if a pool returns a positive result, as the samples are rerun individually in order to determine the positive animal(s). ¤

By Rachel Vankempen-Fryling
Montana Veterinary Diagnostic Laboratory

Animal Health Contact Information:

Marty Zaluski, DVM
State Veterinarian, Administrator
(406) 444-2043
mzaluski@mt.gov

Tahnee Szymanski, DVM
Assistant State Veterinarian
(406) 444-5214
tszymanski@mt.gov

Eric Liska, DVM
Brucellosis Program Veterinarian
(406) 444-3374
eliska@mt.gov

Evaleen Starkel
Alternative Livestock
(406) 444-9525
estarkel@mt.gov

Import Permit Office
(406) 444-2976

We're on the Web:
www.liv.mt.gov

Montana Department of Livestock
Animal Health Division
P.O. Box 202001
Helena, MT, 59620-2001
Return Service Requested
Phone: 406-444-2043
Import line: 406-444-2976
Fax: 406-444-1929