



StockQuotes: Animal Health Newsletter

<http://liv.mt.gov/ah/newsletter>

June 2016

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

Volume 9, Issue 2

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State Veterinarian Notes

Rabies prevention and case management can be complicated. While recent changes in the Rabies Compendium are welcome, there is a need for additional clarity in animal health as well as exposed person rabies management. For example, a Department of Livestock (DOL) employee was recently administered immunoglobulin (instead of a vaccine booster) after an accidental exposure even though they were vaccinated. The One Health insert in this newsletter issue covers many animal and public health aspects of this disease.

In May, we received notice of two trichomoniasis positive herds after nearly two and half years with no confirmed cases. Both herds are located in eastern Montana, and while their operations dramatically differ, they both engaged in management practices that allowed the introduction of trichomoniasis. Please see the trichomoniasis column on page 4.

We occasionally get inquiries about the prevalence of various diseases in the state. Most recently, we answered questions regarding heartworm in southeastern Montana (a few sporadic reports from the Big Horn area), and leptospirosis. This newsletter issue includes an extended discussion of leptospirosis testing of Montana samples and provides insight into interpretation. You may be interested to know that DOL shares (without identifying information) confirmations of reportable diseases with the National Animal Health Reporting System. You can review this list and the incidence of nationally reportable diseases on that website.

With no recent brucellosis outbreaks, we are continuing efforts to check compliance and monitor elk movement around the Designated Surveillance Area (DSA) boundary. Please contact me to receive project summaries compiled by the Department of Fish Wildlife & Parks (FWP). We're also trying to increase rates of adult vaccination in cattle that are at risk of brucellosis exposure, however, the vaccine is not without human health risk, so please review the information

in this issue's brucellosis column. Lastly on brucellosis, we've taken the unusual step of asking for a test for cattle and domestic bison imported into Montana from Big Horn County, Wyoming. More on these issues in the brucellosis column on page 2.

We've had some staffing changes in recent months. Many of you have worked on import permits with Barb Ferguson who retired in March. That vacancy has been filled by Keelin Gilkey who comes to us after working at a medical facility in Helena. Sara Starkey also recently joined the department after working for several years as a technician at a Helena veterinary hospital. See the staffing column on both Keelin and Sara who are already making a tangible contribution to the Animal Health Division.

I'll close with a couple of notes on a topic we've heard some frustrations about; re-entry requirements and international exports.

Your clients that travel out of state to trail rides, exhibitions, rodeos and other short duration events should be pleased to hear that we are lifting a long-standing requirement that Montana-resident animals leaving the state must meet import requirements (including vaccination, and testing) prior to departure from Montana.

Also, Dr. Linfield provides information in the USDA column on a new-ish international electronic health certification option that recently eliminated the need for sending paper documents between the private veterinarian and the USDA office. Read more on these developments on page 5. ✕ mz

CALENDAR OF EVENTS:

Deputy Veterinarian Training:
Jun 30, Helena
Sep 22, Helena

MVMA Summer Meeting:
Jun 26-28, Great Falls

Montana Stockgrowers Association
Dec 7-9, Billings

WHAT'S NEW:

1. Changes to re-import policy (p5).
2. Trichomoniasis affected herds (p4).
3. Electronic certifications for international exports (p5).

Brucellosis

ADULT VACCINATION: A single calthood dose of RB-51 brucellosis vaccine is reasonably effective at preventing abortion but does little to prevent infection in an exposed animal. However adult vaccination, which functions as an RB51 booster, has shown promise in preventing infection.

Improved immunity to brucellosis can be critical in minimizing the impact of the disease on an operation. If *B. abortus* is not cultured from an exposed (serologically positive) animal, then the herd may avoid designation as an affected herd. Therefore, we are urging Designated Surveillance Area (DSA) veterinarians and producers to consider an adult vaccination (AV) program. Currently, DOL reimburses veterinarians \$4.00/head to minimize financial impact to producers.

While the evidence suggests benefits to AV, the procedure is not without risk. RB51 is a live culture vaccine that sets up an active infection in the target animal. Vaccination of pregnant animals can cause abortions and should generally be avoided due to potential human health concerns from exposure to strain RB51.

A recent example of human exposure followed the OCV of a pregnant Jersey calf. The animal was only 18 months old at calving, had severe placentitis with dystocia, and the calf was weak and subsequently died. A veterinarian, who was 7 months pregnant at the time, delivered the calf with assistance from the veterinary technician and the owner.

Following the delivery of the calf, the veterinarian observed severe placentitis and submitted the placenta and serum from the dam

to the Montana Veterinary Diagnostic Laboratory (MVDL). Examination of the tissues by a DOL pathologist, suggested *Brucella* as the likely cause. Tissues were sent to the National Veterinary Services Laboratory (NVSL) in Ames, Iowa for culture, and RB51 was subsequently confirmed. As ex-

pected, serology was negative with the vaccine strain.

Due to the likely exposure of the veterinarian to *Brucella*, the Centers for Disease Control was consulted. Because human exposure to strain RB51 cannot be confirmed with serology and exposure was likely, all three individuals received a course of antibiotics. The veterinary technician and the owner were placed on a course of doxycycline. The veterinarian decided on a course of sulfa based antibiotics versus doxycycline due to the potential fetal side effects. Treatment for exposure to *B. abortus* in humans is highly effective when started early.

AV is not the only vaccination procedure with potential public health impacts. Keep human exposure in mind anytime the vaccine is administered, and when responding to dystocia calls.

BRUCELLOSIS TESTING ON IMPORTS FROM WYOMING'S BIG HORN COUNTY: Brucellosis has been documented in wild elk in Big Horn County, Wyoming since 2012. These elk are in an area outside of Wyoming's DSA. Should an animal become infected in this area of Wyoming, it may move untested across state boundaries, putting Montana livestock at risk, and dramatically complicate epidemiological investigations that attempt to identify the true source of exposure.

Therefore, DOL has asked for additional brucellosis testing from Wyoming. Starting June 15, the same brucellosis testing requirements that apply to Montana's DSA also apply to cattle and domestic bison imported into Montana from Big Horn County, Wyoming. Sexually intact males and females 12 months of age and older must be tested prior to import; if intended for breeding, these animals must be tested regardless of age. All sexually intact males and females must also be officially individually identified. More information on these requirements is listed on our web site.

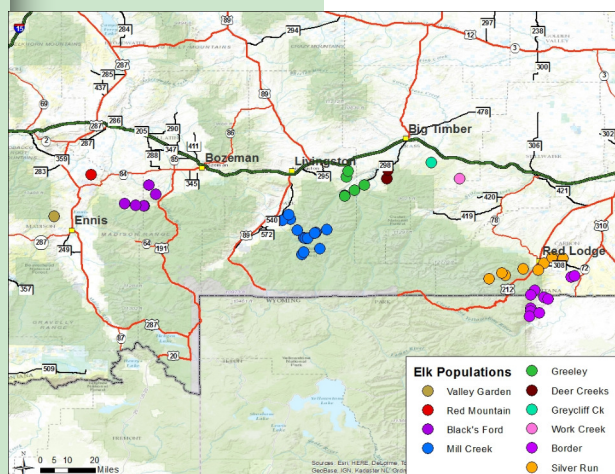
DOL mailed letters to individuals who have imported cattle from Big Horn County, Wyoming into Montana in the last 12 months to inform them of these requirements. ☒

By Eric Liska

FIGURE 1. Elk populations that are being tracked as part of the Targeted Elk Brucellosis Surveillance Project.

See the StockQuotes on our website for a color map (<http://liv.mt.gov/ah/newsletter/default.mcpix>).

Source: Montana Department of Fish, Wildlife & Parks.



Leptospirosis

There are over 250 known pathogenic serovars of *Leptospira* world-wide. Serovars most commonly associated with infection in the U.S. are *Canicola*, *Grippityphosa*, *Hardjo*, *Icterohaemorrhagiae*, *Pomona*, and *Bratislava*. Each serovar is associated with a maintenance host that to some extent determines the geographic distribution of infection. Infected animals shed the bacteria in their urine, and other animals or people can be exposed through contact with urine or infected water and soil.

Serology for leptospirosis is unable to distinguish between antibodies from a vaccine response and antibodies formed in response to a natural infection. In general, vaccine antibody titers seem to be short lived (often less than 3 months) and are lower than those seen with natural infection. A particularly interesting problem with leptospirosis serology is that the serovar with the highest titer is not necessarily the serovar causing the infection. In a study of serology following leptospirosis vaccination in dogs, multiple dogs developed the highest titers against serovars that were not included in the vaccine (Miller et al, J Vet Intern Med, 2011). The study also found that the serovar with the highest titer varied over time. So, while individual serology is not a reliable way to identify the infecting serovar, a 4-fold increase in titers over a 2-4 week period is considered diagnostic for leptospirosis infection. Other techniques for diagnosing leptospirosis include dark field microscopy on urine samples, PCR, and culture.

Studies from Kansas and Nebraska (Raghavan et al, Preventive Veterinary Medicine, 2011 & 2012) have demonstrated there are some environmental risks consistently associated with a diagnosis of leptospirosis in dogs. Leptospirosis is most commonly diagnosed in the fall and is more common in dogs from suburban and urban areas. Leptospirosis is also more common in dogs that live in low income neighborhoods or live near wooded public parks and university campuses. Flooding is also a risk factor for leptospirosis as contaminated water spreads and increases the risk of exposure to the bacteria.

Overall canine leptospirosis in Montana appears uncommon. The results of testing from several laboratories are presented in the table (right). Keep in mind that most of these repre-

sent a single titer and are not necessarily confirmed positive cases. Additionally, the reported serovars may not correspond to the infecting serovar. In addition to the serology presented below, Idexx did report two PCR positive cases during the same time.

The Montana Veterinary Diagnostic Laboratory (MVDL) runs leptospirosis serology on a number of species besides dogs. The vast majority of tests are for cattle. Other species that have been found with positive titers include antelope, bighorn sheep, bison, deer, elk, horses, fox, moose, grizzly bears, and wolves.

Cattle are maintenance hosts for serovars *Hardjo* and *Pomona*. In cattle, leptospirosis most often causes reproductive losses and decreased fertility in females. Studies of prevalence in cattle vary widely based on study design and geographic region, but infection appears to be more common in humid, temperate climates.

There are commercially available leptospirosis vaccines. The American Animal Hospital Association lists leptospirosis as a non-core vaccine and recommends vaccination for at risk dogs with a 4 serovar vaccine on an annual basis. Studies of cattle vaccines show that the vaccination of calves with 2 doses of vaccine can reduce colonization and urine shedding of bacteria (Zimmerman et al, JAVMA, 2013).

Although not common in Montana it is important to consider leptospirosis as a differential diagnosis in dogs and cattle. Paired titers are the best way to confirm a diagnosis of leptospirosis in dogs. Vaccination is not completely protective and requires annual re-vaccination. Also note that leptospirosis is a zoonotic disease, so infected animals pose a public health risk to owners, veterinary staff, and other contacts. ☘

By Emily Kaleczyc

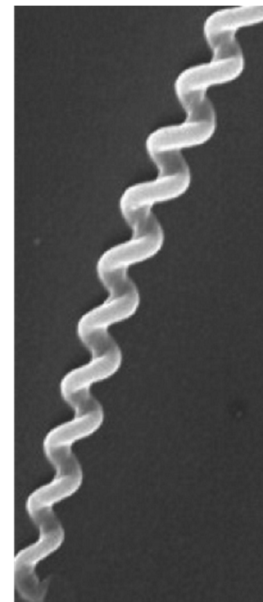


FIGURE 2: Classic spiral configuration of *Leptospira*.

source: <https://research.pasteur.fr/en/team/biology-of-spirochetes/>

TABLE 1: Laboratory submissions for leptospirosis to Montana Veterinary Diagnostic Laboratory, Antech, and Idexx.

Laboratory	Date Range	Animals with Positive Titer	Total Tests Run	Most Common Serovar
Idexx	Mar 2013 – Mar 2016	16	Not provided	Not provided
Antech	Jan 2015 – Apr 2016	7	17	Grippityphosa, Icterohaemorrhagiae, Pomona
MVDL (canine results)	2013-2015	4	15	Bratislava

Trichomoniasis

After an extended period with no new positive herds in Montana, DOL recently received confirmation of two newly affected trichomoniasis herds. These herds are the first in Montana since December of 2013. Both herds have been placed under quarantine and epidemiological investigations are underway.

The first herd is a traditional cow/calf operation located in Yellowstone County. The bulls were tested prior to being leased out for the breeding season and found to be positive in May. This herd previously grazed in an area of Big Horn County historically associated with positive herds. The epidemiologic investigation suggests that trichomoniasis has been circulating in this herd since that time, but the use of artificial insemination has mitigated the impact of the disease.

The herd consists of a traditional spring-calving group and a smaller fall-calving herd. Open cows from a single year with poor conception (likely the year of trichomoniasis exposure) were combined into the fall-calving group. Through the use of artificial insemination in the spring-calving cows, breed-up percentages were maintained high enough to avoid inquiry as to the cause of decreased conception. The fall calving group held significantly fewer cows so for any given year, only a subset of bulls owned were needed to provide adequate coverage, mitigating the rate of disease spread in the herd.

Fortunately, this herd is relatively isolated. Only one adjacent herd has been identified to date, with no concern for potential exposure and subsequent disease transmission. Additionally, it appears that all open cattle sold out of the herd have gone to slaughter channels only.

The second herd is a large rebreed operation located in Custer County. This facility purchases open cows in the spring and moves them to pasture for grazing and breeding during the summer. In the fall, bred cows are sorted off and open cows go back into the facility where they are bull bred in dry lots over the winter. DOL has been working extensively on animal movements into and out of the premises to identify and notify any herds that may have been exposed or that may have served as the source of the infection.

The risk of trichomoniasis can be greatly re-

duced by following some basic best management practices, including:

- Work with a veterinarian to develop a reproductive herd health plan.
- Have a defined breeding period.
- Keep fences in good repair to prevent accidental contact with potentially infected cattle.
- Purchased replacement heifers should either be pregnant or less than six months of age.
- Do not retain open females that failed to breed.
- Replacement bulls should be known virgins, or have a negative test before they enter a herd.
- Test non-virgin bulls annually.
- Pregnancy check to identify problems early.

These best management practices were not followed in the affected herds. However, both herds are proactively making management changes to eliminate the disease and reduce the risk of future introductions.

DOL is working to minimize the impact of this disease on these herds and others in Montana, while also providing a gentle reminder of the importance of maintaining good production practices. Most producers are aware of the risk from non-virgin bulls and of regulations requiring testing of non-virgin bulls from select parts of Montana with increased risk. With no regulations on open cows for sale or import into Montana, education becomes the most valuable tool we can provide producers to mitigate this risk.

Big Horn, Glacier, Pondera, and Yellowstone Counties still have enhanced surveillance requirements for movement and change of ownership of non-virgin bulls. These most recent cases demonstrate that continued surveillance in areas of increased risk is warranted. MDOL will be using brand inspection data in the coming months to provide outreach to individuals regarding testing requirements.

For a summary of trichomoniasis regulations in Montana, please visit our website. ☘

By Tahnee Szymanski



FIGURE 3: *InPouch TF media often used for inoculation of trichomoniasis samples.*

Re-Import Permits

Animals imported into Montana must meet certain requirements prior to entry into the state. These requirements typically include a certificate of veterinary inspection (CVI), a permit to import, and possibly testing or vaccination. These import requirements also apply to Montana-origin animals traveling to an out-of-state trail ride, show, or rodeo and returning to Montana.

RE-ENTRY REQUIREMENTS FOR ALL ANIMALS: Montana origin animals traveling to an out-of-state trail ride, show, or rodeo and returning to the state have typically been required to meet all of Montana's import requirements (including tuberculosis or brucellosis testing) prior to the trip. However, we recognize that these testing requirements provide no risk mitigation to the import of disease into Montana. Specifically, testing prior to departure does not address the risk of disease from commingling with other animals at the destination event. Therefore, as of July 1, DOL will no longer require animals to meet disease specific import requirements in order to obtain a MT re-entry permit.

When you or your client call for a re-entry permit, DOL will only collect movement and traceability data in case of a disease outbreak. Should DOL become aware of an animal health issue at a show or event, we can use this information to provide outreach to owners of exposed animals from Montana. Please note however, this does not provide an exemption to any testing/vaccination/identification requirements associated with Montana's DSA for brucellosis.

RE-ENTRY PERMITS FOR EQUINES: Re-entry permits are required for all temporary exports out of Montana. These permits can be obtained by the veterinarian or the person responsible for the movement of animals. Recently, we removed the requirement for a permit for horses moving on an approved electronic CVI due to the rapid reporting of animal movement data to our office when electronic health documentation methods are used. Approved electronic formats include PDF eCVI, mCVI app for iOS and Android mobile devices, VSPS, and GlobalVetLink. For more information on electronic health certificates, please contact our office. ☒

By Tahnee Szymanski

International Electronic Certification

VETERINARY EXPORT HEALTH CERTIFICATION SYSTEM (VEHCS): Cattle can now be exported to Canada using a fully digital system that eliminates the use of paper forms and the associated delays in mailing health certificates between the private veterinarian and the federal office. The process includes electronic submission of the certificate of veterinary inspection (CVI) to the USDA endorsing office, and electronic review and endorsement by the federal official.

Upon completion, the issuing accredited veterinarian can simply download the digitally endorsed certificate and print a copy to accompany the shipment. Upon arrival at the border port, the Canadian Food Inspection Agency (CFIA) officials can verify the authenticity of the presented certificate by searching and viewing the endorsed certificate on the VEHCS website. This new "all digital" approach will provide for a more efficient and timely means for CVI creation, review, and endorsement – no more "waiting for the mail"!

Currently, this "all electronic" process is available for cattle entering Canada through the following U.S. / Canadian ports only:

- Sweetgrass, MT / Coutts, AB
- Eastport, ID / Kingsgate, BC
- Sumas, WA / Abbotsford-Huntington, BC
- Oroville, WA / Osoyoos, BC

Future expansion of this completely electronic process is anticipated for additional commodities and ports. Stay tuned – we will keep you updated as advancements occur!

For other commodities, VEHCS still provides advantages to exclusively paper based systems. VEHCS provides core functionality to automate the creation, endorsement, payment and printing of USDA Veterinary Export Health Certificates based on the Model Veterinary Certificates for International Trade in Live Animals, Hatching Eggs, and Products of Animal Origin. The system facilitates the work flow of the certificates from creation to printing and enables users, based on user role and organization, access to the certificate as it progresses to a final completed status. ☒

By Tom F.T. Linfield
Assistant Director // MT Field Office
USDA-APHIS-Veterinary Services



Staff Corner



Sara joined the DOL Animal Health team as an Animal Health Compliance Technician with an associate degree in Equine Health and Business Management. Previously she worked as a veterinary technician at Valley Veterinary Hospital. She will be

overseeing the seasonal grazers program along with quarantines in the Animal Health Division. Sara loves to spend her free time with her husband on their small and ever growing ranch up Birdseye. ☘

Keelin joined the DOL Animal Health team as a License Permit Tech. Previously she worked for Shodair Children's Hospital as a Medical Records Clerk. She will be heading up the 6 Month Passport program along with B-Ovis and maintaining the filing of the records. Keelin loves to spend her spare time with her family and horses and competes in roping and barrel racing events year round. ☘



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



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

**Montana Department
of Livestock**