



Stock Quotes: Animal Health Newsletter

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Quarterly Newsletter from the Animal Health Bureau of the Montana Department of Livestock (MDOL)

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WHAT'S NEW

- Top Ten Issues with Submissions to MVDL, p. 3
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State Veterinarian Notes

While I have written for this audience numerous times before and while there is a "business as usual" sense to taking on the responsibilities of the state veterinarian, this first column for your consumption still feels different.

I am greatly appreciative to my years working alongside Dr. Zaluski in my role as the Assistant State Veterinarian. There will undoubtedly be similarities, but I also look forward to leaving my own mark on this office by continuing to build on past successes and all of the lessons learned when things didn't go fully as expected.

In the short term:

- A verbal offer has been made and accepted for the Assistant State Veterinarian position.
- Contingency planning is in place for a potential federal government shutdown (p. 3) to ensure that scheduled disease testing and regulatory work continues without interruption.
- Coordination between the animal health office and the Montana Veterinary Diagnostic Laboratory (MVDL) in Bozeman is underway to maximize the large volume of test data generated by accredited veterinarians during surveillance, diagnostic, and regulatory testing. This coordination will include a concerted effort to increase electronic submissions to the lab (p. 3). Expect additional communication in the coming months.
- Shortage area designations for the Veterinary Loan Repayment Program are due November 13, 2023. If you would like your county or practice area to be considered as a shortage area, please contact our office at 406-444-2976.
- Construction of the new MVDL in Bozeman is slated to begin in the coming weeks. Final funding of the lab is set, the contract has been awarded, and application for permits to start construction have been filed. This milestone is a large victory for all of Montana. A large thank you to the veteri-

nary community of Montana for the support that helped us arrive here.

On the further horizon are emergency preparedness, consideration of novel approaches to the management of brucellosis in the Greater Yellowstone Area (GYA), and continuing to push regulations and disease control programs to reflect current available scientific knowledge.

Department of Livestock (DOL) has made substantial strides in emergency response capabilities over the last seven years, but there is still much to accomplish. Communication from DOL to stakeholders during disease incidents is an area for continued growth as is peace-time planning in the form of Secure Food Supply Plans and the Swine Health Improvement Plan (SHIP), now in it's third year.

The issue of brucellosis in the GYA and it's impact on Montana's industry is well known and complex. Absent effective management tools in wildlife, we are left with the options of managing the distribution of infected wildlife on the landscape (a difficult task at best), limiting contact between wildlife and livestock, and ensuring adequate surveillance of potentially exposed livestock. The success of our Designated Surveillance Area is a testament to the latter. My goal is to continue conversations on how we can influence and impact the first two options. More to come always on the brucellosis front.

On the lighter side of potential changes, is a plea to veterinarians to consider tossing your black sharpies. In a recent conversation with serology staff at MVDL, it was noted that black marker set against the background of blood submissions is very hard to read. Blue or metallic (permanent) markers are much easier to read on serum specimens.

The constant and the part I am so appreciative to be a part of, is a team committed to the industry that very much practices an open-door/phoneline/email inbox approach to serving Montana's livestock industry. Please reach out with questions or feedback! ☘

By Tahnee Szymanski, DVM

Johne's Management Program

The Montana Johne's Herd Management Program was introduced in 2019 and has several participants. The purpose of the management program is to:

- Minimize the spread of Johne's disease through animal sales and movement.
- Identify positive animals and herds in order to implement management practices to eliminate the disease.
- Support non-infected herd owners by identifying biosecurity practices to prevent the introduction of the disease into their herd.
- Create a market opportunity for participating herds to advertise their involvement in the program.

Johne's is a reportable disease; however, Department of Livestock (DOL) does not routinely quarantine premises or have resources to regulate the disease in ways as expected with other reportable diseases. As a veterinarian in Montana, you have a duty to report positive results to DOL, including results from testing done at laboratories outside of Montana Veterinary Diagnostic Laboratory

(MVDL). DOL also asks that negative results from laboratories other than MVDL are reported. This ensures more accurate data for incidence of the disease in Montana and provides valuable information for the Johne's Management program. In instances where a positive is found, DOL will provide support and guidance as needed. The biggest question we will ask is "What are you doing to minimize risk?".

The overall goal of DOL is to see more Montana cattle tested for Johne's. This will allow for the identification and removal of infected animals and reduce the spread of Johne's disease throughout the state. It is important for all producers to understand that a positive, managed herd is lower risk than a herd with an unknown or non-advertised status.

DOL is considering an update to the program, which would include a higher assurance category for herds that have maintained Level 4 High Assurance for greater than five years.

Please contact DOL for information on how to develop a management plan. ☒

By Merry Michalski, DVM

Johne's Herd Management Plan Classification Levels	
0: <u>Unmanaged Risk</u>	<ul style="list-style-type: none"> • No actions taken towards management of Johne's risk or spread • No herd management plan in place
1: <u>Evaluated Risk</u>	<ul style="list-style-type: none"> • Herd Management plan completed • Clinical +/- test positive cases removed or separated from high-risk group cattle • +/- testing on high-risk group cattle <ul style="list-style-type: none"> ◊ Animals showing clinical signs ◊ Offspring of positive dams
2: <u>Managed Risk</u>	<ul style="list-style-type: none"> • Completed all requirements of Level 1 including: <ul style="list-style-type: none"> ◊ Herd Management Plan ◊ Annual whole herd testing completed on all cattle >2 years of age • Clinical and positive test cases removed
3: <u>Assurance</u>	<ul style="list-style-type: none"> • Completed all requirements of Level 2 including: <ul style="list-style-type: none"> ◊ Herd Management Plan ◊ Annual whole herd testing on all cattle >2 years of age ◊ Clinical and positive cases removed • Two years since clinical or positive test case
4: <u>High Assurance</u>	<ul style="list-style-type: none"> • Completed all requirements of Level 3 including: <ul style="list-style-type: none"> ◊ Herd Management Plan ◊ Annual whole herd testing on all cattle >2 years of age ◊ Clinical and positive cases removed • Five years since clinical or positive test case

Figure 1. Johne's Herd Management Plan Classification Levels. Source: AHB Staff.

Top Ten Issues with Submissions to MVDL

The Montana Veterinary Diagnostic Laboratory (MVDL) often sees the following issues with submissions to the lab.

- 1) **OUTDATED SUBMISSION FORM USED:** The most current laboratory forms and information are at <https://liv.mt.gov/Diagnostic-Lab/index>.
- 2) **INCOMPLETE SUBMITTER OR OWNER INFORMATION:** Submitter name, clinic, address, and owner name is required (account & phone number is also encouraged).
- 3) **INCOMPLETE ANIMAL IDENTIFICATION ON SUBMISSION:** For regulatory tests, official animal identification (ID) (840 RFID, UDSA bangs, or USDA silver metal clips) and animal location (address or premises ID, and county) is required. Official animal ID will be on the client's multiple animal report if provided electronically to the laboratory (everyone wins!).
- 4) **NO COLLECTION DATE:** For applicable regulatory tests, the collection date is required.
- 5) **ILLEGIBLE SUBMISSION FORM:** Deciphering handwriting can be challenging (older forms with only a signature field are especially challenging - see numbers one, two and three above).
- 6) **QUANTITY OR ID OF SPECIMENS ON SUBMISSION FORM DOES NOT MATCH SPECIMENS SUBMITTED:** Duplicate animal ID, mis-labeled specimen containers, and missing specimens impact quality and turnaround time.
- 7) **INSUFFICIENT QUANTITY, QUALITY, OR TYPE OF SPECIMEN:** The most current *MVDL Submission Guide & Fee Schedule* is also available at <https://liv.mt.gov/Diagnostic-Lab/index>
- 8) **NO HISTORY ON THE SUBMISSION FORM :** High quality submitter information generally helps MVDL provide higher quality results.
- 9) **NO TEST REQUEST ON THE SUBMISSION FORM:** MVDL frequently receives submission forms with no test orders.
- 10) **SUBMISSIONS MAILED TO THE DEFUNCT LABORATORY POST OFFICE (PO) BOX:** United States Postal Service (USPS) will no longer deliver to PO Box 997; submissions sent to this PO Box have been severely delayed or lost.
- 11) **WAIT, WE SAID 10!** If in doubt , please call MVDL at 406-994-4885 for help with submissions. If in doubt about regulatory program requirements related to submission, please call Animal Health Bureau at 406-444-2976. ☒

By Tess Moore, MVDL Quality Control

Preparing for a Federal Government Shut Down

In recent years, we have witnessed the unfortunate reality of federal government shutdowns. While we hope for the best, it is crucial to be prepared for the worst. In the event of a federal government shutdown, Montana's livestock industry and Montana veterinarians may face challenges due to the unavailability of United States Department of Agriculture Animal and Plant Health Inspection Services (USDA APHIS) employees. To ensure the continued health and well-being of Montana's livestock, Department of Livestock (DOL) will have contingency plans in place.

During a federal government shutdown, various federal agencies, including USDA APHIS, may be impacted. USDA APHIS plays a vital role in ensuring the health of our nation's livestock and animals, including disease monitoring and regulatory oversight.

COMMUNICATION AND COORDINATION: Establish clear lines of communication with local veterinarians, livestock producers, and other stakeholders. DOL will create a central contact point for inquiries and assistance on our 24/7 phone line 406-444-2976.

INVENTORY AND SUPPLIES: Ensure an adequate supply of tuberculin, federal truck seals, official identification tags, and federal forms for Montana veterinarians as needs arise. Please contact DOL to coordinate shipment of these supplies on our 24/7 phone line 406-444-2976.

EMERGENCY RESPONSE TEAMS: Formulate emergency response teams comprising experienced DOL veterinarians, Animal Health Bureau (AHB) and Brands Enforcement employees who can step in if federal USDA APHIS personnel become unavailable.

MONTANA FEDERAL PORT CROSSINGS: Federal ports at Sweetgrass and Raymond, Montana as well as USDA Veterinary Export and Trades Services for endorsements will be staffed and exempt from a federal shutdown.

By implementing these contingency measures, we can mitigate the potential risks associated with the unavailability of USDA APHIS employees and ensure that Montana's livestock industry remains resilient in the face of adversity. Together, we can ensure that Montana's livestock continue to thrive even in challenging circumstances. ☒

By Britta Sekora, Import Office Manager

Common Viral Diagnostics for Neurologic Equine

It's been a rainy summer in Montana, and consequently an active mosquito season. Not unexpectedly, Montana Veterinary Diagnostic Laboratory (MVDL) has seen an increase in submitted specimens from neurologic equines for testing of mosquito-borne diseases such as West Nile virus (WNV). Common questions MVDL receives include: what should I test for (if equine encephalitis are differentials), what samples should I collect, and how do I interpret my test results? Answers can depend on factors including whether the horse is still alive and when the horse was last vaccinated.

As we say in veterinary medicine, "common things happen commonly," and "if you hear hoofbeats, don't always think zebras." Common causes of infectious equine neurologic disease should be ruled out, with priority given to diseases present regionally and with consideration to season (especially in the summer when mosquito populations are active and horses are moving). Of course, there are other causes of equine neurologic disease such as bacterial, protozoal, toxic, idiopathic, etc., but here we focus on common viral etiologies and testing.

For the antemortem, acutely neurologic equine, we advise first ruling out WNV and equine herpesvirus (EHV). Conveniently, we can quickly screen for these diseases using serology; WNV via an IgM capture ELISA, and EHV via serum neutralization (SN). A WNV IgM positive is a good indication of acute infection, as IgM can be present as early as one week post-infection and persist for around one month. Some previously WNV-vaccinated horses will not mount a sufficient IgM response post-infection, and follow up titers using the plaque reduction neutralization test (PRNT) may be recommended if there is still a high suspicion for WNV.

For EHV, positive SN titers of <1:256 can indicate early infection, vaccination, or previous exposure – usually the greater the titer, the greater the concern for active infection. It is important to note that the SN and PRNT cannot distinguish between vaccination and infection with a single sample, so convalescent serum taken ~14 days following the initial sample is helpful for interpretation. Typically, a 4-fold rise in antibody titers from initial to convalescent sample is indicative of active infection.

PCR of a nasal swab or EDTA whole blood can be helpful in confirming active EHV infection in living patients, whereas ante-mortem PCR testing for WNV is usually less rewarding. If initial serologic

testing for WNV and EHV yield negative results, eastern equine encephalitis (EEE) and western equine encephalitis (WEE) are the next logical viral rule outs. Testing for EEE and WEE is referred to National Veterinary Services Laboratory (NVSL) for the IgM ELISA and subsequent PRNT if necessary. Interestingly, while EEE is common in other parts of the country, there have been no reports of equine WEE disease over the last two decades, and some virologists believe that WEE is no longer circulating in its original virulent form.

In an unvaccinated or vaccine-lapsed animal, rabies would also be a viable differential for an acutely neurologic horse. Veterinarians are encouraged to approach these animals with caution when obtaining biologic samples, to wear appropriate personal protective equipment if warranted, and to consult with the MT Department of Livestock regarding observation times/conditions, considering that antemortem (clinical/diagnostic) testing for rabies is unavailable.

In the post-mortem equine, timely submission of the brain for rabies testing is of the utmost importance, especially in unvaccinated animals. Following a negative rabies test, histopathology to look for evidence of viral encephalitis may be useful, but results can be incredibly variable. If lesions are present histologically, brain tissue can be tested by PCR for various viral etiologies. If peri-mortem serum was collected prior to euthanasia or death, serology for WNV, EHV, EEE, and WEE can still be performed; however, in a vaccinated animal, titer results are more difficult to interpret if a convalescent serum sample is not available. Unfortunately, post-mortem (necropsy) examination is typically unrewarding and cannot differentiate between common viral etiologies of neurologic disease in the horse.

In any instance of suspected equine viral encephalitis, MVDL is always available to help our clients formulate a diagnostic plan of action! ☘

By Erika Schwartz-Collins, DVM



Montana Veterinary
Diagnostic Laboratory

Figure 2. MVDL. Source: MVDL Staff.

Brucellosis Surveillance at Small Slaughter Plants

Wyoming’s most recent brucellosis affected herd was detected through testing at a custom exempt slaughter plant. Epidemiology work has not yet determined the source of infection, but a discouragingly high proportion of cows were found infected at the initial whole herd test. Epidemiologic data gathered so far do indicate that brucellosis was transmitted from cow to cow within the herd. This raises the potential for some individual females to harbor undetectable infection until near the end of their next pregnancy. The owners elected depopulation due to the number of reactors and length of time under quarantine necessary to establish brucellosis freedom through a test and removal program.

Brucellosis in cattle is highly infectious. When a brucellosis case is not diagnosed before uterine contents are spilled into the environment, the likelihood of within herd transmission and negative consequences for the herd is dramatically increased. The Wyoming Livestock Board operates a slaughter surveillance program for brucellosis that includes the majority of custom exempt plants, as well as most state and federally inspected plants within Wyoming. Cattle producers improve their probability of early disease detection when they choose to slaughter cattle at establishments that participate in the brucellosis testing program. Importantly, brucellosis can produce the conditions for which cows often get culled. These conditions include lost pregnancies, weak calves, and poor milking and mothering. Slaughter surveillance is an efficient way to detect infections in cows with these conditions and has the benefit of accomplishing surveillance on small herds that

may not market cattle in typical channels.

Wyoming’s small-plant surveillance program has detected two other brucellosis infected herds since state and federal animal health officials established the Designated Surveillance Areas (DSA) in 2010. Like this most recently diagnosed herd, one of those two other herds also suffered within herd transmission prior to detection and brucellosis was highly prevalent in that herd. The owner and state and federal animal health officials similarly decided to depopulate that herd. The other small-plant brucellosis detection was a steer. This steer detection validated the owner’s decision to run steers and spayed heifers rather than cows on a pasture with intense brucellosis-infected elk pressure. That land use strategy protected the owner’s cow herd from brucellosis-related marketing disruptions.

Early detection of brucellosis spillover from wildlife is crucial for minimizing impact on domestic livestock herds. Based in part on Wyoming’s experience, Department of Livestock (DOL) is considering increased small-plant slaughter surveillance for brucellosis in Montana to further improve the potential for early detection. The table below (Figure 3) displays the conditions at detection of each of the 13 brucellosis affected herds since the implementation of the Montana DSA. We welcome input as we consider surveillance options. Please contact Dr. Brad De Groot, with any questions or comments you have at 406-475-2693 or Bradley.DeGroot@mt.gov ✉

By Brad De Groot, DVM, PhD

Calendar Year	# Index Test Reactors	% Herd Prevalence	County	Reproductive Status of Positive Animal	Month of Detection	Reason for Test
2010	4	0.12%	Gallatin/ Madison DSA		October	Voluntary
2011	7	2.55%	Park DSA		September	Sale
2011	1 (bull)	0.06%	Madison DSA	N/A	October	Voluntary
2013	3	0.27%	Madison DSA	Open	September	Voluntary
2013	1 (bull)	0.14%	Park DSA	N/A	September	Voluntary
2014	1	0.04%	Madison DSA Seasonal	Pregnant	November	Voluntary
2014	1	0.15%	Park DSA Seasonal		October	Voluntary
2016	2 (bulls)	1.11%	Beaverhead DSA	N/A	Nov/Dec	Voluntary
2017	1	0.09%	Madison DSA	Pregnant	August	Voluntary
2018	1	0.07%	Madison DSA	Pregnant	November	Voluntary
2021	1	0.17%	Madison DSA	Pregnant	November	Voluntary
2022	1	0.59%	Gallatin DSA	Pregnant	January	Voluntary
2023	1	1.11%	Madison DSA	Pregnant	April	Market Sale

Figure 3. Affected Herd Summary MT Brucellosis Detections. Source: AHB Staff.

Regional Ruckus Takeaways

Dr. Merry Michalski recently attended the “Regional Ruckus” meeting in Charlotte, North Carolina. The meeting was an opportunity for state animal and agricultural groups to network and collaborate on disease management and natural disaster emergency preparedness. Discussion at the meeting included:

Secure Beef/Food Supply Plans and the need for harmonization of Secure Food Supply Plans nationally and creation of guidance to make the review process standardized to ensure plan completeness. There is also a need to distill the Secure Beef Supply (SBS) website into a more workable format to make it easier for veterinarians and producers to engage.

Lack of Engagement with Academic Partners and how to utilize their knowledge and ability to reach out to students and community. Providing emergency preparedness education and training to students can provide a workforce resource during disaster situations.

Risk Communication, specifically current messaging has been fear-based when delivering emergency preparedness information. Teaching with fear has not resulted in engagement. Instead focusing on preventing production diseases

and highlighting benefits (such as faster turnaround of movement permits during disease outbreaks) may encourage participation. Partnering with academia to change the tone of communication and help with education of the next generation will hopefully lead to better commitment to planning.

Personnel Gaps and the struggle to fill and maintain veterinary and emergency preparedness positions is a national problem. Contributing factors include compassion fatigue, limited financial opportunities, turnover and retirement. The decrease in workforce causes gaps in training for disease or disaster response. Providing better compensation, collaborating with other states on workforce resource sharing, and increasing educational opportunities were all possible solutions to this growing problem.

The need for creation of a western area group which would include Montana and surrounding states that share similar risks and concerns in disease management and disaster response. A regional partnership would focus on collaborative planning, mitigation, response, and recovery efforts. ☐

By Merry Michalski, DVM

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