StockQuotes: Animal Health Newsletter

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

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

Mar 2015

Volume 8, Issue 1

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CALENDAR OF EVENTS:

Deputy Veterinarian Training:
Jun 25, 2015, Helena
Sep 24, 2015, Helena

Board of Livestock:
Mar 23-24, Helena

MVMA Summer Meeting:
Jun 21-23, Big Sky

Montana Stockgrowers Association
Jun 5-6, Bozeman

State Veterinarian Notes

EMAIL UPDATES: If you haven't been receiving our email updates (but want to), please contact our office (mzaluski@mt.gov) with an updated email address. These emails are sent every few weeks and provide more current information than a quarterly newsletter can accomplish. The email updates are also the most efficient way to inform you of emerging issues and provide supporting materials that won't fit into the newsletter format. We currently send the email to 480 veterinarians.

OWNER-ADMINISTERED RABIES VACCINE FOR LIVESTOCK: In the last issue, we requested feedback on a proposed policy change to allow veterinarians to dispense rabies vaccine directly to livestock owners as is done in 18 states. While owner-administered vaccinations would not be eligible for a rabies certificate, the intent of this proposal was to increase the number of livestock immune to this fatal disease. We received comments from five veterinarians; all of whom spoke against the proposal. They cited a variety of concerns, and absent any comments in support, we are setting the proposal for livestock owner administered rabies vaccine aside. Thank you for considering this issue and providing thoughtful feedback.

EQUINE BIOSECURITY: Spring is almost here with its expected increase in rabies and equine issues. Please see the column on biosecurity for equine events. The column describes a common sense approach that scores facilities and management practices by green/yellow/red based on the level of risk. This tool may make it easier to justify the value of biosecurity discussions with your clients.

The column gives a basic overview; follow the links to the California Department of Food & Agriculture for the full set of materials.

ADMINISTRATIVE RULE PROPOSAL: Since last September, we no longer have the flexibility to consider extenuating circumstances in how import and movement requirements are applied. Circumstances where we previously had discretion include extending the validity of expired tests due to transport delays, allowing testing on arrival, or waiving certain requirements based on prior testing. For small animal, we've approved moving animals out of a rabies quarantined county prior to the 21-day wait, or waiving rabies vaccination requirements due to vaccine-related reactions.

To allow us the necessary flexibility, we are proposing a rule change that states, "The state veterinarian may waive requirements for animals imported into Montana on a case-by-case basis if granting the waiver does not create a threat of disease to livestock or to the public." The full rule announcement can be found on our web page under Administrative Rule Notices (http://liv.mt.gov/public/arm.mcpx). An alternative to our office having this discretion is to stick with letter of the rule, or forward the request to the Board of Livestock. Please let us know in writing whether you support or oppose that we retain the discretion to evaluate requests for a variance to standing regulations on a case-by-case basis.

You may submit comments through March 26.

ONE-HEALTH: This edition of One-Health discusses zoonotic salmonellosis which has been on the rise partly due to increased popularity of backyard poultry. Also see the High Path AI column on recent cases throughout the U.S. from wildlife. ¤

mz

WHAT'S NEW:

1. Input requested on proposed rule to grant waivers to import rules. http://goo.gl/0KoYhX.
2. High Path Avian Influenza (p5).
3. Report on state regulations for trichomoniasis (p6).

Brucellosis Update

ELK SURVEILLANCE: The Department of Fish, Wildlife and Parks (FWP) has completed annual elk capture operations. Elk with radio collars in Blacktail, Sage Creek, and Black's Ford were recaptured. New areas sampled were in Mill Creek (HD317) near Pray in Park County, and North Absaroka (HD560) south of the interstate and east of Livingston.

In HD560, 63 elk were captured and 61 were seronegative. Two elk, one of which was just outside the Park County (Designated Surveillance Area) boundary tested positive. We will be following the movement of these elk closely.

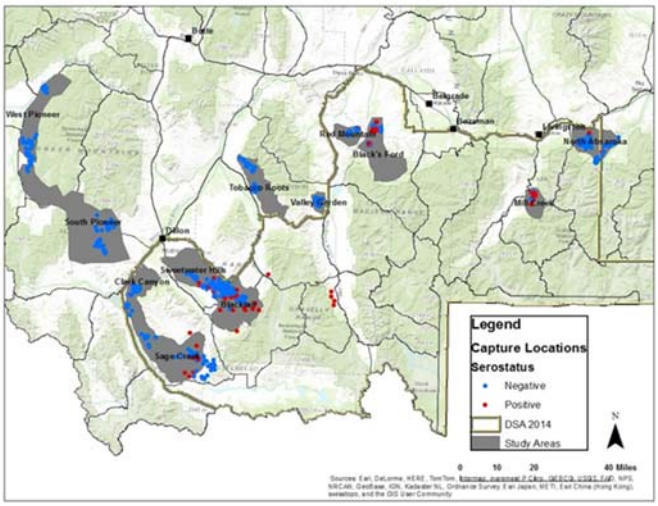
In HD317, 30 elk were captured, and 16 (53%) were positive. Based on local knowledge of these elk, these animals reside in this immediate area, and do not travel; however, we will also be closely monitoring the GPS collar data in this group.

While the rate of brucellosis infection in HD317 is surprising, it is consistent with other testing that was done on a small number of elk following game damage hunts, and also correlates with the location of four brucellosis infected cattle herds since 2007. We've already met with FWP regarding these findings, and intend to meet with landowners and conduct a number of other measures in response to these high numbers.

***FIGURE 1**. Elk capture areas in Southwestern Montana since 2011.*

The full-color PDF version of this map which displays locations of positive elk is available on our website. http://liv.mt.gov/ah/newsletter/default.mcpx

Source: Montana Department of Fish, Wildlife & Parks.



DSA RISK ASSESSMENT: Over the last year, USDA has been conducting an analysis of the risk of exporting brucellosis infected cattle from the DSA. The risk assessment concludes that the risk of exporting brucellosis affected cattle from the DSA is extremely low and that post-entry testing of DSA cattle is unjustified. Specifically, the report found that:

1. The annual probability of exporting an undetected brucellosis positive breeding animal from Montana's DSA is 0.009 per year. Another way to look at this is that it would take 111 years before a brucellosis positive animal would be shipped out.
2. USDA estimated the break-even cost of what an outbreak would have to cost to justify post-entry testing nationwide of DSA cattle from Idaho, Montana and Wyoming. Based on those calculations, an outbreak (in a state that receives DSA cattle) would need to cost between $151M and $234M to justify post entry testing.
3. Therefore, "the results demonstrate that post-movement testing and reproductive monitoring of all DSA-origin breeding cattle is not a cost-effective mitigation."

The model limited the evaluation to cattle that are within the DSA; risk from cattle outside the DSA was not considered. While nothing is ever absolute, Montana has done due diligence to ensure that at-risk cattle risk are included. We've spent $1M over several years just on elk capture operations to better define the DSA boundary - and we update that boundary based on new information.

The model assumed that compliance to DSA testing is 100%. No regulatory program has 100% participation; however, (i) the compliance assessment that we just completed shows that 96% of the cattle sold out of Montana's DSA came out of herds that have brucellosis tests on file (the herds have completed brucellosis testing at some level), and (ii) personal conversations I've had with the risk assessment team show that the output of the risk assessment is not significantly altered if the model uses 90% for compliance.

One additional point. Montana conducted about 60,000 brucellosis tests on DSA cattle in 2014. Not coincidentally, the herd inventory of the DSA is right about 60,000. Of course, not every adult animal was tested in the DSA last year– baseline testing rate is very high, but was boosted even higher by testing associated with the epidemiological investigation where some animals were tested twice. Still, I'm not sure whether there is precedent for such an intensive and sustained surveillance program. ¤

mz

Equine Biosecurity

Equine travel season is just weeks away. Shows, rodeos, and trail rides create additional exposure to diseases such as Equine Herpes Virus (EHV-1) and others. Transport and unfamiliar surroundings can further stress the immune system.

In addition to reviewing vaccination programs with your clients, consider offering a biosecurity assessment of events. Basic management practices can prevent (or contribute to) the spread of illness. Rating facilities according to High / Medium / Minimal biosecurity risk can be a simple and effective tool.

For example, horse stabling can have a significant impact on spreading disease throughout a barn. High biosecurity risk would be expected if the barn is filled to capacity, stall walls are low, are made of untreated porous wood, and ground surfaces are impossible to disinfect. Nose to nose contact between horses in these facilities makes spreading diseases especially likely. On the other hand, a facility with minimal biosecurity risk would be only partially occupied, and have full height stall walls made of nonporous material that can be easily cleaned. Medium risk would be somewhere in between.

Other components of equine events can be evaluated in a similar manner. When events require a health monitoring and documentation protocol for the duration of the event, the risk of introductions from sick horses is minimized. These facilities can be qualified as minimum security risk for the health of event horses. However, when horses are admitted with no exam, no health certificate, and the event proceeds with no monitoring, the risk of disease from event horses increases dramatically, and such an event would be scored as a high biosecurity risk in that category.

Horse entry, horse-to-horse contact, water sources, hay and feed storage, equipment use, horse movements, isolation facilities, visitor access, pet policies, signage and other areas can be evaluated.

California Department of Food and Agriculture (CDFA) has developed some outstanding resources that I have shamelessly poached (with permission) for this article. Special thanks to Dr. Katie Flynn (Equine Staff Veterinarian) and Dr. Annette Jones (State Veterinarian) at CDFA.

For a full biosecurity toolkit, please see the CDFA website at http://goo.gl/OvVTCU. ¤ mz

Designated vehicle parking limits disease transmission risk.

Source: California Department of Food and Agriculture (CDFA)

FIGURE 2: *Selected biosecurity assessment components from the Biosecurity Toolkit.*

Source: California Department of Food and Agriculture (CDFA)

Horse Health Entry Requirement	Horse health declaration, Certificate of Veterinary Inspection and temperature documentation required for all horses		Participants are required to sign horse health declaration upon arrival, but no Certificate of Veterinary Inspection or temperature record are required		No horse health entry requirements
Monitoring of Horse Health	Qualified and knowledgeable event staff are designated to inspect every horse upon arrival and periodically monitor horses for duration of the event		Event staff conduct random walk through of the barns to monitor health status of horses		No designated staff or individual is responsible for monitoring health status of horses
Temperature Monitoring	Temperature monitoring of horses required 2x/day with record posted on stall door.		Temperature monitoring of horses by participants is recommended.		No policy for monitoring horse temperatures during the equine event.
Exhibitor Contact Information	Owner/agent current phone number and, email address and horse origin and destination addresses are recorded for all exhibitors upon arrival		Owner/agent phone number and address available but horse location unknown		No contact information obtained/maintained
Reporting of Suspicion of Illness in Horses	All participants are notified in writing, before and upon arrival, of the requirement to immediately report any suspicion of an infectious disease in horses to event staff		Signage alone notifies participants of the requirement to report any suspicion of infectious disease in horses to event staff		No requirement to report suspicion of an infectious disease in horses

Genotyping—The Final Chapter

In previous newsletter issues (Jul 2014, Sep 2014), we discussed the basics of Whole Genome Sequencing (WGS). This issue focuses on Montana-specific analyses, and how this information is used for surveillance and control efforts.

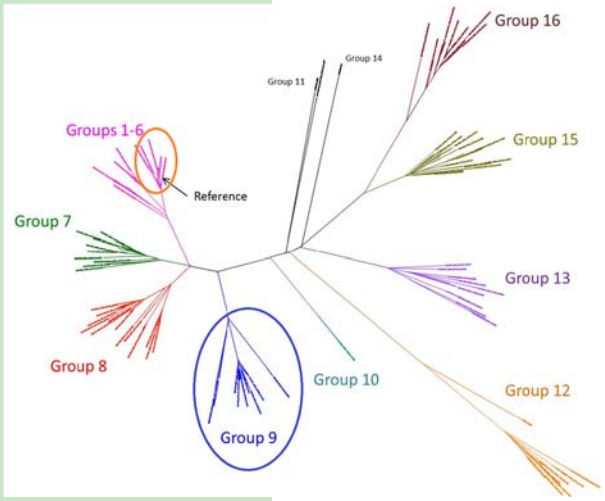


FIGURE 3. *Low Resolution Tree*

Source: USDA-APHIS

Figure 3 shows the low resolution (LR) tree of *B. abortus* isolates. As isolates are being genotyped, they form distinctly related groups on the phylogenetic tree. Groups 1-6 represent livestock and wildlife isolates that originated from Gallatin, Beaverhead, and Madison counties. Group 9 represents livestock and wildlife isolates that originate from Park County-Wyoming and Park, Gallatin, and Carbon counties in Montana. Because all of the Montana brucellosis affected livestock herds detected since 2007 are found in Groups 1-6 and 9, we will focus on Group 9 for descriptive purposes.

In the high resolution (HR) tree for Group 9 (Figure 4) wild elk and wild bison isolates are represented in black font. Isolates from the five affected cattle herds detected between 2007 and 2014 are in green, purple, blue, teal, and red font. In this HR tree, the tight clustering of the purple (cattle) isolates indicates that they are either identical or highly related isolates from within a single herd. This indicates a point-source was responsible for this infection, and indeed this is supported by field observations of six infected animals in the same management group.

A further review of the HR tree shows that the isolates from infected cattle herds match wildlife isolates more closely than they match other infected herds. While WGS cannot determine the direction of transmission, the genotype analysis, when combined with other epidemiologic evidence, helps to conclude that herd-to-herd transmission is likely not responsible for these outbreaks.

The notable differences between the various isolates (wildlife and livestock) indicate that they have been circulating amongst animal populations for an extended period of time. It's also worth noting that close genetic grouping closely correlates with geographic location; i.e. similar isolates are repeatedly found in a specific region and no other. The risk is local, and therefore, mitigation strategies, such as preventing co-mingling of species during critical transmission periods, can be effective in preventing spread of disease within the animal populations in this geographic region.

Continual monitoring of the genotypes in this area can also be used to evaluate the effectiveness of disease control strategies by alerting us if "new" genotypes are introduced. ¤

By Kammy Johnson, DVM, PhD, USDA-APHIS-VS

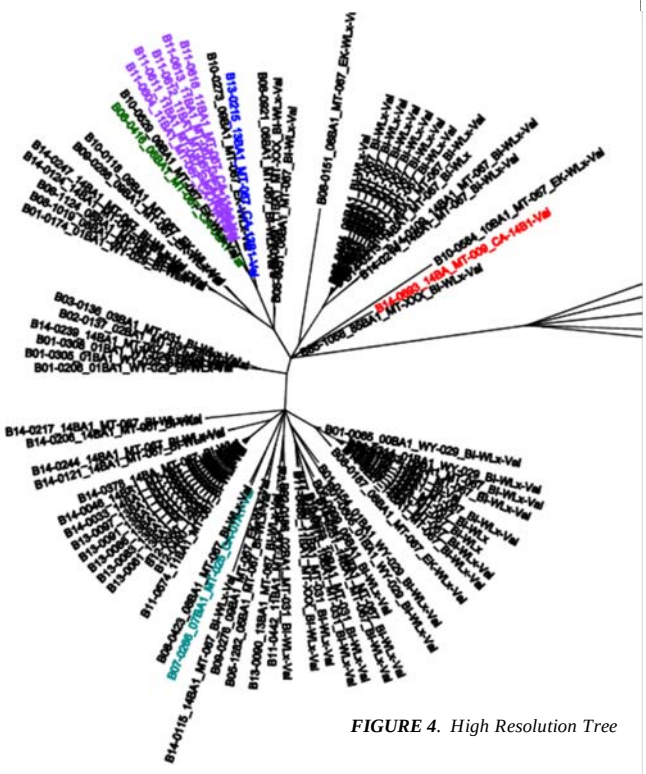


FIGURE 4. *High Resolution Tree*

Source: USDA-APHIS

Avian Influenza—High Path

Highly pathogenic avian influenza (HPAI) was first diagnosed in the Pacific flyway in December 2014. Since then, the disease has been found in wild waterfowl, backyard flocks, and commercial poultry operations in six western states (California, Idaho, Nevada, Oregon, Utah, and Washington).

The United States Department of Agriculture (USDA) has now confirmed the same strains of HPAI in flocks in Minnesota, Missouri, Arkansas, and Kansas. All of these latest states are in the Mississippi flyway. Montana is located in the Central flyway, between the Pacific and Mississippi.

HPAI is a foreign animal disease. It is highly contagious among birds and can result in high mortality rates in affected flocks. Clinical signs of disease include: sudden death, respiratory disease, incoordination and nervous signs, depression, cyanosis (blue discoloration) of the wattles and comb, and diarrhea.

Affected flocks associated with this outbreak are reporting high mortality with very few noticeable clinical signs prior to death. A turkey house in Minnesota lost all but 100 birds in a house of 15,000. MDOL urges all poultry owners to notify the state (406-444-2043) or USDA (406-449-2220) immediately if they are experiencing mortalities in their animals.

Indemnity payments are available to producers affected with HPAI. Indemnity is only paid on live animals, further emphasizing the need for surveillance, rapid reporting and diagnosis.

The virus is believed to be spread through wild waterfowl. Wild birds can be infected with the virus without showing any clinical signs of illness. The virus is capable of infecting chickens, turkeys, pheasants, quail, domestic ducks, geese, and guinea fowl.

Recommendations are similar to prevention of Swine Enteric Corona Disease (SECD) on hog facilities; bird owners should practice good biosecurity. It's important to prevent contact between domestic and wild birds, and report sick birds or unusual bird deaths to State or Federal officials.

More information at: http://healthybirds.aphis.usda.gov.¤

By Tahnee Szymanski, DVM

Laboratory Corner—One Health

"Because of their expertise, veterinarians play critical roles in the health of animals, humans, and even the environment, but these roles are often overlooked or unrecognized. Nonetheless, veterinary medicine is the only profession that routinely operates at the interface of these three components of One Health." (AVMA website)

As further background, the World Health Organization (WHO) and the Center for Disease Control (CDC) report that there are over 200 zoonotic diseases worldwide. Sixty percent of all diseases affecting humans are zoonotic diseases and 75% of all new emerging diseases in the last ten years have originated from animals or are vector borne. Risk of exposure to zoonotic/emerging diseases will grow because of increased human/wildlife interaction and because the human/animal bond continues to grow throughout societies. Monitoring and protection of our environment and our food and feed supplies from diseases, contamination, and acts of terrorism is critical for human and animal health as well as preserving commerce of animals and animal products.

The total number of tests performed at the Montana Veterinary Diagnostic Laboratory (MDVL) in FY 2014 was 271,973 tests. The test volume performed at the MVDL that could potentially identify zoonotic agents listed is 85,978 or 31.6%. If the Milk Laboratory which has both public health and consumer protection responsibilities is included, the test volume would be increased to 111,982 tests or 41.1% of the total tests run at the MDVL. ¤

By Bill Layton DVM, MT Veterinary Diagnostic Laboratory

***FIGURE 5**: Diagnostic Testing of Zoonotic Diseases by Type of Agent:*

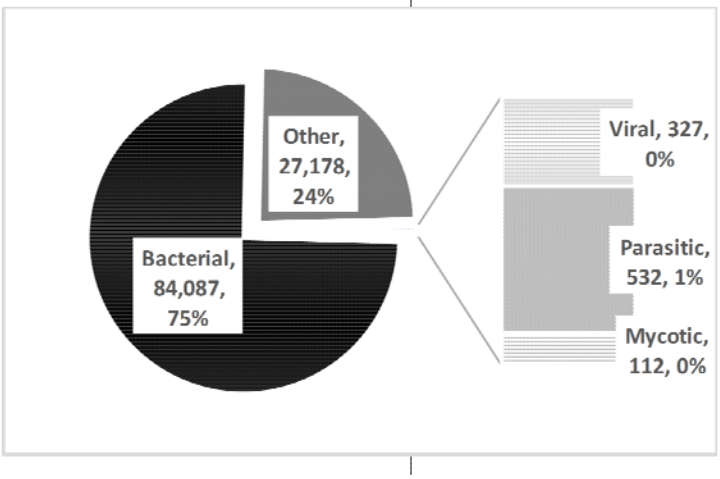
***Bacterial**:Brucellosis, Campylobacteriosis, Chlamydiosis, Leptospirosis, Listeriosis Lyme Disease, MRSA, Plague, Q-Fever, Salmonellosis, Tularemia*

***Viral**: Arboviruses (WEE/EEE), Influenza, Orf, Rabies, West Nile Virus*

***Mycotic**:Dermatophytosis, Systemic fungal*

***Parasitic:** Echinococcus, Toxoplasmosis, Toxocara*

***Other**: Spongiform encephalopathies, Dairy product testing,*



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Trichomoniasis

TRICHOMONIASIS SAMPLE SUBMISSION PROTOCOL: We updated our submission protocol for trichomoniasis submissions to the Montana Veterinary Diagnostic Laboratory. The updated protocol includes new information on alternate media, shipping of samples and outdated pouches. The protocol is available on our website at http://goo.gl/7CblXj.

HARMONIZATION OF INTERESTATE REGULATIONS: Trichomoniasis regulations are in place in 27 states. We recognized several years ago that differences in state regulations are making it exceedingly complicated to move bulls interstate, and have been working with other states to bring greater uniformity to requirements.

At the 2014 meeting of the United States Animal Health Association, a resolution was passed encouraging states to adopt the following standard requirements:

- A single negative PCR.
- A length of test validity of 60 days.
- Recognize virgin bulls up to 18 mo of age.

Of the 27 states that have trichomoniasis regulations only four (AZ, NM, NV, UT) are expected to remain outside the established standard for the long term (see table below).

For a detailed summary of all states' trichomoniasis import requirements, please contact Dr. Szymanski at tszymanski@mt.gov. For questions on the Trich Test Protocol, please contact Dr. Szymanski, or Dr. Layton, Director of the Montana Veterinary Diagnostic Laboratory. ¤ By Tahnee Szymanski, DVM

COMPLIANT	CHANGES PENDING	CHANGES EXPECTED	NO PLANS FOR MEETING STANDARD
Colorado	California	Alabama	Arizona
Kansas	Georgia	Arkansas	Nevada
Montana	Tennessee	Hawaii	New Mexico
North Dakota	Washington	Idaho	Utah
Oregon	Wyoming	Iowa	
South Dakota		Louisiana	
		Mississippi	
		Missouri	
		Nebraska	
		Oklahoma	
		Texas	

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