



# StockQuotes: Animal Health Newsletter

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

INSIDE THIS ISSUE	
State Veterinarian Notes	1
Johne's Lab Submissions	1
Porcine Epidemic Diarrhea Virus (PEDv)	2
Traceability	3
Brucellosis Update	4
Bison Feasibility Study	5

### CALENDAR OF EVENTS:

**Board of Livestock:**  
May 19–20, Helena

**Montana Veterinary Medical Assn Summer Meeting:**  
Jun 29–Jul 1, Missoula

**Deputy Veterinarian Training:**  
Jun 26, Helena  
Sep 25, Helena

**Montana Stockgrowers Assn Mid-Year Meeting:**  
Jun 13–Jun 14, Miles City

## State Veterinarian Notes **Johne's Submissions**

Thanks for picking up the March issue of StockQuotes, the quarterly newsletter from the Animal Health Division.

In this issue, Dr. Tahnee Szymanski covers animal traceability, and an uptick in Johne's testing. In the brucellosis section, I discuss this [spring's elk surveillance results](#), efforts to maintain marketability of DSA cattle, and preliminary discussions on a new Yellowstone bison management plan. Also provided is a summary of the Bison Quarantine Feasibility Study on Yellowstone bison. Through this project, several dozen disease-free bison have been selected from the endemically infected Yellowstone National Park herd.

This quarter's One Health issue covers histoplasmosis and discusses cases in humans and animals. Montana is not considered endemic for the disease, and yet several cases of histoplasmosis have been reported in Montanan's with no known history of travel to areas of known risk.

And one more reminder for those of you who choose to also receive this newsletter electronically, [the closing date for comments on the proposed administrative rule on fees is March 31](#) (the print version of this newsletter will reach your mailboxes in April). The rule proposal raises fees for most animal health supplies (which haven't been increased since 2003), and establishes fees for some special permits that have been developed in response to veterinarian and animal owner requests. You can review the draft rule here: <http://goo.gl/Gb2ZHp>.

Lastly, if you have an interest in what we've been up to in 2013, [please take a look at our Annual Report](#). Mostly through the vision and efforts of Cinda Young-Eichenfels in our import office, the annual report for 2013 is completely redesigned in a format that allows you to see major activities in a concise, polished format. The Annual Report is available at the link below on April 1.

<http://liv.mt.gov/ah/default.mcp>. ☒ mz

Over the past three years, MDOL has seen an increase in both the number of tests submitted and the number of positive Johne's tests.

Table 1 (page 6) displays the testing numbers from the last three years and shows that:

- The number of samples that are ELISA positive have increased almost 5X since 2011.
- The average number of samples per submission has increased 4X in the diagnostic submission data set.

Submissions came from 52 different veterinarians and represent owners in 32 Montana counties.

MDOL has also seen an increase in PCR testing. PCR is considered an official (confirmatory) test for the determination of an animal's Johne's disease status. Other official tests include: fecal and tissue cultures, and histology of tissue. These are all classified as organism detection tests.

Screening tests such as the routinely performed ELISA, environmental fecal sampling, and pooled fecal cultures or PCR do not meet the definition of an official Johne's disease test. These tests are tools to both determine if the causative organism is present within a herd as well as to eradicate the causative organism from herds found to be infected. Once an animal within a herd has been found positive on an official screening test, ELISA is recommended for ongoing surveillance within the herd.

Johne's is a reportable disease, and reporting all positives to our office if using a lab other than MVDL is required. Please note,

*(Continued on page 6)*

### WHAT'S NEW:

1. Fee rule public comment closes March 31.
2. Elk surveillance testing results (p2).

# Porcine Epidemic Diarrhea Virus

Earlier this year, two premises with Porcine Epidemic Diarrhea virus (PEDv) were confirmed in Montana making the state one of 27 states that have reported the disease. Both affected premises in the state reported virtually 100% mortality in their suckling pigs over a several week period.

Nationally, the swine industry has asked for minimal regulatory action to reduce the impact on commerce, and the disease is not officially reportable in Montana. Likewise, because the two affected facilities only sell to slaughter, and we're advising swine operators to treat all traffic as potentially PEDv infected, MDOL did not quarantine the affected facilities. We've been working with the attending veterinarian and the Montana Pork Producers Council (MPPC) to share general information to limit the impact of the disease.

PEDv is a coronavirus that is transmitted by oral contact with contaminated feces. The most common sources of infected feces are pigs, trucks, boots, clothing or other fomites. PEDv is extremely stable in the environment. In cool, wet conditions, it has been shown to survive for 60+ days.

Biosecurity is paramount to the control of PEDv. A biosecurity program should involve:

- Attention to all on farm traffic - including delivery and service vehicles. The movement of pigs does not appear to have contributed to either of MT's affected premises.
- Establish a line of separation - this is a delineation between the area that is used by outside traffic and the area that is used by farm personnel. People and vehicles should not cross this line without appropriate cleaning and disinfection.
- Use of effective disinfectants - PEDv is susceptible to Tekrol, Virkon, Stroke Environ, and bleach. Bleach is an effective disinfectant, but only when all organic material (feces) has been removed.
- Attention to movement between hog facilities. This includes veterinarians, extension agents, and other non-producers who may be visiting multiple swine premises. A minimum of 12 hours down time between pig exposures, a complete change of clothing before entry, shower systems, and fumigation of all supplies

and equipment entering the farm are recommended as a deterrent against people tracking the virus.

For additional information on biosecurity recommendations, visit: [aasv.org](http://aasv.org) or [pork.org/pedv](http://pork.org/pedv).

In addition to a good biosecurity protocol, MDOL is working with MPPC on a PEDv notification network. The network is modeled after a porcine respiratory and reproductive syndrome (PRRS) network used in midwest states to educate producers about the PRRS status of swine herds in their area. Through a signed PEDv agreement, producers would be notified of the locations of new cases and commit to report any PEDv suspect incidents. Participating producers could make educated decisions about travel to other swine premises or for scheduling traffic between facilities. Look for more information on the network in the coming weeks.

Nationally, a lot of research has focused on how the virus is spread between farms. The USDA, in conjunction with Pork Checkoff, the American Association of Swine Veterinarians, and the National Pork Producers Council have been publishing summaries of recent PEDv research. The Swine Health Monitoring Project reports can be found at: <http://goo.gl/uTxNU5>. Summaries of recent publications are included below:

One study demonstrated that PEDv isolated from the inside of a feed bin is infective to pigs albeit with a delayed onset of symptoms compared to the positive control (a spiked sample). They also demonstrated viable virus and air samples from infected pigs.

Another study analyzed risk factors to becoming a positive facility and demonstrated a high relationship between:

- Production type - sow operations had 8.8 higher risk than growing-pig-only facilities;
- Size of operation - larger sites (over 2,000 head) had a higher risk;
- Visits from a renderer - dramatically increased risk of infection (7.1x).
- Wildlife and rodents - increased risk of infection almost as much as a visit from a renderer. ♂

By Tahnee Szymanski, DVM



Map of United States highlighting states with confirmed PEDv cases.

Source: National PEDv report.



Source: National Hog Farmer.com

# Traceability

It's been a year since the USDA published the traceability rule in March 2013.

The most significant impact of the federal rule is the requirement to capture and record official identification (ID) when some classes of cattle (beef over 18 months of age, dairy and exhibition) move interstate. The use of RFID tags and automated data capture systems is one solution, but the cost of tags and equipment may be limiting for some production systems.

**COMPLIANCE AND ENFORCEMENT:** With the one year anniversary of the federal traceability rule upon us, [USDA-APHIS is starting to look at enforcement](#). During a recent call, APHIS indicated that the primary points of focus for enforcement activity will be:

1. Individuals who continue to ship animals that are required to be officially identified interstate without official identification.
2. Individuals who fail to comply with CVI requirements.
3. Compliance at state designated tagging sites.

We are also asking for help in documentation of identified animals. Frequently, our office receives health certificates with a range of tags. This is convenient for the producer and the veterinarian because tags aren't read during load-out, but too often the range listed on the health certificate is so wide that a trace would not be possible; ie. when 30 animals are shipped from a tag range of 200, it's not known which 30 are being shipped and where the other 170 are destined.

While we'd prefer that every animal on the shipment be documented, we understand that last minute decisions are made after the health certificate is signed. Therefore, we have established a policy that at least 90% of the tag series listed on the health certificate must be included on the shipment. This requirement is a minimum for Montana deputy veterinarians, but may be higher based on the importing state's policies.

**NEW OPTION FOR OFFICIAL ID:** MDOL is looking into low cost alternatives that we can provide to producers in order to meet their needs and facilitate both the movement of animals and the capture of official ID.

One alternative is the use of large visual NUES tags. Traditional NUES (National Uniform Eartagging System) tags are metal Brite tags in the 9 digit alphanumeric system (81XXX1234). Visual NUES tags are tamper evident dangle tags (see image) that have the potential to provide both a visual management tag number as well as meet official ID requirements for interstate movement.

Tags are available in multiple sizes and colors and would be issued directly to producers.

If producers are willing to rotate colors on tag orders, the tag prefix (81AAA) could be associated by the color of the tag, leaving only four digits that must be read to know the official ID number of animals that are being transported interstate. The layout of the tags is such that the 4 numerical digits are the largest and lowest on the tag for ease of reading.

For example: If a producer orders 400 red visual NUES tags to be applied to his cow at a time when cows are regularly handled and the range of those tags is 81ABC0001 - 81ABC0400, anytime cows with a red NUES tag are to be moved across state lines, only the 4 numerical digits would need to be read (because the series would be known) to have the official ID number of each animal intended for shipment.

The cost of these tags is about \$0.25 for a smaller tag that would be consistent with danglers used in small ruminants and \$0.99 for tags more consistent in size with what is used in cattle. This compares to about \$1.40 per RFID tag purchased by MDOL and an average cost of \$1200 for a wand to read tag numbers. If you have an interest in these tags, we'd love to hear from you.

MDOL will continue to offer silver NUES tags (brite tags) at no cost to producers and RFID tags (both general and orange OCV) to producers at no or low cost. ☺

By Tahnee Szymanski, DVM



*Visual NUES (National Uniform Eartagging System) tags that can be used in place of metal "brite" clip tags. These are considerably cheaper than RFID but would need to be special ordered by MDOL.*



*Orange bangs vaccination RFID tags are available from our office.*

# Brucellosis Update

**ELK SURVEILLANCE:** The fourth annual elk capture study was completed in February with a focus on areas outside of the DSA in the Black's Ford area of Hunting District 311 (south of I90 between Three Forks and Belgrade) and the Tobacco Roots. Of 130 elk sampled, 60 elk were captured in the Black's Ford area, and 70 in the Tobacco Roots.

All 70 samples collected in the Tobacco Roots tested negative. This area was sampled because of documented brucellosis in elk to the west and the south, but fortunately the highways seem to maintain an effective deterrent to elk movement into the Tobacco Roots.

Unfortunately, 10 of 40 samples in HD 311 tested positive. The majority of positive elk were found towards the eastern part of the study area southwest of Belgrade. We had a strong suspicion that those elk would test positive, and in fact have already been working with those cattle producers to increase surveillance activities on cattle that were moved or sold. The Board of Livestock is likely to review the DSA boundary in this area at the May meeting.

**MARKETABILITY:** Over the last several months, we've been working with Arizona and Colorado on import test requirements for Montana origin cattle. Colorado considered asking for a post-entry brucellosis test on Montana origin breeding cattle. Fortunately, after reviewing Montana's program including cattle testing numbers, compliance with regulations, and elk surveillance efforts, the Colorado State Veterinarian decided to defer to Montana's regulations for brucellosis testing. A similar review was performed by the Missouri State Veterinarian in late 2013, and fortunately, a similar decision was reached.

As of this writing, Arizona is requiring brucellosis testing on Montana origin cattle that are over 12 months of age. The state is asking for this test on all states with a wildlife disease reservoir and on assembled herds from anywhere in the United States. The Arizona State Veterinarian is conducting a review of our program to assess whether this additional testing is warranted.

To the best of my knowledge, only the states of Arizona, Texas and Michigan have brucellosis testing requirements over and above

what is required by the State of Montana. I anticipate that Michigan will lift their requirements in 2015 as Michigan requires brucellosis testing by statute on any state that has been Brucellosis Class Free for less than 5 years (Montana regained Class Free in 2009).

**IBMP:** At the January meeting, the Board of Livestock (BOL) discussed the Environmental Assessment (EA) on year-round bison tolerance outside of Yellowstone National Park (YNP). At that meeting, the BOL opted for the no-action alternative because none of the proposed alternatives addressed the bison population numbers.

At the following (March) meeting, the BOL evaluated a modified alternative that tiers bison tolerance in Montana adjacent to YNP to total bison abundance. Meeting lower population targets would result in greater area available. The most liberal tolerance area within the state of Montana would be provided when the total number of bison is below a certain population threshold (most recently proposed 3,300) during the spring count. No additional tolerance would be provided if bison abundance exceeds 4,000 animals, and an intermediate amount of tolerance would be provided when the population is within this established range.

This tiered approach to tolerance bridges the interests of bison advocates to provide more bison habitat with MDOL's longstanding concern that the population of bison is inadequately managed by YNP. Bison abundance has exceeded 3,000 every year in the last decade except for 2008 when 2969 bison were counted after a large removal that spring.

On a related note, the state of Montana and the National Park Service (NPS) are having preliminary discussions on a new Environmental Impact Statement on bison management. The "future effects" planning on the original EIS was forecast for 15 years, and therefore, NPS believes the utility of those efforts are coming to a close. The state of Montana will be a co-lead in the drafting of this EIS to ensure that the state's interests are represented. ☘

mz



*Elk captured as part of the elk surveillance project.*



*Elk congregated in the vicinity of the capture area.*

## USDA Corner:

### Bison Quarantine Feasibility Study

Over a decade ago, agencies involved in Yellowstone National Park (YNP) bison management recognized the potential benefit of salvaging disease free animals from a herd endemically infected with brucellosis.

Through the Bison Quarantine Feasibility Study (BQFS), USDA serially tested yearling bison captured in YNP, and this effort yielded several dozen animals that are considered free of brucellosis. This is a remarkable accomplishment considering that YNP bison are approximately 50% positive as an average, while calving age females are nearly 70% seropositive. The BQFS study was just published in the March 1 copy of JAVMA, (Clarke, P.R., et al, JAVMA, March 1, 2014, Vol. 244, No. 5, Pages 588-591) and excerpts from the paper follow:

**OBJECTIVE:** The purpose of the study was to determine whether it was feasible, following the protocol described in the USDA APHIS Brucellosis Eradication Uniform Methods and Rules (UM&R), to qualify YNP bison as free from brucellosis, including latent infections.

**MATERIALS & METHODS:** The bison containment facility was built consistent with UM&R recommendations and included two fences at least 10 feet apart to prevent contact with any animals outside of the facility. The protocol was reviewed and approved by the Bison Quarantine Feasibility Study Animal Care and Use Committee.

The study was organized into 3 phases. Phase 1 involved enrollment and testing for seroconversion and ended with random selection for euthanasia. Phase 2 involved breeding and calving of bison that completed phase 1. Phase 3 involved translocation and assurance testing of bison that completed phase 2.

Two hundred fourteen bison were selected over three years (2005, 2006, 2008) at the Stephens Creek bison capture facility in YNP based on negative results to a card test and field FPA to determine the preliminary serologic status of each bison. After transport to the quarantine facility, serum samples from bison selected for quarantine were then sent to the Montana Veterinary Diagnostic Laboratory (MVDL) for confirmatory serologic testing and grouped into two cohorts. Remaining bison were serially tested until they received 2 negative tests 30 days apart after

the last bison seroconverted.

All seropositive animals were euthanized and up to 25 separate tissue/exudate samples were submitted for tissue culture. Additionally, at the end of Phase 1, 88 seronegative bison (43 females and 45 males) chosen randomly from both cohorts were also euthanized and tissues were cultured.

**RESULTS:** Thirty-four calves were removed from the study after testing non-negative at initial confirmatory testing (8), or serial testing during the following months (26). Brucella was cultured from all but 3 of the bison testing positive (28/31). Of the bison that seroconverted during serial testing, 77% (20/26) seroconverted within 90 days. No bison seroconverted after 205 days in quarantine.

Of the 88 seronegative bison euthanized after phase 1 serologic testing, none had positive results of culture for any tissues. In phase 2, no bison cows tested positive by either serologic tests or by bacteriologic culture.

**DISCUSSION:** Results of this study showed that it is feasible to take sub-adult seronegative bison from an infected population and, following the rigorous quarantine protocol published in the brucellosis UM&R, qualify them as brucellosis free in < 3 years.

The crucial events that seem to reveal low-level infections are pregnancy and parturition in females and puberty in both sexes. Therefore, culture of tissues and swab specimens immediately after birth were deemed essential to determine with more certainty that these bison were not shedding *B. abortus*.

Older bison that have survived at least 1 parturition prior to enrollment without seroconverting would seem to be eligible for a shorter duration of residency in a quarantine test group as outlined by the USDA APHIS brucellosis UM&R. ✕

*Liberally adapted and shamelessly excerpted by mz from BQFS JAVMA article by Clarke, P.R., et al, cited above. All positive bison were detected through serology at or before puberty. The authors indicated that another paper is forthcoming that addresses serology as the primary screening tool to identify infected animals. mz*



Dr. Ryan Clarke (USDA-APHIS-VS) testing bison for brucellosis.



Bison enrolled in the Bison Quarantine Feasibility Study (BQFS) at the containment facility.

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# Johne's Submissions *(cont'd)*

*(Johne's continued from page 1)*

while only positive tests are required to be reported, negative test data is also valuable when looking at surveillance levels.

Frequent Johne's related inquiries to our office concern:

- The disposition of positive animals – Per Title 9 Code of Federal Regulations (CFR), animals positive to an official organism detection test cannot be moved across state lines for any purpose other than direct to slaughter.
- Sale of breeding animals – Purchased bulls have been documented to be a source of Johne's infection in some herds. Increased producer awareness has created a market for herds that have an ongoing Johne's surveillance program.
- Management of affected herds – MDOL has materials that are left over from the National Johne's Education Initiative that include management plans for affected herds.

Year	Elisa (+) Samples	ELISA (-) Samples	Number of Submissions	Average # Samples/ Submission
2011	24	484	96	5
2012	47	1729	122	14
2013	131	2540	118	23
<b>Sum</b>	<b>202</b>	<b>4753</b>	<b>336</b>	

Table 1: Johne's ELISA sample submissions by year. A single submission of a large cohort of animals tested for international export in 2012 and CSS facilities doing regular screening tests for Johne's have been removed to highlight diagnostic testing.

If you would like more information please contact me at either (406) 444-5214 or [tszymanski@mt.gov](mailto:tszymanski@mt.gov). ☒

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