

*ag animal health*  
**VETERINARY MEDICINE EXTENSION**  
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**From the Editor** - First day of summer as I write this. We finally had some hot weather and now a high of 75° F in Pullman. Corn is likely still being planted in the northwestern part of the state because of the wet spring and fruit is coming on some of the trees in the Yakima Valley. In the dairy world, we have news of tetracycline testing of milk and in beef, we have a new executive for the WCA. In the sheep world, the WSSP is having a ram and ewe sale in Moses Lake on July 15<sup>th</sup> at the Grant County Fairgrounds and pork producers had their first case of porcine delta coronavirus (PDCoV) in June <http://extension.wsu.edu/benton-franklin/tag/pigs/>. For all: fair season is upon us. For a list of Washington fairs and their dates, see: <http://www.wastatefairs.com/events/filters/iso=1>

*The ag animal health newsletter is devoted to the transfer of current, relevant information to food animal owners and veterinarians in the Pacific Northwest.*

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## Update on Salmonella Enterica Subspecies Enterica Serovar Dublin (i.e. Salmonella Dublin)

by Dr. Craig S. McConnel, Extension Veterinarian

For those of you who have never dealt with *Salmonella* Dublin in a cattle herd—consider yourselves lucky. For those of you who have—you may deal with the aftermath for an extended period. This is a pathogen that can be insidious within cattle and can cause severe human infections due to the invasive nature of the infection. It is host-adapted to cattle which means there is the potential for establishing a chronic carrier state after infection and subsequently the potential for establishing endemic infections at the herd level. In some circles *S. Dublin* has been coined “the new Johne’s” due to its ability to reside undetected while significantly impacting productivity and welfare in infected cattle herds. It does not usually make adult cows very sick but can wreak havoc on young and unborn calves, particularly in populations that have not been exposed previously. Its

resistance to many common antibiotics severely limits treatment options and, to make matters even worse, it often presents as respiratory disease which can mislead veterinarians trained to recognize diarrhea as *Salmonella's* telltale sign.

Once established, control of *S. Dublin* requires intervention to minimize exposure to bacteria in the environment or shed by other animals in the herd. In many ways the idea that *S. Dublin* is the new Johne's holds true for preventive practices as well. Following a risk assessment tool based around Johne's prevention (<http://www.johnes.org/index.shtml>) will minimize *S. Dublin* exposure as well. As part of the Danish *S. Dublin* eradication scheme, a risk assessment tool based on Johne's control was produced to assess potential routes for the spread of *S. Dublin* infection ([Food Research International, 45 \(2012\) 1158-1165](#)).

A recent article specifically related to *S. Dublin* control in dairy herds (*In Practice*, 39 (2017) 158-168) touches on a number of measures that can be taken to address the spread of *S. Dublin* in herds, either in the control of an outbreak, or to try to eradicate an endemic infection. Additional resources related to *Salmonella* prevention and control are accessible via [Cornell University's Animal Health Diagnostic Center](#).

Although control of *S. Dublin* is challenging, the use of standard methodology can reduce herd level prevalence as demonstrated by the Danish eradication scheme. A test-and-cull strategy to remove persistently infected cattle has long been considered an important control element. However, the identification of carrier animals is challenging. They may not shed or may shed intermittently, and the sensitivity of fecal culture for detecting carriers may be as low as 6 to 14%. Stress does seem to increase shedding, though, so postpurchase or postcalving cultures are likely to have greater sensitivity. The use of an antibody ELISA has been used to assess carrier animals as well. In the U.S. this ELISA is currently only offered at Cornell (<https://ahdc.vet.cornell.edu/>). Depending on to whom you speak, the optimum sampling regime has been suggested to be 3 samples over 4 to 8 months. This relies on the premise that carriers have persistently high antibody levels compared to cattle that were simply exposed to *S. Dublin* and developed transient antibodies that degrade over time.

Although youngstock with high antibody levels are more likely to shed the bacteria, there is a poor association between antibody levels in older animals and their risk of shedding. Therefore, the ELISA test may be useful in identifying seronegative herd replacements, but it has a poor positive predictive value when it comes to identifying shedders in the adult herd. This becomes more relevant in herds with a high prevalence as it is often not economically feasible for a farmer to cull all ELISA positive animals. In those high prevalence herds, the implementation of a Johne's disease control program is a positive predictor for herd recovery from a *S. Dublin* problem.

The ELISA test also may be used to test bulk milk tank samples on those dairies interested in knowing their herd's exposure to *S. Dublin* or the impact of preventive measures. In fact, the monitoring of bulk milk antibody levels forms the basis of the Danish and Dutch eradication schemes. A positive result on a bulk tank milk sample indicates that one or more cows contributing to the tank have antibodies to *S. Dublin*. Repeated testing of the bulk tank is recommended to more accurately classify herd infection status with *S. Dublin*.

A final consideration has to do with the use of vaccination against *S. Dublin*. Vaccinating for *S. Dublin* has been shown to induce antibodies to the bacterium. In the U.S. the available vaccine is named EnterVene®-d (Boehringer Ingelheim Vetmedica, Inc.), which is indicated for the vaccination of healthy calves as an aid in prevention of clinical disease due to *S. Dublin*. It is labeled to be given subcutaneously and has a precautionary statement regarding the potential for anaphylactoid reactions. *There is no empirical data to support efficacy of this vaccine if given orally at the labeled dose.* The decision to use it in a herd must be made on a farm-by-farm basis, but it should be used alongside a management program to minimize the infective challenge.

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## Dairy: Automated Calf Feeding Systems and Health

by Dale A. Moore, Extension Veterinarian and Amber Adams-Progar, Extension Dairy Management Specialist, WSU



Dr. Adams-Progar was intimately involved in a project recently published by the University of Minnesota. Because of the popularity of automated calf feeders for pre-weaned calves in the Midwest, the research team visited 38 farms. Although there are only a few automated feeding systems here in Washington, it is worth reviewing the advantages and potential pitfalls in these systems in case there are other dairy farmers in the state interested in pursuing this technology.

We, as an industry, have been housing calves in individual hutches for a long time because of the risk for disease transmission. Group housing has the advantage of better social interactions and calves housed in pairs have shown higher feed intakes. Automated feeding systems have the advantage to allow for greater milk intakes by individual calves.

According to the last USDA study of dairy farms, about 1.3 percent of farms were using some form of in-line milk feeding system in 2014. To understand potential management practices' roles in contributing or detracting from calf health using automated feeding systems, the investigators visited the 38 farms over 18 months. Each farm was visited up to 8 times, with about 2 months between visits. Calf health (scoring of attitude, ears, nose, etc.) was evaluated in two pens each visit and potential risks for disease were identified.

Season was a significant risk factor for all the health outcomes measured, with fall and winter seasons having the highest risk. This points to the need for more intensive management of calves during certain times of the year.

Diarrhea is the most common condition of preweaned calves. This was assessed using hide dirtiness scoring. They found that the more peak milk allowance for calves, the lower the "prevalence" of diarrhea. The longer it took calves to reach peak milk allowance the greater the prevalence of depressed attitude, greater eye and ear scores and odds of

having a fever. Thus, feed allotment management, in particular more feed, is important for calf health.

Bacterial contamination (SPC>100,000) was present in about 68% of the tube-end (connected to the nipple) and 32% of the mixing tank samples. Median SPC was over 2.5 million cfu/ml. Bacterial counts >100,000 cfu/ml in the liquid feed were associated with higher odds of being “depressed” and having a fever. The investigators suggested that milk pooling in the feeder mixing tank or tubing could allow more bacteria to grow. Attention to the cleaning process should follow what is done in the milking parlor to remove milk residue and food for bacteria.

Group size averaged about 18 calves on these farms but the range was 6 to 60 calves per group. Larger group size was associated with the odds of a higher nasal score (surrogate for respiratory disease) but lower odds for hide dirtiness. However, lower space per calf (an increase in stocking density) was positively associated with some of the health outcomes. Pens on these farms allowed an average of about 5 m<sup>2</sup> (54 ft<sup>2</sup>) but ranged from 17 to 128 ft<sup>2</sup>.

Conclusions - This study pointed out the tremendous variability in feeding, housing, and hygiene management of automated feeding systems in the Midwest. It is critical for dairy farmers interested in pursuing this technology to address these three factors when setting up and operating a new automated calf feeding system. These systems are not completely personnel nor maintenance free but if managed correctly, can offer calves the ability to eat and grow more.

#### References

Adams-Progar A, Moore DA. Group Housing Preweaned Dairy Calves: Socialization vs. Disease Transmission <http://pubs.wsu.edu/ItemDetail.aspx?ProductID=15969&SeriesCode=&CategoryID=166&Keyword=>

Jorgensen MW, Adams-Progar A, de Passille AM, et al. Factors associated with dairy calf health in automated feeding systems in the Upper Midwest United States. J Dairy Sci. 2017;100:5675-5686.

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## **Beef: Mom’s Diet is Important to Her Baby’s Health**

by Dale A. Moore, Extension Veterinarian

You might remember that our Extension Beef Team worked on a Cow-calf Bovine Respiratory Disease project a few years back (<http://vetextension.wsu.edu/research-projects/brd/>). One of the things we emphasized was how feeding more protein to late gestation cows improved calf health.

In a new article from the Journal of Animal Science, Oregon State University investigators looked at Selenium (Se) in the diet of pregnant cows and its effect on calf selenium and antibodies in the calves after birth. Specifically, they evaluated the Se uptake by cows and calves when cows were fed alfalfa hay fertilized with Se-fertilizer.

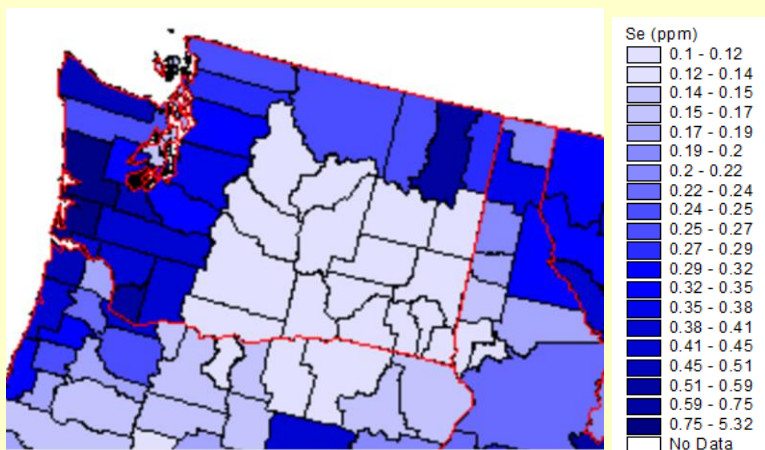


Selenium supplementation of the cow either through a mineral mix or injectable can improve passive transfer of immunity from the IgG calves get from the colostrum. Both of these methods work but the authors thought that fertilizing the alfalfa would be a more convenient, and more bioavailable route of getting Se into the cows.

There were 3 groups of about 15 Angus or Angus-cross cows each at about 10 weeks before calving. Cows were fed alfalfa hay each evening and grass hay in the morning (ration crude protein about 13.9%). Control cows were fed non-Se supplemented alfalfa hay plus a mineral supplement with 120/mg/kg Se from sodium selenite. The treated cows received alfalfa hay supplemented with fertilizer containing 18 g Se per acre as sodium selenite and a mineral supplement without Se. The third group was fed alfalfa supplemented with 36 g Se per acre and mineral without Se. The cows calved in their pens and the calves stayed with the cows.

At calving cow blood Se levels were highest in the high-supplemented alfalfa group (over 500 ng/ml) and medium level in the lower-supplemented alfalfa group (about 350 ng/ml), and lowest in the mineral supplemented group. This pattern was similar for Se levels in the colostrum and in the calves at birth and 48 hours later. Specific antibody titers were higher in the calves on Se-fertilized alfalfa-consuming cows, but the calf serum IgG levels were not significantly higher. Although this was an important outcome, all the dams were supplemented with Se in some way and all the calf serum IgG levels were about 40 mg/ml. The most interesting outcome was that Se applied into a fertilizer might have been a more efficient way of getting Se into the cows and into the calves.

Selenium is a trace mineral necessary to life. It has many functions, and if deficient, can predispose cattle to disease, poor performance and clinical syndromes such as white muscle disease. Selenium is absorbed by plants but can be deficient in some areas and at toxic levels in others. The USGS has a county map depicting average soil selenium levels (<https://mrdata.usgs.gov/geochem/doc/averages/se/northwestern.html>). Although this map provides general estimations, soil testing where you grow forages is the only way to tell for sure if the soil is deficient or if you might have high selenium.



<b>Blood Selenium Levels for Cows</b>	
<b>Adequate</b>	<b>70 to 100 ng/ml</b>
<b>Concern</b>	<b>&lt;35 or &gt;800 ng/ml</b>

Note that the Basin and Eastern Washington tend to have low levels of Se in the soil, except the northern tier. But, now there are three ways to supplement the cows so that the calves get the Se they need, and using a Se-fertilizer appears to make the Se more

available to the cow. This means double-benefit from feeding alfalfa in late gestation - protein and selenium.

Reference: Wallace LG, Bobe G, Vorachek WR, et al. Effects of feeding pregnant beef cows selenium-enriched alfalfa hay on selenium status and antibody titers in their newborn calves. *J Anim Sci.* 2017;95:2408.

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## **WSU Research Updates**

(1) Huebner KL, Kunkel AK, McConnel CS, Callan RJ, Dinsmore RP, Caixeta LS. 2017. Evaluation of horn bud wound healing following cautery disbudding of preweaned dairy calves treated with aluminum-based aerosol bandage. *Journal of Dairy Science.* May;100(5):3922-3929.

Pain management during and following disbudding procedures has been studied extensively, though few studies have evaluated wound healing following cautery disbudding in dairy calves. **The purpose of this study was to observe wound healing following cautery disbudding with or without treatment using a topical aluminum-based aerosol bandage (ALU) in preweaned dairy calves.** Dairy calves were disbudded within the first 3 wk of life using a standard cautery disbudding protocol. The ALU treatment was randomly allocated to the right or left horn bud within each animal. The outcomes measured were lesion score (LS) and wound diameter (WD). The LS was evaluated on a scale of 1 to 3, with LS = 1 representing normal healing without a scab or exudate, LS = 2 having the presence of a scab, and LS = 3 showing the presence of wound exudate. Lesion score and WD were evaluated on a weekly basis following dehorning for 3 wk. A total of 209 animals completed the study. No difference was observed in LS between groups during the first 2 wk postdisbudding, but the proportion of LS = 3 on wk 3 postdisbudding was greater for the control group when compared with ALU (17 vs. 8%, respectively). During wk 1 and 2 postdisbudding, the odds of having delayed healing, or a LS  $\geq 2$ , were similar for both groups. However, the odds tended to be different at wk 3 postdisbudding with control disbudding sites being 1.42 times more likely to have delayed healing than ALU. In wk 3, WD was 1 mm smaller in the treatment group compared with the control, and treatment decreased diameter over time compared with controls. **Overall, once abnormal wound healing was observed, the likelihood of having abnormal wound healing the following week was increased. However, treatment with ALU diminished this effect on delayed healing during the follow-up period. Based on these results, the use of ALU improved wound healing following cautery disbudding of preweaned dairy calves.**

(2) Sischo WM, Short DM, Geissler M, Bunyatratchata A, Barile D. 2017. Comparative composition, diversity, and abundance of oligosaccharides in early lactation milk from commercial dairy and beef cows. *Journal of Dairy Science.* 100(5):3883-3892.

Prebiotics are nondigestible dietary ingredients, usually oligosaccharides (OS) that provide a health benefit to the host by directly modulating the gut microbiota. Although there is some information describing OS content in dairy-source milk, no information is available to describe the OS content of beef-source milk. Given the different trait emphasis between dairy and beef for milk production and calf survivability, it is plausible that OS composition, diversity, and abundance differ between production types. **The goal of this study was to compare OS in milk from commercial dairy and beef cows in early**

**lactation.** Early-lactation multiparous cows (5-12 d in milk) from 5 commercial Holstein dairy herds and 5 Angus or Angus hybrid beef herds were sampled once. Milk was obtained from each enrolled cow and frozen on the farm. Subsequently, each milk sample was assessed for total solids, pH, and OS content and relative abundance. Oligosaccharide diversity and abundance within and between samples was transformed through principal component analysis to reduce data complexity. Factors from principal component analysis were used to create similarity clusters, which were subsequently used in a multivariate logistic regression. In total, 30 OS were identified in early-lactation cow milk, including 21 distinct OS and 9 isomers with unique retention times. The majority of OS detected in the milk samples were present in all individual samples regardless of production type. Two clusters described distribution patterns of OS for the study sample; when median OS abundance was compared between the 2 clusters, we found that overall OS relative abundance was consistently greater in the cluster dominated by beef cows. **For several of the structures, including those with known prebiotic effect, the difference in abundance was 2- to 4-fold greater in the beef-dominated cluster. Assuming that beef OS content in milk is the gold standard for cattle, it is likely that preweaning dairy calves are deprived of dietary-source OS.** Although supplementing rations with OS is an approach to rectify this deficiency, understanding the health and productivity effects of improving OS abundance being fed to preweaning calves is a necessary next step before recommending supplementation. These studies should account for the observation that OS products are variable for both OS diversity and structural complexity, and some products may not be suitable as prebiotics.

**(3) Besser TE, Cassirer EF, Potter KA, Foreyt WJ. 2017. Exposure of bighorn sheep to domestic goats colonized with *Mycoplasma ovipneumoniae* induces sub-lethal pneumonia. PLoS One. 12(6):e0178707.**

**BACKGROUND:** Bronchopneumonia is a population limiting disease of bighorn sheep (*Ovis canadensis*) that has been associated with contact with domestic Caprinae. The disease is polymicrobial but is initiated by *Mycoplasma ovipneumoniae*, which is commonly carried by both domestic sheep (*O. aries*) and goats (*Capra aegagrus hircus*). However, while previous bighorn sheep comingling studies with domestic sheep have resulted in nearly 100% pneumonia mortality, only sporadic occurrence of fatal pneumonia was reported from previous comingling studies with domestic goats. Here, we evaluated the ability of domestic goats of defined *M. ovipneumoniae* carriage status to induce pneumonia in comingled bighorn sheep. **METHODOLOGY/PRINCIPAL FINDINGS:** In experiment 1, three bighorn sheep naïve to *M. ovipneumoniae* developed non-fatal respiratory disease (coughing, nasal discharge) following comingling with three naturally *M. ovipneumoniae*-colonized domestic goats. Gross and histological lesions of pneumonia, limited to small areas on the ventral and lateral edges of the anterior and middle lung lobes, were observed at necropsies conducted at the end of the experiment. A control group of three bighorn sheep from the same source housed in isolation during experiment 1 remained free of observed respiratory disease. In experiment 2, three bighorn sheep remained free of observed respiratory disease while comingled with three *M. ovipneumoniae*-free domestic goats. In experiment 3, introduction of a domestic goat-origin strain of *M. ovipneumoniae* to the same comingled goats and bighorn sheep used in experiment 2 resulted in clinical signs of respiratory disease (coughing, nasal discharge) in both host species. At the end of experiment 3, gross and histological evidence of pneumonia similar to that observed in experiment 1 bighorn sheep was observed in both affected bighorn sheep and domestic

goats. CONCLUSIONS/SIGNIFICANCE: *M. ovipneumoniae* strains carried by domestic goats were transmitted to comingled bighorn sheep, triggering development of pneumonia. However, the severity of the disease was markedly milder than that seen in similar experiments with domestic sheep strains of the bacterium.

(4) Manjunatha UH, Vinayak S, Zambriski JA, Chao AT, Sy T, Noble CG, Bonamy GMC, Kondreddi RR, Zou B, Gedeck P, Brooks CF, Herbert GT, Sateriale A, Tandel J, Noh S, Lakshminarayana SB, Lim SH, Goodman LB, Bodenreider C, Feng G, Zhang L, Blasco F, Wagner J, Leong FJ, Striepen B, Diagana TT. 2017. A Cryptosporidium PI(4)K inhibitor is a drug candidate for cryptosporidiosis. *Nature*. 15;546(7658):376-380.

Diarrhoeal disease is responsible for 8.6% of global child mortality. Recent epidemiological studies found the protozoan parasite *Cryptosporidium* to be a leading cause of paediatric diarrhoea, with particularly grave impact on infants and immunocompromised individuals. There is neither a vaccine nor an effective treatment. Here we establish a drug discovery process built on scalable phenotypic assays and mouse models that take advantage of transgenic parasites. Screening a library of compounds with anti-parasitic activity, we identify pyrazolopyridines as inhibitors of *Cryptosporidium parvum* and *Cryptosporidium hominis*. Oral treatment with the pyrazolopyridine KDU731 results in a potent reduction in intestinal infection of immunocompromised mice. Treatment also leads to rapid resolution of diarrhoea and dehydration in neonatal calves, a clinical model of cryptosporidiosis that closely resembles human infection. Our results suggest that the *Cryptosporidium* lipid kinase PI(4)K (phosphatidylinositol-4-OH kinase) is a target for pyrazolopyridines and that KDU731 warrants further preclinical evaluation as a drug candidate for the treatment of cryptosporidiosis.

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## What's New at WADDL?

### Blue-Green Algae (Cyanobacteria) Identification

Because of our weird weather, rainy then hot, and the potential for algal blooms, we thought we would discuss blue-green algae poisoning and the capability of WADDL to test for this.

Blue-green algae in ponds and lakes can kill most animal species. We'll focus on cattle and sheep (ruminants) in this article because they tend to be more sensitive to poisoning. The algal bloom in the water might not be completely obvious or there might be a scum on the surface of the water. These algal blooms can happen overnight. When the algae die, toxins (neurotoxins and liver toxins) are released. Cattle can be affected by drinking water with toxins or intact algae.

In a herd case of 24 out of 175 heifers that died, the cattle were either found dead or had nervous signs and were down, weak, not eating and sensitive to noise (Puschner et al, 1998). In addition, the toxin caused liver damage. In most cases, WADDL is notified about sudden deaths but muscle tremors and difficulty breathing may be seen. The algae can be identified in GI tract contents which should be sent fresh and refrigerated or fresh and on ice bags. See the WADDL website for sample requirements <https://waddl.vetmed.wsu.edu/labs-sections/toxicology>.



Treatment is rarely successful. Gut content evacuation or activated charcoal to bind the toxin might be helpful in mild exposures. Prevention is key and consists of keeping livestock away from stagnant water after hot dry weather. An algacide could be added to the pond, such as copper sulfate, but may kill the algae and release more toxins and sheep are exquisitely sensitive to copper poisoning.

Reference: Purschner B, Galey FD, Johnson B, et al. Blue-green algae toxicosis in cattle. JAVMA 1998 Dec 1;213(11):1605-7.

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## WSDA Corner

By Dr. Brian Joseph, State Veterinarian



### Attention Cattle Producers and Veterinarians—Testing for Bovine Tuberculosis

Are you moving cattle interstate, planning a dairy sale, or simply testing your herd for Bovine Tuberculosis? There are important updates that you should be aware of in the event of a caudal fold test (CFT) responder. In the past, WSDA field veterinarians were called to confirm any positive CFT results, using the Bovine Interferon Gamma Assay (Bovigam® blood test) or comparative cervical test (CCT). Traditionally, the blood test was considered a quick, efficient way to conduct confirmatory TB testing. It involved one trip to the farm, minimal animal restraint, and timely laboratory results.

However, this past May, USDA Veterinary Services temporarily suspended the use of the Bovine Interferon Gamma Assay due to inconsistent results and a variety of other factors. VS Guidance 6708 has details. Because of this, WSDA veterinarians are required to use the comparative cervical test (CCT) to determine the TB status of a herd until further notice. The CCT must be conducted within 10 days of your veterinarian's initial CFT injection, or after 60 days. The CCT requires that animals be restrained. The procedure involves clipping two spots on the animal's neck, measuring skin thickness with calipers, and injecting two types of tuberculin. Three days later (72 +/- 6 hours), the skin thickness at the two sites is measured and the reactions are compared. Then, results are plotted on a graph to determine the TB status of the animal. As one can see, this process is much more involved than simply drawing a tube of blood and sending it to the lab. Forward planning is absolutely essential!

**Large herds** -- In the event that large herds are TB tested at once, one can expect that 1-5% will be responders. This will result in a Hold Order being placed on the farm to restrict animal movement and contain the possible spread of disease. After this, an enormous amount of planning and interagency coordination is required to provide personnel, equipment, and supplies for further testing. The process can take several weeks, especially if a TB suspect or reactor is found. Those animals will require euthanasia, necropsy, examination of tissues under the microscope, and culture.

With all this in mind, how can you help streamline this process and ensure cattle get on their way? Here are some tips:

1. When planning Bovine TB testing with your veterinarian, allow at least 2-3 weeks for any follow-up testing by regulatory personnel. Once a TB responder is identified via

the CFT, no animals will be allowed to leave the premise until herd status can be determined. It doesn't matter if the number of animals tested is large or small; the process will take time.

2. Have your veterinarian contact the WSDA field veterinarian in their region as soon as TB testing is on your calendar. Our four field veterinarians have a variety of responsibilities within their regions, so timely notice is much appreciated. A list of WSDA field veterinarians, and contact info is at <https://agr.wa.gov/foodanimal/animalhealth/ContactUs.aspx>
3. Do not assume there won't be TB responders when conducting herd testing. A common mistake is to have cattle transport trucks arrive at the conclusion of your veterinarian's initial testing. This can be very costly and frustrating for the producer when the cattle are not permitted to load due to a Hold Order.

Do you have more questions? Please feel free to contact the Animal Health Program at (360) 902-1878, or your WSDA field veterinarian for further assistance. We are happy to help!

### **New Fee for WSDA Large Animal Certificates of Veterinary Inspection**

Washington State accredited veterinarians received notice from the Department of Agriculture (WSDA) that beginning July 1, the Animal Services Division will collect a \$7.50 processing fee for paper-issued large animal Certificates of Veterinary Inspection (CVI). Similar to other states, including Colorado, Florida, Kansas, Texas, Utah, and Wisconsin, the fee will be collected to support costs associated with data entry and processing of paper-issued large animal CVIs. At this time, this new fee will not impact the Equine Certificates of Veterinary Inspection and Interstate Movement Permits, also known as the six month horse passports.

Why is WSDA Charging this Fee? Industry proposed legislation in 2013 that was approved by the Legislature to recover costs associated with processing animal health documents that facilitate disease control and traceability.

One of the goals of the legislation was to promote the use of electronic CVIs to increase efficiencies with data collection, but to also share of the cost of traceability across all livestock sectors. WSDA wanted to be able to provide other options to the paper CVI that did not accrue a processing fee but did not have a reliable or user friendly electronic CVI option available for use. Because of this, WSDA decided to wait to implement this fee until a reliable electronic CVI option was available! WSDA is excited to share that they now have a reliable and user friendly electronic CVI option for you--the mCVI.

Tell me more about the mCVI -- WSDA offers the new mobile CVI app called "mCVI" to all Washington State accredited veterinarians. This app is available on all Apple and Android mobile devices, such as phones and tablets. This app can be found in your device's app store, just search for "mCVI". Additionally, an internet connection is not needed to create CVIs in the mCVI app. You only need to be connected to the internet when you are ready to finalize and submit your completed CVI. Some of the other benefits of the mCVI app include: certificates can be emailed to the client, to the veterinarian's office, or printed right from the app; it allows the import of official animal IDs and other data from a spreadsheet; and automatically submits the certificate to the State Veterinarian's Office,

to both the state of origin and the state of destination, as soon as it is returned to internet coverage.

For more information on the mCVI and other electronic CVI options, please visit our website at: <https://agr.wa.gov/FoodAnimal/AnimalID/electroniccertificates.aspx>

### **Animal Disease Traceability**

The United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), in collaboration with local state animal health officials, hosted public meetings across the country this spring to discuss animal disease traceability (ADT) with the primary focus of traceability in the cattle and bison sectors.

Officials heard from industry representatives about their experiences with ADT: What areas are working well? What aspects are challenging, confusing, or problematic? How can these obstacles be rectified? In addition, APHIS sought stakeholder views on the longer-term issues; in particular, what is the level of traceability that should be considered if they are to move beyond the basic traceability framework.

Dr. Brian Joseph, WSDA state veterinarian, and other staff from the WSDA Animal Services Division, along with a couple of Evergreen State industry members, participated in the public meetings. The meetings were well-structured, providing great dialogue between industry reps and state and federal animal health officials. USDA provided opportunities for industry members to participate on a panel to discuss what is and is not working for ADT.

Topics included mandatory and electronic identification and the pros and cons based on different industry sectors, difficulties with ADT at livestock markets, the amount of regulations set by USDA, and traceability efforts and successes in other countries. We feel in general the meetings were beneficial and there is no one-size fits all for traceability. USDA plans to publish a report summarizing the input received from these public meetings this fall.

### **Animal Health Rulemaking**

WSDA recently adopted rule amendments to chapter 16-54 of the Washington Administrative Code (WAC). The amendments included:

- Modifying the requirement that rams must test negative on an ELISA test for Brucella ovis within 30 days before entering Washington to 60 days;
- Repealing the requirement that black face sheep imported for breeding purposes must be genetically tested before entry to be QR or RR at the 171 codon;
- Repealing the Equine Infectious Anemia test exemption for equine moving to Washington from Idaho and Oregon; and
- Repealing the M. bovis test requirement for Old world primates, Gibbons, and Great apes.

The rule amendments become effective on July 17. If you would like to be notified when the Animal Services Division proposes a change to their rules, contact Jodi Jones at [jjones@agr.wa.gov](mailto:jjones@agr.wa.gov) or call her at (360) 902-1889. Rulemaking information and documents can be reviewed on our website at [www.agr.wa.gov/Lawsrules/](http://www.agr.wa.gov/Lawsrules/).

## **RFID Pilot Project at Everson Auction Market**

Animal disease traceability (ADT) is the state/federal program which sets standards for individual animal identification and data management for animal tracing. Application of ADT principals supports a safe food supply, assists in the prevention of zoonotic diseases, and protects the state's livestock industry by making it possible to quickly identify, locate and contain animals exposed to or infected with disease.

ADT promotes electronic capture and management of animal identification and movement data, which allows your veterinarian as well as state and federal animal health officials to respond to an adverse animal disease event quickly and effectively. WSDA was awarded \$881,000 in the 2013 legislative session to create an ADT program to track interstate movement of cattle. Since then, we've developed a database called Animal Tracks to house animal movement data, change of ownership information, as well as animal health data. Animal Tracks has been developed and set the groundwork for ID capture in a searchable format. WSDA is committed to continuing progress to develop and implement a robust ADT Program to minimize the time to complete any animal health disease investigations.

In order to continue working towards measurable progress and improve traceability in public markets, the Animal Health Program is working on a pilot project at the Everson Auction Market in Whatcom County. This year-long project is the first step towards developing a market-based program for the capture of individual ID and its correlation to movement information. The project will inform WSDA of how to overcome challenges of implementing ADT in market systems where speed of commerce, costs of tagging and correctly identifying and sorting animals to the vet chute remains a challenge.

Most importantly, this pilot project aligns with WSDA's commitment to Washington's livestock industry to build a comprehensive ADT system for animal agriculture.

The RFID Pilot Project will work to promote the advancement of the ADT program by:

- 1) Providing FREE tags to increase the availability and use of official animal identification (AIN) with radio frequency technology (RFID) for producers.
- 2) Collecting electronic data to optimize search capabilities of animal health data by interfacing RFID technology with the existing sale yard electronic data system.

RFID panel readers will 'passively' capture any existing electronic ID in the intake chute where back tags are applied. The sale yard veterinarian will 'actively' capture existing or newly applied RFID of any cattle leaving the market that are NOT destined for slaughter. The sale yard veterinarian will also be applying RFID brucellosis tags to female cattle that are brucellosis vaccinated and to breeding bulls >18 months that leave the market with a Trichomoniasis test.

Capture of official RFID at markets and interfacing that ID with existing market systems as well as the WSDA Animal Tracks database is a much-needed enhancement of the program. The pilot project provides the necessary first steps and an assessment arena for this process, along with tremendous potential as a foundation for additional activity to capture and utilize official animal identification information.

If you have questions about this pilot project, contact Dr. Amber Itle, field veterinarian, at (360) 961-4129 or by email at [aitle@agr.wa.gov](mailto:aitle@agr.wa.gov).

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# Continuing Education

## Veterinarians

**Bull Breeding Soundness Evaluation** – Drs. Tibary and Campbell -- The evaluation of bulls for their ability to perform as herd sires has unfortunately become commonly labeled as “semen testing” or “semen evaluation”. It is important to stress that semen evaluation is just a small part of the complete evaluation of bulls for breeding soundness.

Understanding the guidelines for breeding soundness examination requires a thorough knowledge of the reproductive physiology as well as factors that may affect spermatogenesis and/or sperm delivery. In addition, the veterinarian has all the adequate training to recognize the lesions or symptoms of diseases that may be relevant for herd biosecurity. **This course provides 1 credit at a cost of \$50.00. Go to the following site to register:** <https://apps.vetmed.wsu.edu/CVME>

**Calf Care Audit** -- \$50 + 1 CE credit – Visit <https://apps.vetmed.wsu.edu/CVME/Event/Details/28> . Go through the course, complete a 10 question quiz and you will automatically be issued a CE Certificate. PowerPoint notes and the 5 reference documents are also available! Or FREE! At <http://vetextension.wsu.edu/research-projects/amrcap/outreach/>

**CVM Homecoming CE Event**, October 21, 2017, WSU Pullman. Veterinarians & veterinary technicians -- earn 3 free credit hours of CE prior to the CVM Alumni Barbeque and Homecoming football game. SAVE THE DATE! More details to come!

Visit our website for information on current research projects and outreach materials for veterinarians and producers! <http://vetextension.wsu.edu/>

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