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http://vetextension.wsu.edu/newsletters/

From the Editor - It’s Fall... Need I say more? Baseball is winding up - how ‘bout them Dodgers? And, football is well underway. With the start of the new semester, we have been planning for the future and have conferences for producers and veterinarians lined up. First up is homecoming CE.

Education, or just learning something new to apply on the farm or share with the neighbor is our goal. In this issue, you can share something new about continuing education, bovine leukosis virus, goat mastitis, Bluetongue virus, and all the research being done for ag animals at the vet school. There’s a lot of new information out there!

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

Congratulations!

WSU ag animal students Shelby Nagle, Class of 2021, was awarded one of the Amstutz Scholarships and Dallas Shaw, Class of 2020, was awarded an AABP Foundation Bovine Veterinary Student Recognition award at the 2019 AABP Conference.
Veterinary Students Visit India
By Sara Falk, Veterinary Student Class 2020, WSU

This past summer, seven 4th year veterinary students spent four weeks in India on an exchange between WSU and the Tamil Nadu Veterinary and Animal Sciences University (TANUVAS). Although its location is in Chennai, one of the largest cities in India, it still has strong agricultural ties. In addition to the high small animal caseload, its large animal departments regularly see cattle, sheep, goats, horses, and water buffalo. India has a large number of native breeds of which are resistant to many contagious diseases not seen here in the North America, such as PPR and many hemoproteozoa. Several students spent a week at a rural university clinic, where we were able to assist with a goat C-section, practice artificial insemination in native cattle, collect goat semen for a semen bank, and even palpate a water buffalo. Despite different cultural and social needs, ag animal medicine has similarities worldwide, and we all have something to learn from one another.

Dairy: We’re Talking Drugs Again
by Dale A. Moore, Extension Veterinarian, WSU

The last 20 plus years of my career was partially devoted to ways to reduce antibiotic residues in cattle products. Mostly, I focused on disease prevention strategies and reducing the need for antimicrobials such as improving calf nutrition and reducing exposure to pathogens. My colleagues and I have done Beef Quality Assurance, Dairy Beef, and Residue Prevention programs in the West, and industry, producers and veterinarians have worked hard to reduce residue prevalence here.
Our group has also investigated how resistant bacteria arise on some farms, looked at the rise of public interest in antimicrobial resistance (AMR), and read requests by government to increase veterinary oversight of antimicrobial use on farms. Oversight of all antimicrobial use is in our future, as it currently is in California where there is no over-the-counter antibiotics available and where the Veterinary Client Patient Relationship (VCPR) and prescriptions rule (see the PEW article). That may sound onerous, but the good news is that many of the practices that work for residue reduction will also work for resistance reduction, with new ideas also coming on board.

On September 25, 2019, the FDA posted a draft of its guidance document in the Federal register: *Recommendations for Sponsors of Medically Important Antimicrobial Drugs Approved for Use in Animals to Voluntarily Bring Under Veterinary Oversight All Products That Continue To Be Available Over-the-Counter; Draft Guidance for Industry*. This will provide information to sponsors of certain new animal drug products who are interested in changing the approved marketing status of these products from over-the-counter (OTC) to prescription (Rx). Please have a read. If you wish to provide comment to this document (until December 24, 2019), see the Federal Register site.

To get ready for the future and provide veterinarians and dairy producers with practical information on how to implement antimicrobial stewardship on the farm, the California Department of Food and Agriculture has partnered with WSU and University of California, Davis, veterinary colleges on a western states conference: *Partnering for Dairy Antimicrobial Stewardship: A Conference for Farmers and Veterinarians in the West, Friday, April 17, 2020, Portland, Oregon*

This conference is unique in several ways. First, it brings veterinarians and farmers together to examine the practice of antimicrobial stewardship. Second, the conference will have a live program held in Portland, Oregon, for those who are located nearby, but will also be broadcast live to 5 other locations in the West to make it convenient for folks who cannot travel to Portland. These remote sites, in Lynden, WA, Twin Falls, ID, and Orland, Modesto and Fresno, CA, will be hosted by local collaborators on this project.

Dairy veterinarians and farmers are welcome to attend this day-long meeting focused on the reasons behind and the practical application of antimicrobial stewardship guidelines. For more information and registration: [https://vetextension.wsu.edu/dairy-antimicrobial-stewardship/](https://vetextension.wsu.edu/dairy-antimicrobial-stewardship/).
Helping maintain and preserve rangelands and inform the ranchers and professionals who manage them, Tip Hudson, WSU rangeland and livestock management Extension specialist, launched a new podcast, “Art of Range,” in the fall of 2018. The podcast is produced by Washington State University Extension in cooperation with the Society for Range Management and the Rangelands Partnership, funded by the Western Center for Risk Management Education. The podcast provides education through conversation with national experts on managing and conserving rangelands with a new episode released every two weeks.

Most modern people’s daily lives, including agriculturalists, are filled with distraction and constant stimulation that prohibits us from engaging in sustained thought and, most importantly, what psychologists call generation. Generation is one’s brain building information on its own and not just passively receiving. This synthetic activity is crucial to learning — one must be an actor and not simply an observer. The communication medium of a podcast allows indulgence in unhurried thinking and generation. Further, a podcast which broadcasts a conversation between people — rather than a canned, tightly scripted message — has much greater potential to stimulate the kind of creative thinking that is badly needed to work through complex issues with biological and sociological components.

The Art of Range title plays on the idiom that range management is both art and science. Science is classically understood as a body of knowledge to be acquired. There is much we know about the physical and biological world and the numerous ecological interactions among organisms. An art, classically understood, is the practice, the application of a body of knowledge. Rangeland management is an art as well — those whose livelihoods depend on making good decisions over a lifetime require skill developed from continual learning. The Art of Range bi-weekly podcast will help aspiring and established range managers learn from those who have mastered the art and understood the science.

There are 20 episodes now on topics ranging from rangeland monitoring apps to plant secondary compounds to targeted grazing for cheatgrass control with nationally-known experts, experts that haven’t been nationally appreciated yet, book authors, ranchers, and more.

You can subscribe to the podcast through your favorite podcasting app (search for “Art of Range”) or listen on the website at artofrange.com. On the website you’ll also find show notes, full transcripts of the interviews, and an invitation to share feedback. A new episode will be released every two weeks. Contact Tip Hudson with questions or comments at hudsont@wsu.edu.

**Dairy: Update on Bovine Leukemia Virus (BLV)**
**Diagnosis and Control**
By Craig S. McConnel, Extension Veterinarian, WSU

Two articles were published recently that provide new insight into an old problem. Bovine leukemia virus (BLV) has been recognized as an infectious cause of lymphosarcoma in both beef and dairy cattle for decades. Recent research has shown that dairy cows infected with BLV have altered immune function associated with decreased milk production and lifespan. It is estimated that BLV prevalence has now surpassed 40% of US dairy cattle, with over 80% of US dairy herds infected.
Since around 2000, there has been an effort to encourage BLV testing in the US to try and reduce the level of infection. BLV infection occurs as a subclinical infection in a high percentage (≥90%) of dairy cattle, necessitating an accurate assay for detection. Dr. Jim Evermann and others at the Washington Animal Disease Diagnostic Laboratory (WADDL) recently conducted a study evaluating a serum ELISA for detection of bovine leukemia viral antibodies in milk samples (J Vet Diagn Invest. 2019 Jul; 31 (4):598-600). Colostrum and milk are considered the major natural sources of BLV spread on farms, and milk ELISA for BLV antibody detection has been used in various countries for monitoring herds that have successfully eradicated BLV. Additionally, milk ELISA has been used to determine the progress of BLV control programs in regions where BLV remains endemic. The findings from the WADDL study were consistent with prior studies comparing milk with serum as a means of testing, and supported the use of the BLV serum ELISA on properly collected and processed milk samples. As such, WADDL will soon offer the milk ELISA as a simple diagnostic option for producers and veterinarians. Given that milk can be easily obtained from any lactating cow, this test should facilitate BLV detection and the development of strategies to reduce the spread of BLV such as heat-treating milk or discarding infected milk from calf-feeding programs. More information regarding the implementation of the milk ELISA or other BLV diagnostic options can be obtained at the WADDL website, or by contacting WADDL directly at waddl@wsu.edu or (509) 335-9696.

A second study regarding BLV is hot off the press and open access in the Journal of Dairy Science. Ruggiero et al. investigated the control of BLV in dairy herds by identifying and removing cows with the highest proviral load (PVL) and lymphocyte counts (LC). Milk or blood samples from adult cows were tested with ELISA for BLV antibodies, and ELISA-positive cattle were then re-tested using a blood LC and a quantitative PCR test for PVL. Although antibody testing is a widely accepted diagnostic tool, false-positive and false-negative results are possible and the above methodology provided an additional level of discrimination helping to identify the most infectious animals for segregation and culling. After 2 to 2.5 years of this combined diagnostic oversight, the participating herds saw the risk of new infections decrease substantially and overall herd prevalence fell from 62% to 21%.

Admittedly, the above study was a pilot intervention trial and in fact there is no commercially available PCR test for PVL in the US. However, the findings from this study highlight that increased scrutiny of BLV infections within herds can reduce the overall burden of disease. Given the efficacy of milk ELISA, investigating the infection status within a given herd may be simplified through the use of routine DHI milk samples. Although more studies are required, it may be that bulk tank or pooled milk samples can ultimately be used as part of a herd-wide screening and control strategy as well. This is encouraging because a very low prevalence of BLV infection would make it
economically feasible to remove all remaining infected cattle, as was achieved in national eradication programs in other countries decades ago.

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**Goats: Dairy Goats and Staphylococcal Mastitis**
by Dale A. Moore, Extension Veterinarian, WSU

Last Spring, the *Washington Post* highlighted the rise of dairy goats in the United States with a growth rate of over 60 percent in 10 years. There was major growth occurring in many Washington state counties. [For basics of dairy goat production, see a Penn State article.](#) Regardless of whether these milking goats are being raised in backyards or large-scale goat dairies, just as with dairy cows, mastitis is a condition that can be troubling to their owners.

In a recent article in the *Journal of Dairy Science*, University of Missouri researchers investigated the most common cause of mastitis in dairy goats, staphylococci bacteria, with a prevalence up to 25 percent of udder halves at dry off and up to 12 percent within the first 4 days of lactation. The purposes of the project reported by Gosselin et al. were to evaluate factors predicting infection dynamics over the dry period and define milk quality parameter (such as somatic cell score - SCS) cutpoints that could predict those infection dynamics. In so doing, they might be able to predict which goats would require dry period intramammary therapy and which would not.

Thirteen different species of staphylococci were identified from samples taken 14-21 days before dryoff, 10-14 days later and just after kidding, less than 10 days into lactation. The prevalence of intramammary infections (IMI) was 26.3 percent before dry-off and 25.8 percent after kidding. The incidence of new IMI at the half level was 13.2 percent. Persistent infections occurred in about 48 percent of the cases.

After adjusting for pre-dry IMI status, Small Ruminant Lentivirus status, and parity, new IMI status was not associated with pre-dry SCS (P = 0.64). After adjusting for pre-dry IMI species, SRLV status, and parity, persistence of IMI was not associated with pre-dry SCS (P = 0.10) and pre-dry IMI species of Staph was not associated with persistence of IMI. Optimal pre-dry SCS thresholds lacked sensitivity (only about 53 percent) and had only moderate specificity (about 81 percent) for detecting an IMI that would persist over the dry period into the next lactation.

In conclusion, although the rate of persistence of an IMI with Staph species was high in this study, the value of using somatic cell score to predict persistence did not hold up. Dairy goat farmers are left with deciding to either use or not use blanket dry-off therapy as a means of reducing new IMI, whereas dairy producers with cows have more evidence-based options. However, even for cow dairy farms, treatment of Staph mastitis can be challenging. Detecting infection quickly, milking infected animals last, considering culling those that are culture-positive multiple times, have high numbers of bacteria on culture, have more than one quarter infected, and are older, as well as extended therapy for clinical cases and dry-off therapy are all considerations when designing a control program for *Staph aureus* mastitis problems (Barkema et al., 2006).
Reference

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Sheep: It’s Bluetongue Virus Season, Sheep Producers Beware!

By Kaylie Shaver, Veterinary Student Class 2020, WSU

Late summer to early fall is the peak season for blue tongue virus (BTV) infection as this is when transmission by the vector Culicoides (biting midge or “no seeums”) is most prevalent. While BTV infects many ruminants, sheep show more severe morbidity and mortality following infection. It is important to differentiate BTV infection from pneumonia, particularly in lambs. It is also important to recognize that BTV infection can cause infertility in rams and ewes. More detailed information about BTV in sheep is available on the Vet Med Ext website (https://s3.wp.wsu.edu/uploads/sites/2147/2019/09/BTV_Veterinary.pdf), made possible by funding from the Washington Wool Growers Association Auxillary.

What’s New at WADDL?

The Washington Animal Disease Diagnostic Laboratory (WADDL) is pleased to announce that Dr. Laura Chen has started as the new WADDL-Puyallup Branch Chief for the Avian Health and Food Safety Laboratory (AHFSL) on September 1st. Dr. Chen is board certified by the American College of Poultry Veterinarians and the American College of Veterinary Pathologists, and has a Master’s of Science degree from North Carolina State University in Avian Medicine and Poultry Pathology. She received her Bachelors of Science degree in animal science from Rutgers University and a DVM degree from North Carolina State University.

Dr. Chen brings the expertise to manage and provide the high quality, client focused service to the poultry industry, backyard flocks/aviaries, food safety industry, as well as the ability to work effectively with regional state and federal poultry regulatory programs which is expected from WADDL-Puyallup AHFSL. Her experience working as a Veterinary Medical Officer for USDA-APHIS highly pathogenic avian influenza virus (HPAI) emergency response incident command system, as well as hands-on training in foreign animal disease investigation serves our region well at the entry point of the Pacific flyway to the USA. More information about the WADDL-Avian Health and Food Safety Laboratory can be found at https://waddl.vetmed.wsu.edu/avian
Veterinary Medicine Loan Repayment Program

The State Veterinarian at WSDA is responsible for forwarding need areas for rural practitioners or programs that would qualify for the USDA Veterinary Medicine Loan Repayment Program. The shortage nomination cycle starts October 7, 2019, and closes November 11, 2019. The program can result in NIFA’s entering into “educational loan repayment agreements with veterinarians who agree to provide veterinary services in veterinarian shortage situations for a determined period of time. If you commit to at least three years to providing veterinary services in a designated veterinary shortage area, NIFA may repay up to $25,000 of your student loan debt per year. Loan repayment benefits are limited to payments of the principal and interest on government and commercial loans you received for the attendance at an accredited college of veterinary medicine resulting in a degree of Doctor of Veterinary Medicine or the equivalent.” For more details on the program, see: https://nifa.usda.gov/program/veterinary-medicine-loan-repayment-program

WSU Ag Animal Faculty Research Updates


Objectives were to determine effects of 1) injectable or transdermal flunixin meglumine (FM) at embryo transfer (ET) compared to an untreated control group on pregnancy per ET (P/ET; ~35 d after ET); 2) embryo and recipient factors on P/ET; 3) FM on hormone concentrations; and 4) FM on returns to estrus. Angus-cross beef cows (n = 1145) at five locations were scored for body condition (BCS; 1-9) and temperament (0 or 1) and given Select-Synch + CIDR. Recipient cows with a corpus luteum (CL) ≥1.5 cm received a frozen-thawed embryo 7 d after estrus and were concurrently given 1.1 mg/kg injectable FM im (INJFM; n = 384), 3.3 mg/kg transdermal FM pour on (TDFM; n = 388), or nothing (CON group; n = 373). Blood samples were collected at ET and 7 d later (60 cows). Accounting for temperament (P < 0.05), ET difficulty score (1-3, easy to difficult; P < 0.01), treatment by temperament (P < 0.001) and treatment by embryo quality (P < 0.05), FM treatments affected P/ET (P < 0.05). The P/ET for cows given INJFM [62.8% (241/384)] or TDFM [58.7% (228/388)] were not different (P = 0.26), but they were greater (P = 0.01 and P = 0.04, respectively) than P/ET for controls [51.2% (191/373)]. The P/ET was greater for calm versus excitable cows, 60.2 (463/769) and 52.4% (197/376), respectively (P < 0.01) and was lower for difficulty score 3 [49.2% (156/317)] compared to score 1 [62.7% (254/405; P < 0.001) or score 2 [59.1% (250/423; P < 0.01)]. There was no effect (P > 0.1) of cow age, BCS, or stage of embryo development on P/ET. Pregnancy rates for embryo quality grade 1 (excellent/good) and grade 2 (fair) were 60.4% (314/520) and 55.4% (346/625), respectively (P > 0.05). Percentages of non-pregnant recipient cows in estrus from Days 18-26 did not differ among treatment groups (P > 0.1). Control cows had lower progesterone concentrations and greater substance-P, PGFM and 8-isoprostane PGF2α concentrations at 7 d after ET compared to FM-treated cows (P < 0.05). In conclusion, injectable or transdermal FM improved pregnancy rates in ET recipients, without affecting nonpregnant cows’ return to estrus.

Bovine respiratory disease (BRD) is an often unrecognized problem in cow calf herds. We describe a program to help producers identify practices that could increase their herd’s risk for BRD and how to avoid them. Greatest knowledge gains were for topics of costs associated with BRD, BRD risks at the feedlot, and biosecurity. Through producer self-assessments the number of risky ranch practices ranged from none to 22 per operation, with an average of 10. **Extension professionals should consider use of self-assessment coupled with management information as an effective strategy to inform producers of risks in their operations.**


Bovine leukemia virus (BLV) infection has worldwide distribution in both dairy and beef herds. Our study was initiated in order to encourage control of BLV infection by using milk samples, in lieu of serum samples, to readily test lactating animals prior to dry-off and calving. Two Holstein dairy herds (A and B), with known status of BLV infection as determined by serology, were sampled by the collection of serum and fresh milk samples. Selected samples were tested using a USDA-licensed BLV antibody ELISA kit (Bovine leukemia virus antibody test kit; VMRD, Pullman, WA) for serum. Forty-one lactating cows from each herd were sampled. Herd A was confirmed to have endemic BLV infection; herd B was confirmed to be free of BLV infection. **The milk ELISA results demonstrated 100% identification of positive and negative animals compared with the serum results. The correlation of the ELISA values between serum and milk samples was 97%, which supports the use of this BLV ELISA on milk samples.**


Bedding is an important source of teat end exposure to environmental mastitis pathogens. To better control environmental mastitis, we need an improved understanding of the relationships among bedding selection and management, bedding bacteria counts (BBC), and udder health (UH). The objectives of this crosssectional observational study were (1) to describe BBC, bedding characteristics, udder hygiene scores, bulk tank milk (BTM) quality, and UH in US dairy herds using 1 of 4 bedding materials; (2) describe the relationship between BBC and herd measures of UH; and (3) identify benchmarks for monitoring bedding hygiene. Local dairy veterinarians and university researchers enrolled and sampled 168 herds from 17 states. Herds were on a Dairy Herd Improvement Association (DHIA) testing program and used 1 of 4 bedding types for lactating cows: new sand, reclaimed sand, manure solids (MNS), or organic non-manure materials. Each herd was sampled twice (winter and summer) in 2016. Samples and data collected included unused and used bedding, BTM samples, udder hygiene scores, DHIA test data, and descriptions of facilities and herd management practices. Bedding was cultured to determine the total bacteria count and counts of Bacillus spp., coliforms, Klebsiella spp., non-coliform gram-negative organisms, streptococci or streptococci-like organisms (SSLO), and Staphylococcus spp. Bedding dry matter, organic matter, and pH were also measured. Bulk tank milk samples were cultured to determine counts of coliforms, NAS, SSLO, Staphylococcus aureus, and Mycoplasma spp. Udder health measures included DHIA test-day average linear score (LS); the proportion of cows with an intramammary infection (IMI), where infection was defined as LS ≥4.0; the proportion of cows with a new IMI, where new IMI was defined as LS changing from <4.0 to ≥4.0 in the last 2 tests; the proportion of cows with a chronic infection, where chronic was defined as LS ≥4.0 on the last 2 tests; and the cumulative incidence of clinical mastitis in the 30-d period preceding sample collection. Although much variation existed within and among bedding types, mixed linear regression showed the use of MNS bedding to be generally associated with higher BBC, dirtier udders, increased coliform and
SSLO counts in BTM, and poorer UH measures compared with organic non-manure materials, reclaimed sand, or new sand bedding materials. While controlling for important farm traits and management practices, mixed linear regression showed that increased counts of coliforms, Klebsiella spp., SSLO, and Staphylococci spp. in both unused and used bedding were associated with poorer values for 1 or more herd-level measures of UH. Achievable benchmarks identified for counts of coliforms (unused: ≤500 cfu/cm³; used: ≤10,000 cfu/cm³), Klebsiella spp. (0 cfu/cm³ for unused and used), Staphylococcus spp. (0 cfu/cm³ for unused and used), and SSLO (unused: 0 cfu/cm³; used: ≤500,000 cfu/cm³) can be used to monitor bedding hygiene in most bedding materials, with minor variations suggested for SSLO in unused MNS (≤1,000 cfu/cm³).


Background -- This study is based on data collected to investigate the relation of peri-parturient events (colostrum quality, passive transfer of immunity, calving difficulty) on calf health and antimicrobial use. A component of the study was to provide feedback to farm management to identify calves at risk for disease and promote antimicrobial stewardship. At the start of the study (May 2016), a combination of enrofloxacin, penicillin, and sulfamethoxazole was the first treatment given to clinically abnormal calves. Based on feedback and interaction between study investigators, farm management and consulting veterinarians, a new policy was implemented to reduce antimicrobial use in calves. In August, the first treatment was changed to a combination of ampicillin and sulfamethoxazole. In September, the first treatment was reduced to only sulfamethoxazole. We investigated the effects of these policy changes in antimicrobial use on resistance in commensal Escherichia coli. Results -- We enrolled 4301 calves at birth and documented antimicrobial use until weaning. Most calves (99.4%) received antimicrobials and 70.4% received a total of 2-4 treatments. Antimicrobial use was more intense in younger calves (≤ 28 days) relative to older calves. We isolated 544 E. coli from fecal samples obtained from 132 calves. We determined resistance to 12 antimicrobials and 85% of the isolates were resistant to at least 3 antimicrobial classes. We performed latent class analysis to identify underlying unique classes where isolates shared resistance patterns and selected a solution with 4 classes. The least resistant class had isolates that were mainly resistant to only tetracycline and sulfisoxazole. The other 3 classes comprised isolates with resistance to ampicillin, chloramphenicol, aminoglycosides, sulfonamides, tetracycline, in addition to either ceftiofur; or nalidixic acid; or ciprofloxacin plus nalidixic acid and ceftiofur. Overall, E. coli from younger calves and calves that received multiple treatments were more likely to have extensive resistance including resistance to fluoroquinolones and ceftiofur. In general, there was a declining trend in resistance to most antimicrobials during and after policy changes were implemented, except for ampicillin, ciprofloxacin, ceftiofur and gentamicin. Conclusions -- Information feedback to farms can influence farm managers to reduce antimicrobial use and this can change endemic farm resistance patterns.


Veterinarians are being asked to provide more oversight of antibiotics used on dairies and promote stewardship of these drugs because of the risk for development of antimicrobial resistance. As organizations work to develop stewardship guidelines, gathering data on veterinarians’ views and actual use can better inform those guidelines. The purpose of this project was to survey dairy veterinarians to understand current antimicrobial use practices and views on antimicrobial
resistance. A 50-question online survey was developed and a link sent to members of the Academy of Dairy Veterinary Consultants. The final response rate of 41% (58 of 143) included only practicing veterinarians. Fifty-nine percent did not believe that the current use of antimicrobials on dairy farms contributed to antimicrobial resistance in human pathogens. Most of the respondents (83%) felt that there was unnecessary use of antimicrobials on dairies, particularly in pre-weaned calves, primarily due to protocol non-compliance and farmers’ or employees’ misidentification of healthy animals as sick and treatment of them with antimicrobials. About half the respondents always had written treatment protocols for their clients, and 40% always provided training on those protocols. Blanket dry-cow therapy was recommended by 65% of the practitioners. The results of this survey provide a baseline of western, large dairy herd veterinary antimicrobial use and recommendations. Responses indicated opportunities for dairy practitioners to improve some antimicrobial stewardship practices that could reduce antimicrobial use.

WSDA Corner

Dr. Joseph Returns from Deployment
Washington State Veterinarian Dr. Brian Joseph returned to his duties at WSDA last month after an overseas deployment to western Afghanistan with the Army Reserve Veterinarian Corps. Assistant State Veterinarian Dr. Amber Itle served as our acting state vet in his absence. She has likewise returned to her regular work.

We’re Not Zombies, but We Need Your Neurologic Sheep and Goat Brains!
Accredited veterinarians are encouraged to submit tissues or whole heads for scrapie surveillance from sheep/goats over 18 months of age that die on-farm or are euthanized. For fiscal year 2020, WA is required by USDA APHIS to sample 82 goats and 89 sheep to contribute to the national data pool so we can have statistical confidence in the scrapie status of the U.S. flock.

Scrapie is a fatal, degenerative disease affecting the central nervous system of sheep and goats. It is among a number of diseases classified as transmissible spongiform encephalopathies (TSE). Due to nervous system damage, affected animals often show behavior changes such as nervousness or aggression, intense rubbing, and locomotor incoordination that progresses to recumbency and death. Other clinical signs may include tremors (especially of head and neck), head pressing, star gazing, significant weight loss with no decrease in appetite, wool pulling, and hyperesthesia.

In addition to collecting routine surveillance samples, if a sheep or goat is neurologic or showing clinical signs compatible with scrapie prior to death, the animal must be reported to the WA State Veterinarian.

APHIS provides collection and shipping supplies including waybills for tissue and whole head submissions at no cost. You can order a box with all pertinent paperwork included through USDA APHIS Veterinary Services in Tumwater at 360-753-9430. For information on sample collection, labeling, and shipping samples, click here. Remember when sampling to keep all identification tags on the animal(s).

Scuttlebutt on the WSDA Reserve Veterinary Corps
Washington State has a large and robust livestock industry with more than a million head of cattle, 400 dairies, and nearly 12,000 ranches. The Reserve Veterinary Corps (RVC) is a body of volunteers willing to help WSDA respond to a crisis affecting animals in our state. Animals handled by RVC members could range from large farm animals to household pets. The mission of the RVC is to assist WSDA Animal Services Division respond to natural disasters, such as a wildfire or flood, an animal
Members of the RVC include veterinarians, veterinary technicians, and animal health professionals. However, those with experience in public health, law enforcement, incident command structures, or the military are also encouraged to become engaged with the RVC.

Participation in the RVC is completely voluntary, but members should be trained on the Incident Command System, a method of organizing and managing large scale emergency responses. The training is free and provided by WSDA. Members are also invited to other training that could assist when responding to an animal health emergency, including training on:

- Foreign animal disease response
- Hazardous materials awareness
- Animal decontamination

On average, there are four training opportunities each year. In some cases, volunteers may be paid to attend depending upon the training or incident. The 2019 WSDA RVC Annual Meeting focused on veterinary clinic emergency preparedness, animal disaster medicine, and humane euthanasia in a disaster response. A total of 30 veterinary professionals participated in this year’s one-day training.

To learn more about the RVC, visit [https://agr.wa.gov/departments/animals-livestock-and-pets/animal-health/reserve-vet-corps](https://agr.wa.gov/departments/animals-livestock-and-pets/animal-health/reserve-vet-corps) or call 360-902-1889.

**UPDATE on Brucellosis in the U.S.**

**By Dr. Amber Itle, Assistant State Veterinarian**

In the 1940s, brucellosis was endemic (widespread) throughout the U.S. Prior to implementation of the Brucellosis Eradication Program, there were 154,000 positive herds in the U.S. and $400 million in related production losses, including abortion and lost milk production. Prior to pasteurization, brucellosis was a significant public health concern because humans could become infected through consuming milk or contacting birthing fluids.

The Brucellosis Eradication Program has been extremely successful in the U.S. As of 2009, all States were declared Brucellosis FREE in their cattle herds. Currently, only three states have rare reported cases of brucellosis due to wildlife reservoirs occasionally infecting cattle; cattle contacting infected elk and bison herds are at greatest risk. Idaho, Montana, and Wyoming have identified designated surveillance areas (DSAs) and are required to execute Brucellosis Management Plans reviewed by the USDA annually. This gives other states confidence brucellosis is unlikely to leave those states. There have been no herds found positive outside of a DSA for 10 years. Affected herd prevalence across the U.S. is 0.0002%.

Many states have relaxed brucellosis requirements based on the low risk of disease. However, several states including Washington have retained vaccination requirements at change of ownership to facilitate commerce with Idaho and Oregon, which also require the vaccine. USDA is challenging states that still require brucellosis vaccination to reconsider based on the negligible disease risk. Industry has requested states align their rules to facilitate interstate commerce. WSDA is looking for feedback from industry and veterinarians about the brucellosis vaccination requirement. A relevant USDA RB-51 factsheet is available at [www.aphis.usda.gov/animal_health/animal_dis-spec/cattle/downloads/rb51_vaccine.pdf](https://www.aphis.usda.gov/animal_health/animal_dis-spec/cattle/downloads/rb51_vaccine.pdf).

In late October 2018, a New York resident became ill after drinking raw milk originating from a Pennsylvania dairy farm. The Centers for Disease Control and Prevention (CDC) confirmed the illness was due to *Brucella abortus* RB51 vaccine. The New York patient is the third known
domestically acquired illness caused by *Brucella abortus* RB51 in raw milk in the United States since 2017. The other two patients occurred in two unrelated outbreaks in 2017 in Texas and New Jersey. USDA’s current recommendation is raw milk herds should NOT vaccinate for brucellosis because of this rare but serious public health risk.

The USDA uses slaughter facilities in five states for “catchment of ID” for slaughter surveillance data across the U.S. Each year, 1.7 million samples are taken at slaughter at a cost of $1.15 million. Over 90% of the samples have low surveillance data because they are from non-DSA areas. USDA has awarded WSDA cooperative agreement money to pay for testing on any abortion screening test through WADDL. If you are interested in such testing, please contact the WSDA State Veterinarian’s office. [https://agr.wa.gov/departments/animals-livestock-and-pets/animal-health](https://agr.wa.gov/departments/animals-livestock-and-pets/animal-health)

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**Continuing Education**

**Veterinarians**

**Academy of Dairy Veterinary Consultants**, October 11-12, 2019, Grove Hotel, Boise ID. For more information: [https://academyofdairyveterinaryconsultants.org/](https://academyofdairyveterinaryconsultants.org/)

**WSU CVM Homecoming CE Event**, October 16, 2019. WSU Pullman. 9 AM to Noon, 3 hours of FREE continuing education for large and small animal practitioners and technicians. For other CE programs visit: [http://cvme.vetmed.wsu.edu/](http://cvme.vetmed.wsu.edu/)

**WSU Poultry Institute**, November 6, 2019. Allmendinger Conference Hall, WSU Puyallup Research and Extension Center, 2606 W Pioneer Ave, Puyallup, WA 98371. For more information, contact Dr. Chen Email: [WADDLAHL@vetmed.wsu.edu](mailto:WADDLAHL@vetmed.wsu.edu) Phone: 253-445-4537 or: [https://waddl.vetmed.wsu.edu/avian/poultry-institute/2019](https://waddl.vetmed.wsu.edu/avian/poultry-institute/2019)

**WSU CVM Spring Conference**, March 27-29, 2020. SAVE THE DATE! Pullman, WA. For updates visit: [https://cvme.vetmed.wsu.edu/](https://cvme.vetmed.wsu.edu/)

**Dairy antimicrobial stewardship Conference**, April 17, 2020, Sheraton Airport, Portland OR. [https://vetextension.wsu.edu/dairy-antimicrobial-stewardship/](https://vetextension.wsu.edu/dairy-antimicrobial-stewardship/)

**Producers**

GUESS THAT BREED!
We decided to give you all a little treat every issue! Just a knowledge quiz on \textit{ag animal} breeds. 
\textbf{WHO ARE THESE CUTE CREATURES?} (They’re crosses so just pick one breed!)

The Answer will be posted on the VME Homepage, under Newsletters: 
https://vetextension.wsu.edu/

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

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