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View Past Issues of ag animal health at: http://vetextension.wsu.edu/newsletters/

From the Editor - Into our 10th year of Veterinary Medicine Extension and the ag animal health newsletter and we are trying something new for Volume 10 with a launch into a blog-style, phone-friendly newsletter. Feed-back is always welcome... The ability for you to find articles of interest and search our archives is also new. We also welcome a new extension veterinarian, highlight LOTS of ag animal research from WSU, as well as changes at the diagnostic lab and the state department of agriculture. Nothing so constant as change!

DA Moore

**New format coming this fall/winter 2016**

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

A New Face in the Neighborhood

In November, we will have a new Extension Veterinarian joining our ranks. Dr. Craig McConnel (WSU CVM Class of 2002) has taken the position of Extension Veterinarian / Assistant Professor in our ag animal group. Craig has been on faculty at Colorado State University for the last three years. His research/outreach focus will be dairy cattle health and well-being. When you see him, say “Hey!”

Dr. Craig McConnel
Dairy: New Look at Subclinical Ketosis Testing
by JR Wenz

In a study we recently published, we looked at subclinical ketosis as measured by serum beta-hydroxy butyrate (BHBA) levels in dairy cows on 40 Washington state dairies (see abstract below) and different “alarm levels” as well as some different sampling strategies. We found a higher prevalence among Washington herds with our sampling technique compared to studies done in other regions.

One of the most interesting things we found was that second lactation animals tended to resemble first lactation with regards to prevalence. This means that when sampling a large herd, a better strategy is to have representative samples from first and second lactation animals as a group and separate samples from older cows. Older cows had higher prevalence than those less than three lactations. Sampling across the lactations could mask a problem in the 3+ cows.

In addition, the average value of the BHBA of a sampled group well-represented the potential for a subclinical ketosis problem in the herd. Pooling 15 samples from each parity risk group can reduce the costs of testing as a part of routine monitoring for post-partum energy balance.


The purpose of this study was to estimate the cow- and herd-level prevalence of subclinical ketosis (SCK) on dairies in the state of Washington and evaluate the arithmetic mean of individual samples as a proxy for pooled-sample testing to screen herds for SCK. The cow-level prevalence of SCK in 589 cows from 40 Washington dairies was 31, 25, and 19% using β-hydroxybutyrate (BHB) concentration cutpoints of ≥ 1.0, 1.2, and 1.4 mmol/L, respectively. For all BHB cutpoints, no difference was observed in the prevalence of SCK between cows of parity 1 and 2 (P > 0.358), but SCK was higher in cows of parity ≥ 3 versus those in lactations 1 and 2 (P <0.001). The mean BHB concentration (mmol/L) in cows of parity ≥ 3 (1.16) was higher than that of parity 1 (0.72) and parity 2 (0.88) cows (P <0.001). Using a BHB cutpoint of ≥ 1.2 mmol/L and herd alarm level of >15% cows exceeding that cutpoint, 23 herds (58%) demonstrated a herd-level problem with SCK. When a BHB cutpoint of ≥ 1.4 and herd alarm level of >25% was used, 12 herds (30%) had SCK. A herd mean BHB concentration of 0.77 mmol/L was correlated with a 15% herd-alarm level using a ≥ 1.2 mmol/L BHB cutpoint. Sensitivity and specificity of the herd mean BHB cutpoint of ≥0.8 mmol/L to identify herds with > 15% cows with BHB ≥ 1.2 mmol/L was 91 and 75%, respectively. The prevalence of SCK in Washington dairies was numerically higher than previous reports. Results of this study highlight the importance of obtaining representative samples from parity risk groups. Furthermore, results suggest parity 2 cows may be better
grouped with parity 1 rather than ≥ 3 parity cows. Herd mean BHB concentration performed well as a test to identify herds with a potential SCK problem when a mean value specific cutpoint was used. Further research evaluating the relationship between pooled-sample BHB and important outcomes, such as disease, milk production, reproduction, and removal, are needed.

Cow Calf: Tightening Your Calving Intervals
by Dale A. Moore, Extension Veterinarian

In a recent Beef Magazine article, Harlan Hughes, a livestock economist, ran the numbers on what “turn-out to calving” interval was the most profitable. He demonstrated that cows calving in the first 21 days of the calving period were more profitable than cows calving later. One part of the reason why is that cows that calve early wean heavier calves. There are likely other reasons but the economics seem to be pretty compelling on getting cows to calve early but how do we get there? In this article, we’ll discuss some risks for long calving intervals and make a list of the things to consider that would tighten them.

We Start With Records
The first question we need to answer is: “Where are we now? Or “How long was my breeding season or What was the calving interval last year?” We need to go through last year’s breeding and calving records to find out what the total calving period length was and what the average CI was for heifers and for cows. This will provide us a baseline. If the gestation length is about 283 days, cows need to conceive in the first 82 days of the breeding season to calve at the same time period next year. That number or less than a 90-day breeding season should be your first goal. If you do not have the records on individual cows but would like to start keeping them, see our record-keeping pages to print out at: http://www.bqa.wsu.edu/states/wa/modules.htm# or obtain a Redbook at NCBA.

The Bulls
Although we’re focused on the cows when entering the breeding season, we should really start with the bulls. If any of your bulls, whether they are young, old, new, or farm-reared lack the capacity to serve or are “shooting blanks” you will see an effect on the calving interval. The solution is: Breeding Soundness Exams (BSE) BEFORE they are turned out with the cows. These exams will give you the information you need to make decisions about keeping or culling those bulls. The BSE should include a general physical examination, Trichomoniasis testing, the Society for Theriogenology’s specific examination and include semen evaluation if the bull has passed all the other exams. For more information, see the Merck Manual: http://www.merckvetmanual.com/mvm/management_and_nutrition/breeding_soundness_examination_of_the_male/breeding_soundness_examination_of_bulls.html. If you decide to keep the bulls for breeding, they should be well-vaccinated, particularly for BVD.
The Heifers
Your replacement heifers are the future of your herd. To ensure their ability to get pregnant, a physical examination and a reproductive tract examination with scoring (RTS) will identify those too immature to breed or conceive. For more information on RTS, see: http://beefmagazine.com/breeding-systems/reproductive-tract-scoring-can-improve-yearling-heifer-performance. Most beef specialists recommend that the heifers enter the breeding phase about 20 to 30 days before the cows. The heifers also need to be vaccinated for BVD and leptospirosis if important in your area.

The Cows
Before the breeding season, cows will also need a physical exam. In addition, you should look at their calving interval last year. Those that bred late last year are at risk for breeding late this year. Knowing more about these cows will help you decide each cow’s ability to be successful this breeding season. A cow’s body condition is also linked with her fertility. Her days to show heat after calving and ability to conceive in the first 20 days of the breeding period is greatly reduced if she is thin. The cows also need to be vaccinated or revaccinated for reproductive diseases.

Synchronization and Artificial Insemination (AI)
Using AI with synchronization is one way to tighten calving intervals. Whether using this technology on heifers only or the whole herd, there are several important considerations. The synchronization protocol that you choose can influence the conception rate and, hence, the calving interval. See the Beef Reproduction Task Force documents on synchronization at: http://beefrepro.unl.edu/resources.html. Other influences on conception rates include the temperament of the heifer or cow, chute and handling facilities, semen storage, bulls used, and AI technique or technician.

Pulling the Trigger on the Breeding Window
If you are serious about reducing calving interval and addressing the risks for prolonged CIs, your next decision is when to pull the bulls out or stop breeding. To get the calving window you want means an 82 to 85 day breeding period. At the first herd pregnancy exam you’ll find those open cows and if you examine and cull early, they won’t be taking resources away from those that were successful at conceiving.

Summary
If you want to capture the most value from a tighter calving interval, there are quite a few considerations, many of which make sense for other reasons. Establishing what the herd has been doing by looking at the records and setting your CI goal is the first step. Developing strategies for evaluating your bulls, replacement heifers and cows are next in line for you to make progress towards your goal of tightening the calving interval and realizing more profit per cow.

For information on very specific steps to take to convert your herd to a controlled breeding season, see the University of Florida site: http://edis.ifas.ufl.edu/an267

References


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**Feedlot: *E coli* Causing Disease in Feedlot Cattle?**
by Dale A. Moore, Extension Veterinarian

We most often think of *E coli* enterohemorrhagic (EHEC) diarrhea in people and young calves. *E coli* O157:H7 is shed by some feedlot cattle but does not appear to cause disease in them as it does in people. A report from the University of Nebraska adds another group to this list of animals susceptible to EHEC. They reported a case of hemorrhagic colitis with erosions in the colon of a yearling feedlot heifer where they identified *E coli* O165:H25 in the lesions. In an article describing the research, additional animals were reported with bloody diarrhea from the same pen. The agent found in this case (*E coli* O165:H25) should be put on the differential diagnosis list for cattle with bloody diarrhea, along with salmonella, coccidiosis and bovine viral diarrhea virus.

**References**


Contact with cats either in the pasture or barns were three times more likely to be positive compared to those without contact. For cattle, there were additional, important risks such as a reservoir water supply, presence of rats in their feed, being extensively raised, and more than three cats in their area.

Toxoplasma infection can cause abortion in sheep and eating undercooked, infected lamb or mutton is a risk for human infection. Restricting cats from sheep areas is the logical step. Keeping cats from hunting mice or rats or consuming raw meat is another way to reduce infections. Doesn’t look like cats and sheep should mix.

Reference

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**Swine: Enteric Coronavirus Disease in the US**

by Dale A. Moore, Extension Veterinarian

The USDA released an August 2016 update on the number of pig farm samples that were confirmed positive for porcine epidemic diarrhea virus (PEDV) and porcine delta coronavirus (PDCoV) since June, 2014. Over 2700 US premises have been confirmed positive for PEDV and over 180 were positive for PDCoV. There are 39 states with confirmed PED on at least one premise since 2013.

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*Figure 1. Number of Confirmed Positive Premises by Week*

*Week the sample was received at the laboratory for testing.*
Although Washington state is not shown as “positive” on this map, how do we keep the disease from affecting our pigs? From the American Association of Swine Veterinarians:


Suggestions include:
- limiting traffic (people and equipment) onto the farm,
- thoroughly cleaning and disinfecting anything coming onto the farm,
- enforcing downtime requirements and maintaining a log of visitors,
- taking care when disposing of dead stock particularly if using a communal disposal method,
- isolating newly arriving animals and continuing vet to vet discussions about animal health at the herd of origin, and
- showering into the facility where practical and changing into clean boots and coveralls (veterinarians should also be careful not to track the virus between herds on their person, equipment or vehicles).

The practices listed above are important for limiting the transmission of any infectious disease. Preventing PED from becoming established in Washington state also requires strict adherence to state regulations regarding transportation of pigs into the state. For more state-specific information, go to:

Staphylococcus aureus is one of the most important pathogens causing contagious mastitis in dairy cattle worldwide. The objectives of this study were to determine if recently described S. aureus genotype B was present among previously characterized isolates from cases of bovine intramammary infection in the United States and to compare pulsed-field gel electrophoresis (PFGE) to the combination of ribosomal spacer PCR (RS-PCR) and virulence gene identification for typing of S. aureus strains. The hypothesis was that isolates that were previously characterized as contagious would be identified as genotype B and that the results of the two strain-typing methods would be comparable. Isolates were selected from a collection of S. aureus isolates from eight dairy farms. Mammary quarter milk somatic cell count (SCC) and N-acetyl-b-d-glucosaminidase (NAGase) activity data were known and used to evaluate strain pathogenicity. RS-PCR was performed with conventional gel electrophoresis, and PCR was used for toxin gene identification. RS-PCR patterns were associated with a specific virulence gene pattern, as previously reported. Five RS-PCR banding patterns were identified. None of the isolates were characterized as genotype B. No association between RS-PCR types and milk SCC was found; however, NAGase activity was significantly higher in milk from mammary glands infected with RS-PCR banding type 1 (RSP type 1) than in milk from those infected with RSP type 2. The discriminatory power values were 1.0 and 0.46 for PFGE and RS-PCR, respectively. These data suggest that genotype B may have a limited geographic distribution and that PFGE is more discriminatory than RS-PCR performed with conventional gel electrophoresis for typing of S. aureus isolates of bovine origin.


Lidocaine is commonly used in ruminants but has an anecdotal history of being toxic to goats. To evaluate lidocaine's effects on selected cardiopulmonary parameters. Isoflurane-anesthetized adult goats (n = 24) undergoing abdominal surgery received a loading dose of lidocaine (2.5 mg/kg) over 20 min followed by constant-rate infusion of lidocaine (100 μg/kg/min); control animals received saline instead of lidocaine. Data collected at predetermined time points during the 60-min surgery included heart rate, mean arterial blood pressure, pO2, and pCO2. According to Welch 2-sample t tests, cardiopulmonary variables did not differ between groups. For example, after administration of the loading dose, goats in the lidocaine group had a mean heart rate of 88 ± 28 bpm, mean arterial blood pressure of 70 ± 19 mm Hg, pCO2 of 65 ± 13 mm Hg, and pO2 of 212 ± 99 mm Hg; in the saline group, these values were 90 ± 16 bpm, 76 ± 12 mm Hg, 61 ± 9 mm Hg, and 209 ± 83 mm Hg, respectively. One goat in the saline group required an additional dose of butorphanol. Overall our findings indicate that, at the dose provided, intravenous lidocaine did not cause adverse cardiopulmonary effects in adult goats undergoing abdominal surgery. Adding lidocaine infusion during general anesthesia is an option for enhancing transoperative analgesia in goats.
3) Say E, Çoban S, Nak Y, Nak D, Kara U, White S, Kasimanickam V, Kasimanickam R. Fertility of Holstein heifers after two doses of PGF2α in 5-day CO-Synch progesterone-based synchronization protocol. Theriogenology. 2016 Sep 1;86(4):988-93. The objective of the study was to determine the effect of three different PGF2α (PGF) treatments in the 5-day CO-Synch progesterone-based synchronization protocol on artificial insemination (AI) pregnancy rate (PR) in Holstein heifers in Turkey and the United States. We hypothesized that two doses of PGF administered concurrently or 6 hours apart would result in greater AI pregnancy compared with a single dose of PGF on Day 5 at controlled internal drug release (CIDR) removal. In Turkey, Holstein heifers (n = 450) from one farm in the province of Adana and another farm in the province of Bursa were included. In the US, Holstein heifers (n = 483) from two locations in the state of Idaho were included. Heifers within locations were randomly allocated to one of three protocol groups: 1PGF-received 25 mg IM of dinoprost at CIDR removal; 2Co-PGF-received 50 mg IM of dinoprost at CIDR removal, and 2PGF-received 25 mg IM of dinoprost at CIDR removal and an additional 25 mg IM of dinoprost 6 hours later. All heifers received a CIDR (1.38 g of progesterone) and GnRH (10 μg IM of Buserelin [Turkey] or gonadorelin hydrochloride [US]) on Day 0. The CIDRs were removed on Day 5, and each heifer was given PGF according to the assigned treatments. On Day 7, each heifer was given another dose of GnRH and concurrently inseminated at 56 hours after CIDR removal. Heifers in both experiments were examined for pregnancy status between 35 and 45 days after AI. Overall, controlling for age, the heifers in the 2PGF group had greater AI-PR (61.7% [192/311]) than heifers in 2Co-PGF (48.2% [149/309]; P < 0.001) or 1PGF (53.7% [168/313]; P < 0.05) groups. No difference was observed between 2Co-PGF and 1PGF groups (P > 0.1). In Turkey, the heifers in the 2PGF group had a greater AI-PR (60% [90/150]) than 2Co-PGF (45.3% [68/150]; P < 0.01) group. No difference was observed between 2PGF and 1PGF (55.3% [83/150]) groups (P > 0.1). There was a trend for AI pregnancy between 1PGF and 2Co-PGF groups (P = 0.08). In the United States, the heifers in the 2PGF group had a greater AI-PR (63.4% [102/161]) than the heifers in 2PGF (50.9 [81/159]; P < 0.05) or 1PGF (52.1% [85/163]; P < 0.05) groups. Heifers that were 15- and 16-month old achieved greater AI-PR than 17- and 18-month-old heifers (59.2 [342/578] vs. 47.0% [168/355]; P < 0.01). In conclusion, administration of 2PGF at 6 hours apart on Day 5 at CIDR removal in a 5-day CO-Synch + CIDR protocol resulted in greater AI pregnancy. A greater number of 15- and 16-month-old heifers became pregnant compared with 17- and 18-month-old heifers.

4) Kasimanickam RK, Whittier WD, Hall JB, Kastelic JP. Estrous synchronization strategies to optimize beef heifer reproductive performance after reproductive tract scoring. Theriogenology. 2016 Aug;86(3):831-8. Three experiments comparing four estrous synchronization protocols were conducted to determine estrous expression rate and artificial insemination pregnancy rate (AI-PR) in heifers with a range (1-5) of reproductive tract scores (RTSs). At enrollment (Day 0), 1783 Angus cross beef heifers from six locations were given body condition score and RTS. The four protocols were: (1) HRTS-DPGF group-heifers with RTS 5 received prostaglandin F2α (PGF; Dinoprost 25 mg; im) on Days 0 and 14; (2) HRTS-CIDR-PGF group-heifers with RTS 5 received a CIDR (1.3-g progesterone) insert on Day 7, followed by CIDR removal and PGF on Day 14; (3) LRTS-CIDR-PGF group-heifers with RTS 4 or less received a CIDR insert on Day 7, followed by CIDR removal and PGF on Day 14; and (4) HRTS-Select-Synch group-heifers with RTS 5 received 100 μg of gonadorelin diacetate tetrahydrate (gonadotropin releasing homone; im) on Day 7 and PGF on Day 14. In all groups, heifers observed in estrus
were artificially inseminated (within 120 hours after PGF) using the AM-PM rule. In Experiment 1, estrus expression rates were 82.2% (282/343) and 88.5% (184/208) for HRTS-DPGF and LRTS-CIDR-PGF, respectively (P < 0.05), whereas AI-PR were 51.3% (176/343) and 59.1% (123/208; P < 0.1). In Experiment 2, estrus expression rates were 79.6 (168/211), 86.9 (186/214) and 84.2% (176/209; P > 0.1) and AI-PR were 52.1 (110/211), 60.3 (129/214), and 58.4% (122/209; P > 0.05). In Experiment 3, estrus expression rates were 77.5 (131/169), 85.5 (142/166), and 83.3% (579/680), respectively; higher for heifers in LRTS-CIDR-PGF and HRTS-CIDR-PGF groups compared to heifers in HRTS-DPGF group (P < 0.05). The AI-PR for heifers in HRTS-DPGF was lower (52.0 [376/723]) compared with HRTS-Select-Synch (60.2 [100/166]), LRTS-CIDR-PGF (58.7 [399/680]), and HRTS-CIDR-PGF (60.3 [129/214]); P < 0.05). In conclusion, heifers achieved greater AI-PR after CIDR-PGF or HRTS-Select-Synch estrous synchronization protocols. Even though acceptable AI-PRs achieved in heifers with RTS 5 that were subjected to a double PGF protocol, the reproductive performance was reduced compared with other protocols used in this study.

5) White SS, Kasimanickam RK, Kasimanickam VR. Fertility after two doses of PGF2α concurrently or at 6-hour interval on the day of CIDR removal in 5-day CO-Synch progesterone-based synchronization protocols in beef heifers. Theriogenology. 2016 Aug;86(3):785-90.

Timed artificial insemination protocols in beef cattle are designed to synchronize ovulation in a greater proportion of females while simultaneously achieving acceptable pregnancy rates and a concise calving season. Protocols achieving such goals reduce time and labor associated with estrus detection and make advanced reproductive technologies implementable for beef producers. The objective of the study was to determine the effect of three different PGF2α (PGF) dosage schemes on artificial insemination (AI) pregnancy rates in beef heifers. We hypothesized that two doses of PGF administered concurrently at the time of controlled internal drug release (CIDR) removal would attain similar pregnancy rates compared with two doses given 6-hours apart-one at CIDR removal and the next 6 hours later in the 5-day CO-Synch progesterone-based synchronization protocol. Angus heifers (n = 875) at six locations in Washington, Idaho, and Oregon states were included in this study. Heifers within locations were assigned a body condition score (BCS). All heifers received a CIDR (1.38 g of progesterone) and 100 μg IM of GnRH on Day 0. The CIDRs were removed on Day 5, heifers were randomly allocated to one of three protocol groups: 1PGF (n = 291), received 25 mg IM of dinoprost (PGF); 2CO-PGF (n = 291), received 50 mg IM of dinoprost at CIDR removal, 2PGF (n = 293), received 25 mg IM of dinoprost at CIDR removal, and an additional 25 mg IM of dinoprost 6 hours later. Each heifer was given GnRH (100 μg, IM) and artificially inseminated at 56 hours after CIDR removal. Heifers were examined for pregnancy status between 50 and 70 days after AI to determine time of conception. A mixed-model procedure (PROC GLIMMIX of SAS) was used to evaluate the effect of treatments (1PGF, 2CO-PGF, and 2PGF) on AI pregnancy rates. Models included were treatments, BCS categories (≤5 and >5), and treatment by BCS category interaction. Location (state), handling facilities, handlers, inseminators, and AI sires were included as a random effect in the model. The 2PGF group had greater AI pregnancy rate of 63.6% (185/291), compared with the 2CO-PGF group at 51.9% (151/291).
and 1PGF group at 54.9% (161/293; P < 0.001). An AI pregnancy rate of 50% (104/208) was observed for heifers with BCS less than or equal to 5 versus 58.9% (393/667) for heifers with BCS greater than 5 (P < 0.05). Location did not influence the AI pregnancy rate (P > 0.1). In conclusion, beef heifers received two 25-mg doses of PGF at 6-hour interval on Day 5 at CIDR insert removal in a 5-day CO-Synch + CIDR synchronization protocols achieved greater pregnancy compared with heifers received 50 mg of PGF concurrently at CIDR removal.

6) Floren HK, Sischo WM, Crudo C, Moore DA. Technical note: Use of a digital and an optical Brix refractometer to estimate total solids in milk replacer solutions for calves. J Dairy Sci. 2016 Sep;99(9):7517-22. The Brix refractometer is used on dairy farms and calf ranches for colostrum quality (estimation of IgG concentration), estimation of serum IgG concentration in neonatal calves, and nonsalable milk evaluation of total solids for calf nutrition. Another potential use is to estimate the total solids concentrations of milk replacer mixes as an aid in monitoring feeding consistency. The purpose of this study was to evaluate the use of Brix refractometers to estimate total solids in milk replacer solutions and evaluate different replacer mixes for osmolality. Five different milk replacer powders (2 milk replacers with 28% crude protein and 25% fat and 3 with 22% crude protein and 20% fat) were mixed to achieve total solids concentrations from approximately 5.5 to 18%, for a total of 90 different solutions. Readings from both digital and optical Brix refractometers were compared with total solids. The 2 types of refractometers' readings correlated well with one another. The digital and optical Brix readings were highly correlated with the total solids percentage. A value of 1.08 to 1.47 would need to be added to the Brix reading to estimate the total solids in the milk replacer mixes with the optical and digital refractometers, respectively. Osmolality was correlated with total solids percentage of the mixes, but the relationship was different depending on the type of milk replacer. The Brix refractometer can be beneficial in estimating total solids concentration in milk replacer mixes to help monitor milk replacer feeding consistency.

What’s New at WADDL?

West Nile Virus - WADDL has been receiving samples from horses and finding West Nile Virus infection in areas where the virus was not previously found. To better serve the owners and veterinarians of horses in our region, WADDL posted some very important information on their website. Go to: http://waddl.vetmed.wsu.edu/animal-disease-faq/west-nile-virus for more information on the disease, testing and prevention.

Highly Pathogenic Avian Influenza Detected in Alaska - WADDL helped the USDA diagnose Highly Pathogenic Avian Influenza (HPAI) in a duck from Alaska. The strain identification is H5N2. The 2014-2015 outbreaks in the US H5N2, H5N8 and one wild bird with H5N1. This indicates that if other birds are similarly affected, they could pose a risk to birds as they migrate through the Pacific flyway this fall. A map of the flyways are provided below - from http://flyways.us/flyways/info
Biosecurity practices and good housing are ways to protect backyard poultry who exquisitely sensitive to HPAI infections. See the USDA information on protecting birds at: http://blogs.usda.gov/2015/10/22/fall-migration-underway-make-sure-to-protect-your-poultry-with-good-biosecurity-practices/

WSDA Corner

We have a new Assistant State Veterinarian, Dr. Scott Haskell, at the WA Department of Agriculture. Dr. Haskell is a graduate of UC Davis School of Veterinary Medicine. He has served as a private practitioner, faculty member, researcher and outreach specialist. Please welcome Dr. Haskell to Washington! For WSDA contact information for Dr. Haskell and others in Animal Health, go to: http://agr.wa.gov/foodanimal/animalhealth/contactus.aspx
Continuing Education

Veterinarians

**Dairy Cattle Genomics Workshop.** 7:00 – 8:30 PM, October 4, 2016 in Madison, WI. Wyndham Garden Hotel Madison Fitchburg, 2969 Cahill Main, Fitchburg, WI 53711. A collaborative research and extension team, which includes faculty from Washington State University, University of Idaho, USDA-ARS, University of Florida, and the University of Missouri will discuss: Genomics and Fertility Research Update, Impact of Genomic Selection in Dairy Cattle, and Where do we go from here — and when will we get there? Please reply to Joe Dalton to reserve a space: jdalton@uidaho.edu or 208.459.6365.

**WSU CVM Homecoming FREE CE Event!** Coming back for the game with UCLA? Coming to the CVM Homecoming BBQ? Join us for 3 hours of case discussions (and 3 hours of CE credit) on small animals or small ruminants. October 15, 2016, 9:00 AM to Noon. Go to: [https://cvme.vetmed.wsu.edu/cvme-index/2016/10/15/vetmed/cvm-homecoming-ce-event-free](https://cvme.vetmed.wsu.edu/cvme-index/2016/10/15/vetmed/cvm-homecoming-ce-event-free)


**WSU CVM CE Webinar on “Tools and a Strategy for Monitoring Calf Care on Dairy Farms”.** 6:00 – 7:00 PM, December 14, 2016. Save the Date! We’ll post more information at: [https://cvme.vetmed.wsu.edu/](https://cvme.vetmed.wsu.edu/)

Producers

**Dairy Cattle Genomics Workshop.** 7:00 – 8:30 PM, October 4, 2016 in Madison, WI. Wyndham Garden Hotel Madison Fitchburg, 2969 Cahill Main, Fitchburg, WI 53711. A collaborative research and extension team, which includes faculty from Washington State University, University of Idaho, USDA-ARS, University of Florida, and the University of Missouri will discuss: Genomics and Fertility Research Update, Impact of Genomic Selection in Dairy Cattle, and Where do we go from here — and when will we get there? Please reply to Joe Dalton to reserve a space: jdalton@uidaho.edu or 208.459.6365.

**Dairy Cattle Genomics Workshop.** 10:00 AM to 2:30 PM, November 30, 2016. Prosser, WA. Please reply to Joe Dalton to reserve a space: jdalton@uidaho.edu or 208.459.6365.


**WA Cattlemens’ Association Convention.** November 9-12 2016 Suncadia Resort, Cle Elum, WA. For more information and registration, go to: [http://www.washingtoncattlemen.org/new-page-2/](http://www.washingtoncattlemen.org/new-page-2/)


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