WASHINGTON STATE UNIVERSITY
VETERINARY MEDICINE EXTENSION

ag animal health
VETERINARY MEDICINE EXTENSION
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WASHINGTON STATE UNIVERSITY EXTENSION & WSU COLLEGE OF VETERINARY MEDICINE

In This Issue

From the Editor

What's in a Name?

From a Reuters journalist last month we learned that flu fears prompted 20 countries to ban meat imports (*Laura MacInnis, Reuters, May 4, 2009*). Even though the new H1N1 strain is not food-borne, fear (and trade) led to restrictions on live pigs, pork, cattle, poultry, livestock, feed and animal semen from countries with reported infections. Russia, China, Switzerland, Croatia, Indonesia, Thailand and Ecuador banned products from Mexico and the United States and some blocked imports from Canada, New Zealand, Spain, France, Israel, Costa Rica, El Salvador, Colombia, Cuba, Nicaragua, Panama, Honduras, Guatemala and the Dominican Republic. Egypt commensed with the destruction of about 300,000 hogs.

"Swine" flu is a disease of people but despite what we know about the virus (with genetics from human, swine, and avian influenza viruses) a name really matters. "Sticks and stones may break my bones" … but words (and names) can really hurt our ag animal industries.

If you want to help dispel myths and address public concerns when such and event takes place, get involved with your communications groups in your industry or profession – for dairy, *DMI* has producer training in risk communication and for the beef industry, there is NCBA's *Masters of Beef Advocacy* program – and many other means to get training in communicating risk. For information about risk communication training in the state of Washington, contact the editor at VetExtension@vetmed.wsu.edu.

Featured Faculty

Dr. Ahmed Tibary, DVM, PhD, DSc, Diplomate ACT

As Professor of Theriogenology in the department of Veterinary Clinical Sciences, College of Veterinary Medicine at WSU, I am responsible for teaching and clinical service in large animal (Equine, Ruminant and Camelid) reproduction. I enjoy the comparative approach to reproductive medicine both at the individual animal and herd level which I practiced as a university faculty and as a private consultant for nearly 30 years. My basic research interest is in gamete preservation and embryo production. I am also active in collaborative programs on factors affecting herd/flock fertility. My most recent program involves reproductive and health in Holstein and Friesian heifers in North Africa. Since joining WSU 10

years ago I have delivered more than 200 seminars in equine, ruminant and camelid topics to breeders and veterinarians at local, national and international venues. I currently serve as the president of the American College of Theriogenologists.

Bull Breeding Soundness Exams

By: Dr. Ahmed Tibary

Bulls are one of the major factors in herd fertility and risk of introduction of diseases into a herd (specifically trichomoniasis, campylobacteriosis and BVD). Although sterility is not common, marginal fertility may cause economic loss and result in poor fertility of daughters. Herds using tested bulls average 8% higher calf crop than herd using untested bulls. Despite this, the 2009 National Animal Health Survey (NAHMS) shows that less than 60% of all cow-calf operations surveyed perform a complete BBSE. This percentage is even lower in bull bred dairy herds. There is often a misunderstanding of what BBSE really means and what expectations should be place on it.
BBSE implies the use of standardized examination protocol to eliminate bulls with physical or health defects from breeding and to keep only bulls with a potential to achieve high conception rates under natural mating conditions. BBSE guidelines used by veterinarians in the USA have been set by the Society for Theriogenology (SFT) and the American College of Theriogenology. According to these guidelines bulls are classified either as satisfactory potential breeder, unsatisfactory and deferred based on health and reproductive parameters.

Health parameters include general physical examination with a particular emphasis on conformation, feet and vision soundness. Bulls presenting known hereditary defects or showing signs of systemic illness are deemed unsatisfactory. Bull with treatable diseases may be deferred for another examination before use. Studies on large numbers of BBSE have shown that 10% of "unsatisfactory" bulls are removed because of a physical defect. Young bulls are often removed for persistent frenulum (a possibly hereditary defect) and penile warts (firbropapilloma). Physical unsoundness in older bulls is primarily due to musculoskeletal problems or injuries to the prepuce and penis.

Reproductive ability is primarily evaluated on the basis of scrotal circumference (SC) (a direct measure of sperm production capacity), semen morphology and motility. In Canada, the guidelines for SC are breed-specific and the acceptable motility and morphology are higher that those set by the SFT. Failure to pass a BBSE is due to poor scrotal circumference or poor semen morphology in respectively 12% and 52% of cases. Poor SC may be due to genetics, developmental abnormalities, nutritional deficiencies or diseases. Specific abnormalities of spermatozoa may be due to genetics, nutritional deficiencies or toxins as well as diseases processes (high fever or local testicular irritation or inflammation) or environment (frost bite, heat stress). Adequate evaluation of morphology requires experience and adequate equipment. One of the most common causes of poor motility is seminal vesiculitis, a common problem in young bulls.

About 15 to 25% of Yearling bulls are expected to fail or be deferred on the first BBSE if performed between the ages of 11 and 13 months. The primary reason for failure of deferral is poor morphology due to immaturity and most of these bulls will eventually pass the BBSE but this should not be assumed and bulls should be re-examined periodically. Bull should be classified as unsatisfactory if they do not pass by 15 months of age.

Key take-home messages about BBSE:

- ✓ ***Pay attention to herd of origin***. Know the health and vaccination status of the herd of origin and test all non-virgin bulls for trichomoniasis.
- ✓ ***Know that fertility and breeding ability changes***. Bulls should be examined annually (even if they achieved normal pregnancy rate in the previous season). BBSE is generally where one starts in herd infertility investigations.
- ✓ ***Do not get surprised***. Schedule examination of bulls about 60 days prior to the intended use
- ✓ ***Yearling bulls examined between 11-13 months will have a high failure rate***. Schedule

examination of yearling bulls at least 30 days before intended use (even if they were examined at sale)

- ✓ ***Provide safe environment for onsite BBSE.*** This includes a safe environment for bulls, veterinarian and personnel (particularly in dairies) and a covered shed which allows adequate examination of semen
- ✓ ***Think about welfare.*** Collection of semen with electroejaculation should be performed according to strict guidelines
- ✓ ***Remember that BBSE does not test for serving capacity.*** An observation period of bull/cow interaction (or activity) is highly recommended if possible to make sure that bulls have normal libido
- ✓ ***Pay attention to bull-bull interaction and injuries during the breeding season particularly in multi-sire mating systems***
- ✓ ***Take insurance on high value bull by preserving semen***. High value bulls should be collected and their semen frozen before use in a natural mating system. Semen collection and freezing should be performed under strict veterinary care

Additional Resources for Veterinarians

Tibary A. (2003). **Bull breeding soundness examination. CD-ROM**, Jackson Hole Veterinary Rendez-vous.

Alexander James, **Bull breeding soundness examination tutorial**, Great Plains Veterinary Educational Center. Nebraska. http://gpvec.unl.edu/bse/frames.htm

Chenoweth PJ (2001). **Topics in bull fertility**. Electronic book, www.ivis.org

Additional Reading for Producers

Washington State University
http://cru.cahe.wsu.edu/CEPublications/eb1601/eb1601.pdf

New Mexico State University
http://aces.nmsu.edu/pubs/_b/b-216.html

Contact Dr. Tibary: tibary@vetmed.wsu.edu

What's New at WADDL?

Principles of Avian Disease Diagnosis

By: Dr. Rocio Crespo
WADDL-Avian Health and Food Safety Laboratory

As with other animals, birds are susceptible to a variety of diseases, not only infectious in nature but also due to irregularities in management or nutrition or a combination of these conditions. Knowledge about the type of birds, their anatomy and how they are managed helps one understand the diseases to which different birds are susceptible. Some birds are raised for egg or meat production, such as commercial poultry. Because commercial poultry are normally raised in a confined space, infectious diseases can spread rapidly among them. Poultry can also be raised in small numbers as backyard flocks. Poultry raised in backyard settings often lack BioSecurity, may be more exposed to natural elements and are often not protected from common diseases by vaccination. Inadequate BioSecurity, failure to vaccinate and suboptimal nutrition can lead to frequent viral, bacterial, parasitic and nutritional diseases. Pet and exotic birds, such as psittacines and passerines, are raised in small to large aviaries, sold in pet shops and kept as pets. Diseases in these pet birds can result

Typical commercial squab (meat pigeon) flock housing.

Backyard flock.

from infection with bacteria, viruses, parasites, nutrition deficiencies and management practices. Wild birds face ever shrinking habitats that are undergoing changes. Therefore, diseases in wild birds can be greatly influenced by environmental factors. Numerous birds raised or kept in captivity as in zoos have a different and unique environment. Genetics and nutrition also play a significant role in the initiation and outcome of a disease in a bird population.

Diseases that affect birds have a wide range of overlapping clinical signs and visible lesions. In most cases, samples need to be submitted to a diagnostic laboratory in order to provide a definitive diagnosis and identify the causative agent. This is especially important when a foreign or notifiable disease, such as avian influenza, Newcastle disease, or infectious laryngotracheitis is suspected.

Courtesy of Dr. Crespo

Performing necropsy in diagnostic laboratory.

During antemortem and postmortem examinations a variety of samples may be collected, including blood, swabs, and tissues samples. Lab techniques and instruments used by the avian diagnostician are numerous and can be quite sophisticated. Accuracy of the results often depends on the quality of the samples submitted. The use of pharmaceuticals, such as antibiotics, prior to testing may prevent the isolation of certain pathogens. An avian diagnostician interprets the clinical and laboratory results to determine the cause of disease. Once the cause of disease is determined, a clinician can provide recommendations about treatment and prevention of other birds at risk.

Ideally, live and freshly deceased birds should be submitted to the laboratory. In order to slow down decomposition of dead birds, consider reducing the core body temperature by moistening the feathers with soapy water as soon as possible. Wetting the feathers also prevents aerosolization of pathogens. If the necropsy is performed in the field the examination should be done away from housed birds to reduce the risk of spreading infection. The selected location also should have easy access to water for cleaning and disinfection after the necropsy is completed.

In commercial poultry, it is common to perform postmortem examinations on 5-10 birds that have been randomly selected from the flock for health monitoring. A standard set of samples submitted for health monitoring may include, blood serum samples for serologic testing, oropharyngeal or cloacal swabs for viral and bacterial detection, swabs and fresh tissues from trachea, air sac, lung, liver, and/or spleen for viral and bacterial detection, and fixed in 10% formalin tissues for histopathology.

In sick flocks, it is important to select birds with typical clinical signs. If the main problem is increased in mortality, without any other sign, choose birds that have died recently for the necropsy examination. In disease investigations, it is important to examine tissues with gross lesions and to test other samples without lesions, blood and swabs to confirm the diagnosis and rule out other possible problems.

The Puyallup Avian Health & Food Safety Laboratory (AHFSL) is specialized in all aspects of avian disease diagnosis. AHFSL is a member of the USDA National Health Laboratory Network. The laboratory maintains high standards for quality control, research and development of diagnostic assays and is the only fully accredited avian diagnostic laboratory in Washington State. It collaborates closely with state and federal regulatory agencies and private industry for the improvement of avian health and welfare.

Further Reading:

1. Foreign Animal Diseases
www.usaha.org/pubs/fad.pdf
2. OIE Listed Diseases
www.oie.int/Eng/maladies/en_classification.htm
3. Poultry Examination and Diagnosis. Cornell University-College of Veterinary Medicine and USDA.
www.partnersah.vet.cornell.edu

Contact Dr. Crespo: rcrespo@q.com

WSDA Corner

New Veterinarian Courses!

Trichomoniasis Testing Course – Bovine Practitioners

If you have not yet been registered to take trichomoniasis samples, you can easily take the online course developed by Washington State Department of Agriculture (WSDA) Animal Health Program and Genex Cooperative Inc. in association with The National Association of Animal Breeders and Certified Semen Services. WSDA will monitor and track registrants in order to provide them with a certificate upon completion.

1. Veterinarians need to be accredited by Washington State before they can be certified to perform Trichomoniasis testing on bulls in Washington.
2. Only veterinarians registered with WSDA can take official samples and submit them.
3. Washington Animal Disease Diagnostic Lab is an official lab for culture of Trich samples.
4. **Program Coordinator: Kerrie Pfalzgraf** Kpfalzgraf@agr.wa.gov **(360) 902-1878**

Course Access:
http://vetextension.wsu.edu/programs/bovine/trich/index.htm

Tuberculosis Testing Course for Bovine Practitioners

Coming Soon!

CA Feeder Cattle Entry Requirements

By: Dr. Leonard E. Eldridge DVM

Because California lost their TB-free status and Washington receives feeder cattle from California, many of you may want to know what the requirements are for cattle entry into Washington. Below are the requirements for feeder cattle only. Breeding cattle must be tested for tuberculosis.

1. Restricted feedlot is a dry feed lot registered with WSDA, all cattle are to remain in slaughter channels (cattle do not go to grass):
    a. Requirements to be met in California:
        i. Washington entry permit – (360) 902-1878
        ii. Brand inspection certificate with Washington permit written on it
        iii. Cattle cannot be of Mexican origin
        iv. Additional information requested but not required:
            1. Premises ID of origin or latitude and longitude of ranch of origin
            2. Individual animal ID
    b. Requirements of Dry Restricted Feedlot in Washington upon entry:
        i. Record on Brand Inspection certificate, lot number into which the cattle are being lotted. Fax immediately to (360) 902-2087.
        ii. First, do everything possible to keep 100% CA cattle in one lot.
        iii. If it is absolutely necessary to mix cattle from other origins, California cattle must be EID tagged and a list with those EID numbers of the CA cattle retained in their respective lot files and reported to WSDA.
2. Cattle entering Washington and going to grass must meet Washington's entry requirements:
    a. Requirements for grass:
        i. Brand inspection certificate
        ii. Health certificate with entry permit and individual official identification
        iii. Cattle cannot be of Mexican origin or comingled with Mexican cattle
        iv. Females over 4 months must be vaccinated for brucellosis
        v. All cattle six months of age must test-negative for tuberculosis within 60 days of import unless there is a Risk assessment and California permit issued by CDFA (beef origin cattle only).
    a. if high risk will need to TB test
    b. if low risk may enter meeting all other Washington entry requirements without TB test
    c. All dairy cattle must test for tuberculosis
    vi. Bulls must meet Washington's Trichomoniasis requirements

For Questions, Contact WSDA: (360) 902-1878

A New Look at Drug Residues

By: Dr. Dale A. Moore

At the end of last year, a dairy producer in the state of Washington received a warning letter from FDA for selling three cows for slaughter as food that contained excess levels of the drug sulfadimethoxine (*Albon*) of over 5ppm (established tolerance is 0.1ppm in edible tissues and 0.01ppm in milk). In addition, the dairy's treatment records were found to be inadequate so that medicated animals bearing drug residues were likely to enter the food supply. The dairy operation failed to maintain complete treatment records, the Warning Letter said.

Although we see few residue violations in the dairy industry in Washington, this example provides us a reminder about a number of issues. One issue is -- ***the drug*** -- it's not just beta-lactam antibiotics (like Penicillin) that cause residues or can be detected. The second issue is -- ***record-keeping***. The third issue is - ***employee education***, and the fourth -- ***communication***.

THE DRUG - Sulfadimethoxine (e.g. Albon) is an over-the-counter drug available as an injectable product and as an oral solution. The **injectable** product is labeled for IV (intravenous use) only. The label dose is 25 mg/lb initial dose followed by 12.5mg/lb for maintenance doses every 24 hours. The withdrawal time is 5 days for cattle for slaughter and 60 hours (5milkings) after the last treatment for milk.

The **oral solution** is labeled for Dairy Calves, Dairy Heifers, and Beef Cattle (NOT LACATING DAIRY COWS) for the treatment of shipping fever complex, bacterial pneumonia, calf diphtheria, and foot rot at 25mg/lb first day followed by 12.5mg/lb/day for 4 days in drinking water or as a drench. The withdrawal period is 7 days for slaughter.

When using this or any drug in cattle - you must follow the label directions. If you go off-label (route of administration, reason for use, dose, or duration), it is considered EXTRA-LABEL DRUG USE, a prescription is required, the withdrawal time will change and you may end up with a drug residue.

RECORD-KEEPING - Keeping records on treatments can be done on paper, in the computer, or on a board. The primary purpose is to establish that the withdrawal time was met for both meat and milk.

EDUCATION AND COMMUNICATION - Anyone handling medications on the farm needs to understand the conditions of use (label directions) and the withdrawal time for the medications used. Education, training and communication about the disease conditions and drug use can help prevent problems with residues, reduce violations and treat cows more effectively.

OTHER DRUG RESIDUE ISSUES - Although the issue with sulfadimethoxine is current, another drug for which there have been recent violations across the country is flunixine meglumine (for example, Banamine). The primary reason given for a residue has been the injection of the drug IM when it is labeled for IV injection. Following label directions is key to prevention of residues.

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Beef Quality Assurance Program

BREEDING AND GENETICS - Part II

By: Dr. Holly Neibergs

Let's return to our example of Joe who wishes to select a new bull for his herd. After a review of his performance records, Joe finds that he is assisting an increasing number of his heifers' and cows' births. He

would like to choose a bull that reverses this trend while continuing to optimize his weaned calf value, and weaning weight. Of the bulls below, which bull would you choose? To aid in your evaluation, the abbreviations for EPD and dollar value indexes are described below.

	CED		BW		WW		YW		YH		SC		CEM	
Bull ID	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC
1	+12	.90	+1.1	.96	+73	.93	+126	.91	+0.4	.93	+.02	.91	+8	.58
2	+11	.71	-0.5	.90	+58	.84	+120	.80	+0.2	.82	-.11	.81	+10	.40
3	+8	.86	+0.6	.95	+67	.92	+110	.90	+0.0	.79	+.24	.90	+4	.60
4	+10	.57	+0.4	.82	+66	.74	+107	.33	+0.3	.24	+.09	.18	+8	.25
5	+12	.53	-1.0	.80	+55	.71	+106	.58	-0.1	.47	+.26	.51	+10	.17
6	+10	.60	+1.9	.88	+50	.83	+104	.74	+0.6	.61	+.99	.67	+8	.25
7	+14	.93	-1.2	.97	+55	.96	+101	.95	-0.2	.94	+1.80	.94	+15	.41
8	+15	.74	-0.4	.89	+51	.83	+96	.80	+0.2	.83	+.86	.82	+5	.56
9	+1	.83	+4.0	.93	+51	.90	+96	.87	-0.1	.82	+.46	.86	+7	.55
10	+10	.73	-0.5	.89	+44	.84	+93	.79	+0.3	.80	+.85	.77	+8	.54
11	+9	.78	+0.6	.92	+51	.88	+93	.85	-0.3	.90	-1.05	.88	+12	.42
12	+11	.81	+1.3	.94	+48	.90	+92	.87	+0.2	.84	+.31	.84	+4	.68
13	+11	.30	+0.8	.34	+68	.26	+119	.25	+0.6	.38	-.01	.34	+9	.17
14	+14	.46	+0.8	.76	+60	.66	+110	.47	+0.3	.52	+.15	.48	+10	.20

Bull ID	Milk		CW		MARB		REA		FAT							
	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC	EPD	ACC	$W	$F	$G	$QG	$YG	$B
1	+27	.65	+22	.51	.69	.58	+.54	.59	-.010	.51	+42.98	57.7	38.69	+29.40	+9.29	+73.44
2	+28	.50	+14	.22	.46	.31	+.23	.40	+.041	.25	+27.32	57.49	+24.46	+23.30	+1.16	+54.51
3	+35	.72	+23	.24	+.03	.37	+.19	.45	-.028	.29	+40.47	42.88	+13.33	+6.48	+6.85	+44.83
4	+25	.27	+21	.23	.56	.31	+.32	.38	+.030	.27	+36.41	40.15	28.6	+26.18	+2.42	+58.50
5	+18	.20	+19	.16	+.08	.28	+.49	.35	+.051	.22	+29.41	+43.57	+11.21	+8.70	+2.51	+40.55
6	+26	.27	+13	.25	+.40	.35	-.41	.43	+.098	.29	+23.48	+43.50	-2.46	+21.25	-23.71	+22.73
7	+28	.52	+5	.54	+.44	.60	+.07	.61	+.033	.54	+33.72	+38.34	+24.48	+22.66	+1.82	+41.75
8	+13	.69	+20	.52	+.47	.57	-.10	.58	+.047	.51	+28.64	+34.80	+16.72	+23.64	-6.92	+44.63
9	+17	.67	+9	.22	+.51	.36	+.07	.44	+.053	.28	+46.55	+34.80	+22.75	+24.79	-2.04	+74.69
10	+22	.65	+2	.31	+.84	.38	+1	.45	-.052	.32	+26.72	+34.51	+44.50	+32.07	+12.43	+58.06
11	+19	.49	+18	.25	+.42	.36	+.63	.45	-.005	.30	+34.98	+31.77	+32.42	+22.01	+10.41	+58.18
12	+22	.80	+15	.53	+.53	.58	+.16	.59	+.011	.52	+30.58	+31.93	+29.11	+25.40	+3.71	+52.98
13	+34	.19	+24	.18	.50	.23	+.56	.27	+.021	.19	+34.56	52.12	+30.62	+24.50	+6.12	+64.98
14	+24	.21	+22	.22	.39	.31	+.49	.38	+.002	.27	+30.63	45.75	+28.51	+20.92	+7.59	+60.14

EPD abbreviations, each category is an estimation of the differences in a sire's ability to transmit a given trait to his progeny compared to that of other sires if bred to cows of similar genetic merit.

ACC- accuracy, is the reliability of the EPD under consideration. Values close to 1.0 indicate a high reliability. Accuracy is increased by the number of progeny with performance records that are measured.

CED - calving ease direct, expressed as the difference in the percentage of unassisted births with a higher value indicating greater calving ease in first-calf heifers. This measures the heifer's genes' ability to affect calving ease.

BW - birth weight, expressed in pounds

WW- weaning weight, expressed in pounds

YW- yearling weight, expressed in pounds

YH- yearling height, expressed in inches

SC- scrotal circumference, expressed in centimeters

CEM- calving ease maternal, is expressed as the difference in the percentage of unassisted births with a higher value indicating greater calving ease in first-calf daughters. This measures the cow's ability to produce daughters that are easy calving.

MILK- maternal milk, is the part of a calf's weaning weight attributed to milk and mothering ability

CW- hot carcass weight, expressed in pounds

MARB- marbling, expressed as a fraction of the difference in USDA marbling scores in a carcass

REA- ribeye area, expressed in square inches

FAT- fat thickness, expressed in inches as measured in external fat thickness taken between the 12th and 13th ribs

Dollar Value Indexes are selection indexes based on multiple traits and are expressed in dollars per head of cattle. These indexes allow the selection of multiple traits through the use of one or more indexes. Like EPDs, the $Value is an estimation of the differences in a sire's ability to transmit given traits to his progeny compared to that of other sires if bred to cows of similar genetic merit. Dollar Value Index abbreviations:

$W- weaned calf value, includes both revenue and cost adjustments associated with differences in birth weight, weaning direct growth, maternal milk and mature cow size.

$F- feedlot value

$G- carcass grid value; $QG and $YG are components of $G

$QG- quality grade, is the quality grade portion of the economic advantage found in $G. MARB (marbling) EPD contributes to $QG. This index allows for a selection emphasis on quality grades.

$YG- yield grade, is the yield grade portion of the economic advantage found in $G. This index allows for a selection emphasis on red meat yield which includes ribeye, fat thickness and weight measurements.

$B- beef value, includes post-weaning and carcass performance

Did you choose a bull with a high CED and a low accuracy, as found in bull #14? Or did you choose a bull such as #9 with the highest $W and $B, that had a low CED EPD? If you chose bull #1, you chose a bull that had excellent EPDs for CED, CEM, BW, WW, $W and $B and high accuracy for most of those categories.

The use of genetic selection tools may increase the uniformity and consistency of the beef cattle herd and increase profitability. To successfully implement genetic selection tools, good performance records are needed to identify performance strengths and opportunities.

References

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[4]Hinger M, Brandt H, Erhardt G. 2008. Heritability estimates for antibody response to Mycobacterium avium subspecies paratuberculosis in German Holstein cattle. J Dairy Sci. Aug;90(8):3237-44.

[5]Snowder GD, Van Vleck LD, Cundiff LV, Bennett GL, Koohmaraie M, Dikeman ME. 2007. **Bovine respiratory disease in feedlot cattle: phenotypic, environmental and genetic correlations with growth, carcass, and longissimus muscle palatability traits.** J Anim Sci. Aug;85(8):1885

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For more information on Washington Beef Quality Assurance --- see the BQA website at: http://www.bqa.wsu.edu/states/wa/index.htm

Continuing Education

Veterinarian Online CE for Official Trich Testing

To take the course and receive certification, go to: http://vetextension.wsu.edu/programs/bovine/trich/index.htm

Western Region Dairy Odor & Air Quality Program

June 15-17, 2009: Leavenworth, WA. Contact Dawn Bekenyi for more information at dlb@whatcomcd.org or (360) 354-2035.

Northwest Junior Sheep Exposition

July 16-17, 2009: Moses Lake, WA. Held at the Grant County Fairgrounds. Contact Sarah Smith for more information at smithsm@wsu.edu or (509) 754-2011, ext. 413.

WA State Dairy Industry Annual Meeting

October 27-29, 2009. Red Lion Inn, Pasco, WA. For more information call 360-482-3485.

Dairy Cattle Reproduction Council

Regional Meeting - November 19-20, 2009 in Boise, ID. Held at the Doubletree - Riverside. DCRC website for more information: http://www.dcrcouncil.org/index.html

Dairy Employee Education Materials Online

A link to the producer version of ***DairyBeef: Maximizing Quality & Profits*** is available as well as down-loadable employee education programs in English and Spanish on market cow quality. To view or download these files visit: http://www.bqa.wsu.edu/DairyBeef/index.htm

Washington State University - Lamb 300

October 1-3, 2009. For more information contact Sarah Smith at the WSU Grant-Adams Extension at (509) 754-2011 ext. 413

Send newsletter comments to the Editor:

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