



Beef Tips

July 2012

Department of Animal Sciences & Industry

www.asi.ksu.edu/beeftips

Upcoming Events

Tallgrass Range School
Camp Wood YMCA, Elmdale, KS
July 31-August 2
www.kglc.org

K-State Beef Conference
Manhattan, KS
August 9
www.KSUbeef.org
See details page 4

Mid-/Shortgrass Range School
Camp Lakeside, August 21-23
www.kglc.org

**Building Better Heifers
Field Days**
Eureka, KS Aug. 28
Phillipsburg, KS August 29
See details page 4

**Applied Reproductive
Strategies in Beef Cattle**
Sioux Falls, SD
December 3-4, 2012
www.beefrepro.info

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Consider ammoniated wheat straw to enhance forage supply

Dale Blasi, extension beef specialist, stocker, forages, nutrition and management

As of this writing, unseasonable, dry conditions exist and, with the memories of last year's drought many producers are urged to consider ammoniation of wheat straw as a means to bolster their existing forage supplies. In essence, ammoniated wheat straw increases the digestibility of crop residues by breaking lignin – cellulose bonds, thereby swelling the plant tissue to allow greater ruminal microbial activity. As a consequence, dry matter digestibility is improved by 8 – 15% thus boosting feed intake by 15 to 20% because of improved forage palatability and increased rate of passage through the digestive tract. Moreover, the process usually doubles crude protein content by being a non-toxic source of non-protein nitrogen that is well utilized by calves and brood cows.

To ammoniate, anhydrous ammonia is applied to a stack of baled wheat straw that is covered with 6 mil black plastic. Historically, the recommended application rate was 3% anhydrous (60 lbs/ton). However, because of high anhydrous ammonia costs, previous work conducted at KSU suggests that application rates can be reduced to 1.5% (30 lbs/ton) with relatively comparable results. Last year at one location in southwest Kansas, Dr. Justin Waggoner compared both rates with wheat straw and determined only negligible differences between either level of application.

Good application is dependent upon the present moisture contained within the straw and the ambient temperature. Depending on the ambient temperature, ammoniation will take only three to five days in hot weather to 30 – 45 days in cold weather for complete infiltration of the ammonia. Anhydrous ammonia will seek out all the moisture in the stacked straw, a chemical process which aids in the uniform spread of the material. Eight to 10% is an

adequate moisture content; 15 to 30% is better. It is recommended to keep the stack covered (unless wind tears the plastic) until two weeks before feeding. At that time, remove the cover and allow the bales to fully air out to reduce the concentration of residual ammonia.

Ammoniation of higher quality grass hays, such as brome, fescue, small grains, forage sorghums or sudans IS NOT RECOMMENDED. The high soluble carbohydrate content of such forages when treated with ammonia appears to produce imidazole compounds in some cases. These compounds can produce extreme hyperactivity, convulsions, and even death, especially when treated forage makes up most or all of the ration.

Many producers have asked if applying a liquid protein to the straw would result in comparable improvements in forage quality relative to the results observed with ammoniation and the answer is a definite no. Previous work conducted at Nebraska, Oregon and Missouri have all discounted the relative value that applying a non-protein molasses – based supplement on the digestibility of low quality forages has relative to ammoniation.

A final reminder; anhydrous ammonia is maintained under pressure and can be dangerous. If misused, it can burn skin, eyes or throat and can explode and burn. The following safety measures should be followed when handling this potentially dangerous compound.

- Wear goggles, rubber gloves and protective clothing.
- Work upwind when releasing anhydrous ammonia into the stack. Ideally a

continued...see Ammoniated wheat on page 2

“You can’t manage what you don’t measure.”

Tally Time – Pregnancy testing

Sandy Johnson, livestock specialist

Information on pregnancy status can be extremely valuable in a hot dry year. If the old, open and ornery were culled last year, then culling this year might not only be about identifying open cows but also those expected to calve late.

For years, pregnancy diagnosis in cows has largely been dependent on the skills of a veterinarian that has been trained in rectal palpation. Increasingly, more veterinarians have invested in ultrasound equipment that can detect pregnancy as early as 25 days after mating. The efficiency of diagnosis (i.e. speed and accuracy) is such that 30 days of gestation is a more practical minimum time period. Ultrasound can also be used to determine the sex and approximate age of the fetus.

A relatively new option available for pregnancy diagnosis that does not require a veterinarian or expensive equipment is in the form of a commercially available blood test. Three companies now provide bovine pregnancy tests: BioTracking, LLC (BioPRYN; <http://www.biotracking.com/>), IDEXX (<http://www.idexx.com/>) and Conception Animal Reproduction Technologies (DG29™, <http://www.conception-animal.com/>) in partnership with AgSource Cooperative Services and Genex Cooperative.

The tests determine the presence of pregnancy associated glycoproteins (PAGs), a family of proteins produced by the placenta. The tests can be used 28 -29 days after mating in cows and heifers. These proteins continue to be produced throughout pregnancy and disappear slowly after calving. Depending on the test, proteins can be detected in the blood until 60 to 90 days after calving. In the case of the DG29™ test (protein present until 90 days post calving), if a cow conceives at 50 days after calving, the test would need to be delayed until 40 days after she was bred, or a total of 90 days after calving.

These tests are considered highly accurate on a herd basis. One of the things that can contribute to the inaccuracy of the test is that if embryonic loss occurs, the protein may still be detected for a period of time after the loss. So an animal will be called pregnant even though the embryo died. A certain amount of embryonic loss is expected, regardless of the method of pregnancy detection. A majority of embryonic loss that does occur happens early in pregnancy so this loss may not be apparent if pregnancy diagnosis normally occurs in mid to late gestation.

If you compare ultrasound and the blood tests for early pregnancy diagnosis, ultrasound enables you to see the fetal heart beat and know that the pregnancy is viable at that point in time. The other advantage of palpation over a blood test is that you can make a management decision at the time the cow is in the chute based on if she is pregnant or not.

The advantage of testing via a blood sample is that you don’t have to compete with the neighbors in scheduling the veterinarian and producers complete the testing on their own schedule. Collecting a blood sample is a relatively easy skill to acquire and does not require expensive equipment. Recently one company ITL Animal Healthcare (www.itlanimalhealthcare.com/) has developed a sampling device (TEGO Card) that can be used for DNA samples or pregnancy tests (Biogenetic Services). The card is held in a plastic container that fits into an Allflex ear tagger. A specialized adaptor pin is used with the tagger to prick the skin and allows blood to be collected on the card. The sample collector is able to store the blood card in its specialized envelope directly after collecting the sample without having to let it dry. This saves the producer time and reduces the chances for cross contamination. The cards can be stored at room temperature.

Determining which cows are pregnant and at what stage can be valuable information for producers in making routine management decisions and even more when forced into tough culling decisions during drought. Given the price of feedstuffs, the cost to determine pregnancy status can be recovered in the savings from relatively few days of feeding. Partner with your veterinarian or try one of the commercial pregnancy tests to determine pregnancy status and take pressure off of limited feed resources.

Ammoniated wheat...continued from page 1

decoupler should be used to disconnect the nurse tank away from the stack when application is complete.

- Have fresh water available to wash off any anhydrous ammonia that comes into contact with the skin.
- Check valves, hoses and tanks for leaks.
- Check the plastic cover on the stack for any observable tears in the plastic BEFORE initiating application. Seal any holes afterwards with duct tape.
- Do not smoke near anhydrous ammonia.
- Keep children away from the treatment area.

Successful early weaning considers water, weaning method, vaccination program and animal handling

Larry Hollis, extension beef veterinarian

With the hot, dry summer currently being experienced in many parts of Kansas, traditional weaning plans may need to be significantly altered. Cows are out of grass in many areas, and grass is extremely short in others. Early weaning calves should be strongly considered. Considerable research has shown that it is a much better use of resources to wean the calf early, and either sell or feed the calf, than try to feed the cow enough to sustain lactation through a drought and hold feed costs down both now and this winter when producers are trying to get cows in condition to (1) survive the winter, (2) calve successfully, and (3) be in reasonable body condition score (BCS) to breed back next year. Many cows may be close to drying up on their own because of the lack of feed, so the primary thing they may be providing is merely companionship for the calf!

Consider these factors when early weaning.

- **Water.** Freshly weaned calves need plenty of fresh, clean water, especially if weaned during the heat of summer. Hopefully they have had access to water alongside their mothers, but if their mothers are drinking from an elevated tank or tub that calves cannot reach, they may need to be provided with a readily-available, closer-to-the-ground water source so that they are trained to drink from it prior to actual weaning time.
- **Weaning method.** Research has shown that “soft” weaning methods such as fence line weaning or nose clip weaning result in better maintenance of existing calf weights or subsequent calf performance than traditional “hard” weaning methods (abruptly separating cows and calves and placing calves in a drylot or unfamiliar pasture situation). When calves are weaned with either soft method, calves have the benefit of knowing their way around the pasture, including where shade, water and feed are located. If facilities permit (calf-proof fences between 2 adjoining pastures), fence line weaning is preferable over nose clip weaning because it does not require running calves through the chute twice to install and remove the nose clips. Hard weaning methods always result in greater calf weight losses than soft methods. Also, hard weaning, especially when calves are weaned in dry, dusty pens, almost always results in more respiratory health problems.

- **Vaccination program.** If some of the better calves need to be held for replacements, or calves are typically marketed through a value-added preconditioning program or marketing system, they will benefit from the same preconditioning and vaccination program that would be utilized if they were held until normal fall weaning time. Feeding programs following weaning need to be adjusted to meet the needs of these lighter calves. When processing calves during the hot summer, be careful to make sure that vaccines are handled properly, because heat can spoil vaccines rapidly if they are not kept refrigerated during transit and chuteside while working calves. If modified live virus vaccines are used, it is imperative that they also be protected from sunlight. Over 60% of viral particles in the bottle or syringe will be inactivated by only 1 hour of exposure to sunlight. Keeping the vaccine bottles and syringes in a cooler except when animals are actually being injected will help protect the product from both heat and sunlight.
- **Working cattle.** Try to gather cattle into loose grass traps or large pens near the working facility where they have plenty of space prior to being worked. If possible, this should be done the evening before working the cattle. Try to have all work completed by 10:00 in the morning. Also, fresh water needs to be available both before and soon after working through the chute.

We can't escape an occasional drought, but we can manage our way around them and reduce their negative impact. With a little advanced planning, early weaning can be accomplished and the herd set up to recover more quickly once it finally starts raining again!

For more drought resources see

www.ksre.ksu.edu/drought/

“Considerable research has shown that it is a much better use of resources to wean the calf early, and either sell or feed the calf, than try to feed the cow enough to sustain lactation through a drought....”

Building Better Heifers' Field Days Planned in Eureka, Phillipsburg

COLBY, Kan. – Kansas State University will host “Building Better Heifers – Selecting, Growing and Breeding Heifers Using Today’s Science” field days on Aug. 28 in Eureka, Kan. and Aug. 29 in Phillipsburg, Kan.

“As feed costs have risen, the balance between properly developing heifers and not spending more than you can afford, has become more challenging,” said Sandy Johnson, K-State Research and Extension livestock specialist, based in Colby.

The Aug. 28 field day will be hosted by the Perrier family, Dalebanks Angus at 820 River Rd., Eureka, Kan., 67045. The Aug. 29 event will be hosted by the Stuart Jarvis family at Bar Arrow Cattle Co. at 26 E. Limestone Rd., Phillipsburg, Kan., 67661.

“Market signals are there for those who are in a position to build their cow herd,” Johnson said. “Where resources are adequate, producers may develop additional heifers beyond what they need to offer for sale. Producers should be aware of current research studies that look at systems aimed to reduce the cost of heifer development while maintaining or improving their performance as cows.”

The field day at both locations begins with registration at 4 p.m., and the program starting at 4:30 p.m. Presentations and speakers include:

- Heifer development systems– Rick Funston, University of Nebraska-Lincoln;
- Heifer selection tools – Bob Weaber, K-State;
- Post-breeding nutrition and early pregnancies – Scott Lake, University of Wyoming;
- Healthy heifers to healthy cows – Dale Grotelueschen, veterinarian, Pfizer Animal Health;
- Early pregnancy diagnosis– Sandy Johnson, K-State; and
- Proper collection of DNA samples – Kara Wilson, CAB and Tonya Amen, American Angus Assn.

The field days are sponsored by K-State Research and Extension, Pfizer Animal Health and Certified Angus Beef. An evening meal is included in the event. For meal planning purposes, organizers request that all participants RSVP before Aug. 13 by contacting Anna Curry (akcurry@ksu.edu or 620-583-7455), Rachael Boyle (rboyle@ksu.edu or 785-425-6851) or Sandy Johnson (sandyj@ksu.edu or 785-462-6281).

K-State’s 2012 Beef Conference is Aug. 9

MANHATTAN, Kan. – Kansas State University’s 2012 Beef Conference – Thriving in the New Beef Economy, will be held Aug. 9 in Frick Auditorium of K-State’s College of Veterinary Medicine in Manhattan.

“We’ve had an interesting year in the beef industry and we have an equally exciting lineup of topics and speakers for this year’s conference,” said Larry Hollis, veterinarian with K-State Research and Extension.

For the convenience of those who are not able to travel to Manhattan in person, the conference will be broadcast remotely to several sites around Kansas; El Dorado, Lucas, Parsons, Pratt and Wakeeney.

Presentation topics and presenters at the conference will include:

- *2012 Farm Bill and U.S. Economic Outlook: Impacts on the Kansas Ag Sector*, Troy Dummer, K-State Extension Ag. Economist
- *Changes in the INS and OUTS of the cow business*, Glynn Tonsor, Ph.D., K-State Ag. Economist
- *Creative feeding strategies*, Justin Waggoner, Ph.D. K-State Beef Systems Specialist
- *Growing with a purpose in mind*, Bob Weaber, Ph.D. K-State Cow/Calf Specialist
- *Planning with the end product in mind*, Chip Ramsay, Rex Ranch
- *Managing calves for profit*, Warren Weibert, Decatur Co. Feedyard
- *Weather patterns/Global warming and implications for Agriculture*, Evelyn Browning-Garriss, climatologist

The fee to attend is \$60 per person or \$100 for two or more from the same operation. Early registration deadline is August 3. More information, including how to register for the webcasts or for in-person attendance, is available at KSUBeef.org or by phone (785-532-1280).

New antibacterials for treating bovine respiratory disease

Larry Hollis, extension beef veterinarian

A new injectable antibacterial, recently approved by the FDA for use in treating or controlling Bovine Respiratory Disease (BRD) in cattle, recently reached the market. A new feed additive antibacterial, recently approved by the FDA for use in controlling BRD in cattle, is soon to hit the market.

The first product, Zuprevo®, is an injectable macrolide related to current products Draxxin®, Zactran®, Micotil® and Tylan®. It was brought to market by Merck. It has approved uses for both treatment and control of BRD. It is designed for subcutaneous (SC) injection. Some key features include low-volume dosing (1 mL/100 lb BW), syringeability over a wide range of temperatures, reaches peak plasma levels in 45 minutes post-injection, has a 28-day duration of activity in the lung, and has a 21-day pre-harvest withdrawal time. Zuprevo is a veterinary prescription product requiring a veterinary-client-patient relationship (VCPR).

The second product, Pulmotil®, is a feed additive version of Micotil®, and will be brought to market by Elanco. It is the same product that is already being marketed under the same name for use in swine. It has received FDA approval for use to control BRD in beef and non-lactating dairy cattle. It will apparently not be marketed until the combination approval with Rumensin is received from the FDA, which is anticipated soon. It will be offered as a Type A medicated article containing 90.7 g tilmicosin/lb for use by FDA-licensed feedmills and microingredient machine-equipped FDA-licensed feedlots. It will also be offered as a Type B medicated premix containing 18.1 g tilmicosin/lb. Either product is designed to be incorporated into a total mixed ration to form a Type C medicated feed containing 568-757 g tilmicosin/ton, to provide 5.68 mg/lb/hd/day. This Type C feed is to be fed continuously for a 14-day period, and is the only feed to be fed during this period. Pulmotil cannot be used in feeds containing bentonite, cottonseed meal or cottonseed hulls, as these may interfere with the efficacy of the active ingredient. Pulmotil-containing feeds have a pre-harvest withdrawal time of 28 days.

There are several FDA-imposed restrictions associated with the use of Pulmotil. First, it is a prescription-only feed additive, requiring a veterinarian to have a VCPR with the cattle operation and to complete a Veterinary Feed Directive (VFD) form and provide it to the feedmill before the product can

be used. The prescribing veterinarian must determine that 10% or more of the cattle in a group have active BRD before writing a VFD for Pulmotil use. Initiation of treatment must begin within 45 days of the writing of the VFD, and the VFD cannot be refilled. A given group of cattle can only be treated with a single 14-day round of Pulmotil. During the 14-day treatment period, the Type C medicated feed is to be the exclusive feed being fed. If cattle consuming Pulmotil-medicated feed get sick enough to require individual treatment, an injectable macrolide cannot be used as the therapeutic antibacterial.

This requirement by FDA for use of VFD's prior to manufacturing feeds containing antibacterials is anticipated to become the norm within the next 4-5 years. It is anticipated to include any products provided via the feed for disease treatment or control (CTC, OTC, etc). Growth promotant use of antibacterials will no longer be legal. It is unclear at this time whether it will become necessary to use VFD's with ionophores such as Rumensin or Bovatec since there is no equivalent class of products used in human medicine.