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The Great Plains News Feed

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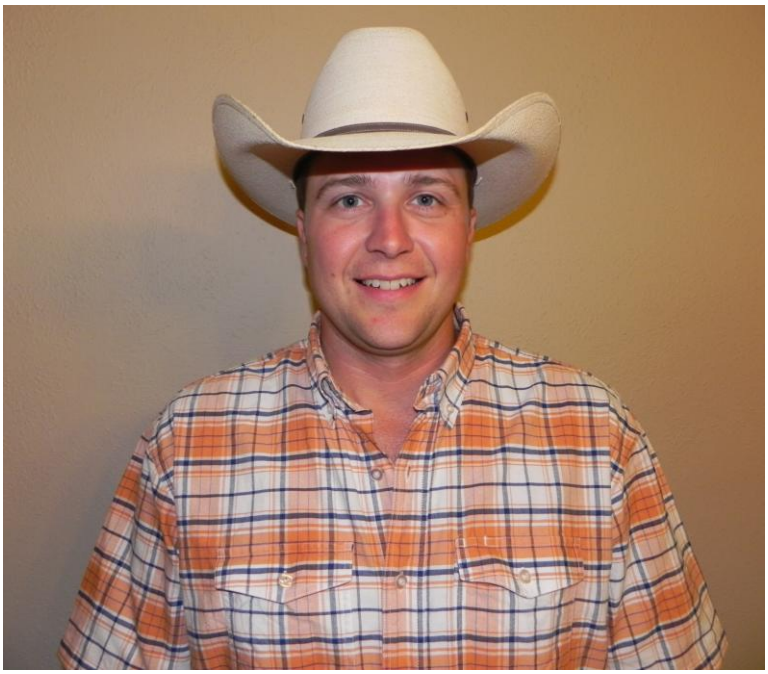
The Latest Across the Plains

Welcome Luke Miller!



Great Plains Livestock Consulting is excited to introduce our new nutritionist! As our company continues to grow and expand we continue to maintain our unsurpassed customer service and know that Luke will be an exceptional addition to the team! Luke was raised on a commercial cow/calf operation in Northwest Missouri. Luke attended the University of Missouri-Columbia where he received both a Bachelor's degree in Animal Science and a Master's in Ruminant Nutrition. Luke's graduate research involved pasture management, residual feed intake on replacement heifers, and balancing feedlot rations for optimal levels of rumen degradable protein. Luke also helped manage the University's Registered Hereford herd. After graduation, Luke worked for 5 years as a nutritional consultant with an independent regional feed mill where he had the opportunity to work one on one with beef producers of all sizes. Luke now manages a cow/calf operation of his own and enjoys working with farmers and ranchers to help them become more efficient and maximize profitability. Luke will be starting to work in southern Iowa, Missouri, Arkansas, southern Illinois, Kentucky, and Tennessee.

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ATTENTION SEEDSTOCK PRODUCERS if you would like your sale date printed in the GPLC newsletter Calendar of Events, please contact Tiffany Wright at Tiffany.Wright@GPLC-Inc.com or (402) 781 -9378 so it can be included.

Calendar of Events

- **Sept. 9-18** Kansas State Fair, Hutchinson, KS.
- **Sept. 13-15** Husker Harvest Days, Grand Island, NE.
- **Sept. 13-15** NPPC Fall Legislative Action Conference, Washington, D.C.
- **Sept. 15-21** Oklahoma State Fair, Oklahoma City, OK.
- **Sept. 22-24** NDSA Convention and Trade Show, Bismarck, ND.
- **Sept. 22-25** Aksarben River City Rodeo and Stock Show, Omaha, NE.
- **Sept. 22-25** 2011 World Beef Expo, WI State Fairgrounds, West Allis, WI.
- **Sept. 29-Oct. 5** US Animal Health Association Annual Meeting, Buffalo, NY.
- **Oct. 4-8** 2011 World Dairy Expo, Madison, WI.
- **Oct. 7-9** Ozarks Fall Farmfest, Springfield, MO.
- **Oct. 12** NDSA All Breeds Cattle Tour, Stanley, ND.
- **Oct. 19-22** 84th Annual National Future Farmers of America Convention, Indianapolis, IN.
- **Oct. 19-22** The NILE Stock Show and Rodeo, Billings, MT.
- **Oct. 27-29** 2011 Professional Rodeo Cowboys Association Gold Tour Rodeo, Kansas City, MO.
- **Oct. 31** Halloween

The Great Plains News Feed

Timely Reminders

General

- ✓ Get commodities and byproducts booked and contracted.
- ✓ Have us test hay and silage (silage greater than 4 weeks after harvest).

Beef

- ✓ Prepare supplies and pens for weaning calves.
- ✓ Develop a weaning/ receiving protocol with your veterinarian and nutritionist.
- ✓ Pregnancy check cows, and make a marketing plan for culls and opens.

Equine

- ✓ Keep an eye on hay/forage quality.

Unused Feed

- ✓ The easiest way to eat crow is while it's still warm. The colder it gets, the harder it is to swaller.

Shade vs. Sprinklers vs. Misters

By Dr. Terry L. Mader, Beef Cattle Specialist

In 1995, 1999, 2005, 2006, 2007, 2009, and 2010 individual feedlots, in the Midwest and Plains, lost in excess of 100 head during severe heat episodes, with total feedlot cattle death losses between 2,000 and 5,000. Economic losses as a result of individual heat waves are estimated to range between $10 and $40 million. Estimated direct and indirect losses (cattle death and loss of performance) as a result of adverse weather, averaged between $5,000 and $7,500 for each animal that dies. Plus effects on related industries would be double or triple that number.

Sprinkling and misting systems. In addition to pen design and altering feeding regimen, sprinkling can be effective in minimizing heat stress. Misting can also be beneficial under the right conditions. In general misting regimens will utilize less than 5 gallons of water /head and does not create the mud build-up that is often associated with sprinkling regimens. Misting should only be used when cattle have shed all winter hair and a slick hair coat is prevalent to allow water to penetrate to the hide. If water does not penetrate to the hide, the water will form a barrier between the outer hair boundary and the hide, which can contribute to heat build-up (not heat loss) around the animal.

Sprinkling may require 2 to 3 times more water than misting to be effective. There are three primary problems associated with sprinkling. First cattle tend to not like the application of the cold water droplets to the body and are less likely to use this system than the misters. Second, even with intermittent sprinkling, mud build-up is usually associated with sprinkling systems. Intermittent sprinkling would constitute 2 to 5 minute application every 30 to 45 minutes or up to 20 minute application every hour to 1.5 hours. Whether or not the cattle that need to be sprinkled always go to or under the sprinklers is still unknown. The third problem is that once cattle adapt to sprinkling, it is imperative that they be sprinkled under even moderate heat stress; meaning they become adapted to sprinkling very rapidly and are prone to be even more at risk than cattle that are never sprinkled.

In theory, sprinkling will almost always produce greater heat stress relief than shade or misting due to the high heat loss associated with the evaporation process. However, limited research data in feedlot cattle, suggest that shade provides a more consistent performance response than sprinkling. Where cattle are in closer confinement and the probability is high that water gets applied to the animal, then a more positive response to sprinkling/direct water application is found (e. g. dairy units).

Benefits of sprinkling tend to be enhanced if sprinkling is started in the morning, prior to cattle getting hot. Also, data show significant benefits to sprinkling or wetting pen surfaces. Sprinkling of pen surfaces may be as much or more beneficial than sprinkling the cattle. Feedlot ground surface temperatures in excess of 150° F were reported by 2 p.m. in the afternoon in Southern California. Surface temperatures in excess of 140° F can be found in most High Plains feedlots under dry conditions with high solar radiation levels. Cooling the surface would appear to provide a heat sink for cattle to dissipate body heat, thus allowing cattle to better adapt to environmental conditions vs. adapting to being wetted.

Use of shade. Shade also has been found to be beneficial for feedlot cattle exposed to hot climatic conditions, however, in research conducted in Northeast Nebraska positive benefits occurred only in the early portion of the feeding period and only in cattle with wind barriers provided. In this study, performance was similar for shaded and unshaded cattle fed in the facility without wind barriers provided; some benefit to shade was found in facilities which had wind barriers provided. In general, the response to shade occurred within the first 56 d of the feeding period, even though shade use tended to increase with time cattle were on feed. This suggests that cattle must adapt to shade or social order around and under shade before optimum shade use occurs. Although no heat-related cattle deaths occurred in this study these results suggest that shade improves performance in the summer when cattle are fed in facilities that restrict airflow and for cattle that have not become acclimated to hot conditions. Once cattle are acclimated or hot conditions subside compensation by unshaded cattle may offset much of the benefits of providing shade. However, in the event deaths occur, no opportunity for compensation exists.

Summary. Beef cattle are traditionally managed outdoors with exposure to natural and variable environmental conditions. Cattle are particularly vulnerable not only to extreme environmental conditions, but also to rapid changes in these conditions. Management alternatives, such as the strategic use of sprinklers or shade, need to be considered to help cattle cope with adverse conditions. In addition to these changes, manipulation of diet, diet energy density, and intake may also be beneficial for cattle challenged by environmental conditions.

Bedding Versus Extra Feed for Cattle Cold Stress Management

By Dr. Terry L. Mader, Beef Cattle Specialist

Ruminants have the ability to generate a substantial amount of heat through fermentation of feedstuffs. This can be a detriment in the summer but a large asset in the winter. However, some winter conditions are severe enough that, although the animal in generating heat to survive, productivity is compromised. The past two or three winters have offered significant environmental challenges in various parts of the state with no particular location spared. For instance, last winter feedlot cost of gains were 10 to 50% greater in some locations compared to more normal winters. Differences in productivity are often a result of increased maintenance energy requirements associated with exposure to cold, wet, and/or windy conditions. For most cattle, efficiency of feed conversions and maintenance energy requirements are approximately 15 and 25% greater, respectively, in the winter than in the summer. If hair coats are wet and muddy, energy requirements for maintenance can easily double, particularly if the animal is not protected from the wind.

To enhance animal comfort in feedlot pens and other areas in the winter, the following guidelines can be utilized: 1) If possible, facilities should be designed to properly drain water away from areas where cattle normally accumulate. 2) Pushing snow out of pens (preferable after every storm) or at least to the low end of the facilities will minimize the effects of gradual melting plus aid in drying-out resting areas.3) Smooth out or knock down rough, frozen surfaces, which may impede access of feed and water by cattle. 4) Double per animal space allocation. The added space minimizes mud accumulation and allows for greater access to dry areas for animals to lie down. 5) Use bedding. There are times when bedding use is essential for maintaining animal comfort and welfare, regardless of the type of cattle operation. This is especially true in locations that are poorly drained and have wind protection which catches snow and dumps it into the cattle facilities.

Anytime cattle have wet or muddy hides and hair-coats, heat loss from the wet area is 3 to 6 times greater than if they were dry. Conservatively an animal, in which the lower third of its body is wet, will

require approximately one-third more energy for maintenance.

Under today's feed costs, it would require between 30 to 45 cents of extra feed daily to offset the extra cost of maintaining that animal. However, utilizing 3 to 5 pounds of bedding, poor quality hay, cornstalks, etc, on a daily basis to keep the animal dry, may cost only 10 to 15 cents /day. This would be a cheaper alternative, especially if hay, corn, or other alternative feed prices are relatively high, plus the bedding would provide some additional insulation for the animal against the cold ground. Furthermore, once the animal is dry, bedding usage would decrease, while if bedding was not utilized the moisture laden cattle facilities possibly remain and the animal stays wet.

In conclusion consider the use of bedding to keep animals dry in the winter, as opposed to feeding extra feed, to offset the added maintenance cost associated with wet, cold cattle. This would be particularly relevant in those facilities that are not well drained and/or prone to being wet under winter feeding conditions.

Developing Marketable Bulls with Longevity in Mind

By Dr. Dan Larson, Ruminant Nutritionist

There is not a more challenging, nor frustrating, but very important member of the cowherd than the herd bull. Young bulls are especially difficult to manage because they have duty on their mind 24/7 and will literally kill themselves to accomplish the task. However, appropriate development and continued feeding management can help ensure these youngsters make it to adulthood. A bull development system, (note the word "system"), should have five main goals: low cost of production, low risk (for the bulls' health), low reproductive failure rate, longevity, and salability. Further, we can break bull development down into 5 phases: pre-weaning (creep phase), post-weaning development (gain test phase), pre-breeding (prior to first turnout), during breeding, and post-breeding.

Let's start by examining pre- and post-weaning diets. The key concepts to keep in mind are energy and protein content of the diet, vitamin and trace mineral needs, and developing a strategy to reach your goals. Whether it be creep feed, self-feeders post-weaning or a TMR, bulls can be developed too fat or too lean. The value of creep feeding bulls is less about cost of gain and more about whether or not creep will increase the value of your bulls. Seedstock nutrition is not, and should not be, about cheapest cost of gain, rather we should strive for the least cost of producing the most marketable, highest valued animal. The choice to creep feed should be made by you and your nutritionist, depending on your marketplace. If you do choose to creep feed, work with your nutritionist to develop a feed that poses the least risk to the bull's health, reproductive performance, and longevity. Corn is NOT an adequate creep feed. Rather, choose feedstuffs that are high in fiber, moderate in protein, and moderate in energy. These feeds, especially when fed in a limited manner, will allow a bull to develop to his potential without causing problems later in life. A side benefit of creep feeding, even if only for a short duration, is reduced stress at weaning and more rapids gains on feed.

More good bulls are wrecked between 8 and 15 months of age than any other point in their relatively short lives. While underfeeding can be an issue, over-fat bulls are far more prevalent. The following table of basic bull requirements details requirements for various stages of growth.

Age, Months	NEg Mcal/lb	Crude Protein, %	Calcium %	Phos %	Zinc ppm	Copper ppm
8-12	0.58	14.0	0.60	0.35	60	15
12-15	0.56	13.0	0.60	0.35	60	15

These recommendations are general and you should consult your nutritionist to design rations for your specific situation. Zinc, copper, and manganese are extremely important to scrotal development and sperm production. The testes have a high concentration of both zinc and manganese, and depletion of these trace minerals can result in small scrotal circumference and poor sperm quality. Research at Kansas State (Arthington et al., 1995) found that bulls supplemented with chelated zinc had higher normal sperm counts than those supplemented only with inorganic zinc. Treating bulls with feed grade chlortetracycline monthly will reduce white cell count and improve semen quality. Overfeeding bulls is vastly more common and is the biggest challenge in the seedstock industry. Every bull producer has heard the stories of over-fat bulls "melting" on pasture. However, the same bull customers who complain about fat bulls will generally pay more for a highly conditioned, well-muscled bull. So, how do we reconcile these conflicting demands? We do it by creating a bull development system that allows adequate gain testing and development up to sale day, with a period of hardening prior to breeding. Gain testing is most economical in the period between weaning and 10-12 months of age. Conveniently, this is also prior to most production sales, and leaves enough time to harden a bull up prior to turnout.

The biggest challenges with gain testing and bull development are acidosis, the resulting founder and fat insulated testicles. Acidosis can be prevented by using higher fiber feedstuffs such as distillers grain or gluten feed and by accurate feed bunk management. Bulls that are self-fed are more prone to acidosis, especially if the feed is not limited by some manner. Diets that are high in byproducts and low in starch are better suited for self-feeding than high corn diets, especially fine ground corn. Bulls that experience at least one bout of acidosis throughout their lifetime will experience far more foot and leg problems than bulls that do not. Roughage is also essential to manage rumen health. Forage free diets, while minimally adequate for finishing cattle are in no way appropriate for developing bulls. Using technologies such as Rumensin or Bovatec will also help manage acidosis and bloat, as well as improving feed efficiency.

Regardless of how you choose to develop bulls, reducing body fat will improve semen quality and longevity. Reducing weight from May to June increased percent motile sperm, increased percent normal sperm, and reduced aged acrosomes, which improved sperm viability (Pruitt and Corah, 1985). A short (60 day) period of a high roughage diet will improve serving capacity and reduce the potential for a young bull to fall apart during his first breeding season. It is critical to maintain adequate vitamin and trace mineral nutrition prior to breeding to ensure high quality sperm and breeding capability. Perhaps the most neglected animal on the farm is a bull after the breeding season. It is easy to put a bull out of sight and out of mind. As seedstock producers, we have limited influence on how bulls are managed during and after breeding. However, working with your customers to ensure young bulls are fed to gain after breeding will improve longevity and ultimately create a return customer. Bulls do not reach maturity until 3+ years of age and require slightly enhanced nutrition to prepare for the next breeding season. For example, 3-5 lb of dry distillers per day with moderate quality hay will allow the young bull to regain condition and continue to grow. In cold climates, remember to provide adequate bedding to avoid frozen testicles. Allow plenty of exercise to keep bulls athletic and ready to breed.

It is essential to have a professional attitude toward bull development. Know your clientele and their needs. Create a system and stick to it throughout the development period. If you have a well designed program, with your customers in mind, it can become an integral part of your marketing program. Moreover, if you follow through with customers to ensure your bull works for them, they will become return customers. Work closely with your nutritionist to develop a program that turns out sound bulls, which fit your environment and your customers needs.