

The Great Plains News Feed

The Latest across the Plains

New beginnings amidst fall

Fall is upon us now, and it is time for farmers to harvest and break out those coveralls and gloves from storage or from behind the pickup seat. The Great Plains Livestock Consulting is reaping a few benefits from new growth on the staff as well. New positions were designed with our clients in mind and filled with people matching the integrity and hospitality that our clients have become familiar with over the years. We are proud to welcome Dr. Jeremy Martin, Dr. Jason Schneider, and Mr. Brent Nelms to the GPLC staff. Over the next few Newsletters we will introduce our new employees



Jeremy Martin, Ph.D. grew up on a diversified livestock operation in west central Nebraska and developed a passion for the livestock industry by spending time at his fathers' veterinary practice. This led Jeremy to a M.S. and Ph.D. in ruminant nutrition and reproductive management at the University of Nebraska-Lincoln where he conducted heifer development, cow supplementation, and

estrous synchronization research that focused on profitable use of by-products as protein and energy supplements in beef cattle systems. With a real-world education to match, Jeremy has a unique blend of nutrition and reproductive management experience and a passion for the beef industry in particular.

Check it out!

If you use the internet to stay informed, check us out at www.GPLC-Inc.com. The GPLC website has a new look and has been improved for our clients and visitors.

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Timely Reminders

November/December

- ✓ High quality mineral supplements, including chelated trace minerals, are proven by university research to reduce morbidity and mortality in stressed calves after weaning.
- ✓ With a frost just around the corner across much of the country, remember prussic acid poisoning is a concern in cattle grazing sorghum, sudan, Johnson grass, and related forages. Frost and/or freezing lead to higher prussic acid levels in these forages. However, prussic acid is quickly released as a gas, so 3 to 5 days following a killing frost, plants should be safe to graze.
- ✓ Test forages for nitrate levels.
- ✓ Maintain a cow BCS of 6.
- ✓ Take winter forage inventory.

Phosphorus Supplementation for Beef Cattle



by Dr. Jeremy Martin, Ruminant Nutritionist

Phosphorus is an essential macro mineral required for growth, energy metabolism, and reproduction in cattle. Supplementing cattle with phosphorus (P) in free-choice range minerals and/or daily supplements is common, and is important for preventing P deficiency in certain situations. Fortunately, cattle maintain extensive bodily P reserves and can mobilize these reserves to meet requirements during periods of dietary deficiency, providing a buffer against acute deficiency. Recent increases in P price have driven up the cost of mineral supplements, and these costs are likely to keep rising. In order to achieve the most cost-effective and precise supplementation possible, Great Plains Livestock Consulting, Inc. has focused on designing range minerals that target the cow's needs, rather than the status quo.

Phosphorus requirements for mature beef cows range from approximately 0.12% of diet dry matter during mid-gestation to about 0.20% of diet dry matter during peak lactation. Forage samples collected by Great Plains Livestock Consulting, Inc. from across the U.S. reveal the average forage P content greater than 0.25% of dry matter. This finding is consistent with published values. Assuming 65% P availability, supplementation of lactating cows with 3 oz./hd/day of a 6% P mineral is adequate to meet P requirements. After peak lactation, cow P requirements decrease to the point that supplementation with 3 oz./hd/day is sufficient to meet P requirements for gestating cows consuming forage with 0.10% P. Phosphorus is not required in mineral supplements for cows fed corn, corn silage, or co-products due to the relatively high P content of these feedstuffs.

Based on recent research in finishing calves and yearlings (Erickson et al., 1999, 2002), P supplementation of cattle fed corn-based finishing diets is not necessary, and particularly if these diets include corn milling co-products. Researchers at the University of Nebraska determined dietary P requirements to be 0.16% of dry matter intake or less for finishing cattle. This concentration is exceeded in typical finishing diets. Excess supplementation of P has serious environmental implications for feedlots. Unlike Nitrogen, P does not volatilize and thus feeding excess P results in increased land area required for responsible manure application. Great Plains Livestock Consulting, Inc. beef nutritionists do not recommend supplemental P for finishing cattle.

In conclusion, P price and environmental concerns regarding excess P necessitate feeding supplemental P only when necessary, and in amounts necessary to meet P requirements of the cattle. Based on university research, field observation, and collection of an extensive library of forage samples, Great Plains Livestock Consulting, Inc. has formulated a product lineup focused on cost-effective utilization of P in cattle production systems, rather than the status quo.

Feeding the Gestating Sow



by Dr. Jason Schneider, Monogastric Nutritionist

The purpose of a breeding herd is to consistently produce a targeted number of high quality piglets at a low cost and in an efficient manner. Typically, the cost of feeding a breeding herd amounts to approximately 12% of the total cost of pork production. More importantly, the quality of a feeding program can greatly influence the productivity and longevity of sows in the herd. In most breeding herds the cost of feed is considered to be a fixed cost. Therefore, increasing breeding herd productivity will decrease production cost and potentially increase profits. This is why a nutritionist will design a feeding program to allow gestating sows to achieve an appropriate, targeted sow weight gain during gestation that will allow optimum litter development and prepare the sow for lactation.

Epidemiological data has shown that the average sow replacement rate in the USA in 2003 was approximately 60% with a range of 33 to 86%. The reason for high replacement is due to disease, skilled labor issues, and an inadequate feeding program for gestating and lactating sows. All phases of the reproductive cycle are interrelated; thus, the feeding and management of the gestating sow can greatly influence feed intake and productivity during lactation and subsequent parities. Feed intake, or more accurately, energy intake in gestating sows is very important in determining the expected fat depth of sows. High feeding levels in gestation can result in sows that are too fat (> 0.83 in. or more backfat). Typically, sows with that level of backfat will reduce feed intake in lactation and will need to mobilize body tissue (fat and muscle) to meet a high level of milk production in lactation. Furthermore, recent research has shown that the rebreeding interval of weaned sows is significantly prolonged if sows lose 9 to 12% of body protein during lactation. On the other hand, if sows are underfed during gestation they may not have enough body reserves built up to handle a large litter. These thin sows usually have the same fate as fat sows after being weaned from their litter, in that their rebreeding interval is prolonged and these sows are usually culled from the herd. Therefore, the goal of swine producers and nutritionist is to neither over or under feed the sow at any stage of her life cycle.

Since there are so many factors that influence the requirement of sows, a successful feeding program should concentrate on needs of the individual sow. The feeding program should be based on some estimate of sow weight and backfat and/or body condition at the time of breeding. This feeding program should be designed to allow all sows to gain sufficient weight during gestation to allow a backfat depth of 0.7 to 0.8 in. at farrowing, allow optimum litter development, and minimize variation in sow backfat depth at farrowing. Using data and regression equations from the National

Research Council a spreadsheet can be developed to determine the daily feed intake for each sow based on their body weight and backfat thickness at breeding. Finally, research from Kansas State University has shown that this method of feeding sows produces a higher proportion of sows reaching the optimum backfat level of 0.7 to 0.8 in. In addition, feed costs are lowered by approximately \$10 per sow per year.

Feeding Crop Residue



by Dr. Ki Fanning, Ruminant Nutritionist

With the high prices of grains and the reductions in yields of hay, we have been promoting the harvest and utilization of corn stalks, wheat straw, and bean stubble. This recommendation is assuming that these forages can be acquired at a lower cost than traditional forages with a higher energy content. These forages need to be ground to a particle length of 0.5 to 2.0 inches when fed in a TMR; this helps increase the digestibility and utilization. It will also reduce the sorting problems compared with either free-choicing or processing to greater than 3.0 inches in length. These forages work very well in rations that have a wet feed to mix with in a TMR. The wet feeds that work the best are: wet corn gluten feed, wet brewers grains, wet distillers grains. The syrup from an ethanol plant will work in conjunction with another energy source such as corn, wheat midds, corn silage, soybean hulls, dry gluten feed, dried distillers grains, etc. The syrup cannot be fed in a high enough quantity to meet the energy and protein needs without having a TMR too sticky to flow out of a feed truck.

In brood cow diets, these forages can make up approximately half of the diet with the other half being made up of wet distillers or wet gluten feed. Some producers have saturated bales with syrup several days prior to feeding. When the cows have access to the forages with the syrup, very little waste is found. With these diets, as with any, the animal's body condition score (BCS) should be monitored at least on a monthly basis and the manure should also be monitored for consistency. Adjust the diets accordingly, to maintain BCS at a 6. With this type of diet a range mineral without phosphorus (P) should be fed but should contain added thiamin.

Backgrounding and growing diets can also effectively utilize these forages. It is best to receive or wean calves on a forage that is more digestible such as alfalfa hay or good quality grass hay. Once the calves are on feed and have good consumption, a switch to a crop residue can be made. For gains in excess of 2.0 pounds per head per day, calves should be fed only about 1% of their body weight in crop residue with the remainder from a byproduct and/or grain source.

Finishing cattle can utilize crop residue too. Research shows that corn stalks produce similar gains to alfalfa hay used as the roughage source in finishing diets. It is very important that the forage is chopped short enough to prevent sorting. Sorting can be seen if the cattle are moving their heads back and forth in the bunks, creating holes in the feed. During this process they are separating the forages from the concentrates.

Due to the low protein content of crop residues, an economical source of protein is a must. Additionally, a diet low in protein will result in low intakes and poor digestion of feed. An experienced nutritionist can help analyze the feed sources available and their nutrient concentrations to optimize the use of these forages.