



Great Plains Livestock Consulting, Inc.

500 S. 4th St.
P.O. Box 377
Eagle, NE 68347

The Great Plains News Feed



Great Plains Livestock Consulting, Inc.
"Turning Science into Money"

Phone: (402) 781-9378

Fax: (402) 781-9379

www.GPLC-Inc.com

May/June
2010

The Latest Across the Plains



Summertime!

We can officially start welcoming summer. The end of the school year is here, along with graduations and the start of summer sports. With branding, breeding season, and planting in full swing or just around the corner, we know you all have your plates full. Put your mind at ease for all your livestock nutrition needs and give us a call!

Beef Today

Some of you may have already read the article in *Beef Today* by our own *Dr. Jeremy Martin*. In the article he discusses the key to feeding light test weight corn. With so much of the Midwest having late harvest, light test weight corn and milo are more prevalent this year. Jeremy goes on to discuss the precautions necessary to utilize light test weight corn and milo, as well as how it compares to normal test weight corn. He reviews the research done by North Dakota State University on trials they did regarding finishing diets and milo feed values. Jeremy states that the key is processing, since light test weight corn and milo require more care to process correctly to provide the most beneficial feeding value. Whether you're a farmer who has light test weight corn or if you might purchase light test weight corn this article would be worth your time to look into. If you would like to read this article you can find it on www.agweb.com, keyword search Jeremy Martin.

Staff



Ki Fanning, Ph.D., PAS

Ruminant Nutritionist
Cell: (402) 890-5505
Ki.Fanning@GPLC-Inc.com

Jeremy Martin, Ph.D.

Ruminant Nutritionist
Cell: (402) 890-5507
Jeremy.Martin@GPLC-Inc.com

Dan Larson, Ph.D.

Ruminant Nutritionist
Cell: (402) 560-4052
Dan.Larson@GPLC-Inc.com

Bill Chapman, M.S., PAS

Dairy Nutritionist
Cell: (402) 416-3277
bill@cmpdairy.com

Wayne Schiefelbein, M.S.

Swine Nutritionist
Cell: (515) 238-1271
waynexe@yahoo.com

Stan Smith

Office Manager
Stan.Smith@GPLC-Inc.com

Brent Nelms

Office/Marketing
Brent.Nelms@GPLC-Inc.com

Calendar of Events



- **May 5** International Water for Food Conference, Lincoln, NE.
- **May 12 & 13** 14th Annual Distillers Grains Symposium, Indianapolis, IN.
- **May 19** Int'l. Symposium on Beef Cattle Welfare, K-State Campus, Manhattan, KS.
- **June 4 & 5** Cattleman's Ball of Nebraska, Kearney, NE.
- **June 9, 10, & 11** World Pork Expo, Des Moines, IA.
- **June 16 & 17** Sandhills Ranch Expo, Bassett, NE.
- **June 28** Dr. Temple Grandin Livestock Handling Seminar, Rapid City, SD.
- **June 30** Governor's Ag Development Summit, Sioux Falls, SD.
- **June 15** Feeder Council Annual Feedlot Tour, SD.
- **June 14-16th** 143rd Annual Colorado Cattlemen's Convention and Tradeshow, Pueblo, CO.



The Great Plains News Feed



Timely Reminders

Beef

- ✓ Semen check bulls for upcoming breeding season.
- ✓ Cows should be given pre-breeding vaccinations.
- ✓ Create a fly control plan to minimize pinkeye and maximize production.
- ✓ Worm cows.
- ✓ Consider addition of Rumensin, Bovatec, or Gain-Pro to mineral for cows and yearlings; all will improve performance.
- ✓ Give us a call if you need help designing a synchronization program for cows or heifers.

Swine

- ✓ Check feeders/waterers for waste control.
- ✓ Check feed budgets to control overfeeding expensive diets.
- ✓ Consider using Paylean to maximize your profits.

Unused Feed

- ✓ No matter how hard the winter is, spring always comes.

Ionophores



By Dr. Jeremy Martin, Ruminant Nutritionist

Ample moisture and a little sunshine have cattlemen (and cattle) across the country experiencing grass fever. As cattle move to summer pasture, we encourage you to carefully plan your summer grazing. Research proves that people with a plan accomplish more than those without, and that is undoubtedly true in the case of grazing management. There are a number of tools available to aid in the development of a grazing management plan. If you depend on grazing cattle for income, you need to develop a grazing plan, and we would be happy to help you do so. As we all know, pasture costs are steadily rising, and it behooves you to use this resource in a cost-effective and sustainable fashion.

Ionophores are an underutilized tool for management of grazing cattle. We tend to think of ionophores as critical in high-grain feedlot diets, but the truth is they provide significant return in most grazing situations. Rumensin, Bovatec, and Gain-Pro are commonly used in supplements or minerals for grazing cattle, and have been compared in many research trials. Ionophores alter ruminal fermentation patterns allowing cattle to receive more energy from their diet. Rumensin and Bovatec also prevent coccidiosis. The best choice of ionophores depends on your situation.

Rumensin (monensin sodium) is proven to increase weight gain in cattle by altering fermentation patterns in favor of propionic acid production. Research at the University of Nebraska, Oklahoma State University, and others consistently show improved pasture gains when cattle are fed Rumensin. The improvement in gain varies depending on the trial, but averages around 0.15 to 0.20 lb per day gain. On wheat or legume pasture, Rumensin is the preferred ionophore because it can decrease the incidence and severity of bloat, and does so to a greater extent than either Bovatec or Gain-Pro.

Just as importantly, Rumensin has proven to be the most effective ionophore for hastening puberty in replacement heifers and reducing the postpartum interval in cows. Most of this effect is likely due to improved energy status, but is conceivably related to the effects of Rumensin on propionate production as well. We highly recommend Rumensin as part of a calving and breeding program, daily intake should be 100-200 mg per head. However, Rumensin is toxic to horses, extra care needs to be taken to insure horses do not consume feed containing Rumensin.

Bovatec (lasalocid) is the only ionophore approved for feeding with chlortetracycline. Therefore, in grazing situations where chlortetracycline is needed as a preventative for pinkeye or footrot, Bovatec is the ionophore of choice. Bovatec is more palatable than Rumensin in mineral, and most research shows similar effects on gain in pasture cattle, around a 0.15 lb per day advantage compared to cattle not fed an ionophore. In replacement heifers, Bovatec has also proved to hasten puberty, in conjunction with increased weight gain. Research comparing the postpartum interval of cows, however, has not shown an advantage for Bovatec. We recommend 100-200 mg of Bovatec daily for replacement heifers or stocker cattle. Bovatec is also toxic to horses, but the lethal dose of Bovatec is 7-10 times greater than that of Rumensin.

Gain-Pro (Bambermycins) is the least common but most safe of the ionophores. The chemical in Gain-Pro is an enormous molecule, making it very unlikely to ever leave the gut. Therefore, it does not appear to have any toxicity in horses. Gain-Pro is used more in forage situations than feedlot situations because it is less effective at managing acidosis. In grazing situations, cattle supplemented with Gain-Pro typically have higher dry matter intake than cattle fed Rumensin or Bovatec. This additional intake often leads to similar performance compared to other ionophores. Gain-Pro should be fed at 10 to 20 mg per head daily.

Research comparing the three ionophores head to head is scarce, but indicates they are all effective at improving animal performance versus cattle not fed ionophores. The choice of which ionophore you should use depends on your situation, and we would appreciate the chance to discuss your options with you. It is clear that all three can provide returns far greater than their cost in grazing stockers, replacement heifers, and beef cows.

Trace Mineral Nutrition



By Dr. Dan Larson, Ruminant Nutritionist

Trace mineral nutrition is an area of increasing focus. Thirty years ago, it was far less common to provide supplemental trace minerals, yet cattle survived. True, they "got by", but is getting by good enough? Thirty years ago, we demanded far less from cows and feedlot cattle. However, as we expect more from our livestock, nutrient requirements increase and trace mineral nutrition becomes more important to success. The Meat Animal Research Center has evaluated productivity in multiple beef breeds since 1970. Their data show **weaning weight has increased by an average of 55 lb between 1970 and 2000.** That would indicate milk production has increased as well, along with nutritional demands on the cow. This is most evident in first-calf heifers that require a nutrient rich diet in order to rebreed efficiently. **The interval from calving to first estrus (heat) has shortened from 86 days to fewer than 60 days on average in the past 30 years.** In order to accommodate these improvements, it is easy to see why a well-designed nutritional program is more important now than ever before.

Trace mineral nutrition is equally as important for young growing cattle. Thirty years ago, skimping on minerals in developing heifers may not have reduced conception rates. However, prior to 1970, heifers were normally bred for the first time at 2 years of age or older. The modern heifer is bred for the first time between 13-15 months of age and **heifers reach puberty at least 30 days earlier than they did in 1970.** Growing feedlot cattle has changed as well. Steer weight at slaughter has increased by nearly 300 lb since 1970 and they are reaching that weight by 12 to 18 months of age instead of 24 to 36 months. The increase in slaughter weight is a result of 1 lb/day improvement in ADG, which dramatically increased nutrient requirements. Clearly, properly balanced nutrition is a **key component** of these advances. The data above demonstrate why trace mineral

nutrition is **more important now than ever before.** Below is a partial list of trace minerals and the function of each for reproducing and growing cattle.

Cobalt (Co) - Cobalt is used by the ruminant as a substrate for the rumen microbes to synthesize vitamin B12 (cyanocobalamin). Vitamin B12 is necessary for the rumen microbes to produce propionate, a volatile fatty acid and an important energy source. Vitamin B12 is also essential for the production of red blood cells. The signs of cobalt deficiency include poor growth and appetite, rough hair coat, anemia, and a general lack of reproductive activity. The cobalt requirement of mature animals is 0.10 ppm; however, young growing animals may require a great level of Co supplementation.

Copper (Cu) - Copper is implicated in red blood cell health, reproduction, and immunity. Copper interacts with molybdenum and sulfur in vitamin metabolism. If cattle are exposed to high levels of zinc, iron, or phosphorus, Cu absorption can be reduced. Signs of Cu deficiency include faded hair coats, delayed estrus (heat), severe diarrhea, and reduced immune response. Secondary Cu deficiencies occur when dietary Cu is made unavailable by interactions with antagonists such as Fe, Mo, S, Se or Zn present in the diet or water. Therefore, Cu requirements vary with antagonist trace mineral concentration and range from 10 ppm to as high as 15 ppm or greater in diets with sulfur greater than 0.25 ppm.

Iodine (I) - Iodine is key in maintaining a normal metabolic rate through its role in the thyroid hormones, T3 and T4. When I is deficient, thyroid function is disrupted, resulting in lower metabolic rates. The signs of I deficiency include reduced milk production, weaning weights, an increased incidence of abortions, and poor hoof health. Cows deficient in I may have calves that are born blind, weak, hairless, or are stillborn. A hallmark of long-term iodine deficiency is a goiter, which is an enlargement of the thyroid gland as a compensation for reduced iodine concentration. Approximately 0.5 ppm I in the total diet is sufficient; however, higher levels are useful for treating hoof problems.

Manganese (Mn) - Manganese is important for growth and essential for reproduction. Concentrations of Mn increase in reproductive tissues with greater supplementation. Both Ca and P can inhibit Mn absorption when fed in excess. Signs of Mn deficiency include reduced conception rates, poor growth rates, low birth weights, and increased abortions. Cows deficient in Mn may have calves with skeletal abnormalities such as knuckled over pasterns. Requirements may vary depending on the stage of production. Growing and finishing cattle require 20 ppm in the diet, while reproducing cows require 40-50 ppm in the diet.

Selenium (Se) - Selenium interacts with vitamin E in immune function, growth, and reproduction. The maximum dietary level of Se in beef cattle is estimated to be 2-3 ppm with no ill effect on performance. In the north-central United States, soil Se is relatively high (> 2 ppm). In some areas, toxicity can develop, resulting in blind staggers, sloughing of hooves and hair, anorexia, and a wide range of birth defects. Deficiencies of Se more commonly are found in the Pacific Northwest, Great Lakes, and Atlantic Coastal Range and are associated with disorders such as white muscle disease, retained placentas and reduced reproductive efficiency. The selenium requirement for beef cattle is approximately 0.1 ppm, but most supplements provide the FDA maximum of 0.3 ppm because the requirement is poorly defined.

Zinc (Zn) - Zinc is essential in the immune response, enzyme systems, and hoof health. Copper and Zn compete for a similar absorption site, therefore the Zn:Cu ratio should be 3:1 or greater. Signs of deficiency include reduced feed intake and weight gain, excessive salivation, rough hair coat, and sensitive, soft hooves. Critical Zn deficiencies result in hair loss, thickening of skin, and lesions around the nose and mouth. Zinc is also essential for sperm quality and male reproductive performance. In most situations, Zn is required at 30-40 ppm in the diet. Due to its essential nature to health, Zn is often supplemented at a greater rate in stressed cattle.