Timely Tips
Dr. Roy Burris, Beef Extension Specialist, University of Kentucky

Spring Calving Herd

- Body condition is important, plan an adequate winter program for cows to be at least body condition score 5 (carrying enough flesh to cover the ribs) before the calving and breeding season. This will help them to breed early in the spring. Thin cows should be fed to regain body condition prior to winter. Don’t let cows lose weight/condition.
- Begin feeding the lowest quality forage to dry cows which are in good condition during early winter and save the best hay for calving time or for weaned calves.
- Divide the herd into groups for winter feeding --
  - weaned heifer calves
  - first-calf heifers, second-calvers and thin mature cows
  - the remainder of the dry cows which are in good body condition
  - herd sires
- Be sure that weaned heifer calves are on a feeding program which will enable them be at 65% of their mature weight before the start of the breeding season. Rations should be balanced to achieve gains sufficient to get heifers from their current weight to that “target” weight.
- Order and number eartags for next year’s calf crop this winter. It is also a good time to catch up on freeze branding and replacing lost eartags.

Fall Calving Herd

- Have Breeding Soundness Evaluation (BSE) performed on bulls (even if you used them this spring).
- Get breeding supplies together, if using estrous synchronization and/or A.I.
• The fall breeding season starts. Breeding can best be accomplished on stockpiled fescue pasture; otherwise, cows with calves should be fed 25-30 pounds of good quality hay or its equivalent. Supplement with grain, if needed, and minimize hay waste. Cows shouldn’t be allowed to lose body condition.

• Observe performance of bulls during breeding season. Watch cows for return to estrus, if you see several in heat, try to determine the cause and consider changing bulls.

General

• Consider putting down geotextile fabric and covering with gravel in feeding areas before you begin hay feeding to minimize waste of expensive hay.

• Complete soil testing pasture to check for fertility and pH.

Ag Publications Are Important

Dr. Roy Burris, Beef Extension Specialist, University of Kentucky

I grew up in the country and have always been a part of a rural lifestyle. My family didn’t subscribe to the Wall Street Journal (investing was not an option, survival was the priority) but the Farm Journal, Progressive Farmer, and anything about farming was studied religiously. Our family farm was about sustainability – being able to sustain three generations with cattle, hogs, chickens, tobacco, corn, hay and milk cows. We weren’t getting “back to nature”. We never left it. I was active in 4-H and FFA, and one project was selling feeder pigs for 10 dollars a head (in 1965). But, wait a minute, the farm magazines were saying that “top” hogs were going to 30 $/cwt by that summer. Since they were bringing 14-15 $/cwt at that time and corn was $1.10 a bushel, I could see some possibilities for financial gain (even if I didn’t read the Wall Street Journal).

I stopped by Anderson Bros. Feed Store on the way home from school and told them the plan to “feed out” my pigs that year and do you know what they said…..? They told this “kid” to go ahead and they would supply the feed and deduct the cost from the sale proceeds (they also owned the stockyard). I proceeded to calculate the mixture of corn and supplement needed, using the “Pearson Square”, and set out feeding hogs. Some guys rode around after school but I would stop by the feed store and load up the trunk of my ’57 Chevy with shelled corn and supplement and take care of business. Going into the summer, hog prices were steadily climbing and I “pulled the trigger” at $28.50 $/cwt. The price did, in fact, go on to $30 $/cwt but I wasn’t taking chances and cleared enough money to pay for a year of college.

This part of my life reminds me of how important good information is in any business. It is important to stay current and be willing to change or adapt. But, more importantly, I am reminded of how important it is to help and mentor young people in Agriculture. The good folks at Anderson Bros. Feed Store graciously extended credit to a young boy for his 4-H/FFA project which led to a college education and a career in agriculture. We need to keep these acts of kindness going – “Pay it forward” and keep reading those “ag publications”!
Mid-South Stocker Conference Set for February 18-19 at Paris Landing State Park

Dr. Jeff Lehmkuhler, Extension Beef Specialist, University of Kentucky

The 2014 Mid-South Stocker Conference will be the ninth consecutive one and will be held February 18 and 19, 2014. The conference will be hosted at the Paris Landing State Park and Conference Center at Buchanan, Tennessee. As with the preceding conferences, this one is a joint effort by the University of Kentucky Cooperative Extension, the University of Tennessee Extension, Mid-South Stocker Cattle Association, Bayer Animal Health, and BEEF.

The objectives of the conference are to provide information that will aid producers in exploring ideas for the production of efficient performing healthy cattle and determining the role and contribution of stocker production in the total beef industry effectively meeting consumer expectations. These objectives are being accomplished through “take home” research based information and topics that present innovative ideas that can be readily applied to individual operations.

The conference will also provide a unique opportunity for producers to interact with nationally renowned cattle specialists and other operators from the Mid-South and Midwest. In addition, industry professionals in the animal health, equipment, cattle nutrition and marketing participating in the trade show will be available for consultation.

For additional information, contact either local University of Kentucky Extension or University of Tennessee Extension offices or go to the web site: http://midsouthstocker.org/
Or contact Mr. Rusty Evans, UT Extension, 1030A Cumberland Heights Road Clarksville TN 37040-6901. Ph: (931) 648-5725 email: Jevans1@utk.edu

Forage Quality Could Impact Cow Performance

Dr. Jeff Lehmkuhler, Extension Beef Specialist, University of Kentucky

The wet spring this year resulted in several acres of hay that were cut and baled late. This can be problematic since much of our hay is derived from fescue and fescue-legume mix stands. The later the hay harvest, the more the plants advance in maturity from a vegetative stage, which is all leaf, to an advanced reproductive stage when the seeds are developed.

The ideal time to harvest cool-season grass for hay from a yield and quality perspective is from boot stage (i.e. just prior to the flower emerging from the stem) to early flowering. Due to the excessive precipitation received this year, many fields were cut beyond this ideal time frame. Hay that was in the soft dough to fully ripened seed stage was harvested from several fields. The quality of hay at these later stages of maturity poses problems for our beef cattle, especially those with high nutritional needs such as lactating cows and growing calves.

The figure below is a plot of approximately 60 forage analysis from hay sampled in 2013. The lines represent the energy and protein needs for a cow in late gestation. Hay samples that are left of the vertical line require protein supplementation. Samples below the horizontal line are energy deficient. Thus, those in the lower left quadrant are both energy and protein deficient while those in the upper right quadrant exceed both the energy and protein requirements. You should be able to see that many of the hay samples are adequate in protein but deficient in energy. Thus, in many instances, energy is first limiting during this
phase of production while protein will likely be limiting along with energy as the cows start their lactations.

Late cut hay is lower in protein and is less digestible leading to less energy available to the animal. The low protein and lower digestibility of this hay also negatively impacts forage intake. This can lead to lactating cows being in a severe negative energy balance resulting in excessive body tissue mobilization to support nutritional needs. The loss of body condition can negatively impact reproduction costing the operation in the long term.

To ensure the livestock are receiving an adequately balanced diet, producers should sample their hay and have it analyzed for nutrient content. This information is then used to develop a strategic supplementation strategy for cattle. Their nutritional requirements at different stages of production must be taken into account. In other words, dry, non-lactating bred cows in the mid-trimester of gestation will have lower nutritional needs than cows 60 days from calving in which rapid fetal growth is occurring. Forage analysis allows ranchers to more efficiently match hay quality to the nutrient needs of the cows.

Producers that wish to utilize their forage analysis in developing a supplementation strategy should visit [http://apps.ca.uky.edu/forage-supplement-tool/](http://apps.ca.uky.edu/forage-supplement-tool/) by searching the internet using the keywords Kentucky Forage Tool. This simple web program allows a producer to enter a few pieces of information from their hay analysis, select the stage of production the cows are in along with various supplements to arrive at a supplementation program. It was developed to help producers utilize their hay analysis rather than simply look at the paper and toss it in a drawer. Producers are still encouraged to contact their nutritionist or county Extension agent for assistance in designing supplement programs. This tool will, however, get a cow-calf operator started down the right track. Stay warm and supplement smart this winter.
Forage-Related Disorders in Cattle—Hypomagnesemic Tetany or “Grass Tetany”

Dr. Michelle Arnold, Large Ruminant Extension Veterinarian, University of Kentucky

What is “Grass Tetany” and when are cattle susceptible: Grass tetany, also known as spring tetany, grass staggers, wheat pasture poisoning, winter tetany or lactation tetany, is a condition caused by an abnormally low level of magnesium (Mg) in the blood. Maintenance of normal blood magnesium is completely dependent on absorption of magnesium obtained from the diet. Deficiencies occur most often in beef and dairy cows in early lactation grazing lush pastures high in potassium (K\(^+\)) and nitrogen (N\(^+\)) and low in magnesium (Mg\(^++\)) and sodium (Na\(^+\)). Affected cattle are often found to have low blood calcium concurrently. Typically grass tetany occurs when grazing ryegrass, small grains (i.e. wheat, rye) and cool season perennial grasses in late winter and early spring (Feb-April) although it can occur in fall-calving cows. Fast-growing spring grass is usually high in potassium and crude protein, and low in sodium and magnesium.

Cause of Grass Tetany: A number of factors contribute to the ability of magnesium to be absorbed through the rumen (stomach) wall. To be absorbed, magnesium must be “in solution” (dissolved) and this is largely dependent on the pH of the rumen fluid. When the pH is high (or more alkaline or “basic”), this decreases the available Mg because its solubility declines at a higher pH. Lush spring grass with its high level of crude protein combined with the use of nitrogen fertilizers in the soil, causes an increase in ammonia in rumen fluid and a corresponding increase in pH. Grass plants also do not take up magnesium as well when the weather is cool and the soils are water-logged. Several known magnesium binders can also exist within forages that form insoluble Mg salts in the rumen, preventing the passage of Mg into the blood.

In order to move magnesium out of the rumen, there is a “pump” mechanism that actively transports the dissolved Mg across the rumen wall to the bloodstream. The active transport of Mg across the rumen wall is compromised by high dietary potassium and low sodium because this changes the electrical potential necessary for the pump to work. Adding salt to the ration will improve Mg transport when forage sodium is low but too much sodium will ultimately cause more problems by loss of magnesium in the urine. Research has shown that the negative effects of high potassium cannot be overcome by the addition of large quantities of salt. However, a high rumen magnesium level, achieved by feeding high magnesium mineral mixes, will allow magnesium to passively flow into the bloodstream of the cow without the need for the active transport pump.

Clinical Signs: Grass tetany is characterized by hyperexcitability (nervousness), tetany (constant contraction of muscles or muscle stiffness and rigidity), convulsions, and death. The earliest signs begin when blood magnesium levels fall below 1.1 mg/dL and include twitching of the facial muscles, shoulder, and flank. As the fall in blood magnesium progresses, tetanic spasms of the muscles (muscles stay contracted so legs are stiff and rigid) become more common, eventually causing the cow to stagger and fall. Rapid convulsions or seizures quickly follow, with chomping of the jaws and frothy salivation. The low concentration of magnesium in the cerebrospinal fluid (the fluid present around the spinal cord or “CSF”) is responsible for the convulsions seen in grass tetany. Affected animals lie with the head arched back and the legs paddling. The heart rate may reach 150 beats per minute (normal is 60 to 80) and can often be heard without the use of a stethoscope. Respiratory rates of 60 breaths per minute and a rectal temperature as high as 105°F may result from the excessive muscle activity. Animals may stand up and repeat these convulsive episodes several times before they finally die. A moderate form of
hypomagnesemia with blood Mg levels of 1.1 to 1.8 mg/dL can occur with milder signs of reduced feed intake, nervousness, and reduced milk production.

Diagnosis is made based on history, clinical signs, and low magnesium level in the blood or CSF. Blood samples are not always an accurate measure of Mg levels because muscle damage may cause leakage of Mg from within cells, giving an artificially elevated reading. After death, samples of CSF or vitreous humor (fluid within the eye) that test below 1 mg/dL of magnesium are reliable indicators of grass tetany for approximately 24-48 hours.

**Treatment:** Animals exhibiting grass tetany are in need of immediate veterinary treatment; preferably 1.5 to 2.25 grams of magnesium administered intravenously for an adult cow. Tranquilization by the veterinarian may be needed to reduce the risk of injury to both the animal and the doctor during treatment. Response to therapy is not always good and depends largely on the length of time between onset of symptoms and treatment. Cattle that do recover take at least an hour which is the time it takes for magnesium concentrations in CSF to return to normal. Many of these cows will relapse and require additional treatment within 12 hours. Administering oral magnesium gel once the animal has regained good swallowing reflexes or drenching with magnesium oxide or magnesium sulfate will reduce the rate of relapse. If grass tetany has occurred within a herd, an effort should be made to immediately increase the intake of magnesium to other members of the herd to prevent further cases.

**Prevention:** Prevention is based on providing a high concentration of soluble magnesium in the rumen during times when conditions for grass tetany exist. As long as the active transport pump for magnesium is working well and driving magnesium across the rumen wall, problems should not develop. However, when factors prevent this from working such as high potassium level in the forage, the second or “backup” pathway is to increase the amount of magnesium in the diet, for example with a high magnesium mineral mix. A high rumen magnesium level will allow magnesium to passively flow into the bloodstream of the cow without the need for the active transport pump. **Supplementation with high magnesium mineral should begin at least 30 days prior to calving.** Cows require 20 grams of magnesium daily or 4 ounces per day of a 15% magnesium mineral mix during the late winter and early spring. Mineral feeders should not be allowed to be empty because consistent intake is important for clinical disease prevention. UK Beef IRM mineral recommendations for free choice supplements for grazing beef cattle include 14% magnesium in the complete mineral mix and all from magnesium oxide (no dolomitic limestone or magnesium mica). At least a third of the magnesium oxide should be in the prilled form to increase palatability.

In addition to supplying supplemental magnesium, several management factors may decrease the risk of grass tetany. These include: 1) Soil test and apply fertilizer based on soil test results and use no more potassium than recommended since grasses are luxury consumers of potassium; 2) Legumes are high in magnesium and will help offset the problem although their growth is often limited in late winter; 3) Feed small amounts of hay and/or grain to cattle on lush pasture during susceptible periods or limit grazing to 2-3 hours per day; 4) Graze the less susceptible or non-lactating animals (heifers, dry cows, stocker cattle) on the higher risk pastures.
Tyson Imposes Animal Welfare Requirements on Beef Producers
Brett Wessler, writer for Drovers CattleNetwork, web version

As consumers grow more concerned with animal welfare issues, Tyson says beef producers will have to follow on-farm requirements for animal treatment next year if they want to work with the major meat processor.

Tyson made the decision as it’s received customer feedback from major food companies including Whole Foods and McDonald’s. Tyson already requires its hog producers to follow specific guidelines and will now enforce its higher animal welfare standards on beef and poultry producers.

The animal-handling practices will be implemented by a third-party auditor who will visit farms to ensure compliance. The Des Moines Register reports the auditor will review animal handling practices and confirm animals have access to adequate feed and water.

Cattle producers heard the news from Lora Wright, Tyson’s beef supply chain manager, at the Iowa Cattlemen Association’s annual convention. Many of the practices are already practiced, so the change will be in the requirement for producers to document practices. Following the audit, producers will learn if their practices are approved, in need of improvement, or unacceptable.

Tyson Foods’ FarmCheck program was implemented for all of its pork producers. Wright said the audit system has yet to give a hog farm a rating of ‘unacceptable,’ but did remove an Oklahoma producer from its supply chain after an undercover video found incidents of animal cruelty.

The company’s FarmCheck Program ensures the best practices for the farm which are reviewed by a panel of 13 animal welfare experts.

Kentucky Beef Cattle Market Update
Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

Since early November, the feeder cattle markets have traded in a relatively narrow range. CME© Feeder cattle futures have traded in the mid-$160’s, with August at about a $2 premium to January. In Kentucky markets, 5wt steer calves have been moving mostly in the $160’s, with a few groups in the $170’s. Heavy feeders have also continued to move at strong prices and it appeared that many groups of 7wt and 8wt feeders went to market the first week of December.

Calves usually bring $50 to $100 more in the spring than in the fall, but that has not been the case this year. This counter seasonal market is largely the result of decreasing grain prices throughout the year as the 2013 corn crop has continued to grow. December WASDE estimates put the crop just under 14 billion bushels. In addition to lower grain prices, the large corn crop also means that we should go into the 2014 crop year with a lot more cushion in terms of grain stocks, which should make the 2014 crop a bit less price sensitive.

At the time of this writing, new crop 2014 corn futures were trading at about a $0.37 per bushel premium to 2013. While there are several reasons for this, I think it is likely that the market is expecting an acreage shift towards soybeans in the upcoming year. Again, at the time of this writing, the 2014 new crop price ratio of soybeans to corn was just over 2.5 to 1. Historically, this is a very high ratio that would tend to
favor beans. It will be very interesting to watch this ratio as we get closer to spring as the market tries to find the right acreage balance for the upcoming year.

Regardless, 2014 should be a good year for cattle producers. The more moderate corn prices and strong fed cattle futures should support the market well. I expect prices to be higher on a year-over-year basis for all of 2014, but especially in the spring. I think the spring market is setting up to be similar to 2012, which was the best spring calf market that we have seen. If fall 2014 feeder cattle futures stay in the mid-$160 and weather cooperates, I think we could see 5wt steers calves in the $180’s on a state average basis and high quality groups of calves selling for more than $2 per lb.