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College of Agriculture, Food and Environment
Cooperative Extension Service

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Beef IRM Team

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER OCTOBER 1, 2022

Published Monthly by UK Beef IRM Team and edited by Dr. Les Anderson, Beef Extension Specialist, Department of Animal & Food Science, University of Kentucky

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Timely Tips

Dr. Les Anderson, Beef Extension Professor, University of Kentucky

Spring-calving herds

- Schedule a pregnancy examination of cows if not done previously. Winter feeding costs can be minimized by eliminating open cows prior to winterfeeding. Pregnancy status (pregnant versus open) can be determined using palpation, transrectal ultrasonography, or blood sampling. Stage of pregnancy can only be determined by palpation or ultrasonography (performed by your veterinarian). A new chute-side blood sampling kit (Alertys from IDEXX) is available for use. It provides yes/no pregnancy data in 15 minutes for about $8 per cow.
- Evaluate the body condition of your cows and improve their condition prior to winter. It takes about 75 pounds to increase body condition a full score.
- If you have already done a preweaning working, revaccinate (booster) calves as needed. Treat calves for internal and external parasites. If you vaccinate calves yourself, be sure to store, handle, and administer vaccines properly.
- Wean calves before cows lose body condition.
- Obtain weaning weights of your calves and remember weaning is the time to do your first round of culling and selecting breeding stock. You can eliminate obviously inferior calves, especially those with wild or nervous dispositions. Consider the number of heifers that you will need to save for your cow herd. Bulls that are old, unsound, roguish, etc. can be culled now. It is not too early to begin thinking about replacements.

Fall-calving herds

- The calving season should be in full swing for fall-calving cows. Check cows frequently. Identify calves and commercial males should be castrated and implanted.
- Take accurate records of calving and calving performance. Our new app (X10D) makes data collection and reporting simple, easy, and convenient.
- Put fall-calving cows on accumulated pasture before the breeding season. Be sure to save some grass in the breeding pastures.
- It is time to get everything ready for the fall-breeding season, too. Line-up semen, supplies, etc. now and get your bulls ready to go (don't forget their breeding soundness evaluation). Breeding soundness exams are a vital component to reducing the risk of reproductive performance and need to be conducted 30-45 days before EVERY breeding season. Contact your herd veterinarian to schedule the exams.
- Obtain yearling measurements (weight, hip height, scrotal circumference, etc.) on replacement animals - especially for registered ones.
- Contact your herd veterinarian and schedule pelvic area examinations and reproductive tract scores for your potential replacements. Use pelvic area to identify larger heifers with smaller than normal pelvic areas so you can remove them from the breeding pool. Reproductive tract scores can be used to identify immature heifers for culling. Typically, heifers with a reproductive tract score less than 3 have limited ability to conceive early in the breeding season.

Stockers

- If you are purchasing weaned/stressed calves, have your receiving/feeding program in place. Feed a stress ration which contains at least 13% protein and is fairly energy dense.
- Manage to keep newly weaned and/or purchased calves healthy. Calves should be penned in a small lot with adequate feed, water, and shade to reduce stress. Careful handling and comfortable, uncrowded conditions can decrease stress.
- When newly weaned calves are purchased in the fall, sickness and death loss can be a big problem. Work with your veterinarian on a health and receiving program. Consider purchasing CPH-45 feeder calves that are preweaned, vaccinated, bunk-adjusted and treated for parasites.
- Watch calves closely for a few weeks after their arrival. Calves will normally break (get sick) 5-7 days after arrival, but they can break up to 14 days after they arrive. Have a treatment program ready for any health problems. Early recognition of sick cattle improves their chance of recovery. Watch for drooped ears, hollow appearance, reluctance to rise, stiff gait, coughing and dull or sunken eyes. A good "receiving" program is essential to profitability.

General Reminders

- Avoid prussic acid poisoning that can happen when frost ruptures the plant cells in sorghums, sorghum-sudan hybrids, sudangrass, and johnsongrass releasing prussic (hydrocyanic) acid. Fields can be grazed after the plants have dried up after a frost. New growth that occurs in stalk fields is potentially dangerous whether frosted or not.
- Take soil samples for soil analysis to determine pasture fertility needs. Apply phosphate, potash, and lime accordingly.

- Test hay quality and make inventory of hay supplies and needs. Adjust now - buy feed before you run out in the winter.
- Do not harvest or graze alfalfa now in order for it to replenish root reserves.
- Remove fly-control eartags from all animals, dispose of according to instructions on package. Treat for grubs/lice.

Beef Bash 2022: Recovering and Rebuilding from a Natural Disaster

Dr. Katie VanValin, Assistant Extension Professor Beef Nutrition, University of Kentucky

Beef Bash will be held at the University of Kentucky Research and Education Center in Princeton, KY on Thursday October 20th. Registration will begin at 8:30 and the program will begin at 9:00 AM. As in years past, Beef Bash will feature commercial vendors, educational presentations and demonstrations, and opportunities to fellowship with fellow members of the Kentucky beef industry. Although the UKREC including the beef unit are still in the process of recovering from the December 2021 tornado, we thought it was important to continue the tradition of beef bash and move forward with an in-person program! There is no cost to attend Beef Bash, but a meal will be available for purchase with all proceeds benefiting the Caldwell-Lyon Cattlemen's Association scholarship fund.

Vendor spots are still available! If you are interested in being a vendor, please contact Dr. Katie VanValin at Katie.VanValin@uky.edu or 859-562-1361.

The University of Kentucky Research and Education Center is located at 348 University Dr. Princeton KY, 42445. Signs will be posted to guide you to the beef unit.

UK Beef Management Webinar Series

Darrh Bullock, Extension Professor, University of Kentucky

We will start back on the UK Beef Management Webinar Series on October 11 with a Shoot the Bull session and the full agenda for the fall is below. Registration is necessary if you have not registered in the past (If you have ever received an invitation then you should be registered). If you would like to register, please send an email to dbullock@uky.edu with Beef Webinar in the subject line and your name and county in the message. You will receive the direct link with a password the morning of each meeting. This invitation will directly link you to the site and you will be asked for the password which can be found just below the link. Each session will be recorded and posted for later viewing. **All meeting times are 8:00pm ET/7:00pm CT**.

The library of all UK beef related videos, including past webinars, can be found at: https://www.youtube.com/playlist?list=PLC5aJFY_Be8XJZ_03_Ql73TK0826T8Fjq

Remember all sessions are 8:00pm Eastern/ 7:00pm Central and please let us know if you have any issues.

October 11, 2022
Shooting the Bull: Answering all your Beef Related Questions! – Updates and Roundtable discussion with UK Specialists

November 8, 2022
From Hay Sample to Feed Bunk: Winter Feeding Considerations for Cattle – Katie Mason, Assistant Professor, University of Tennessee

December 13, 2022
Packer and Consumer Trends with Some Holiday Beef Ideas – Gregg Rentfrow, Extension Professor, University of Kentucky and Alison Smith, Kentucky Beef Council Retail and Foodservice

Five Things to Do to Improve the Efficiency of Winter Feeding This Year

Dr. Katie VanValin, Assistant Professor Beef Nutrition, University of Kentucky

Undoubtedly, 2022 has had its fair share of challenges thus far. High input prices likely led to fewer hay acres being fertilized, which with the added pressure of drought, can lead to lower quality and quantity of stored forages moving into this winter. You might be in for sticker shock if you haven't purchased feed recently. It can be easy to get caught up in things we have little to no control over, so here are five things we can do to improve this year's winter-feeding program.

1. Body condition score the herd: Calves should be weaned from the spring calving cows (or will be very soon). It's easy to get caught up focusing on the weaning weight of the calves or managing a pre-conditioning program but don't forget about the cows. Now is the time to assess the body condition score of the herd. Spring calving cows will have their lowest nutrient requirements of the entire year shortly after weaning the calf. Now is the time to efficiently add condition to thin cows to set them up for success during the 2023 breeding season. Sorting cows by body condition score can allow for more efficient herd management and for those thin cows to receive the extra nutrition they require without overfeeding them in adequate condition. It is much more challenging to add condition to cows as they approach calving or have a calf at side. The ideal body condition score for mature cows is 5, while targeting younger females to a BCS 6 can ensure they have the extra condition required to meet their additional nutrient requirements for supporting growth.

2. Test your hay: This is something we always recommend, but in years like 2022, this becomes even more important. Hay tests provide valuable information about the energy and protein concentrations in the sample. All lots of hay should be tested, and a lot is defined as hay harvested from the same field on the same day and stored under the same conditions. Testing all lots of hay allows producers to match lots of hay to the herd so that the lowest quality hay is being fed when the cows' nutrient requirements are the lowest while saving the best quality hay for when nutrient requirements are their highest. Feeding the right hay to the right cow at the right time can drastically decrease the amount of supplement required to maintain body condition.

3. Evaluate supplement costs: At some point throughout the year, some supplementation is likely required to meet the energy and protein requirements of the herd. Using hay test results can help determine the most efficient supplement to match the energy and protein deficits in the hay. The University of Kentucky Forage Supplement tool is a simple-to-use online tool that provides recommendations for supplementation based on hay test results. Also, reach out to your local

county extension agent or nutritionist to assist in interpreting hay test results. Now is the time to sharpen the pencil and determine which supplement options will be the most economical to pair with available forage. Remember, the feed that was the most economical last year may not be the most economical choice this year. Just because one feed costs more on a $/Ton basis does not mean it is the most expensive supplement to feed. The amount of a particular supplement required must also be considered.

4. Feed hay efficiently: Regardless of quality, when the quantity of hay is tight, available hay stores must be fed efficiently. Research has shown that feeding hay in a hay ring prevents feeding waste, especially rings that contain a solid skirted bottom. Hay feeding pads and fence line feeders can also reduce hay feeding losses. While these measures will not completely reduce hay feeding losses, these losses can be reduced from 45% to as little as 6% by using hay rings. Moving hay rings or utilizing bale grazing can help to limit trampling damage around these hay feeding sites and help to distribute manure evenly across the feeding area.

5. Stockpiling forages: Although nitrogen application can increase the amount of stockpiled forage available to graze during the winter, tall fescue can still stockpile even without a nitrogen application. Closing off certain fields during the fall growing season can allow the forages in these fields to stockpile, which can then be grazed during the late fall and early winter. While the nutrient quality of stockpiled fescue declines over time, nutrient content can remain adequate for supporting dry cows. Consider setting up a simple strip grazing system using temporary electric fencing to prevent trampling losses when turning cattle out on stockpiled forages.

Contact your local county extension office for more information about establishing an effective and efficient winter-feeding program.

Anaplasmosis in Beef Cattle-Frequently Asked Questions

Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

What is Anaplasmosis? Anaplasmosis is a disease caused by *Anaplasma marginale,* a bacterial organism that invades cattle red blood cells (Figure 1) and causes severe anemia, often resulting in death. In Kentucky, the disease affects adult cattle, typically in the fall of the year with most cases occurring from late September through the first 1-2 weeks of November.

What are the symptoms of anaplasmosis? This organism causes anemia in adult cattle which means there is an abnormally low number of red blood cells circulating in the bloodstream. Lack of red blood cells results in oxygen deprivation to the vital organs, but symptoms are not noticed until 40-50% of red blood cells are destroyed. Infected cattle will show signs of weakness, lagging behind the herd, staggering, rapid breathing and sometimes foaming from the mouth. Affected cattle quit eating, have a fever and may appear to rapidly lose weight. Most become very aggressive due to lack of oxygen to the brain. Mucous membranes will appear pale early in the course of disease and progressively turn yellow in color due to jaundice. Death can be sudden, especially with exercise, or cattle may be found dead with no prior symptoms. Typically, several adult animals in a herd will die within a short (1-2 week) span of time. Pregnant cows that survive will often abort their calves.

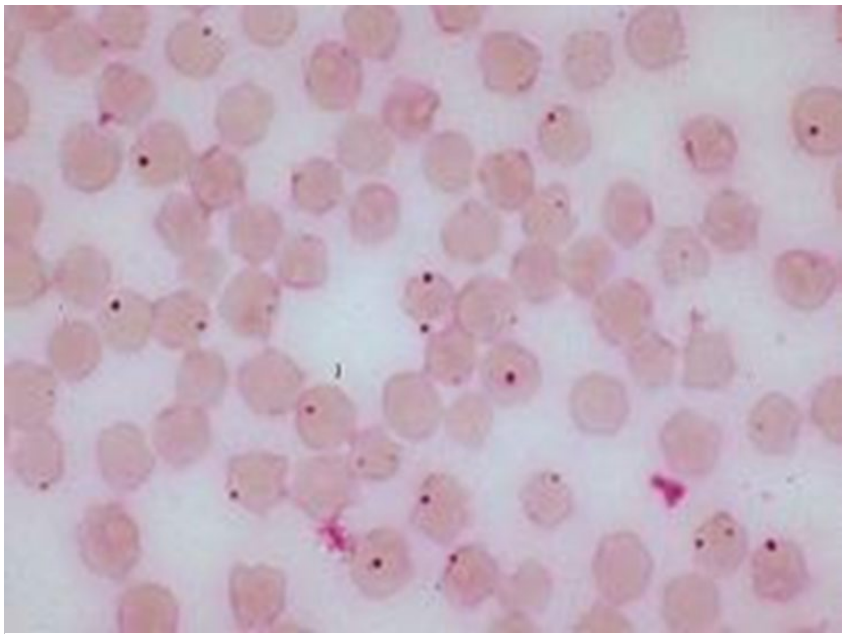

Figure 1*: Anaplama marginale* organisms (small purple dots) in the red blood cells (larger pink circles)

Do all cattle with anaplasmosis show these same symptoms of disease? No. Younger cattle, especially less than 6 months old, rarely exhibit signs of disease due to rapid and active production of new red blood cells (RBCs) in growing calves. Symptoms of anaplasmosis in animals from 6 months to 2 years of age are usually mild and may be misdiagnosed as pneumonia because both conditions include fever and increased respiratory rate but most will recover. Older animals (> 2 years old and up) are at elevated risk for disease and death, especially if under stress such as calving or in early lactation. Others can mount an effective immune response without obvious signs of sickness.

How do you treat an animal showing signs of Anaplasmosis? Treatment with antibiotics is essential for survival if showing signs of disease. A single subcutaneous injection of long-acting oxytetracycline at 22 mg/kg of body weight (BW) or 10 mg/lb BW will often stop the progression of anemia by slowing replication of the *Anaplasma* organism, allowing the immune system to take over and save the animal. Another option is Baytril® 100-CA1, the first fluoroquinolone antibiotic conditionally approved by the FDA for the treatment of clinical anaplasmosis associated with *Anaplasma marginale* in all classes of beef cattle except beef calves less than 2 months of age and beef bulls intended for breeding (any age). However, be aware that severely affected cattle may die due to stress when walked to the barn or going through the working chute. In an outbreak situation, it is recommended to treat all adult cattle in the herd with injectable oxytetracycline (for example, LA-200®, LA-300®), then begin feeding chlortetracycline (CTC) at the control dose (0.5-2 mg CTC/lb BW/head/day) in medicated mineral or feed throughout the rest of the vector (fly) season which ends around November 1st. Many medicated free-choice mineral mixes are now available for anaplasmosis control. Alternatively, hand feeding Aureomycin® daily in feed to deliver 0.5 mg/ lb BW/head/day will also control active infection.

If an animal survives the initial infection, then what? Will they get it again? If an animal (regardless of age) becomes infected with *Anaplasma marginale* and survives, that animal will become a "carrier" of the organism for life. As carriers, they are never sick again due to Anaplasmosis but serve as reservoirs or a source of infection for other uninfected animals. Infected bulls that survive may be infertile for up to a year while pregnant cows that survive almost always abort during recovery from infection. Recovery takes at least 2-3 months to rebuild red blood cells and regain lost weight.

How is Anaplasmosis spread? Anaplasmosis is considered a "tick-borne" disease because they can spread the organism through feeding on cattle. Although ticks are important for this organism to survive and spread, transmission can be by any method that moves affected red blood cells from infected to

susceptible cattle. In addition to ticks, the *Anaplasma* organism may be spread by biting insects (mosquitoes, horse flies, stable flies) and/or using blood-contaminated tools such as dehorners, ear taggers, castration tools, and implant guns without disinfection between animals. Probably the most common way it is transmitted is using the same hypodermic needle on multiple animals when administering vaccines to the herd. Once infected, there is a 3-10 weeklong incubation period before the animal develops signs of a problem. Transmission may also be from cow to calf while pregnant although little is known about when this takes place in gestation.

How is Anaplasmosis diagnosed? If an animal is found dead and no more than 24 hours has passed since the time of death, the animal can be submitted to a veterinary diagnostic laboratory for necropsy or a veterinarian may perform a field necropsy to determine the cause of death. If an animal is alive and showing signs consistent with anaplasmosis, the UKVDL recommends a blood sample (both a red top and a purple top tube) be submitted for an accurate diagnosis. Whole blood (purple top tube) is needed for a complete blood count (CBC) to assess the degree of anemia, to potentially identify the organism in a blood smear and for a new PCR test now available to identify the *Anaplasma* DNA. The red top tube of blood is needed for a serum test (the Anaplasmosis cELISA) to detect antibodies indicating infection and/or carrier status. However, the serum test may be negative early in the disease process. Blood should be collected and transported to the lab as soon as possible (overnight ship with cold packs). Please visit the UKVDL web site for additional information at http://www.vdl.uky.edu

Is an effective vaccine available? Kentucky is among the list of states approved by the USDA for sale of the anaplasmosis vaccine marketed by University Products LLC of Baton Rouge, LA. Vaccination should keep animals from experiencing sickness and death but does not prevent infection and still allows development of the carrier state. The vaccine can be used during an outbreak and has been used in cows in all stages of pregnancy with no problems being reported. The recommendation is a two-dose regimen given 4 weeks apart with annual re-vaccination required. Immunity should develop within 7-10 days of the 2nd dose according to the manufacturer. Vaccination should ideally begin with yearlings. The downside to vaccination is that vaccinated animals will test positive for anaplasmosis which is unacceptable for most seedstock operations. More information may be found at: http://www.anaplasmosis.com/home.html

What is the best way to prevent problems due to Anaplasmosis? Preventing infection with *Anaplasma marginale* is difficult due to the large number of infected herds throughout the state, the frequent movement of cattle and the ease with which the organism is transmitted. In addition, antibiotic treatment and vaccinations do not prevent animals from becoming carriers. For these reasons, the goal is often to prevent disease and death loss when the herd is first exposed to the *Anaplasma* organism and as it spreads within the herd. One control option is to offer chlortetracycline (CTC) at the control dose of 0.5 mg-2mg/lb BW per head per day throughout the vector (fly) season to the herd (May-Nov). This is easily accomplished by purchasing a free-choice mineral with CTC added for anaplasmosis control. However, CTC intake varies greatly from cow-to-cow, so some eat too much and others not enough. Research has found it is equally effective to pulse feed CTC (offer CTC for 30 days, take a 30-day break then offer CTC for the next 30 days and so on) as to offer CTC continuously for control of the disease. To obtain CTC, a producer must have a written VFD from a licensed veterinarian to present to the feed store before purchase of the product. FDA states that “once a veterinarian has determined that anaplasmosis infection exists within a herd, whether or not clinical signs are apparent yet, he/she may write a VFD to direct the use of CTC for controlling the progression of the disease in that herd.” FDA leaves how to make this determination to the discretion of the veterinarian. How long to use the product

is also left to the veterinarian's discretion, based on his or her assessment of the disease risk. A VFD order can be issued for a maximum of 180-day duration of feeding; if needed for a longer period of time, a new VFD order must be written. On the actual VFD form for CTC, the veterinarian can only choose the #5 option (see example in Figure 2) for a free choice product. Remember, **feeding CTC will not prevent disease if the animals are not consuming sufficient amounts** so intake should be monitored. Even when feeding CTC throughout the vector season, some individual animals may still become infected and die if they do not eat enough. Using CTC or any feed additive in a manner not stated on the label is illegal and strictly prohibited for producers, veterinarians, and nutritionists.
If unable to obtain a VFD or feeding CTC is not an option, vaccination is another possible control measure available that can work but is a bit pricey at $8-10 per dose. To reduce the cost, if willing to draw blood and submit for anaplasmosis testing, the vaccine can then be targeted for use in only the individuals who test negative for antibodies. Animals that test positive will not need vaccination nor CTC therapy. This Anaplasmosis cELISA blood test (currently $9 per test) can be run on the same blood sample used for pregnancy testing, too.

Will Anaplasmosis always be a problem for KY cattle herds? Maybe. The disease should reach a point of "endemic stability", meaning nearly all the animals in herds have been exposed to the disease and are immune to its effects. However, studies have found that herds in traditionally endemic areas such as Florida are not necessarily full of positive animals. In other words, there is no way to know the status of your own herd (how many cows are carriers and how many are uninfected) unless you blood test. Any new additions to the herd purchased from areas of the US without anaplasmosis and brought to KY will be at higher risk of disease and should be tested to determine their status. Similarly, new purchased additions may be Anaplasmosis carriers and can infect cows in your herd if there are many negative cows. Bottom line is to test new purchases and work with your vet to determine next steps.

Will carrier cows and bulls always have Anaplasmosis? Should they be culled? Carriers in the herd are not necessarily bad even though they carry the organism in their blood cells. Once an animal is a carrier, it is protected from disease and will not develop anemia and die. However, carriers that consume a consistent, high dose of tetracycline over a prolonged period (called "chemosterilization") may inadvertently clear the organism and are susceptible to re-infection and sickness/death in subsequent seasons. Attempting to clear the organism or eradicate the disease is usually limited to high value seedstock and those that require international movement. Consult your veterinarian for further information about testing and disease control recommendations for your area.

Example VFD Form for Free Choice CTC

Beef and Non-lactating Dairy Cattle: As an aid in control of active infection of anaplasmosis caused by *Anaplasma marginale* susceptible to chlortetracycline when delivered in a free-choice feed.

Drug Concentration:

1. 8000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day) *[Must use a FDA-approved proprietary formulation.]*
2. 6000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day) *[Must use a FDA-approved proprietary formulation or formulation in 21 CFR 558.128(e)(6).]*
3. 5000 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day) *[Must use a FDA-approved proprietary formulation.]*

4. 700 g/ton (to provide 0.5 to 2.0 mg/lb body weight/day) *[Must use a FDA-approved proprietary formulation.]*

Feed Price Implications for Fall Feeder Cattle Markets

Dr. Kenny Burdine, Extension Professor, Livestock Marketing, University of Kentucky

As we move into fall, we have a pretty good feel for the size of the 2022 corn crop. Acreage is down significantly from last year and yield projections were reduced almost 3 bushels this month to 172.5 per acre. After spending some time below $6 per bushel this summer, CME© December corn futures are in the upper $6 per bushel range. Barring a major shock on the demand side, feed prices are going to be a challenge for cattle operations this winter. So, I wanted to briefly talk through some implications of high feed prices on feeder cattle markets.

Perhaps the most important thing to remember is that cost of gain and value of gain are correlated. Feedlots prefer to place heavier feeder cattle when feed prices are high, so the price discount on higher weights gets smaller. This narrowing of price slides increases the value of additional pounds when feeder cattle are sold. I hear a lot more discussion of feed prices than value of gain when producers discuss cattle feeding programs. In truth, opportunities can still exist in high feed price markets depending on cattle price dynamics. So, producers need to push the pencil on post-weaning feeding programs to determine if opportunities exist this fall and winter. Generally speaking, there is more feed flexibility for growing programs than finishing programs. Producers may find that opportunities to grow feeders still exist, especially if they can efficiently make use of alternative feeds.

Along those same lines, producers need to make sure they distinguish between cost of feed and cost of gain. Cost per ton of feed really does not tell me much unless I know something about that feed's (or ration's) ability to put weight on cattle. There are lots of ways to lower feed cost per ton, but I must make certain that I am not losing more value of gain than I am saving in cost per ton. This is why I tend to lean towards cost of gain when comparing programs and prefer to run multiple programs through a full backgrounding budget to compare expected profit.

Finally, there are also implications for fall grazing. A quick glance at the drought monitor reveals how much variation exists across the county. But, if you are in an area that has had good moisture conditions and is getting solid pasture growth, make certain to utilize that to the extent possible. While grazing costs have increased recently as well, they have certainly not increased as much as purchased feed. So, fall pasture is likely the most attractive feed that you have to utilize to add pounds. The current market also increases incentives to incorporate rotational grazing or strip grazing to increase the utilization of those forages.