

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER APRIL 6, 2023



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Beef IRM Team

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Timely Tips

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

Spring Calving Cow Herd

- Watch cows and calves closely. Work hard to save every calf (you can cull/sell them later). Calves can be identified while they are young and easy to handle. Commercial male calves should be castrated and implanted. Registered calves should be weighed at birth.
- Cows that have calved need to be on an adequate nutritional level to rebreed. Increase their feed after calving. Don't let them lose body condition. Keep feeding them until pastures are adequate.
- Don't "rush to grass" although it can be really tempting. Be sure that grass has accumulated enough growth to support the cow's nutritional needs before depending solely upon it. Cows may walk the pastures looking for green grass instead of eating dry feed. This lush, watery grass is not adequate to support them. Keep them consuming dry feed until sufficient grass is available to sustain body condition. We've spent too much money keeping them in good condition to lose it now!
- *Prevent grass tetany!* Provide magnesium in the mineral mix until daytime temperatures are consistently above 60°F. Mineral supplement should be available at all times and contain a minimum of about 14 percent magnesium. Make sure that your mineral mix also contains adequate selenium, copper and zinc. You can ask your feed dealer about the UK Beef IRM High Magnesium Mineral.
- Make final selection of heifer replacements. Strongly consider vaccinating with a modified-live BVD vaccine.
- Purchase replacement bulls at least 30 days prior to the start of the breeding season. Have herd bulls evaluated for breeding soundness (10-20% of bulls are questionable or unsatisfactory breeders). Get all bulls in proper condition (BCS 6) for breeding.
- If you are going to use artificial insemination and/or estrous synchronization, make plans now and order needed supplies, semen, and schedule a technician.
- Prebreeding or "turn-out" working is usually scheduled for late April or May - between the end of

calving season and before the start of the breeding season (while cows are open). Consult your veterinarian about vaccines and health products your herd needs. Make arrangements now for products needed and have handling facilities in good working order. Dehorn commercial calves before going to pasture.

Fall Calving Cow Herd

- Pregnancy check cows now and cull open ones at weaning especially if the open cows are older than 5 years of age.
- Re-implant feeders.
- Consult with your veterinarian about a preweaning working of the herd.
- You may let calves creep-graze wheat or rye, if it is available. Calves will benefit from extra feed until spring grass appears.
- Plan marketing strategy for feeder calves.

Stockers

- Don't go to pastures too soon, give plants some growing time. Then stock at two to three times the July rate and rotate rapidly.
- "Condition" purchased calves prior to grazing. They should be processed and fed a conditioning diet prior to being placed on pasture. You can also use this time to introduce them to electric fences which are used in rotational grazing.
- Provide a good mineral supplement which contains a rumen modifier (Rumensin, Bovatec, etc.) along with adequate levels of copper and selenium.

General

- We've made a muddy mess this winter, so be prepared to reseed bare spots. Our forage group has some excellent information on restoring heavily traffic areas.
- Make plans to improve hay feeding areas to avoid muddy conditions like we have faced this winter. Consider geotextile fabric with gravel or concrete feeding pads.
- Prepare for the grazing season. Check fences and make necessary repairs. Check your corral, too.
- Get everything ready to make high quality hay in May! Have equipment serviced and spare parts on hand. Order baler twine now. Be prepared to harvest an adequate supply of hay when you have the opportunity. Re-supply the extra hay that you fed out of the barn. This past winter caused most producers to exhaust their hay supply, so it's time to re-stock.
- Plan now for fly control ... decide what fly control program that you will use but don't put insecticide eartags on cattle until fly population appears.

Beef Quality and Care Assurance Certification Free in April

Dr. Darrh Bullock and Kevin Laurent, Beef Extension Specialists, University of Kentucky

The Beef Quality and Care Assurance (BQCA) certification is being *offered for free in April and September 2023* by the University of Kentucky (UK) and the Kentucky Beef (KBN). The normal cost of the training is \$5 for in-person and \$10 for online training.

Becky Thompson of KBN states “The Kentucky BQCA program takes national BQA practices one step further to provide a holistic program for Kentucky producers, by adding cattle handling and animal care components to the training modules. Educational modules provide the best management practices for handling cattle and providing for their well-being, in addition to training on the core principles of BQA.”.

This program is run jointly by UK and KBN. Producers interested in taking advantage of this opportunity can visit www.kybeefnetwork.com or <https://afs.ca.uky.edu/content/bqca-training-online> to access the online training platform or contact your county extension office for in-person training opportunities.

Additionally, we will be conducting a BQCA Chute Side Training (qualifies for certification) at Blue Grass Stockyards April 20 with registration and lunch starting at 11:30am EDT. Things should be wrapped up by about 3:30pm. Pre-registration is required and can be done by calling the Kentucky Cattlemen’s Association office at (859) 278-0899 or email kbn@kycattle.org. Only 60 spots are available.

Parasite Problems Returning in Cattle Due to Dewormer Resistance? UK Extension Teams up with KBN and Merck Animal Health to Assess Parasite Burdens in KY Beef Cow/Calf and Stocker Operations

Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

Dewormers (anthelmintics), when given correctly, are not killing intestinal parasites of cattle as they used to. Although new drug “classes” entered the market from the 1950s to the 1980s, it has now been over 40 years since ivermectin was introduced in 1981. Basically ‘we have what we have’ which is 3 major chemical classes or families of dewormers known as the Benzimidazoles (SafeGuard® & Panacur®/ Valbazen®/Synanthic®), the Macrocyclic Lactones or MLs (Ivomec®/ Cydectin®/ Eprinex® & LongRange®/Dectomax®/generic ivermectins) and the Imidazothiazoles/ Tetrahydropyrimidines (Rumatel®/ Strongid®/ Prohibit® or Levasol®). These dewormers are gradually losing effectiveness against livestock parasites with no new products on the horizon to replace them.

“Anthelmintic resistance” is the phrase used for the ability of a parasite to survive treatment with a lethal dose of chemical dewormer because of a change in the genetic makeup (mutation) in the parasite. Only the parasites that survive after deworming will go on to reproduce and may pass a copy of their newly formed “resistance gene” to their offspring. But this is only half of the story. For fully resistant parasites to develop, both parents must pass a copy of this “bad” gene to the offspring. These resistant genes build up slowly but steadily in the parasite population, especially from repeated use of dewormers over many years, and they do not revert to susceptibility. Resistant worms are not more aggressive or deadly; they simply survive in higher numbers after deworming, resulting in production loss and disease in the most susceptible animals.

Consequences of high parasite burdens are mostly seen in younger animals, especially weaned calves and replacement heifers, since adult cattle develop an immunity to the effects of parasites. Although most infections in cattle are a combination of several different worm species, generally all gastrointestinal parasites cause anorexia and reduce the animal’s ability to efficiently convert forage to milk and muscle. The number one sign of a parasite problem is lower than expected production.

including less than genetic potential rate of gain, feed conversion, growth, and reproduction. This is potentially costing producers due to reduced weaning weights, delayed puberty, decreased fertility and pregnancy rates, reduced feed efficiency and immune suppression in young cattle, especially those ages 2 years and younger. As exposure to parasites increases with age, the bovine immune system reduces worm infections and suppresses worm egg production. This immunity to parasites is a moderately heritable trait. Unfortunately, the dependence on chemical dewormers has allowed selection of bulls and replacement females with high production numbers but has ignored any potential genetic contribution to fighting parasites. Additionally, chemical deworming has allowed continued husbandry and pasture management factors that keep worm burdens high. As an example, overstocking a pasture results in more feces, more worm eggs and larvae after egg hatching, shorter grass and more parasites in animals forced to graze near manure piles. Young, growing animals are at highest risk due to lack of previous exposure to parasites and a naïve immune system.

How is it possible to know if dewormer resistance is a problem in a herd? The best way to test is a Fecal Egg Count Reduction Test (FECRT) based on the knowledge that dead worms don't lay eggs. This test basically involves taking fecal samples from 20 random animals within a production group (cows, calves, or replacement heifers) at the time of deworming and sending them to a laboratory for a fecal egg count (FEC). Fecal samples are collected again from the same production group 14 days later and those samples are sent to the same laboratory for a second FEC. The second samples do not have to be collected from the same individual animals but do need to be from the same group collected previously. If the dewormer worked effectively, there should be at least a 90% reduction in the average or mean number of eggs from the first sample to the second sample. "Resistance" is present when the correct delivery of the correct dose of the dewormer to a healthy animal fails to produce at least a 90% reduction in the number of parasite eggs. It is important to understand that a decrease in "anthelmintic effectiveness" or "treatment failure" may be for reasons other than genetic or heritable resistance in the parasite population. Many factors can cause smaller than expected reductions in fecal egg count numbers including underdosing dewormers from errors in weight estimation, dosing equipment not calibrated correctly and/or not working properly, applying pour-ons to the hair of an animal rather than skin, use of expired products, and errors in sample collection and shipment, just to name a few.

How can we slow the development of resistance to dewormers? First and foremost, we must understand the parasite prevalence (the proportion of cattle with a large parasite load in each time period) in KY cattle in order to properly direct research and extension interventions to lessen the effect of parasites on health and production. Secondly, we have to examine the current level of resistance to dewormers through FECRTs performed throughout the Commonwealth. Finally, it is important to identify the predominant types of gastrointestinal parasites in our cattle to correctly interpret the FEC. Most of the major parasites in cattle are classified as "strongyles" and their eggs are basically indistinguishable. Weaned calves up to 12-18 months of age are mostly affected by two strongyle species, *Cooperia* and *Haemonchus*, both of which produce huge numbers of eggs. Around 2 years of age, cattle develop resistance to *Cooperia* and *Haemonchus* but another strongyle, *Ostertagia*, a more pathogenic parasite predominates yet it does not produce many eggs. A PCR is now available to identify the parasite genus and species as there are concerns that climate change, intensive livestock management and dewormer resistance issues have fundamentally changed our picture of "expected" parasite burdens in production classes of cattle. To accomplish these three tasks, UK Extension faculty and agents, in conjunction with KBN and Merck Animal Health, have launched a parasite study that is set to begin in the Spring of 2023 in beef cow/calf and stocker operations in KY and we need your herds.

To participate, collaborating herds must be planning to administer a dewormer in BOTH the spring and fall of the year. Producers may use any dewormer they normally use or one recommended by their veterinarian. It is important to understand that dewormer will NOT be provided to participating herds! Fecal samples will be collected twice in the spring and twice in the fall from the same group of animals. Producers will be asked to complete a short questionnaire requesting basic information on the herd. Once all the data is compiled, the information will be shared with the producer and his/her veterinarian, if desired. If you wish to be considered for enrollment in this important study, please contact your local County Extension agent and convey your interest in joining.

Reducing unnecessary treatment with dewormers, making sure the dewormers used are effective, and making sure deworming is performed correctly all contribute to fewer resistant genes in parasites. In addition, environmental management (see box) will help create safer pastures and lessen the need for chemical dewormers.

Environmental management to reduce exposure of the host animal is central to parasite control. The following list of practices will help create safer pastures with lower worm numbers and result in less need for anthelmintic (dewormer) treatment:

1. Stocking rate is exceptionally important, as overgrazing forces consumption of forage close to the soil surface where the larvae are concentrated. Most larvae never migrate higher than 4-6 inches on forage.
2. Clipping pastures, tilling and reseeding, or removing a cutting of hay will decrease existing worm burdens.
3. Exposure to ultraviolet light (sunshine) kills larvae, so removal of extensive overgrowth of pasture or heavy thatch is recommended.
4. Pasture rotation provides nutritious forage for growth and development but is usually not rested an adequate length of time to decrease the level of worm contamination. Allowing calves to creep graze in clean pastures ahead of adults in a rotational grazing situation will minimize the exposure of the most susceptible animals.
5. Areas of highest risk are those where animals congregate, such as watering troughs, shady areas, or sheltered areas, because manure buildup and high moisture are conducive to larvae survival.
6. Grazing after the dew dries in the morning decreases consumption of larvae from pasture, since moisture is necessary for larval movement up a blade of grass.
7. If practical, cattle and small ruminants can be grazed together or alternately, where each consumes the parasites of the other. This reduces available infective larvae for the preferred host species.

Stocker Outlook for 2023

Dr. Greg Halich and Dr. Kenny Burdine, Extension Professors, Livestock Marketing, University of Kentucky

Spring has officially arrived in the Commonwealth, which always brings questions about stocker profitability. Calf prices typically increase seasonally as we move into spring but have increased at a larger-than-normal rate since the end of 2022. On a state average basis, a medium / large frame #1-2 steer in March has sold for over \$40 per cwt more than that same steer in December. While it is likely that some stocker operators purchased calves early, to get ahead of the seasonal spring price increase, most will place calves into stocker programs in the coming weeks. At the time of this writing (March 21st), fall 2023 CME© feeder cattle futures were trading around \$220 per cwt, which is roughly a \$25 per cwt premium over the April contract. It's hard to remember a year with this much carry on the feeder cattle board between spring and fall. This suggests that heavy feeder cattle prices should increase throughout 2023, which partially explains the sharp increases being seen in calf prices. Still, high calf prices have many stocker operators questioning whether profit opportunities will exist for 2023.

The purpose of this article is to assess the likely profitability of summer stocker programs for 2023 and establish target purchase prices for calves based on a range of return levels. While it is impossible to predict where feeder cattle markets will end up this fall, producers need to estimate this and not rely on the current price (March) for 750-850 lb feeder calves. The fall CME© feeder cattle futures price (adjusted for basis) is the best way to estimate likely feeder cattle prices for fall. Grazing costs including pasture costs, veterinary and health expenses, hauling, commission, etc. are estimated and subtracted from the expected value of the fall feeders. Once this has been done, a better assessment can be made of what can be paid for stocker cattle this spring to build in an acceptable return to management, capital, and risk.

Key assumptions for the stocker analysis are as follows: 1) Graze steers April 1 to October 15 (197 days), 1.4 lb/day gain (no grain feeding), 2% death loss, and 7% interest on the calf. The interest rate used in this analysis may seem high for producers who are self-financed or have very low interest rates but is likely pretty close for those going through traditional lenders. Given these assumptions, sale weights would be 775 lbs and 875 lbs for 500 lb and 600 lb purchased calves, respectively. Using a

\$220.50 CME© futures contract price for October 2023 to estimate sale price, a 775 lb steer is estimated to sell for \$2.11/lb and an 875 lb steer is estimated to sell for \$2.08/lb. This estimate uses a -\$10 per cwt basis for an 800 lb steer and a \$3 per cwt price slide. These sale prices are also based on the assumption that cattle are sold in lots of 40 or more head. Stocker operators who typically sell in smaller lots should adjust their expected sale prices downward accordingly.

Estimated costs for carrying the 500 and 600 lb steers are shown in Table 1. Stocking rates of 1.0 acre per 500 lb steer and 1.2 acres per 600 lb steer were assumed in arriving at these charges. Most of these are self-explanatory except the pasture charge, which accounts

	500 lb Steer	600 lb Steer
Pasture Charge	\$30	\$36
Vet	\$25	\$25
Interest	\$50	\$56
Death Loss	\$27	\$30
Sale	\$18	\$18
Haul	\$15	\$18
Mineral	\$13	\$15
Other (water, etc)	<u>\$11</u>	<u>\$13</u>
<i>Total Variable Costs</i>	<i>\$189</i>	<i>\$211</i>
<i>Note: Interest and death loss varies slightly by purchase price.</i>		

for variable costs such as bush-hogging, fertilizer, seeding clovers, etc., and is considered a bare-bones scenario. Sale expenses (commission) are based on the assumption that cattle will be sold in larger groups and producers will pay the lower corresponding commission rate. However, producers who sell feeders in smaller groups will pay higher commission rates which could exceed \$50 per head based on the revenue assumptions of this analysis. Any of these costs could be much higher in certain situations, so producers should adjust accordingly.

Gross Profit	500 lb Steer	600 lb Steer
\$100	\$2.69	\$2.51
\$125	\$2.64	\$2.47
\$150	\$2.59	\$2.43
\$175	\$2.55	\$2.39
\$200	\$2.50	\$2.35

Notes: Based on costs in Table 1 and sales price of \$2.11/lb and \$2.08/lb for 775 lb and 875 lb sales weight respectively for 500 lb and 600 lb purchased steers.

Target purchase prices were estimated for both sizes of steers and adjusted so that gross returns over variable costs ranged from \$100-\$200 per head. Normally we would use a range of \$50-\$150 per head, but we feel that given the high feed prices this will be more representative this year. This gives a reasonable range of possible purchase prices for each sized calf this spring. Results are shown in Table 2. For 500 lb steers, target purchase prices ranged from \$2.50 to \$2.69 per lb. For 600 lb steers, target purchase prices ranged from \$2.35 to \$2.51 per lb. When targeting a \$150 per head gross profit, breakeven purchase prices were \$2.59/lb for 500 lb steers and \$2.43/lb for 600 lb steers.

As an example of exactly how this works for a 500 lb steer targeting a \$150 gross profit:

<i>775 lbs steer x \$2.11 (expected sale price)</i>	<i>\$1,635</i>
<i>Total Variable Costs</i>	<i>- \$188</i>
<i>Profit Target</i>	<i>- \$150</i>
<i>Target Purchase Cost</i>	<i>\$1297</i>

$$\text{Target Purchase Price} = \$1297 / 500 \text{ lbs} = \$2.59 / \text{lb}$$

For heifers, sale price for heavy feeders will be lower than comparably sized steers and they will not generally gain as well. In this analysis, we assumed the price discount for these heifers is \$12 per hundredweight lower than the same weight steers and we assumed heifers would gain 10% slower than steers. With these assumptions, purchase prices would have to be \$0.26/lb lower for 500 lb heifers and \$0.24 lower for 600 lb heifers compared to the steer prices found in Table 2. Thus, when targeting a \$150 per head gross profit, breakeven purchase prices were \$2.33/lb for 500 lb heifers and \$2.19/lb for 600 lb heifers.

Your cost structure may be different from that presented in Table 1, and if so, simply shift the targeted gross profit up or down to account for this. If your costs are \$25 higher per calf, then you would shift each targeted profit down by one row: For example, you would use the \$175 gross profit to estimate a \$150 gross profit if your costs were \$25 higher. Another way to evaluate this is that a \$1 increase in costs would decrease the targeted purchase price by \$0.20 per cwt for 500 lb steers and \$0.17 per cwt for 600 lb steers.

It is important to note that the gross profits in Table 2 do not account for labor or investments in land, equipment, fencing, and other facilities (fixed costs). Thus, in the long run, these target profits need to be high enough to justify labor and investment, as well as a management return. Typically, by the time this article is written in late-March, calf prices are approaching levels that would place returns on the upper end of the profit range analyzed. While there is a lot of variation in the price of calves across Kentucky right now, a lot of calves are selling well below many of the target purchase prices estimated in this analysis. This is all the more reason that stocker operators should carefully think through their budgets and make rational purchasing decisions.

There is a tendency for calf prices to reach their seasonal price peak when grass really starts growing in early spring. There is little reason to think this won't happen in 2023, which will result in tighter expected margins for stocker cattle placed in the upcoming weeks as those calf prices increase. Two other factors are worth discussion that may impact how strong the calf market gets this spring. First, CME© feeder cattle futures are suggesting that heavy feeder cattle prices will be much higher this fall than what we are seeing today. So, a stocker operator that was using the current market, rather than the futures-based approach taken in this article, would bid much less aggressively on calves this spring. Secondly, feed prices are so high that feedlots likely have almost no interest in purchasing these light calves this spring. That would mean less competition for calves in the marketplace and may prevent calf prices from getting as high as they would in a more normal feed price environment. While there is no way to know for sure what the next few weeks will bring, there could be significant opportunities for stocker operators to place calves at a favorable margin this spring.

Finally, the placement of calves into stocker programs represents a significant cost and there is always a great deal of uncertainty about fall sale price. For this reason, stocker operators should also consider risk management to protect their potential returns. Forward contracts, futures and options have long been utilized for price risk management and remain viable strategies today. However, there has been a considerable increase in the use of Livestock Risk Protection (LRP) insurance over the last few years. LRP works similar to a put option in that it provides downside price protection (for a premium), but also allows the producer to capitalize on rising prices. However, it can be purchased in most any quantity, so producers are not tied to 50,000 lb contract sizes as they would be with futures and options strategies. Some recent changes to LRP insurance have made it more attractive, including increases in subsidy levels and no longer requiring premiums to be paid up front. Regardless of what risk management strategy is utilized, time spent considering price risk management is likely time well spent in these volatile markets. The best way to ensure profitability is to budget carefully and to manage downside price risk.

Greg Halich is an Associate Extension Professor in Farm Management Economics for both grain and cattle production and can be reached at Greg.Halich@uky.edu or 859-257-8841. Kenny Burdine is an Extension Professor in Livestock Marketing and Management and can be reached at kburdine@uky.edu or 859-257-7273.