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College of Agriculture, Food and Environment
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Beef IRM Team

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER SEPTEMBER 9, 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

Contents

This month's newsletter includes:

Timely Tips

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

Spring-Calving Cows

- Bulls should have been removed from the cow herd by now! They should be pastured away from the cow herd with a good fence and allowed to regain lost weight and condition. It is a good time to evaluate physical condition, especially feet and legs. Bulls can be given medical attention and still have plenty of time to recover, e.g., corns, abscesses, split hooves, etc. Don't keep trying to get open spring cows bred – move them to fall calving or sell them when they wean this year's calf. If you don't have a bull pen and want to tighten up the calving season, remove the bull and sell him. Plan on purchasing a new bull next spring.
- Repair and improve corrals for fall working and weaning. Consider having an area to wean calves and retain ownership for postweaning feeding rather than selling "green", lightweight calves. Plan to participate in CPH-45 feeder calf sales in your area.
- Limited creep feeding can prepare calves for the weaning process since they can become accustomed to eating dry feed. This will especially benefit those calves which you are going to keep for a short postweaning period – like the CPH-45 program. It's time to start planning the marketing of this year's calf crop.
- Begin evaluating heifer calves for herd replacements – or culling. Each time you put them through the chute you can evaluate them for several traits, especially disposition. Consider keeping the older, heavier heifers. They will reach puberty before the onset of the breeding season and have higher conception rates.
- This has generally been a reasonably good year for pastures, but many parts of the state are starting to get a bit dry. Evaluate moisture condition and consider stockpiling some fescue pastures. It's not too late to apply nitrogen for stockpiling fescue if moisture conditions have improved.

- Stresses associated with weaning can be minimized by spreading-out other activities commonly associated with weaning – like vaccinations, deworming and, perhaps, castration and dehorning (which should have already been done!). Therefore, this month is a good time to do a "preweaning" working of cows and calves.
- When planning the preweaning working, consult with your veterinarian for advice on animal health products and procedures. One procedure that can be done now is pregnancy checking cows. Early pregnancy diagnosis will allow time to make culling decisions prior to weaning time. Feeding non-productive cows through the winter is a costly venture so pregnancy diagnosis is one of the more sound business decisions a producer can make.

Fall-Calving Cows

- Fall-calving should start this month. Get your eartags ready. Cows should be moved to a clean, accessible pasture and be watched closely. Tag calves soon after they are born and record dam ID and calf birthdate, etc. Castration is less stressful when performed on young animals and calves which are intended for feeders can be implanted now, too.
- If you haven't started calving quite yet, then it's time to get ready. Be sure you have the following:
    - record book or sign up for X10D (@ X10D.org or app store). X10D is a mobile app designed to make record keeping simple and convenient.
    - eartags for identification
    - iodine solution for newborn calf's navel
    - calf puller
    - castration equipment
- Watch for those calves which may come early and be prepared to care for them.
- Be on guard for predators – especially black vultures.
- Move cows to best quality fall pasture after calving. Stockpiled fescue should be available to these cows in November-December to meet their nutritional needs for milking and rebreeding.
- Start planning now for the breeding season. If using AI, order supplies, plan matings and order semen now.

Stockers

- Calves to be backgrounded through the winter can be purchased soon. A good source is Kentucky preconditioned (CPH-45) calves which are immunized and have been preweaned and "boostered".
- Plan your receiving program. Weanling calves undergo a great deal of stress associated with weaning, hauling, marketing, and wide fluctuations in environmental temperature at this time of year. Plan a program which avoids stale cattle, get calves consuming water and high quality feed rapidly. Guard against respiratory diseases and other health problems.

General

- Keep a good mineral mix available at all times. The UK Beef IRM Basic Cow-Calf mineral is a good choice.
- Do not give up on fly control in late summer, especially if fly numbers are greater than about 50 flies per animal. You can use a different "type" of spray or pour-on to kill any resistant flies at the end of fly season.

    - Avoid working cattle when temperatures are extremely high – especially those grazing high-endophyte fescue. If cattle must be handled, do so in the early morning.
    - Provide shade and water! Cattle will need shade during the hot part of the day. Check water supply frequently – as much as 20 gallons may be required by high producing cows in very hot weather.
- Plan the winter feeding program. Take forage samples of hay you will feed this winter. Request protein and TDN analysis so that supplemental feed needs may be estimated. Don't wait until you run out of feed in February to purchase extra feed. Plan to minimize hay storage and feeding losses because feed is too expensive to waste.
- If you have adequate moisture, stockpiling fescue might be a viable option. Nitrogen application to fescue pastures can be made now and allow them to grow and accumulate until November, or when other sources of grazing have been used up. To make best use of this pasture, put fall-calvers, thin spring-calvers, or stockers on this pasture and strip graze.
- Don't graze sorghum or sudan pastures between the first frost and a definite killing frost because of the danger of prussic acid poisoning. Johnsongrass in stalk fields can also be a problem after a light frost. Grazing can resume after the sorghum-type grasses have undergone a killing frost and dried up.

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.

What is this new tick disease?

Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

Office of the State Veterinarian is warning beef producers to look for signs of Theileria infection ("theileriosis") in cattle, with two confirmed cases in beef cattle recently reported in Kentucky. *Theileria orientalis* Ikeda is a microscopic protozoan parasite that infects the red blood cells of cattle, causing anemia. The disease is primarily transmitted by the bite of an infected Asian Longhorned Tick (*Haemaphysalis longicornis*) or by blood transfer through the use of contaminated needles and equipment. The tick can feed on many animal species, including humans, but the blood parasite only affects cattle. Once a cow is infected, it may take 1-8 weeks before she shows symptoms of disease.

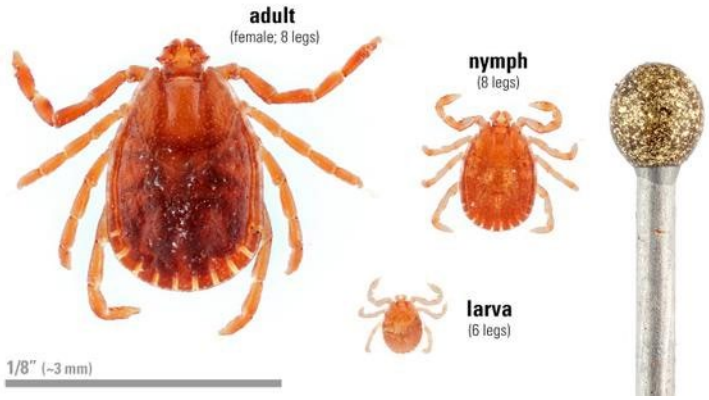


Figure 1: Three life stages of the Asian Longhorned tick sized relative to the head of an insect pin. Nymphs and adults can transmit Theileria to cattle. Photo used with permission from Dr. Matt Bartone, NC State

There is a spring peak in disease incidence in March-April and a fall peak in September-October. There is no effective treatment for sick cattle or vaccine to prevent infections. However, once infected, cattle become carriers and are protected from new infections. There are no recognized long-term health or production effects from persistent infection. *Theileria* is not a public health concern and contact with affected cattle doesn't pose a human health risk or food safety risk.

What to look for

- The majority of infected cattle have limited or mild clinical signs. The symptoms are very similar to anaplasmosis, another tick-borne cattle disease that causes anemia.
- Affected cattle show signs of anemia including lethargy, pale or jaundiced (yellow) mucous membranes, and increased respiratory and heart rates. Labored breathing may be mistaken for pneumonia, especially in young stock.
- Affected cattle may be exercise intolerant and lag behind the rest of the herd or be off by themselves.
- Affected cows may be off feed, have a fever, and sudden weight loss.
- May see sudden death, especially in late pregnant and early lactation cows.
- Late term abortions may occur due to lack of oxygen to the fetus with subsequent death of the calf. Metritis in the cow can follow. Breeding bulls may have decreased libido for 1-1.5 months.
- Calves, especially 6-8 weeks of age but up to 6 months of age, may show symptoms.

What to do if cows show signs of anemia

- Contact your vet. Theileriosis and anaplasmosis look almost identical so treatment with an approved antibiotic (LA-300 or Baytril 100-CA1) for treatment of anaplasmosis is recommended. However, if Theileria is the cause, there will be no response to the antibiotic therapy.
- Stress and movement of affected animals should be minimized, as their reduced number of red blood cells lowers their ability to transport oxygen around the body. This can lead to collapse and death. Affected animals should be rested, given high quality feed and water, and handled only when necessary.
- There is no treatment available for Theileria infection other than supportive care. Blood transfusions may be used for valuable animals. Recovery may take 1-2 months depending on the severity of the anemia.

Prevention and control of Theileria infection

- *Inspect cattle for presence of ticks.* Routinely inspect livestock, pets, and humans for the Asian Longhorned tick (ALT). Parthenogenetic strains exist in the USA, meaning male ticks are not required to produce eggs and viable larvae. A female can produce 1,000-2,000 offspring without mating. A single cow can quickly become host to thousands of tick offspring that may cause death due to blood loss without a blood-borne parasite infection. The ticks are light brown and often smaller than a sesame seed. The adult female is about the size of a pea when full of blood (see Figure 1). All 3 life stages (larva, nymph and adult) may be present at the same time (see Figure 2). In cattle, check the head, neck, ears, flanks, armpit, groin, udder and under the tail (areas where the skin is thinner). Cattle that seem lethargic or unthrifty should be closely inspected for ticks.

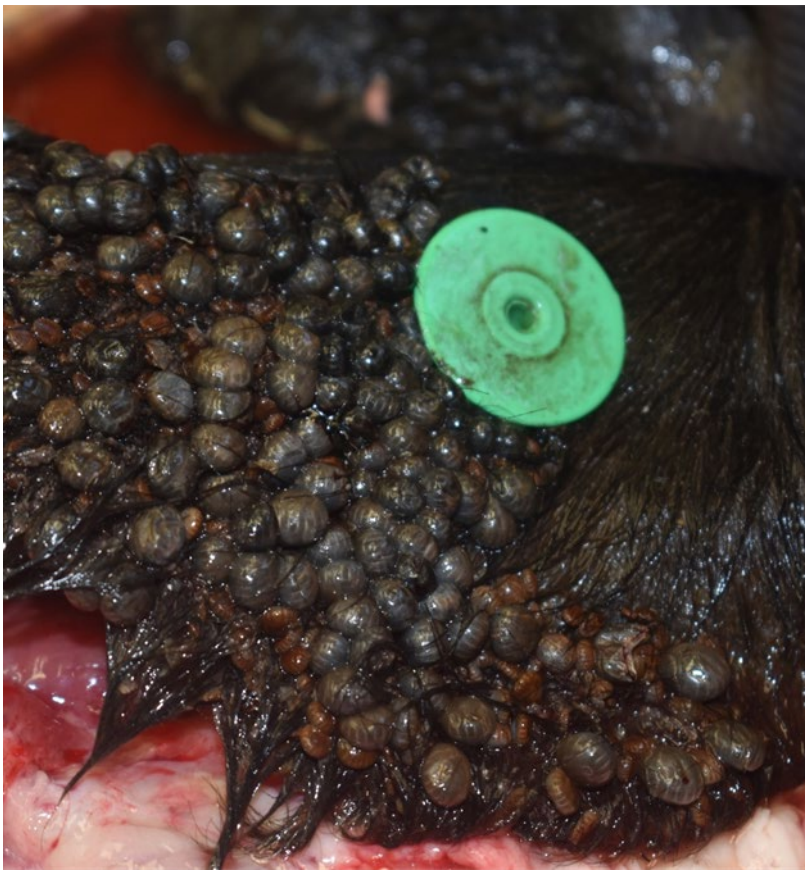


Figure 2: Asian longhorned ticks on the ear of a cow that died due to anemia from the massive tick infestation (Photo courtesy of the UKVDL).

- *Manage the tick population on Cattle:* The eradication or removal of ticks from a farm is virtually impossible. Ticks spend most of the time, nearly 90%, in the environment. Even though only a small proportion of the tick population is on livestock at any one time, treating cattle with a tick repellent will reduce the numbers that feed and develop into the next stage of the tick lifecycle. This will have an impact on the numbers of eggs that eventually get deposited in the pasture and helps manage the disease spread. Currently there are no acaricides labeled for use against the ALT. The use of pesticide impregnated ear tags, pour-ons, sprays, and back rubs that control the American dog tick and the Lonestar tick should provide beneficial tick control. There are field reports of success with macrocyclic lactone dewormers such as Cydectin® Pour-on and Dectomax® Injectable products.
- *Environmental Control to Reduce Contact with Ticks:* This involves mowing pastures, especially shaded areas, and fencing cattle from wooded areas. Perimeter fencing of a minimum of 20 feet from wooded areas will reduce the number of ticks on the grazing area. All stages of the tick like warm, damp conditions and long grass. Avoiding long rank pasture that has not been grazed such as around the edge of crops and brushy areas will reduce the likelihood of animals picking up ticks. Keep in mind that wildlife can serve as tick hosts and move the ticks to new areas. Virginia Cooperative Extension has produced a fact sheet entitled “Managing the Asian Longhorned Tick: Checklist for Best Management Practices for Cattle Producers” that covers

animal inspection, chemical control, and herd management options. It may be downloaded at https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/ENTO/ento-382/ENTO-382.pdf

- *Ease any underlying disease or stress*: Cows in late pregnancy, early lactation and young calves (2-3 months old) are more susceptible to severe disease. Pay close attention to cows around calving, avoid trace mineral deficiencies, and vaccinate cattle against the immunosuppressive BVD virus.
- *Treat "new" animals:* Treat cattle for ticks as they arrive to the farm and before moving cattle from one property to another to avoid movement of infected ticks.
- *Young stock:* Calves should be closely inspected for ticks and signs of anemia, too.

If you suspect a case of Theileria infection, contact your veterinarian for advice. A blood test is available to test for this disease.

What is the real cost of mineral supplementation?

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

For some management practices calculating the return on investment is straightforward. Unfortunately, determining the cost vs. benefit of mineral supplementation is not always clear. This is why it seems when input costs go up, the mineral is one of the things that can be easy to cut out or replace with a less expensive, lower quality option. The problem is that early signs of mineral deficiencies can be hard to. identify and often go unnoticed. Eventually, in cases of severe mineral deficiency, producers could see widespread issues throughout the herd that has us making phone calls to our veterinarian. But those early and often sub-clinical deficiencies can also eat away at performance, productivity, and, yes, profitability. Sub-clinical deficiencies might look like a few more open cows this year compared to last or needing to treat a few more calves this time around. Of course, there are several reasons we would see lower pregnancy rates or higher pull rates from one year to the next, and we shouldn't always blame it on the mineral. However, ensuring the herd is protected against mineral deficiencies is a simple practice in a business where so much is outside of our control.

Think about the mineral program as a good insurance policy. The problem is that many of our common feedstuffs are deficient in one or more minerals. The table below shows the mineral requirements for a lactating cow and typical mineral concentrations for common feedstuffs for select minerals.

Failure to provide a good quality mineral supplement leaves the herd susceptible to developing mineral deficiencies. So, what is a good quality mineral supplement? My definition is a mineral supplement that provides all the required minerals that need to be supplemented in adequate amounts to prevent mineral deficiencies without over-supplementation. I like to tell people when it comes to a mineral program, pay for what you need but not for what you do not need.

Minerals that typically require supplementation include calcium, phosphorus, magnesium, sodium, cobalt, copper, iodine, manganese, selenium, and zinc. However, if our mineral program consists of only a white salt block, we are only supplementing sodium and chloride and forgetting the other nine minerals that also require supplementation. Even when supplementing with a trace-mineralized block, we still miss three or more minerals altogether. Additionally, these products are 95-99% salt, meaning

Table 1. Mineral requirements for lactating cow, and average mineral concentrations for common feedstuffs

Mineral	Ca	P	Co (ppm)	Cu (ppm)	Fe (ppm)	Mn (ppm)	Se (ppm)	Zn (ppm)
Requirement	0.30%	0.20%	0.15	10	50	40	0.10	30
Common Feedstuffs								
Cool season forage	0.56	0.44	-	10	275	75	-	36
Cool season hay	0.58	0.23	-	9	156	72	0.06	31
DDGS	0.22	0.83	-	8	178	27	0.39	65
Corn gluten feed	0.07	1.00	-	6	196	23	0.19	75
Cracked corn	0.04	0.30	-	3	54	11	0.07	27
Soyhulls	0.63	0.17	0.12	10	604	26	0.21	35

Adapted from NASEM: Nutrient Requirements for Beef Cattle, 2016

the concentrations of the other minerals are so low that cattle are still susceptible to mineral deficiencies. Some mineral supplements will also include a source of iron, which makes the product red. Iron is one mineral that is abundant in the feed and does not require supplementation. This is a prime example of paying for something that is not needed.

Selenium deficiencies can be common in parts of the United States, including the southeast. Selenium is the only mineral we supplement to cattle that the FDA regulates. This is why you see something like “not to exceed 3 mg of selenium per head per day” on a mineral tag. In cases where cattle are especially susceptible to a mineral deficiency, the source of the mineral in the supplement also matters. Cattle are not able to absorb and utilize all sources of a mineral the same, which is why some sources are more bioavailable than others. This is especially important in the case of selenium because we cannot simply add more selenium to the supplement. Therefore, I typically recommend a 50:50 blend of sodium selenite (inorganic source of selenium) and Selenium yeast (organic source of selenium) for cattle at risk of selenium deficiency.

Something else that a good quality mineral supplement will also provide is vitamins. Cattle being ruminants, can rely on rumen microbes to produce some vitamins, but Vitamin A and Vitamin E often require supplementation. Leafy green forages are an excellent source of both vitamins, but we know that cattle often do not consume leafy green forages year-round especially during the winter months or during drought. Look for the inclusion of both Vitamin A and E in a good quality mineral supplement.

Hopefully, by this point, you are convinced that supplementing minerals and vitamins is a necessary part of the nutrition program, but what is the actual value of this practice? The table below shows an approximate cost for various mineral supplementation products and the annual cost per cow per year based on target intakes. Although some supplementation options are cheaper than others, remember that failing to provide a good quality mineral can lead to lost performance and productivity of the herd. So when asked what the actual cost of mineral supplementation is, I often start thinking about the price of a couple of open cows or the cost of increased morbidity or mortality on the operation. When looking at the value of a calf in today's markets, I can quickly make a case for providing a good quality mineral supplement to the herd.

Table 2. Estimated cost of mineral supplementation based on supplement type per head per year.

Type of supplementation	Cost	Selenium adequate	Vitamin A adequate	Annual cost per cow
White salt block	7.79	no	no	$5.12
Trace mineralized salt block	7.29	no	no	$4.75
Complete mineral (inorganic selenium)	25.00	no	yes	$32.94
Complete mineral (blend of selenium)	30.00	yes	yes	$41.06

Shop around for the best value for their mineral program but remember this doesn't always mean the cheapest option. Sometimes working with a nutritionist to create a custom mix can be more economical than you might think. Especially if you remember my advice, pay for what you need but don't pay for what you do not need. Like other feed ingredients, buying in bulk can also cut down on price. Keep in mind that vitamins lose their activity over time, so only buy a 3–4-month supply of mineral at a time. For smaller producers, consider partnering with other small producers or local cattlemen's associations to take advantage of bulk discounts on mineral.

Lastly, remember it takes the same amount of labor to put out a poor-quality mineral as it does to put out a good-quality mineral. Keep an eye on mineral intake to ensure the herd gets the most out of the mineral you provide. A 50-lb bag of mineral with a target intake of 3 oz per head per day should last 25 cows for about ten days. Cattle have a desire to consume salt, so salt is the driver behind mineral intake. If cattle consume too much mineral, consider placing a bag of white salt out for a day or two to allow the herd to cost-effectively meet their desire for salt and then return to providing the free choice mineral. If cattle are not consuming enough mineral, ensure that the mineral feeder is located near the water source or shaded area where cattle will be more likely to visit it.

For more information on finding the right mineral supplement for your herd to prevent mineral deficiencies, work with your nutritionist or contact your local county extension office!

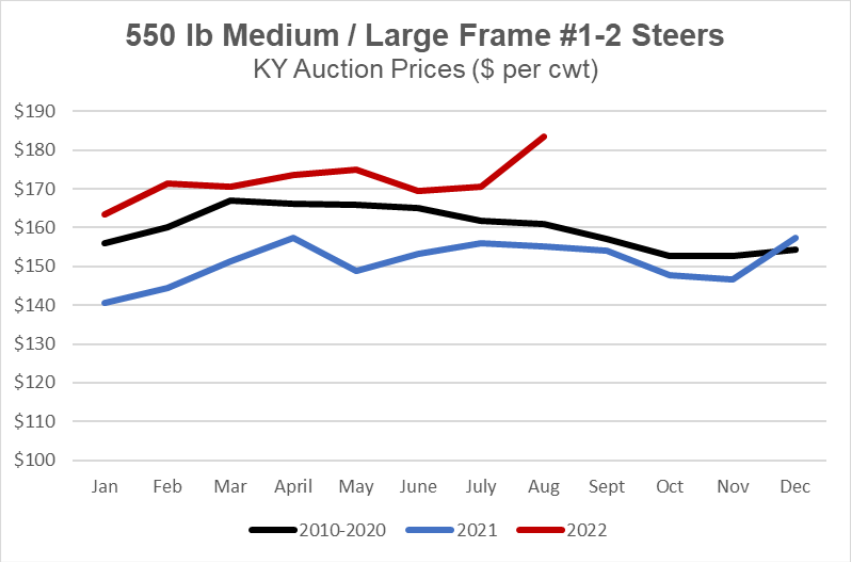
Feeder Cattle Prices Gaining Strength

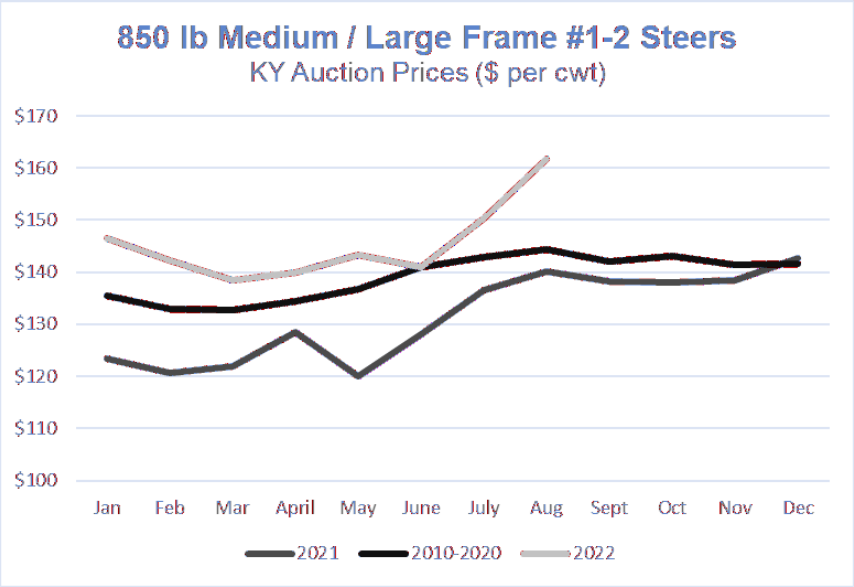
Dr. Kenny Burdine, Extension Professor, Livestock Marketing, University of Kentucky

The feeder cattle market has really flexed its muscles as we have moved through summer. The October CME© feeder cattle futures contract has increased by more than $10 per cwt since May and this can be seen in the market for heavy feeder cattle. Heavy feeders typically make their highs around this time of year, but calf markets are increasing counter-seasonally. A strong calf market going into fall is a good sign for cow-calf operators that calve in the spring and will be marketing calves in the coming months. State average prices for Medium and Large Frame #1-2 Steers at 550 lbs and 850 lbs can be seen below. The monthly charts run through the last week of August, but further price improvement was see in the first week of September.

It is becoming more apparent that the supply of calves is going to be very tight this fall. Beef cow slaughter levels have been a topic of discussion all year and remain 14% above 2021 levels. We are also seeing high feedlot placement levels of light weight feeders, which has been another trend due to dry conditions in much of the country. Given the continued reduction in the size of the beef cow herd, this was likely to be a smaller fall calf run had weather not been a challenge. But, when combining that with the drought implications, fundamentals are setting up for a seller's market for feeder calves.

I also wanted to briefly discuss beef export levels as those have not gotten a lot of attention in recent months. Through the first six months of 2022, beef exports have been 7% higher than last year. Also remember that 2021 was a record year for US beef exports. At the start of 2022, most expected beef export levels to decline, mostly due to an expected decrease in beef production. However, the combination of high cow slaughter and early placement of cattle on feed has kept beef production higher than expected. While exports are likely to slow in the 4th quarter as beef production decreases, it does appear likely that a new record for beef exports will be set in 2022.




850 lb Medium / Large Frame #1-2 Steers
KY Auction Prices ($ per cwt)
$170
$160
$150
$140
$130
$120
$110
$100
Jan
Feb
Mar
April
May
June
July
Aug
Sept
Oct
Nov
Dec
2021
2010-2020
2022

Beef Bash 2022

Recovering and Rebuilding from a natural disaster

Date: Thursday October 20th, 2022

Time: Registration 8:30 AM CT
Program starts at 9 AM CT

Location: The beef unit at the University of Kentucky Research and Education Center.

348 University Dr
Princeton, KY 42445
*Signs will be posted to the beef unit

University of Kentucky
Beef Extension

MAKE PLANS TO JOIN US!

Commercial vendors

Educational exhibits and demonstrations

University of Kentucky, College of Agriculture Food & Environment personnel and administrators

No cost to attend
Lunch available to purchase

Vendor spots are still available. For more information email: Katie.VanValin@uky.edu