



University of Kentucky College of Agriculture, Food and Environment Cooperative Extension Service

Cooperative Extension Service University of Kentucky

KENTUCKY BEEF CATTLE NEWSLETTER. MAY 22, 2020 Beef IRM Team

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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Webinar Series Continues Beef IRM Team, University of Kentucky

The University of Kentucky Beef IRM Group has been conducting a weekly Zoom webinar at 8 pm Eastern every Tuesday evening. Viewing is available on Zoom or on the UK Beef IRM Facebook page. Many county offices also share the live broadcasts. These webinars have ranged in topics and have been extensively watched. Dr. Michelle Arnold will be on this Tuesday to discuss the growing problem of parasite resistance to dewormers. Please contact your local County Extension ANR Agent for viewing information.

I Bought a Farm.....Now What? Les Anderson, Extension Professor, University of Kentucky

Episode 9: Putting up the rotational grazing system – Lehmkuhler and Anderson Episode 10: The heifers arrive at the farm – Lehmkuhler and Anderson

Both of these episodes are filmed outside; how to set up the rotational grazing system, and the heifers arrive at the farm. I think you will enjoy both episodes.

To watch this docuseries, follow this link to the Department of Animal & Food Science YouTube page, subscribe, and click the notification bell. <u>https://www.youtube.com/channel/UCu4t18Zo2E_4_DBBELPjPMg</u>

Watch for Freeloaders on Cattle Jeff Lehmkuhler, PhD, PAS Associate Extension Professor, University of Kentucky

In February at the Mid-South Stocker Conference we had Dr. Strickland provide an update on the Asian longhorned tick (*Haemaphysalis longicornis*). Last week while on a conference call with two colleagues in North Carolina we got talking about this new pest which first appeared in 2017 on sheep in New Jersey. It has since been found along the east coast from Connecticut down to North Carolina and as far west as the northwest corner of Arkansas. My NC colleagues have seen it more than we have to date, but with the cattle influx we have it is only a matter of time before it starts showing up more I fear. This tick was found in Kentucky last year already. I would encourage those of you bringing in cattle from the eastern states, particularly Virginia, West Virginia, North Carolina, New York and east Tennessee, to quarantine and thoroughly look over the animals for ticks before turning them in with other livestock.



This tick is unique as it is parthenogenic meaning females reproduce without males. A mature female tick will feed on a host, drop off the host and lay **1,000-4,000 eggs** in the litter on the ground. These eggs hatch and the six-legged larvae quickly find a host to feed upon. After feeding they drop off the host to molt into the nymph stage within two weeks. The nymphs find another host, feed for 3-8 days and drop off the host to molt into the adult stage. In about 3-8 weeks, the nymphs molt and emerge as eight-legged adult ticks. The adults will then search for a host to feed upon to restart the lifecycle. Thus, this is a three-host tick that can quickly replicate and infect a farm. The tick can go from egg to adult in six months or less. The tick is

not host specific and according to Dr. Strickland has been found on dogs, cats, foxes, raccoons, opossums, skunks, rabbits, groundhogs, goats, deer, elk, cattle, sheep, horses, chickens, geese, hawks, and **people**.

This tick does well in warm, humid climates. Temperatures in the mid-60's to mid-80's allow for rapid replication and development of the tick. The Asian longhorned tick (ALT) dwells in forest edges and pastures seeking hosts. This tick moves quickly up tall forage and animals. This tick will be commonly observed on the ears, tail head and between the rear legs of cattle. Kentucky provides an ideal climate and habitat for this invasive tick.

The Asian longhorned tick can transmit diseases to the host animal. In New Zealand and Australia, the tick has shown to transmit *Theileria annulata* that leads to theileriosis in cattle. Last year researchers found that ALT here in the states can transmit the parasite *Theileria orientalis* Ikeda genotype that can have severe impacts on cattle. The protozoa affects red blood cells and leukocytes leading to severe anemia and potentially death. Other pathogens found in ALT include those the can lead to babesiosis, Rocky Mountain spotted fever and anaplasmosis. However, studies need to determine if this tick can transmit these pathogens. Thus, this tick should be of concern not only for the health of the livestock but those individuals that are outdoors and may become a host for ticks. Use repellents (ie. DEET, picaridin, IR3535) and check yourself regularly for these freeloaders. View the following website for information on repellents that are effective for tick control and hours of duration for products: <u>https://www.epa.gov/insect-repellents</u>. For tick control on livestock, investigate common fly control products which contain pyrethroids and organophosphates and read the labels to ensure they provide tick control. Topical avermectin containing

products can also be effective for ticks. Ear tags impregnated with insecticides can also help reduce infestations. As with fly control, a combination of methods (ie. sprays, rubs, tags) will provide the best results.



Identification of ALT from other ticks can be difficult and require a trained eye. Examples of common ticks are shown below. However, to properly identify ticks, collect them and preserve them in an alcohol solution (greater than 70% is best). Record the location and host animal along with the date the tick was collected. Submit the ticks for identification to Dr. Jonathan Larson at the UK Department of Entomology. For additional information on this pest and others, be sure to check out the Kentucky Pest News.

Being informed is our first step in managing this new pest. If you need additional information on tick and other parasite control strategies, contact your veterinarian or local county Extension agent. Slow down and take some time monitor your cattle this summer periodically. Hopefully, this will also give you a bit of satisfaction seeing the cattle and reinforce why you do what you do to keep your cattle healthy and productive. Until I see you again, stay healthy.

Acknowledgments: Thank you to Dr. Ric Bessin, UK Extension Entomologist, with this article. Top view of a female Asian Longhorned tick in nymph and adult stage.

Source: cdc.gov/ticks/longhorned-tick/index.html

The images below show differences in common ticks with regards to markings, head shade, and body size. Source: cdc.gov/ticks/longhorned-tick/index.html

Avoiding botulism in round baled silage this spring Jimmy Henning, PhD, Livestock Forage Specialist, University of Kentucky

With baleage, moisture is everything. A recent cooperative research project between several agents, farmers and specialists found that moisture content is the biggest factor in getting good fermentation. While moisture is only one factor of many, it is the major determinant of the risk of clostridial fermentation and botulism.

Briefly good baleage should be cut at an early stage of maturity (for high fermentable carbohydrates), baled tightly at 40 to 60% moisture, wrapped with at least six layers of UV-resistant stretch wrap plastic, and kept anaerobic (by plugging any holes) until feeding. All of these are important, but you can do all of them right and still have problems if the moisture is wrong.

The moisture range for baleage is from 40 to 60%, and fermentation and pH drop are better in the wetter



half of that range. Baling too wet is worse than baling too dry because baleage above 70% moisture greatly increases the risk of secondary fermentation by clostridial bacteria, and sometimes botulism.

If moisture content is everything, how do you know if fresh cut forage has wilted enough to make good baleage? Experience and research tell us that in spring it may take a day or more to reach 60% moisture and in summer, less than a day. Fresh forage is 80% MC, and actually dries pretty rapidly down to 60 to 65% after cutting if there is sun and some breeze. Estimating moisture in spring cuttings is a challenge, since rainy, overcast days are more frequent. In cool, overcast weather, it may take two or three days to reach 60% moisture.

For spring harvests, leave the swath wide for maximum solar radiation interception. Tedding after a few hours or the

next day can help to open up the swath for more air penetration. Given good sun, spring cuttings are usually ready for baleage the next day after dew dries. If you are in doubt, it would be a good idea to estimate moisture using one of the methods below. Going to the trouble of measuring moisture a few times will help you develop a sense of how fast forage is drying.

Estimating moisture content (MC) in the forage before baling can be done, but no method is both fast and accurate. Windrow moisture can be estimated by feel (the dishrag or twist test). In this method, take a handful of forage and wring it out or twist it as you would with a dishrag. If moisture can be expressed from the forage, it is generally above 65 percent moisture.

Pre-baling moisture can be determined by drying a chopped sample in a portable forced air dryer (Koster is a common brand). A microwave can also be used to dry the sample. These methods are accurate but slow. See UK publication AGR-235, *Baleage: Frequently asked questions* for more information on estimate moisture content using a microwave oven.

Electronic testers are available to estimate moisture in both the windrow and the bale. Windrow testers have proven highly variable because the methodology is hard to compress loose forage uniformly for testing by inserting the probe. If forage is already baled, probe-type moisture testers are now available that can work at the elevated levels used for baleage. Bale probes are generally more accurate than windrow testers. Remember that baling a little on the dry side is less likely to lead to clostridial fermentation. Just be sure to use at least six layers of plastic and repair any holes, especially in the first month of storage when most fermentation occurs.

We recommend testing baleage for forage quality and for the quality of fermentation at a certified, commercial laboratory. These tests are typically separate analyses and will cost about \$50 per sample. At the very least, estimate bale moisture with one of the commercial probe-type moisture testers (Agratronix is one brand). If these probes indicate you are 65% MC or less, there is little damage of clostridial fermentation. Remember to patch any holes made with a probe or from other causes. Getting the moisture right in spring cut baleage is a challenge, but is certainly doable. It may require moisture testing in a forced air dryer or microwave, but getting the moisture right is the single biggest factor in preventing clostridial fermentation and botulism.

Happy foraging.

(First published in Farmer's Pride, May 8, 2020)

Making the best out of a rainy spring Dr. Katie VanValin, Beef Extension Specialist, University of Kentucky

I don't know what it's like where you all have been, but here in Princeton it has been cool and rainy. I spent most of my childhood growing up in Michigan, and I told someone the other day just how much this spring in Kentucky reminded me of a Michigan spring...cool and wet. I know some folks enjoyed a stent of warmer and dryer weather a couple of weeks ago and were able to get out and get some first cutting hay made! That's great news, but if we missed that window, it's been a long couple of rainy weeks since then.

Now the secret to good hay is pretty simple, harvest the forage at just the right time to optimize forage quality and yield. This is one of those concepts that sounds simple in theory but is much more complicated in practice. This is especially true when mother nature is working against us instead of with us. As frustrating as it can be though, we all know mother nature is one of those things we just can't control. Fortunately, there are some things that we can control when it comes to optimizing the use of hay in our cattle production systems.

By delaying hay production, we know we are going to see a decrease in forage quality, meaning decreased energy and protein and increased fiber content. At times this decrease can be pretty significant. However, I'd rather see producers putting up hay with a bit more maturity then trying to put up damp hay that can mold or result in fire. So, while we can't control the weather conditions that might cause us to harvest a less than ideal quality forage, we can control how hay is stored and utilized in our feeding programs. Ideally hay should be stored under roof and up off the ground in order to maintain as much quality and tonnage as possible. If storing hay indoors is not an option, then consider using net-wrap instead of twine. Net-wrap can help to minimize storage losses. The only way to truly know the nutrient content of hay is to get it analyzed. Hays may look similar, smell similar etc. yet have very different nutrient contents. Always get hay tested before feeding! This allows for poorer quality hay to be fed to cattle with lower nutrient requirements such as mid-gestation cows, while reserving higher quality hay for cattle with increased nutrient requirements such as early lactation cows. This will allow for the greatest efficiency in providing supplemental nutrients.

When a 3-4 days window with no precipitation opens up, it will be tempting to rush to the hay field. However, be cognizant of the conditions on your farm. If you've had quite a bit of precipitation lately the soil can be saturated. Bringing hay equipment out in the field can create ruts and cause soil compaction which decreases soil fertility. Seek to do no harm, meaning it may not be worth getting to the hay field a few days earlier, if it means causing damage to the ground.

Another option for dealing with these damp conditions is to look at producing haylage. When forage is cut it contains \sim 70-80% moisture, for haylage the forage only needs to be dried down to \sim 65% moisture as opposed to \sim 16-18% moisture for dry hay. Haylage may not be practical for all operations, as spoilage can become an issue with fermented feeds. It is important to plan ahead when producing haylage to ensure you will be able to feed the ensiled forage out at a rate that minimizes spoilage. One way to adjust the rate at which you will need to feed haylage in bales is adjusting bale size, smaller bales means less tonnage would need to be fed out at once.

Here's to hoping some warmer and sunnier days lie ahead of us. In a world filled with things beyond our control, remember to focus on the things we can control. Now is the time we can make decisions in our harvested forage program that can either work with us or against us in the months ahead.

Kentucky Beef Quality and Care Assurance (BQCA) Certification Now Available Online - Dr. Darrh Bullock, Kevin Laurent, and Becky Thompson, University of Kentucky and Kentucky Beef Network

Starting June 1, 2020, the Kentucky Beef Quality and Care Assurance (BQCA) Certification is now available online. Producers can access the online BQCA program by visiting <u>kybeefnetwork.com</u> or <u>http://afs.ca.uky.edu/beef/irm</u> and clicking on "Beef Quality & Care Assurance". The Beef Quality & Care Assurance certification costs \$5 and can be paid online prior to the accessing the course.

This online process is similar to how in-person BQCA trainings are conducted. Producers must complete Module A - BQCA Overview, and two of the other modules: B – Genetics and Handling, C – Proper Equipment and Additional Cattle Handling, and/or D – Veterinary Diagnostics Lab. Each module contains a video that must be watched before completing the corresponding test. Producers have multiple attempts to achieve a passing score of at least 85%, for each test.

Upon successful completion of the course, your training will be processed by the Kentucky Beef Network and your BQCA training card will be mailed to your county Extension office at the end of each month. If you should need your BQCA number sooner, you can call KBN at 859-278-0899 or email at kbn@kycattle.org.

If a farmer cannot access the online course or wishes to wait until in-person trainings are available, and they had a valid BQCA number on March 1, 2020, their existing BQCA certification will remain active until live trainings are available again. These steps have been approved by the Governor's Office for Ag Policy staff for compliance in the CAIP program.

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The Kentucky Beef Network and University of Kentucky merged their Cattle Handling and Care Program with the National BQA program to create a new program, aptly named the Beef Quality and Care Assurance (BQCA) program. This program was implemented to raise awareness of practices that insure the proper handling and welfare of cattle while keeping farmers safe and continuing to supply healthy beef to consumers. In turn, this program enables beef and dairy producers to enhance their product, maximize marketability and strengthen consumer confidence.

The Kentucky BQCA program takes national BQA practices one step further to provide a holistic program for Kentucky producers, by adding a cattle handling and care component to the training model. 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.

Bovine Coccidiosis-Frequently Asked Questions *Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory*

What is "coccidiosis"?

Coccidiosis is a disease in cattle due primarily to two species of the protozoan parasite of the genus *Eimeria*, *E. bovis* and *E. zurnii*. It is an important cause of diarrhea, reduced weight gain and potentially death, due to the damaging effects in the intestinal tract. Coccidiosis can occur in calves ranging in age from 3 weeks to 6 months and older, but it is diagnosed most frequently at stressful times such as weaning or at entry to a feedlot. The appearance of diarrhea depends on the interaction of several factors including which species of *Eimeria* is involved and the level of exposure, environmental factors that affect survival of the

organism, and associated stressors such as weaning, transport, poor nutrition or weather extremes. Of note, there are at least 13 species of *Eimeria* in cattle and many are considered nonpathogenic (will not cause illness).

How is the organism transmitted?

All bovine *Eimeria* have a fecal-oral transmission cycle, meaning the infective form of the organism (the "oocyst") is passed in the feces and consumed by other calves in contaminated feed or water. Coccidia are host specific so *Eimeria* species that infect cattle do not infect any other species of animal and vice-versa. Calves infected for the first time shed the greatest number of oocysts (some can shed over a million oocysts per gram of feces) and can quickly create massive areas of contamination. Once the oocysts reach the environment, they "sporulate" within 1-4 days and can then survive weeks to months in the right conditions of moderate temperature and high moisture. Buildup is most common in areas where animals congregate or are crowded together, especially around watering and feeding facilities. However, direct exposure to sunlight and drying will kill the organism.

What does a calf with coccidiosis look like?

After a calf ingests sporulated oocysts, the organism begins a very complex reproductive cycle within the cells that line the calf's intestinal tract (see <u>http://www.corid.com/Coccidia.html</u> for a complete review of the life cycle). When the reproductive cycle is finished and the newly formed oocysts are mature, they break open the intestinal cells and are released into the gut and passed in the feces. The time to onset of diarrhea after infection is 16-23 days. The damage to the gut caused by this phase is what causes the majority of problems. The most common sign associated with coccidiosis is diarrhea that often contains red blood, mucous and shreds of intestinal lining. Calves often strain and some calves actually can prolapse the rectum with excessive straining. Milder cases may have watery or soft stools, depressed appetite, rough hair coats and poor growth. The disease can range from self-limiting infection in which calves require no treatment, to severe infection with rapid death. Calves that recover from severe infection may have permanent scarring in the gut and never grow well. Coccidiosis should always be considered a "herd disease" rather than an individual calf problem because *Eimeria* spread quickly within a group after just a few life cycles of the parasite. Healthy animals are generally immune to the disease by 1 year of age but serve as a reservoir to younger stock.

How is the disease diagnosed?

Observation of diarrhea, especially with red blood present, raises the suspicion of coccidiosis. Fecal samples may be collected and analyzed for *Eimeria* oocysts, with 5000 or more oocysts per gram of feces considered important. Diarrhea may develop before oocysts are detected in the feces so fecal samples from multiple animals should be gathered when attempting to confirm the diagnosis. A rare form of the disease known as "nervous coccidiosis" causes neurologic signs of tremors and convulsions and has a high mortality rate of 80-90%. These cases are diagnosed most often at necropsy.

Is there a treatment available?

In cattle, once the oocysts are detected in the feces of a calf with diarrhea, a majority of the intestinal damage is already done. However, treatment can still have a beneficial effect, especially regarding spread to the rest of the herd. Amprolium (Corid®) is licensed in cattle for therapeutic treatment when given for 5 days at 10 mg/kg body weight and can be used for prevention at a dose of 5 mg/kg of body weight for 21 days. Amprolium is a "thiamine analogue" and it is taken up by the coccidia in place of thiamine, thus interrupting several critical metabolic steps in growth and reproduction. Corid® is available as an oral solution, a pelleted feed additive, or as a soluble powder. It is important to observe the correct dose and length of treatment because too much amprolium can result in polioencephalomalacia or "brainer" calves. Talk with your veterinarian for more information.

Sulfaquinoxaline administered as a 0.015% solution in water, is also approved as a treatment in cattle at 10-20 mg/kg body weight for 3-7 days. Sulfas interfere with the synthesis of folic acid, an essential requirement for reproduction in the life cycle of coccidia. Can coccidiosis be prevented?

Prevention is far better than treatment since production losses and permanent gut damage in a proportion of calves is guaranteed once diarrhea is observed. Effective coccidiosis control does not require complete elimination of the organism. Instead, consumption of low numbers of oocysts are beneficial because it permits development of immunity which is protective when challenged with future infections. Minimizing stress and environmental contamination while optimizing nutrition will help limit the progression of coccidiosis. However, where environmental control is not adequate (for example, a crowded dry lot) and when times of elevated stress are expected (calves at weaning), effective drugs are available to prevent coccidiosis.

The most commonly used drugs to control coccidiosis are the ionophores, specifically lasalocid (Bovatec®) and monensin (Rumensin®). They are highly effective against the early developmental stages in the life cycle and are easily administered in feed or mineral. Decoquinate (Deccox®) is a "quinolone coccidiostat" that is approved to be administered at 0.5 mg/kg body weight for at least 28 days for prevention of coccidiosis.

Weaning Preconditioning Checklist Kevin Laurent, Beef Extension Specialist, University of Kentucky

Weaning and preconditioning calves prior to marketing can reap economic benefits at sale time. Since preconditioning periods are short in length, there is no time for calves to have a "bad day". Following is a checklist for successful weaning and preconditioning.

1. Prepare calves for weaning

- a. Castrate and dehorn prior to weaning best if done prior to 3 months of age.
- b. Introduce calves to dry feed/concentrate this could be done 2-3 weeks prior to weaning by either creep feeding or simply pouring feed on the ground or in troughs out in the pasture 3-4 times per week. Calves will learn to eat from mom.
- c. If calves have never drank from a water trough, consider locking cows and calves into the weaning pen area overnight a time or two prior to weaning so calves can become familiar with water troughs.
- d. Determine your preconditioning health program. Consult with your veterinarian about whether any vaccines or dewormers should be given pre-weaning.

2. Prepare your facilities

- a. Make sure your weaning pen can handle bawling calves. Consider running an electric wire nose high on the interior of the pen. If fenceline weaning, run an additional hot wire on the cow side of the fence.
- b. Make sure you have adequate feed bunk space so all calves can eat at once.
- c. Make sure water troughs are clean and accessible to the calves.

3. Plan your feeding program

a. **First week**: Offer high quality, soft leafy grass hay (not pure alfalfa or clover) either unrolled or flaked out in bunks. Keep an ample supply of hay in front of the calves at all times. Begin top

dressing hay with a 14-16% protein concentrate dry feed. Calves should be fed dry feed twice a day and only the amount that they can clean up. Be careful not to offer too much concentrate at the beginning of the weaning period. As bawling and fence walking diminishes calves will begin to consume more concentrate and should be eating around 1% of body weight of dry feed by the end of the first week.

- b. **Remainder of the feeding period** depends on when you plan to market your calves. The goal should be to put 150 to 200 lbs. of pay weight gain on the calves economically without getting them too fleshy.
- c. **Example 1**: If you are weaning 60 days prior to marketing, calves would have to gain 2.5 lbs. per day plus an additional 5-6% more to cover shrink and reduced performance during the bawling period. In this case, the feeding program needs to target 2.7 lbs. per day of average daily gain to net an additional 150 lbs. of pay weight. Depending on forage quality, feeding 2-2.5% of body weight (10-13 lbs. of feed for a 500 lb. calf) of a 14% protein feed should achieve these gains.
- d. **Example 2**: If you are feeding for 120 days prior to marketing, average daily gains can be lower (2-2.5 lbs. per day) while still achieving total weight gain goals. In this case, the level of concentrate can be in the 1.5-2.0% body weight range (8-10 lbs. of feed for a 500 lb. calf).
- e. **Word of caution:** Forage quality becomes more important when level of concentrate is reduced. If you choose to feed less concentrate, make sure calves have adequate quality pasture or hay in order to maintain sufficient gains

PVAP – preconditioning enrollment checklist

The Post Weaning Valued Added Program - Precondition (PVAP-PRECONDITION) is in its second year. This program is being offered through support of a grant from the Kentucky Agricultural Development Fund and is administered by the University of Kentucky and the Kentucky Beef Network. There are adequate funds are available this year for approximately 20 producers. This program is aimed at Kentucky cow-calf producers who have never marketed weaned calves. The objective of **PVAP-PRECONDITION** is to encourage cow-calf producers to retain ownership and capture added value from their investment in beef cattle genetics, facilities and improved management through diversified marketing strategies. Following is a checklist of procedures and expectations for producers interested in participating in **PVAP-PRECONDITION**:

Eligibility

- Producers who have never weaned and preconditioned calves on the farm.
- Home raised weaned calves retained on the farm for 45-120 days prior to marketing.

Procedures

- A site visit by the UK ANR Agent or KBN Facilitator and UK Specialist to inspect facilities to determine the suitability of a weaning pen, on farm feed storage, etc. will be conducted. This visit will include planning the weaning process and designing a proper feeding program.
- Work, weigh and wean the calves using CPH-45 or similar approved protocol. Begin the feeding program. Calves will be graded and valued at this time using current KDA market information.
- Market calves at a recognized preconditioned sale or outlet such as CPH-45, Red Tag, Yellow Tag, Farmers' Elite, etc.
- Complete required paperwork detailing beginning weights, feed and vet costs, and sales receipts. Producers must submit completed paperwork to receive a PVAP-incentive payment.
- Payment will be \$30/head (maximum \$1,000) for producers completing the program.
- Producers will receive a closeout report detailing the costs and returns of the project.

How to enroll

• Contact your local county ANR Agent or KBN Facilitator to obtain an enrollment form.

- Upon returning the enrollment form a farm visit will be scheduled.

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

Through the week, market reports consistently spoke of price improvement in Kentucky cattle markets. The combination of increasing slaughter at the national level and gradual reopening of the foodservice sector continues to slowly lead to improved prices for fed cattle. And, that general positive tone is spilling over into feeder cattle markets. Also encouraging this week was larger marketings at the state level, which were actually a little higher than last year. I don't want to read too much into that because I don't remember how Memorial Day fell last year. But, I am very encouraged that cattle runs have been closer to normal the last couple weeks and prices are continuing to steadily improve.

CME© feeder cattle futures actually lost a little ground this week with summer contracts closing, on Thursday May 21, 2020, in the upper \$120's and fall contracts in the low \$130's. CME© live cattle futures have been steadily gaining ground since late April; the June contract is well into the upper \$90's as I write this. However, this remains at a very significant discount to cash live cattle, which have traded in the \$117 to \$120 range so far this week.

On a state average basis, 550 lb M / L #1-2 steer calf prices increased by \$1-2 per cwt this week. The calf market has very slowly and steady improved since the end of April, despite the grass placement run being largely over. The state average price for an 850 lb M/L #1-2 steer increased by almost \$8 per cwt this week. There is no doubt that the market for heavy feeders has improved considerably, although I am afraid that price increase might be a bit misleading. The major increase was in the 800 to 850 lb range that I use as part of my 850 lb estimate. I always use the category without a descriptor like "fancy" or "value-added". But, for this week, that price was higher than the price for the "value-added" cattle in the same weight range. That may be accurate, but it is worth this short cautionary note (see figure 1).



Figure 1: Feeder Steer Prices since the First Week of January Kentucky Average (\$ per cwt)

Source: USDA-AMS, Livestock Marketing Information Center, and Author Calculations

Cull cow prices also continued their steady improvement this week. Medium dress, 80-85% boning cows broke \$60 per cwt on a state average basis for the first time since the last week of March. Before that, I actually have to go back to 2017 to find a week in this price series above \$60. Weekly prices for cull cows are shown in figure 2.



Figure 2: 80-85% Boning Cow Prices since the First Week of January Kentucky Average (\$ per cwt)

Source: USDA-AMS, Livestock Marketing Information Center, and Author Calculations

Lastly, we did get specifics this week for direct payments to farmers from the Coronavirus Food Assistance Program (CFAP) and I am sure most of you are already familiar with the basic structure. Signup will begin on May 26th through local FSA offices and continue through August 28th. The easiest way to understand the direct payments is to think of two separate payments, although they will be paid out simultaneously if a producer qualifies for both. The CARES payment is made on a per head basis for cattle that were actually sold from January 15 to April 15, based on the cattle category they fall into. The CCC payment is much smaller, and is made on the highest level of inventory from April 16 to May 14. Table 1 reports payment rates by category. USDA has indicated that they will pay 80% of the payment rate initially and make additional payments later, up to the full rate, if sufficient funds exist.

USDA effectively drew a line in the sand on April 15th. Producers who sold cattle during that 90 day window will receive the larger CARES payment on those cattle. Producers who did not sell during that time, but had cattle in inventory after that, will receive the smaller CCC payment rate on those cattle. This is true for cattle that won't be sold until fall and it is true of cattle that were sold on April 16th. With the caveat that there are still some interpretational questions to be answered, I thought it might be worth walking through some likely Kentucky-oriented scenarios based on my reading of the final rule.

A winter backgrounder that sold cattle in the spring, prior to the April 15 deadline, would receive the CARES payment on those cattle. They would initially receive 80% of the \$139 per head, assuming the cattle weighed more than 600 lbs. A winter backgrounder that kept cattle past the April 15 date, would instead receive 80% of the CCC rate, which is only \$33 per head.

A fall calving cow-calf operator would receive the CARES payment on any calves, cows, or bulls they sold within that 90 day window. And they would receive the CCC rate on calves, cows, or bulls that were in inventory between April 16 and May 14. If they kept their calves past April 15th, which will be a significant

share of our fall calving herd, they would receive the lower CCC rate on calves, cows, and bulls. It is very unlikely that a spring calving cow-calf herd sold cattle during the January 15 to April 15 time period. Most likely, they will only receive the CCC payment on all their cattle.

I have also gotten questions about seedstock operations and heifer developers. The "All other cattle" category is meant to capture cattle not meeting the other definitions. So, I feel that bred heifers, mature cows, and herd bulls sold during the 90-day window will fall into the "All other cattle" category for the purposes of the CARES payment. Since the CCC payment is constant across categories, classification of inventory for CCC purposes matters little.

I'm certain FSA offices will be able to answer a lot of case specific questions as they arise. I would point out that this will be a huge task for local FSA offices due to the sheer number of producers that will be applying. So, I would encourage producers to spend some time reading requirements and to be as organized as possible in order to make efficient use of the time of FSA staff. USDA continues to provide a lot of information about the CFAP program at https://www.farmers.gov/cfap and I would encourage producers to review that information.

Livestock Category	Unit of Measure	CARES Act Payment Rate	CCC Payment Rate
Slaughter cattle (mature cattle)	Head	\$92	\$33
Slaughter cattle (fed cattle)	Head	\$214	\$33
Feeder cattle less than 600 lbs	Head	\$102	\$33
Feeder cattle 600 lbs or more	Head	\$139	\$33
All other cattle	Head	\$102	\$33

Table 1: CFAP Payment Rates for Cattle