

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER, JUNE 2019



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

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University of Kentucky

Beef IRM Team

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Timely Tips

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

Spring-Calving Cow Herd

- Cows should be on good pasture with clover and preferably low endophyte levels in fescue for the spring breeding season. Keep pastures vegetative by clipping or making hay. They should have abundant shade and water. Our goal is to have cows become pregnant before July when temperatures and heat stress can ruin the “spring” breeding season.
- Observe the cows and bulls as the breeding season continues. Watch bulls for injury or lameness and change bulls if a high percentage of cows are returning to heat. Record cow breeding dates to determine next year's calving dates and keep records of cows and bulls in each breeding group.
- Keep a good pasture mineral mix, which contains adequate levels of phosphorus, vitamin A, selenium and copper, available at all times.
- Consider a special area for creep grazing calves, or practice “forward grazing” this summer, allowing calves to graze fresh pasture ahead of the cows. This can be accomplished by raising an electric wire or building a creep gate.

Fall-Calving Herd

- Pregnancy test cows if not done previously.
- Cull cows at weaning time
 - Smooth-mouthed cows
 - Cows weaning light weight and/or poor-quality calves
 - Open cows
 - “Problem cows” with bad feet, teats, udders, etc.
- Select replacement heifers on the basis of:

- temperament
- conformation
- weaning weight
- dam and sire records
- Select more than needed to allow for culling after a short breeding season

General

- Finish harvesting excess pasture as hay soon! It should be cut before it becomes too mature. Be sure and replenish your reserves. Try to put up more than you think you will need in case of a late summer drought.
- Pasture should supply adequate energy, protein and vitamins at this time. However, be prepared for drought situations. Don't overgraze pastures so that recovery time will be faster. Overgrazed pastures will recover very slowly during July/August.
- Keep pastures small for rotational grazing so that nutritive quality can be maintained. They should be small enough so cattle do not graze longer than a week. As the season progresses, you need several paddocks to give each properly stocked pasture about 4 weeks' rest.
- Maintain a clean water supply and check it routinely. Water is extremely important in hot weather.
- Control flies. Consider changing insecticides and/or methods of control this year, because insecticide resistant flies may have developed if you have used the same chemical year after year. Consider pour-on and sprays that allow you to put cattle in the corral or through the chute with little stress on them. It will make subsequent trips through the "chute" less stressful.
- Prevent/Control pinkeye
 - consider vaccinating,
 - control flies,
 - clip tall, mature grass,
 - treat problems quickly.
- Clip grazed-over pastures for weed control and so that seed heads do not irritate eyes. Pastures should be kept in a vegetative state for best quality.

The Process and Tying Your Shoes – Managing the Details

Mr. Kevin Laurent, Extension Specialist, University Of Kentucky and Mr. Tim Dietrich, Kentucky Department of Agriculture

Being a diehard LSU football fan, the first Saturday in November for the last eight years have been pretty rough and Nick Saban and Alabama have been the reason. What makes this worst is I get to annually spend this weekend with all my friends and co-workers at the NAILE. That Sunday morning walk into the South Wing of the KFEC has not been very enjoyable. Let's just say my "friends" have not been very comforting. Maybe a similar example for UK basketball fans could be the John Wooden UCLA teams of the 70's.

The accomplishments of great coaches like Saban and Wooden are not accidental. Books have been written and countless interviews have attempted to explore and determine the secrets of their success. At the end of the day, the common theme is their attention to detail and the focus on getting better each and every day. Saban's methods have become known as "The Process". It's his belief that methodical preparation on a daily basis is the key to success. Coach Wooden took his attention to detail to the minute level. If you haven't heard the story, do a web search for "how to tie your shoes" by John Wooden. Every player on arrival to UCLA was instructed in not only tying their shoes but also in the proper way to put on their socks. Now that's detail!

Attention to detail in the management of our cattle operations could also pay dividends especially during this period of depressed prices. Daily details include checking the cow herd regularly, catching foot rot or pinkeye early, maintaining water supplies and mineral feeders, rotating pastures on a timely basis, to name a few. The following is a mix of timely details and big picture items that can be considered this summer.

1. **Establish a grazing cell.** Take advantage of this wet weather and forage growth by practicing some form of rotational grazing on at least a part of the farm. This could be as simple as dividing a large pasture with existing water into 3-4 paddocks. This will allow growth to accumulate elsewhere and be used if we have a dry spell, when cows are weaned, or even later in the winter. An investment of \$500 -\$1000 will buy a lot of high quality tread in posts and 9 strand polywire that will last 5-10 years.
2. **Test your soil and test your hay.** Test now so proper plans can be made for late summer/fall fertilization and the winter feeding program. Enter your hay test results in the **UK Beef Cow Forage Supplement Tool** (<http://forage-supplement-tool.ca.uky.edu/>) to easily determine your supplementation needs. Often, supplements can be pre-purchased in the summer at a discount to winter prices.
3. **Evaluate your calves.** As summer progresses ride through the herd and cast a critical eye on the quality of the calf crop. Are most of the calves large and medium frame 1s and 2s? If not, a new bull could be the first step in improving the situation. If you are not comfortable making this evaluation find someone who is. If a new bull is needed, and you are currently calving year round, selling the old bull sometime in late summer will be the first real step in establishing a calving season.
4. **Prepare your calves for marketing.** Castrate and dehorn calves prior to weaning. Discounts for 500-600 lb. bulls have averaged \$11/cwt since 2010. That's more than \$50 per head. Realize that when prices trend down, discounts usually trend higher. Consider weaning and preconditioning calves before selling. Talk to your local ANR agent or KBN facilitator about enrolling in the new **PVAP-Precondition** program.

Hopefully this summer timely rains will continue, the market will rebound and feed prices will not get too high. Here's hoping that your calves and grass will continue to grow and who knows, maybe just maybe, this November might be the year. My son-in law has promised that if UK and LSU play for the SEC Championship in football that he will buy the tickets. Hey, it could happen!

You're Invited to Beef Bash 2019

Dr. Les Anderson, Extension Professor and Ben Crites, IRM Coordinator, University of Kentucky

You've got to see this one! The University of Kentucky and the Kentucky Cattlemen's Association are busy planning a fall educational event with something for everyone. Circle Thursday, September 26th on your calendar and join us at the UK C. Oran Little Research Station in Versailles for an afternoon with the cows, grass, and fellowship.

We have hosted Beef Bash at the UKREC in Princeton since 2008. For those of you that have not been able to attend, our goal is to have a more "user-friendly" field day – more interactive and less structured. You can come and go as you please, attend various demonstrations of your choosing, look at cattle exhibits, visit with commercial exhibitors, visit with other producers, or study various educational exhibits. Your choice. The name "Beef Bash" implies that we want you to have an enjoyable time while you learn.

Educational Opportunities. You can see our cattle operation which provides animals for beef research. Education opportunities will abound and will be scattered throughout the entire research station. Many stations will host researchers from the across CAFE will be share their research and it relevance to the Kentucky Beef Industry. ANR Agents will share successful beef programming ideas and their impact on beef productivity. Extension Specialist will discuss state educational programming and impact. Finally, we will discuss the management program or our cow herd; our goals, plans, and procedures.

Commercial exhibits. A large tent in the staging area will house commercial exhibits and serve as the focal point of all activities. You can visit with various company representatives as you please and make plans for purchasing products for weaning calves or wintering the cow herd. Information on many new products will be available. Take your time and visit a while.

Hands-on Demonstrations. Various “how-to” demonstrations will be conducted throughout the day. You can attend those that interest you and ask questions in a less formal environment. Examples of demonstrations may include: bull selection, estrous synchronization technology, ration balancing, freeze-branding, alternative fertilizers, fencing and water, etc. We’ll spend more time “doing” and less time speech making.

Social: Visit with the leadership of the Kentucky Cattlemen’s Association and the University of Kentucky. The Dean and Associate Deans of the UK College of Agriculture are planning to attend and look forward to visiting with you. Bring any prospective agriculture students, especially those interested in Animal and Food Sciences with you. The beef Extension specialists and researchers will, of course, be available to visit and answer questions. We want to hear from you and get to know you.

KCA will be represented with leaders from across the state, especially the western part. This event has been a fantastic opportunity for KCA leadership to interact not only with UK personnel but also with other industry leaders. Come and visit with other cattlemen from across the state and be a part of making KCA the voice for all Kentucky cattle producers.

Make plans now to spend some time with folks who are interested in the same things that you are – improving our position in the beef industry. Mark September 26th on your calendar and bring a neighbor. These are difficult economic times, but we’ll keep moving forward with meaningful research and continue to build an even stronger cattlemen’s organization. We need you!

Registration begins at 8:30 a.m. EST, with programs and tours starting at 9 a.m. EST. A lunchtime meal will be made available to purchase. No preregistration is required. Participants will receive a free pair of cotton-knit gloves.

For more information, please contact Ben Crites (859)-257-7512 or benjamin.crites@uky.edu

Johne’s Disease and Detection in Beef Cattle - Frequently Asked Questions

Michelle Arnold, DVM, MPH UK Ruminant Extension Veterinarian

What is Johne’s Disease? Johne’s (pronounced *Yo-knees*) Disease is a chronic disease of profuse, watery diarrhea and weight loss or “wasting” in adult cattle (Figure 1) caused by the bacterium *Mycobacterium avium* subsp. *paratuberculosis*, commonly referred to as “MAP”. This is a slow, progressive disease that begins when calves (not adult cattle) are infected with the MAP bacteria, most often around the time of birth but infection can occur up to 6 months of age and very rarely after. Once MAP gains entry into a calf, the organism lives permanently within the cells of the large intestine where it multiplies and causes the

intestinal lining to slowly thicken. With time, the thickened intestine loses the ability to absorb nutrients, resulting in watery diarrhea. There is no blood or mucus in the feces and no straining. The clinical signs of diarrhea and extreme weight loss in spite of having a good appetite, do not show up until 2-5 years of age or even older. There is no treatment available and the animal eventually dies due to starvation and dehydration. The MAP organism is “shed” in the feces before diarrhea starts and continues until the animal’s death. Map bacteria are very hardy due to a protective cell wall that allows survival for long periods (potentially years)



Figure 1: Recently calved cow with signs of Johne’s disease; dull hair coat, profuse watery diarrhea and weight loss. Photo from “Management and Control of Johne’s Disease in Beef Sucker Herds” by Drs. Isabelle Truysers and Amy Jennings. In Practice July/August 2016/Volume 38, page 348.

in the environment.

How do calves get infected with MAP bacteria? Johne’s infection is mainly caused by calves ingesting MAP-contaminated feces from nursing dirty teats. In beef cattle, this is possible in high traffic areas (around hay rings, feeding areas) when mud and manure are splashed on the udder, when calving cows in dirty sheds or barns, or when cattle are held in close confinement. MAP is also shed in colostrum and milk of infected cattle. There is great opportunity for transmission thru colostrum and milk in beef calves since they remain with dams 6-7 months or more and calves steal milk from other cows, too. There can be some spread from an infected cow to her fetus during pregnancy but this is infrequent. Transmission by bulls from semen has never been proven but infected bulls still contaminate the environment with their MAP-infected feces.

How did Johne’s Disease get on my farm? In almost all cases, the MAP bacteria arrived when an infected animal was purchased and added to the herd. The bacteria can be hiding in replacement heifers, cows, breeding bulls, recipients used for embryo transfer, or even in an infected calf grafted on a cow. As cow/calf producers, it is easy to buy (and sell) infected, young breeding age animals with no obvious symptoms even though they are already incubating the disease. The problem is difficult to detect early in subclinical cattle (subclinical=before diarrhea and weight loss develop) but these infected animals can and often do shed high numbers of the MAP organism, contaminating the farm long before there is evidence of a problem. Colostrum from other herds, especially from dairies, is another potential source.

Diagnosing a clinical case: Does this animal exhibiting weight loss and diarrhea have Johne’s disease? Options for testing individual cattle:

- Best test: Submission of a dead animal to a veterinary diagnostic laboratory. The affected animal should be humanely euthanized by a veterinarian then promptly taken to the lab for a necropsy (similar to a human autopsy). Histopathology (with special staining) on necropsy-collected tissue including confirmation of the MAP organism is the most definitive confirmation of Johne’s. This is necessary if no prior Johne’s cases have been diagnosed on the farm.
- Best test in a live animal: PCR on a manure (fecal) sample can be used as a primary diagnostic test to confirm the clinical signs of diarrhea and wasting suggestive of Johne’s disease. PCR is an “organism detection test” meaning it detects the DNA of the MAP bacteria in the feces. The PCR result is also a good indicator of the amount of MAP being shed in the feces (see Figure 2). A fecal culture in which MAP bacteria is grown in the lab is another “organism detection test” available but it is quite slow. Johne’s liquid culture is incubated 42 days while solid media culture is incubated 13 weeks before results are known. Culture allows growth of the organism and acid-fast staining for identification.
- The blood test (known as a “Serum ELISA”) is an “antibody detection test”. It is not the preferred test for confirmation of an individual clinical case but can be used reliably if the herd is already known to be Johne’s-infected. The test is not perfect; occasionally, sick cattle with advanced Johne’s disease can test negative on serum. Similarly, healthy uninfected animals can test positive (a “false positive”). However, the blood test is considered a good herd screening test for MAP antibodies and positives should be confirmed with an organism detection test.

Specimen	Test Name	Result	Ct Value
No ID - Mammalian - Bovidae - Bovine - Angus - Female - Adult			
Small intestine - Scraping - 9	Mycobacterium paratuberculosis (Real Time PCR) - 10/25/2018 1:39 PM	POSITIVE	17.50
Mycobacterium paratuberculosis(Real Time PCR):	<p>Cycle Threshold (Ct) provides an estimate of the amount of <i>M. avium</i> subsp. paratuberculosis (MAP) DNA in the fecal material. Generally the lower the number, the more DNA in the fecal material. MAP DNA can then be correlated to the number of organisms shed in the fecal material.</p> <p>General guidelines per USDA are as follows: <25 Ct = Very Heavy Fecal Shedder <30 Ct = Heavy Fecal Shedder <33 Ct = Moderate Fecal Shedder <36 Ct = Light Fecal Shedder <40 Ct = Suspect Fecal Shedder - DNA was detected, but at a low level. Without epidemiological information, correlation to fecal culture is not consistent.</p>		

Figure 2: Sample result from a *Mycobacterium paratuberculosis* real time PCR test for detection of the MAP organism (UKVDL)

Why should I care if I have Johne’s Disease in my herd? Economically, Johne’s disease can be costly in a beef operation. It is believed that for every clinical (sick) cow with Johne’s in a herd, there may be 10-20 more who are infected but not yet showing signs. This is why Johne’s is often referred to as an “iceberg

disease". Obviously death loss and premature culling will mean higher replacement costs to keep herd numbers stable. Perhaps less obvious is that MAP-infected cows showing no signs of disease are less fertile and produce less milk, resulting in lighter calves at weaning and more open cows at pregnancy check. Seed stock operators (including farms that sell any breeding stock, registered or commercial) should enter a rigorous testing program to eradicate this disease once identified. Many are reluctant to test for Johne's Disease for fear that a positive diagnosis will ruin their reputation. However, a seed stock herd's reputation may be damaged much more severely by selling a MAP-infected animal to a customer and introducing a contagious, incurable disease into a buyer's herd. Not only a tarnished reputation but litigation could result from transactions when the source herd is known to be MAP-infected.

Once a diagnosis of Johne's Disease is made, what are the next steps? Once a diagnosis is made, the first step is to determine the goals for the operation. If selling seed stock, the goal should be to classify as test-negative or work towards it as quickly as possible. Commercial operations may opt to reduce the disease prevalence gradually through testing and management.

After the goal is established, decisions on which animals to test and what test to use will depend on the answers to the following questions. What management changes are the herd owners willing to make based on test results? Are they willing to cull positives and/or create test positive and test negative herds based on results? How much money are they willing to spend on testing? How quickly do they want to see progress towards goals? Remember that herd testing is done on healthy animals so decisions should be made in advance on how a positive result will be handled. If no changes will be instituted, then testing is a waste of time and money.

Where can I learn more about Johne's Disease? The Johne's Information Center at the University of Wisconsin maintains an excellent website with good producer-level information at <https://johnes.org>. An easy-to-understand video about Johne's can be found at <https://www.youtube.com/watch?v=u0Y0ew5yMo8> although it is dairy-oriented.

Next Month- Part II: Recommended Herd Testing for Johne's Disease

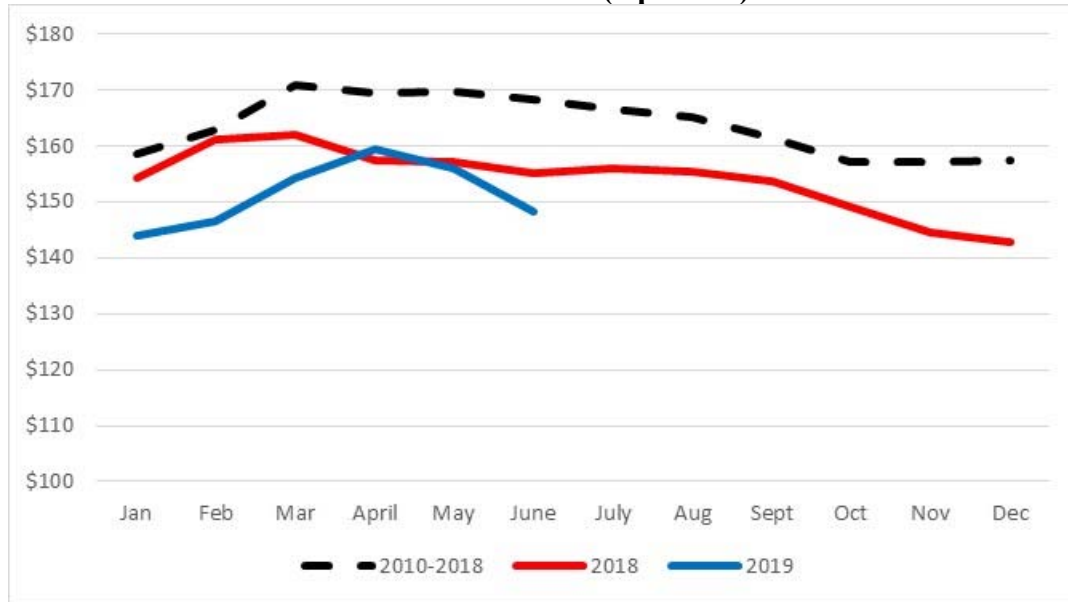
Kentucky Beef Cattle Market Update

Dr. Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

This summer has once again shown us how brutal markets can be. In April, fall CME© feeder cattle futures were in the upper \$150's and I was surprised that calf prices weren't higher given the profit potential of summer stocker operations. Two months later, those same contracts are down over \$20 per cwt and many producers are wishing they had done something to protect those fall sale prices. I think the two largest reasons for the decrease are uncertainty created by trade issues and continued delay in corn planting.

Kentucky calf prices really did seem to hold on as long as they could, but finally broke hard through May and early June. After putting in their highs in April just under \$160 per cwt, 550 lbs M/L 1-2 steers had moved into the mid-\$140's by the second week of June (see figure 1). Honestly, this is less drop than would be expected given the \$20+ drop in the futures market. It's as though our calf market didn't completely buy into the inflated spring market and isn't currently buying into the deflated summer market.

**Figure 1. 550# Medium & Large Frame #1-2 Steers
KY Auction Prices (\$ per cwt)**



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

A market like this one also is a good reminder to me of what should be expected of an extension economist. The decrease in futures from April to June translates into an expected decrease in value for heavy feeders this fall of more than \$150 per head. For 2019, this is about what I was estimating profit to be for a stocker operation this spring. In a normal year, this would be more than enough to turn modest returns into modest losses.

While producers often want an extension economist to predict prices and make estimates for returns looking ahead, there is simply no reason to think that an extension economist can do this any better than the futures market. Our role should be more about risk management strategies than price prediction. Previous research has suggested that futures are as accurate a predictor of markets as we have available, but there is certainly plenty of evidence to show that they aren't perfect. Still, one can't deny that fall futures in the upper \$150's this spring provided us a pricing opportunity. It's easy to say that now, but pulling the trigger back in April was difficult for many as the market seemed to be invincible.

It's important to remember that there is nothing countercyclical about the futures market. They only allow us to capitalize on expectations of prices in the future. As those expectations change, the futures market will change, and the best we can do is price based on those newer expectations. I always get lots of questions about risk management after a year like this one, but by that time it is simply too late. Futures' markets don't allow us to resurrect good prices.

Everyone has their own philosophy on risk management and that is perfectly fine. But, some producers are in better financial position to absorb market swings, like we saw this summer, than others. Some grain producers use a strategy of pricing their grain as they incur their expenses for inputs. In other words, by the time they have priced half of their inputs for the year (rent, seed, fertilizer, etc), they like to have half of their grain priced for sale. It's interesting to think about how this might apply to a stocker operation.

Given that stocker operations tend to be relatively low-input, 75% to 85% of total expenses can be incurred on the day the stocker calves are placed. And, if one really thinks about it, more expenses are committed on that same day such as health costs, transportation, and commission. If one wanted to apply this proportional

pricing approach to a stocker operation, they would be very aggressive pricing cattle at placement – perhaps pricing them all from the start.

I think the most important suggestion that I could make to someone about a marketing strategy is simply to have one. Think about risk management from the very start and include your lender in this discussion. The second suggestion that I would offer is that one should not make risk management decisions in real time. I have witnessed this countless times over the years as producers see the market move upward or downward. We tend to have analysis paralysis, get caught up in the emotion, and can't make a decision quick enough. I typically recommend having a predetermined strategy, with pricing targets and dates, that one can move on as soon as they are reached. In a sense, you are taking the emotion out of the decision and automating the implementation of your plan.

If you would like to learn more about risk management strategies for feeder cattle, I would recommend that you take a look at my publication, "Using Futures Markets to Manage Price Risk for Feeder Cattle" at <https://www.uky.edu/Ag/AgEcon/pubs/ext2013-0128.pdf>. And, as always, don't hesitate to reach out to me with questions.