Contents

This month’s newsletter includes:

Timely Tips – Anderson
You’re Invited to Beef Bash 2019 – Anderson and Crites
My first cutting is just ‘cow hay’ – now what? – Henning
Part II: Johne’s Disease and Detection in Beef Cattle - Frequently Asked Questions – Arnold
Kentucky Beef Cattle Market Report – Burdine

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

Spring-Calving Cow Herd

- Remove bulls from the cow herd by the end of the month and keep them away from the cows. A short calving season can concentrate labor during the calving season; group calves by age so that it is easier to find a convenient time to vaccinate, castrate, dehorn, etc.; and provide a more uniform group of calves at market time.
- Mid-July (when the bulls are being removed) is a good time to deworm cattle, use a product that is effective against inhibited ostertagia. Re-implant calves which were implanted at birth if the type of implant and amount of time indicate. Calves which haven’t been vaccinated for blackleg should be. Spraying or using a pour-on for flies while cattle are gathered can supplement other fly control methods. Remember to work cattle early in the morning when it is cool and handle them gently to minimize stress.
- Watch for pinkeye and treat if necessary. Minimize problems by clipping pastures, controlling face flies and providing shade. Monitor the bulls’ activity and physical condition as the breeding season winds down.
- Fescue pastures tend to go dormant in July and August, so look for alternatives like warm season grasses during this period of time. Try to keep the young calves gaining weight. Go to pastures which have been cut for hay to have higher quality re-growth when it is available.
- Consider cutting warm season grass pastures for hay, if reserves have not been restored yet.

Fall-Calving Cow Herd

- De-worm cows in mid-July with a product that is effective against inhibited ostertagia.
• Fall-calving cows should be dry and pregnant now. Their nutrient needs are minimal and they can be maintained on poor pasture to avoid over fattening. Keep a good free-choice mineral mix available at all times. You can use a lower phosphorus mineral supplement now, if you want to save a little money. These cows are regaining body condition after a long winter feeding period.
• Get ready for fall calving and plan to have good pasture available at calving and through the breeding season.

**Stockers**

• Sell heavier grazing cattle before rate of gain decreases or they get into a heavyweight category. This will also relieve grazing pressure as pasture growth diminishes. They can be replaced with lightweight calves after pastures recover.
• Lighter cattle which are kept on pasture need to be rotated to grass-legume or warm-season grass pastures to maintain a desirable level of performance. Re-implant these calves and deworm with a product that is effective against inhibited ostertagia.

**General**

• Check pastures for downed wild cherry trees after storms (wilted wild cherry leaves are toxic to cattle).
• Be sure that clean water is always available, especially in hot weather. Make routine checks of the water supply. Cattle need 13 to 20 gallons of clean water in hot weather. Cattle should have access to shade.
• Maintain a weed control program in permanent pastures and continue to “spot-spray” thistle, honey locust, etc.
• Have forage analyses conducted on spring-cut hay and have large, round bales covered. Begin planning the winter feeding program now. Most of the hay was cut late due to a wet spring.
• Start soil testing pastures to determine fertilization needs for this fall.

**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

**My first cutting is just ‘cow hay’ – now what?**

*Dr. Jimmy Henning, Forage Extension Specialist, University of Kentucky*

(First published in May 30 issue, Farmer’s Pride).
Late cut hay is a fact of life in Kentucky. There are worse things. Drought, for example. It is no failure if some first cuttings of hay are late. Or rain damaged for that matter. The list of things that have to ‘get done’ in May never ends for the part-time, diversified farmers that form the bulk of the beef cattle producers in Kentucky.

Farmers face a never-ending set of ‘what to do first’ decisions. Something has to be second, or third. So late cuttings of hay happen. The real mistake is to let a less-than-perfect first cutting stop the conversation on hay testing, feeding and forage management.
management because a farmer thinks we in Extension are disappointed. Frankly, it is amazing that anybody in Kentucky gets a good first cutting of hay in the barn.

**Next steps if you think your first cutting is just ‘cow hay’**

The first thing to do is to get a representative core sample and send it to a certified lab for analysis. It is best but not absolutely necessary if it goes through the sweat before taking the sample. Next, store the hay inside if possible, but at least get it off the ground (on rock, pallets and so on). If you are going to have more than one cutting or hay from other fields, store so this lot of hay can be accessed and fed as needed.

Once the results are back, do some planning with the UK Beef Cow Supplementation Tool (http://forage-supplement-tool.ca.uky.edu/). This very simple tool will let you determine what you need to feed with your ‘cow hay’ to meet nutritional needs. Knowing your needs early can let you work with your supplier to secure best pricing.

This supplement tool calculates an intake figure from the total fiber in the hay, but you need to make sure actual consumption matches or exceeds the estimates from the tool. You may need to get some current weights for hay bales so you can back calculate intake from hay disappearance. Don’t forget to take into account the waste that happens, even if this is only a guess.

The tool also cannot take into account changing energy needs with weather. As a guide, every 10 degree drop below the ‘thermo-neutral’ temperature increases energy needs by 5%. And the thermo-neutral temperature is greatly affected by whether the hair on the cow is wet. The thermo-neutral temperature for cows with dry hair coats is 18 F, but 55 F when that hair is wet. So the energy needs for cows when it is 35 F and raining is 10% higher than that predicted by the tool (55 – 35 is 20 and each 10 degree change means 5% more energy). Thinking back, we had a lot of 35 F and rainy days last winter, and cows lost a lot of condition.

Another thing to remember is that the summer is far from over, and other cuttings may be more timely. Hope springs eternal in a farmer. It has too.

Another idea - Make some serious plans to stockpile tall fescue. A well-managed (not overgrazed) field of tall fescue that is rested from mid-summer into the fall and fertilized with 60 lb of N in mid-August can provide better quality feed for cattle than any hay you will likely produce this summer. Grazing stockpiled fescue will lessen days where hay is necessary. Strip grazing the stockpiled fescue with make this high quality forage last longer (due to less waste) and quite possibly reduce mud caused from bale feeding later in the winter.

Remember, just because you made ‘cow hay’ does not mean the forage conversation is over. Not by a long shot.

*Happy Foraging.*

**Part II: Johne’s Disease and Detection in Beef Cattle - Frequently Asked Questions**

Michelle Arnold, DVM, MPH UK Ruminant Extension Veterinarian

Johne’s (pronounced Yo-knees) Disease is a chronic, fatal disease characterized by profuse, watery diarrhea and weight loss or “wasting” in adult cattle (see Figure 1). Although it is a disease of mature animals, the infection most often begins when newborn calves nurse manure-covered teats contaminated with the
bacterium *Mycobacterium avium* subsp. *paratuberculosis*, commonly referred to as “MAP”. The major problem with MAP infection in cattle is that the disease remains hidden because diarrhea and weight loss do not develop until 2-7 years after infection. However, the infected animal will release or “shed” the bacteria during this “silent phase”, contaminating the environment and allowing more calves to become infected. (Please see the June 2019 issue of Off the Hoof for detailed information about Johne’s Disease). Control of the disease is based on three basic steps: 1) identify and cull MAP-infected cattle; 2) prevent exposure of young, susceptible calves to the bacteria; and 3) prevent entry of infected animals into the herd.

**What is the best way to proceed after learning Johne’s disease is in the herd?** Once a diagnosis of Johne’s disease is made, it is important to understand 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 (subclinical) because of the long (2-7 year) incubation period. The first step is to work with a veterinarian to devise a plan of attack to find MAP-infected cattle based on the goals for the cattle 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 infected animals in the herd gradually through testing and management. Remember that herd testing is done on healthy-appearing 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.

**What tests are available to detect animals infected with MAP bacteria before they develop diarrhea and weight loss?** There are basically two options for testing: 1) MAP bacteria detection in feces and 2) antibody detection in blood (serum) or milk. Typically, antibodies in blood are produced by the infected animal after shedding of the bacteria in the feces begins so fecal tests will be positive earlier than blood tests. Both tests become more accurate as the disease progresses towards the clinical stage of diarrhea and weight loss.

**At what age should testing begin?** Due to the biology of MAP infection, only adult cattle (18 months and older) produce the targets needed by diagnostic tests. Although calves are infected while very young, they
rarely release/shed the bacteria in feces, nor do they produce antibody at a young age. It is recommended that diagnostic tests be used in animals at least 18 months old and generally recommend testing to begin after 2 years of age.

What is the recommended herd testing approach for seed stock operators? Seed stock operators or any farming enterprise selling livestock for breeding (including farms that sell replacement heifers) are strongly encouraged to enter a rigorous testing program to eradicate the disease if Johne’s has been identified. MAP-infected cattle are not suitable as breeding livestock because they will have a shortened herd life and will likely transmit the disease to the buyer’s herd. The recommended approach is to submit individual fecal samples for testing (Johne’s fecal PCR test at a veterinary diagnostic lab) on all cattle 18 months and older with all positive animals either culled or segregated well away from the main herd until culled. This should be repeated annually until three negative tests are achieved on the herd. Be aware that this is expensive but the most accurate method to detect infected cattle.

The goal of seed stock operators with no confirmed cases of Johne’s disease should be to remain MAP-free. This is best accomplished by either maintaining a closed herd which breeds its own replacements and/or trying to insure any purchased cattle (including bulls) come from Johne’s certified herds. Entry in the Voluntary Bovine Johne’s Disease Control Program is recommended in order to show potential buyers a certified level of low risk for MAP infection.

What is the recommended herd testing approach for commercial cow/calf operators? Commercial herd testing depends on the goals for the operation and the resources available. The whole herd may undergo screening at once or subsets based on likelihood of infection or convenience. The overarching goal is to identify and cull “super shedders” (animals releasing millions of MAP organisms in the environment daily) because they can infect many animals. Additionally, identification of animals early in the disease process (but not shedding many bacteria) allows segregation into test (+) and test (-) herds to avoid further spread of the disease.

Herd screening with the blood test on all cattle over two years of age is inexpensive and designed for rapid testing of large numbers of samples. If using the blood pregnancy test, it may be run on the same blood sample. The test is not perfect; if the result is negative, it may simply mean the infected animal is not yet producing antibodies to the infection. False positive results may also occur, especially in herds where few animals are infected.

Herd screening with fecal PCR on all cattle over 2 years of age is fast and also gives a good approximation of the amount of fecal shedding but is expensive. Certain labs will pool fecal samples in groups of 5 to cut down on cost. However, if the pool is positive, all 5 samples are re-tested individually. Samples are easily collected when palpating or using ultrasound for pregnancy detection. The most economical overall approach is to blood test the herd first then confirm all suspect and positive blood results by submitting a follow-up fecal sample for PCR.

Which animals in the herd are at highest risk of infection? Targeted testing of groups of cattle considered to be at highest risk of infection is sometimes preferable to reduce the time and expense involved in whole herd testing. This high risk group includes:

- All clinically ill (thin or with chronic diarrhea) cattle;
- Any replacement heifers born to known Johne’s-infected cows;
- Any dam of a MAP-infected animal;
- Cattle who were born in the same calving season and in same pasture as an infected animal;
- All calves born after the purchase and addition of a Johne’s positive animal to the herd;
- Animals purchased from one source at the same time as a MAP-infected animal;
- All purchased animals with no record of testing or disease history from the farm where the animals were born.

**What test should be used before buying or leasing an animal?** From the buyer’s perspective, a record of negative test results from the herd of origin maximizes the chances the purchased animal is not MAP-infected. However, if this is not available, both a fecal sample and blood sample should be submitted and negative results received on both tests before adding the newly purchased animal to the herd. Annual testing with feces and/or blood is advised, especially if no history is available from the farm of origin.

**Is herd testing all that is needed to get rid of Johne’s in the herd?** Johne’s disease control programs in beef cow-calf herds are based on testing and removing positive cattle from the herd and implementing management practices aimed at preventing calves from coming into contact with MAP-contaminated feces from adult cattle. Cattle with diarrhea and weight loss and those identified as being test positive must be separated from young calves and animals intended for breeding as soon as is practically possible. Johne’s positive cows in late pregnancy or raising a calf can be kept separate from the rest of the herd until the calf is weaned in dedicated isolation facilities (field or stall) that should not be used for grazing or housing other livestock. Following weaning, cows that have tested positive should be removed from the herd and sold to slaughter and their offspring should not be retained for breeding or sold as breeding animals. Offspring from cases that have already entered the breeding herd should be tested yearly.

Preventing exposure of calves to feces from infectious animals play a major role in the control of Johne’s disease. Keep perinatal cows (those ready to calve, those in the process of calving and those that have just calved) in as clean an environment as possible, limiting fecal contamination of the flanks, legs, udders and teats. If calving in a barn or stall, remove the dam and calf as soon as possible from the calving area and change the bedding frequently. Another option is to run completely separate ‘clean’ (non-infected) and ‘dirty’ (infected) herds, using only the clean herd to breed replacements from and gradually culling out the dirty herd.

Biosecurity measures to prevent the introduction of MAP should also be a key element in Johne’s disease control. The MAP organism is known to be extremely persistent in nature, with survival in manure and damp environments reported for up to a year or more. Therefore, manure is best spread on agricultural land (hay or crop ground) rather than pasture. Where this is not possible, there should be a gap (preferably of at least 12 months) between spreading manure on pasture and using it for grazing calves. Fecal contamination of feed and water sources can be reduced by providing city water for grazing cattle where possible, fencing ponds and streams, raising feed and water troughs off the ground, and using separate equipment for handling feed and manure. The involvement of wildlife such as deer or rabbits in the transmission of Johne’s disease is suspected but not proven conclusively. This could have important implications for the control of the disease since livestock pastures can have high levels of fecal contamination from these animals.

**What does the future of Johne’s control look like?** Although there is a vaccine for Johne’s, it does not prevent infection but it can decrease fecal shedding and slow disease progression. It is available on an extremely limited basis in the US because it interferes with TB test results and is unlikely to gain further approval. In the future, genetic testing may be used to select animals more resistant to MAP infection although the science is in its infancy. For now, testing and management to prevent transmission of MAP bacteria from adults to young stock are the best tools available for Johne’s disease control.
Kentucky Beef Cattle Market Update  
*Dr. Kenny Burdine, Livestock Marketing Specialist, University of Kentucky*

As is often the case, an extremely wet start to the summer has given way to much drier conditions. While most Kentucky producers would not describe their situation as a drought, many would welcome some moisture to keep pastures growing. As I write this article (July 16, 2019), CME© feeder cattle futures had fallen by nearly $20 per cwt from their spring highs. As has been the case all summer, heavy feeder cattle prices in Kentucky have held reasonably well given the drop in futures with groups of 8wt steers trading in the upper $130’s and $140’s. Calf prices have fallen by roughly $15 per cwt from their April highs and are currently moving in the mid-$140’s.

In terms of market drivers, both trade concerns and rising grain prices continue to dampen cattle markets. Ample beef supplies and less than ideal summer grilling weather has also not helped box beef movement through summer. And, not surprisingly, on-feed inventory has continued to grow with the size of recent calf crops. All in all, 2019 has really set up for a frustrating year across the board for the cattle complex.

While spring appeared to offer relatively attractive stocker margins, the decline in fall futures has greatly moderated those profits levels unless producers priced cattle at, or shortly after, placement. This was really the focus of my article last month as the market did offer stocker operators some opportunity to price in a profit.

Unless something drastically changes in the calf market between now and fall, things won’t look any better for cow-calf operations. A 550 lb steer price in the $140’s and heifer price in the $130’s will leave revenues per cow between $600 and $700 after accounting for weaning rate. When considering cash costs, breeding stock depreciation, and overhead on most operations, return to land and capital are unlikely to please many producers. At a minimum, this should mean that we are nearing the end of the expansion phase of this cattle cycle.

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

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

**Figure 2.** 850# Medium & Large Frame #1-2 Steers
KY Auction Prices ($ per cwt)

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