

OFF THE HOOF



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KENTUCKY BEEF CATTLE NEWSLETTER, DECEMBER 17, 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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Recent and Upcoming On-line Beef Education Opportunities ***Beef IRM Team, University of Kentucky***

Beef Minutes December 3. Minimizing Hay Feed Losses – VanValin
December 11. Hay Testing – Teutsch

Beef Bits Podcast Episode 7. **Befriend a Butcher Part II** with Drs. Lehmkuhler and
Rentfrow

ROWLI Beef Webinar November 24. **Structures and Working Facilities** – Morgan Hayes and
Josh Jackson, BAE Extension

To access this and other excellent beef educational content, visit our Facebook Page (facebook.com/KyBeefIRM) and/or on the Department of Animal & Food Science YouTube page (https://www.youtube.com/channel/UCu4t18Zo2E_4_DBBELPjPMg). Subscribe to the AFS YouTube page and click the notifications bell to receive a notification whenever we publish new beef education content. Beef Bits can also be accessed on the podcast website (https://www.podbean.com/media/share/pb-megic-e6f8f1?utm_campaign=u_share_ep&utm_medium=dlink&utm_source=u_share).

Reaching Out While Locked In Resumes in February ***Darrh Bullock, Extension Professor, University of Kentucky***

The UK Beef Webinar Series ***Reaching Out While Locked In*** will resume in February and continue through May of 2021. The sessions will be the first and third Tuesday of each month and will start at 8:00pm Eastern/7:00pm Central. We do not have all of the titles and speakers locked down yet, but we are planning sessions on preparing for the calving season, targeted

feeding, reproductive management, weed management, forage management, economic outlook and a special Shooting the Bull session with the Beef Extension Team to address your questions and discuss current challenges and opportunities. More information will follow in January, but we wanted to give you the opportunity to hold the dates. As always, if you know of anyone that would benefit from these educational programs have them send their name and county to dbullock@uky.edu with the subject Beef Webinar or you can send me their information along with their email address.

Also, included at the end of this newsletter is a list of links for all the past sessions that we were able to get posted on YouTube; if you missed any, this should keep you busy through January! Feel free to send this information to anyone that you think may be interested.

We look forward to seeing you all in the new year and wish you all the best over the holiday season. Stay safe and enjoy your families whether close or from a distance.

Preparing Your Cows for A Successful Breeding Season

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

A successful breeding season begins with management decisions made prior to calving. As we move into the winter-feeding period for spring-calving cows, cattlemen need to review their management plan to ensure optimal rebreeding and success. Rebreeding efficiency can be optimized by focusing on body condition score (BCS), early assistance during calving difficulty, scheduling a breeding soundness exam for the herd sires, planning their herd reproductive health program, and developing a plan to regulate estrus in their first-calf heifers and late-calving cows.

Reproductive management begins with evaluation and management of BCS. Body condition score is a numerical estimation of the amount of fat on the cow's body. Body condition score ranges from 1-9; 1 is emaciated while 9 is extremely obese. A change in a single BCS (i.e. 4-5) is usually associated with about a 75- pound change in body weight. Evaluation of BCS prior to calving and from calving to breeding is important to ensure reproductive success.

Rebreeding performance of cows is greatly influenced by BCS at calving. Cows that are thin (BCS < 5) at calving take longer to resume estrous cycles and therefore are delayed in their ability to rebreed. Research has clearly demonstrated that as precalving BCS decreases, the number of days from one calving to the next (calving interval) increases in beef cows. Females with a precalving BCS of less than 5 tend to have production cycles greater than 1 year. For example, cows with a precalving BCS of 3 would be expected to have a calving interval of approximately 400 days, while a cow with a precalving BCS of 6 would have a calving interval of approximately 360 days. South Dakota research illustrates the influence of precalving BCS on the percentage of cows that initiated estrous cycles after calving. This experiment demonstrated that the percentage of thin cows that were cycling in the first month of the breeding season (June) was considerably lower than for cows that were in more moderate body condition. During the second month of the breeding season, 55% of the cows with a BCS of 4 had still not initiated estrous cycles, while more than 90% of the cows in more moderate condition had begun to cycle. Thin cows need a longer breeding season, which results in more open cows in the fall. They may

also result in lighter calves to sell the next year because the calves from these thin cows will be born later in the calving season.

Management of BCS after calving also impacts rebreeding efficiency. Maintenance requirements for energy and protein increase 25-30% for most beef cows after calving. Producers need to plan their supplementation to match or exceed this increased nutrient requirement. Rebreeding efficiency is enhanced in cows that calved thin if their energy intake is increased (Rutter and Randle, 1984). Although the best management plan is to calve cows in a BCS of 5+, increasing the energy to cows that are thin at calving can boost reproductive performance.

Dystocia (calving problems) can severely delay the onset of estrus after calving. Research shows that for every hour a female is in stage 2 active labor there is a four-day delay in the resumption of estrous cycles after calving. Early intervention helps; 16% more cows conceived when cows were assisted within 90 minutes of the start of calving. The best method is to reduce the incidence of dystocia via selection, but early calving assistance will increase the opportunity of cows to rebreed.

One overlooked management tool that can improve reproductive performance is breeding soundness exams in bulls. Think of breeding soundness exams as breeding season insurance. These exams are a low-cost method of insuring that your bull is capable of breeding. Examine bulls for breeding soundness about 30 days before they are turned out.

I have worked in reproductive management for over 25 years and it amazes me how many cattlemen still do not vaccinate their cow herd against reproductive diseases. Several diseases are associated with reproductive loss (lepto, BVD, vibrio, trich, etc). The main problem is that most reproductive loss due to disease is subtle and producers don't notice the loss unless they have a massive failure. Most cattlemen are not aware of their losses due to abortion until the cow(s) simply fails to calve. Work with your local veterinarian to develop an annual vaccination plan to enhance reproductive success.

Lastly, develop a plan to enhance the rebreeding potential of their first-calf heifers and late-calving cows. Young cows and late-calving cows have one characteristic in common that will greatly impact their reproductive success; anestrus. After each calving, cows undergo a period of time when they do not come into estrus. This anestrus period can be as short as 17 days but can also last as long as 150 days depending upon a number of factors. Typically, mature cows in good BCS will be anestrus for 45-90 days (avg about 60 days) while first-calf heifers will be in anestrus for 75-120 days. Research has shown that only 64% of mature cows have initiated estrous cycles about 70 day after calving while on 50% of first calf heifers have initiated estrous cycles at nearly 90 day after calving. Let's consider the impact of anestrus and calving date for a herd that calves from March 1 until May 10. Bull turnout is May 20 and the length of anestrus for mature cows is 60 days and for young cows is 90 days. A mature cow that calves on March 1 will begin to cycle on May 1 and is highly likely to conceive early. However, the mature cow that calves on April 20 won't cycle until June 20 and her opportunity to conceive early is very limited. A first-calf heifer that calves on April 20 won't begin to cycle until July 20 and will have limited opportunities to conceive. Cattlemen can reduce the anestrus period by fenceline exposure to a mature bull or by treating the cows with progesterone for 7 days prior to bull

exposure. Sources of progesterone include the feed additive melengestrol acetate (MGA) or an EAZI-Breed CIDR® insert (Zoetis Animal Health). Both sources induce estrus in anestrus cows and exposure of anestrus cows to progesterone for 7 days before bull exposure will not reduce fertility. Pregnancy rates increase in these females because inducing estrus will increase the number of opportunities these cows have to conceive in the breeding season.

Managing for reproductive success begins at calving. Cows need to calve with a minimum BCS of 5 and with little assistance. Implement an effective vaccination program and create a plan to minimize the length of the anestrus period in cows that are likely to be problem breeders. Planning now will help increase the probability of a successful breeding season.

Preventing Calf Disease Starts with the Pregnant Cow

Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

Every year, the UKVDL receives calves that died suddenly in the first week of life, usually with few or no symptoms. Often the owner will describe the situation this way: “calves will nurse, be 2-3 days old and found dead” or “calf was 3-5 days old, lying around more than normal and nursing very little, found dead the next day”. At necropsy (an animal “autopsy”), the pathologist will find no milk within the calf’s digestive tract. Further laboratory testing will find bacteria can be grown (cultured) from several organs such as liver, kidney and lung. These deaths are diagnosed as “septicemia” which means the calf died from an infection in the blood (usually a Gram negative bacteria such as *E. coli* along with the “toxins” or poisons the bacteria produce) that damages all the major organs of a calf, resulting in death. Affected calves respond poorly to antibiotic treatment and those that survive often develop one or more swollen joints. These calves are also at greater risk for diseases such as diarrhea, pneumonia, and meningitis in the coming months. Most grow poorly and die prior to or at weaning. The question is often asked “what should I have treated this calf with to save it” but the real question that needs to be addressed is “why did this happen in the first place and how can I prevent it?”.

Preventing septicemia and other neonatal calf diseases like scours begins long before birth of the calf. Excellent cow nutrition during and after gestation, a quick calving process, and biosecurity management factors to decrease environmental contamination all contribute to a successful start. The following list of management practices are crucial to calf health.

1. Don’t allow pregnant cows to lose weight during gestation. The dams’ diet must provide adequate energy, protein and trace minerals to meet her needs during gestation and lactation, especially during cold or wet winter weather. Remember up to 80% of fetal growth occurs in the last 50 days of gestation and cows are also producing colostrum during the final 4-6 weeks of pregnancy. New research has identified the role of “fetal programming of the immune system” during pregnancy as a major factor affecting calf vitality after birth. In fact, the latest research has proven there is no safe time during gestation to “short” a cow of her nutrient needs (including trace minerals) that will not impact the health of her unborn calf. A nutritionally deprived cow will produce poor quality and quantity of colostrum, have less energy to deliver her calf quickly, and she can lose a substantial amount of weight during her lactation so she will be slow to rebreed. Calves born to energy deficient dams will have less of the brown fat needed for energy to stand and nurse.

2. Don't wait to assist a cow or heifer having difficulty in labor. If a cow or heifer is in active labor for 1-1.5 hours and making no progress, calving intervention is indicated. Assist with calving as early as possible, especially with heifers. Don't hesitate to call for help if you don't know what the problem is, if you know what the problem is and what the solution is but you can't do it, or if you have been trying to correct the problem for 30 minutes but have not made progress. **EARLY INTERVENTION IS KEY** to saving a calf and the dam.
3. Colostrum is key to calf survival. Make sure calves start nursing after calving, keeping in mind that calves should stand within 30 minutes of delivery and nurse within 30 minutes of standing. If in doubt that the calf will be able to stand and nurse within an hour, the producer must take over to ensure the calf is warm and then use a good quality colostrum replacer (not a colostrum supplement) or milk the dam and feed the calf at least 2 quarts during the first 6 hours of life. Most septicemic calves had inadequate colostrum intake, either because the dam did not produce enough good quality colostrum, or the calf was unable to suckle enough to provide good protective immunity. In either case, this situation is called "failure of passive transfer of antibodies" or "FPT". The calf may be born weak and does not get up quickly or nurse aggressively, however, FPT may also be due to bad teat conformation (shape) and the calf simply could not latch on or reach them. Other factors that impair calf immunity include lack of calories (dam provides little or no milk), selenium and copper deficiencies present at birth, and lack of protection from harsh weather.
4. Don't calve out cows in a mudhole. Poor sanitation, cold, wet weather and overcrowding in calving areas also contribute to a higher risk of disease. Septicemia in calves is most often the result of a bacterial infection acquired around the time of birth. The bacteria may enter the newborn through several routes including the navel (umbilical stump), through the mouth or nose, or through an open wound. Calves born in dirty, muddy, manure-covered areas such as around hay rings or in a run-in shed have a wet, exposed navel cord lying in contact with massive numbers of bacteria as soon as they hit the ground. Once the calf gets up, mud or manure-covered teats provide the next opportunity for bacteria to enter the neonatal calf. Even with adequate colostrum, the immune system can be overwhelmed by the sheer numbers of bacteria, viruses and parasites in the environment. Newborns produce little gastric acid during the first week of life which makes them especially vulnerable to infections that enter through the digestive system. If cows are dragging their udders through mud to reach feeding areas, move to a new area with good drainage to feed. If clean pasture is available, pregnant cows close to calving should be rotated there while cow-calf pairs remain on the current pasture. If calving in a barn or shed, the calving pen should be kept clean and dry with frequent changes of bedding to remove the build-up of organisms. Make every effort to get the cow and newborn calf out of the barn quickly to lessen the chances of infection.
5. Don't bring in a new disease. Purchasing animals, cows or calves, and bringing them home to the farm is likely the single most dangerous time for introduction of new diseases into a herd. Purchasing a calf to put on a cow that lost her calf is an excellent way to start a scours outbreak among newborn calves. Newly purchased animals should not be mixed into a group of calving cows. Any newly purchased animals should be isolated either off the farm or in a

well-segregated area for at least 2 weeks (3-4 weeks is better) and observed for any signs of illness. During the period of isolation, a veterinarian should be consulted to appropriately test and vaccinate new arrivals. The best practice is to purchase animals from herds of known health status that will provide a vaccination history. Even show animals returning to the farm from events should be isolated for 2-3 weeks to prevent introduction of disease when they re-enter the herd. Introduction of an animal with a disease such as Johne's or a BVD persistently infected (PI) animal could have devastating, long-term effects on the health of the cow herd.

There will always be exposure to infectious agents, despite the best farm biosecurity measures. The immune system of cattle is well-designed to intercept infectious agents and neutralize their effects as long as immune cells are functioning correctly and the number of infectious organisms does not become overwhelming in the environment. With newborn calves, survival depends on colostrum intake, but it is also the development of the immune system during gestation or "fetal programming" that plays an important role in overall calf vitality. In short, prevention of disease is far more than vaccine and deworming protocols; it is largely the result of day-to-day management practices instituted on the farm to keep adult cows healthy, well-fed, and clean.

Kentucky Beef Cattle Market Update

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

As we push into winter, I wanted to review what drives fall calf markets and discuss those factors in 2020. Fall is when most spring calving herds wean and market their calves, which means a lot of cattle revenue is received over a fairly short period of time. There are three main routes that weaned calves can take if they are sold in the fall – they can be placed into a small grain grazing program until spring, they can go into a feed-based growing program of some type, or they can go directly to a feedyard. Their value in these programs ultimately determines what they are worth in the fall of the year.

Coming from an area of the country where wheat grazing is not common, it is easy to forget how significant winter grazing programs can be. However, the January 2020 USDA Cattle Inventory report suggested that 1.6 million cattle were grazing small grain pasture in January of this year. I like to say these grazing programs set the underpinning for our fall calf markets. Since cost of gain is lower on these programs, they typically outbid feed-based operators for weaned calves. Weather and moisture conditions have been less than ideal, but calf prices in November did suggest some opportunity for these programs this winter.

Feed-based winter growing programs are more significant in my part of the county. Weaned calves are purchased in the fall, grown through winter, and sold in the spring. The timing matches small grain grazing programs pretty closely. While stockpiled forage is sometimes utilized, commodity feeds are much more common. These programs are designed to grow frame and produce a heavy feeder steer for placement on full feed in the spring.

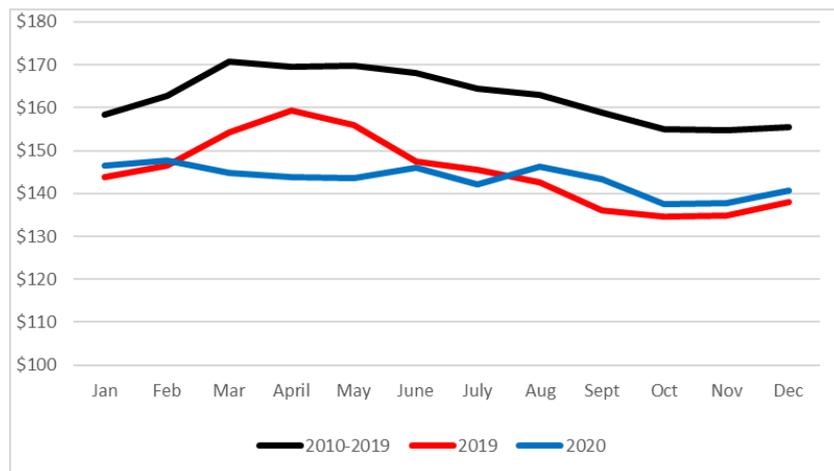
Finally, a large number of calves are placed on feed in the fall. Naturally, these weaned calves are higher risk than heavy feeders, but there are so many calves moving through markets in the fall, a good portion of them end up in feedyards. These calves are typically transitioned pretty quickly to full feed and often hit the fed cattle market the following summer.

While most readers are well aware of what I just discussed, I wanted to review these fundamentals with 2020 in mind. In addition to lingering COVID effects on the supply chain and continued uncertainty

about foodservice demand, feed costs have steadily risen since summer. A quick glance at December CME© corn futures shows that corn prices are up nearly \$1 per bushel from where they were in early August. This increase in cost for feedlots and feed-based growing operations decreases the value of weaned calves. Had COVID-19 not been the focus of most market discussions, the impact of a feed price change of this magnitude on feeder cattle prices would have gotten a lot more attention.

However, despite COVID impacts, less than ideal winter grazing conditions, and significantly higher feed prices, it's worth noting that most calf markets this fall were slightly above 2019 levels (see figure 1). In all fairness, I projected them to be higher than that before COVID, but I do think it says something that our fall market held above last year. I think it's a testament to how resilient our meat system is and how well the industry adjusted to major changes in demand and a very significant supply shock this spring. I also think it is partly due to the smaller calf crop in 2020, which was the first step in building stronger calf prices going forward.

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





College of Agriculture, Food and Environment

Animal and Food Sciences

Reaching Out While Locked in Webinars

Bull Buying While Maintaining Social Distancing – Darrh Bullock, Extension

Professor YouTube video: <https://youtu.be/CFsg21fpi0E>

Managing Calves for the Market – Kevin Laurent, Extension

Specialist YouTube video: <https://youtu.be/9E1vF-eh5tQ>

Preparing Cows for the Breeding Season – Les Anderson, Extension

Professor YouTube video: <https://youtu.be/Y7pEusUoSkY>

Recipe for Profit for Backgrounding and Stocker Enterprises – Jeff Lehmkuhler,
Associate Extension Professor

YouTube video: https://youtu.be/R2_Bm17yWYc

Utilizing Technology to Enhance Cattle Management Practices – Katie VanValin,
Assistant Extension Professor

YouTube video: https://youtu.be/Tg_FWJO7-eU

Approaches to Reclaiming Heavy Use Areas – Chris Teutsch, Associate Extension

Professor YouTube video: <https://youtu.be/QOYH5Mxg6cY>

Management Considerations in the Current Market Environment – Gregg Rentfrow,
Associate Extension Professor and Kenny Burdine, Associate Extension Professor

YouTube video: https://youtu.be/_4stDFe-WVY

State of the Animal and Food Sciences Department – Richard Coffey, Chair

AFS YouTube: <https://youtu.be/En3g-Kp3a5w>

Risk Management when Buying Bulls and CAIP Bull Cost-share 2021 – Darrh Bullock,
Extension Professor

YouTube: https://youtu.be/-8CYB_K2z_c

The Impact of Selenium on Beef Cattle Fertility – Phillip Bridges, Associate Professor and
Les Anderson, Extension Professor

YouTube: <https://youtu.be/SkV0B5GvNBs>

Ruminant Physiology and Nutrition Research – David Harmon, Professor
Planning the Winter Feeding Program – Kevin Laurent, Extension Specialist
YouTube: <https://youtu.be/MIgzcStO9Vo>

How Does Temperament Relate to Performance in Growing Cattle? – Eric Vanzant, Associate Professor

Basics of Baleage – Jimmy Henning, Extension Professor
YouTube: <https://youtu.be/qQOGKz7mbYs>

Selenium Supplementation and Grazing Endophyte-infected Tall Fescue – James Matthews, Professor
YouTube:
https://www.youtube.com/watch?v=P2cII8Ayu3M&list=PLC5aJFY_Be8XJZ_03_QI73TK0826T8Fjq&index=39&t=1s

Basics for a Complete Mineral Program – Katie VanValin, Assistant Extension Professor
YouTube:
https://www.youtube.com/watch?v=dkQdmM6K3ls&list=PLC5aJFY_Be8XJZ_03_QI73TK0826T8Fjq&index=38

Feedstuffs and Impact on Nutrient Metabolism – Kyle McLeod, Associate Professor and Jeff Lehmkuhler, Associate Extension Professor
YouTube: <https://youtu.be/z9dHT2EibEg>

Food Safety Resources for Kentucky Producers - Dr. Paul Vijaykumar
YouTube: <https://youtu.be/RPdvwTWzj8E>

Meat Industry Update - Dr. Gregg Rentfrow
YouTube: <https://youtu.be/avQqKlvamW8>

Post-Harvest Strategies to Improve Fresh Meat Quality - Surendranath Suman
YouTube: <https://youtu.be/unLoVrN-gEY>

Marketing Outlook – Kenny Burdine, Associate Professor
YouTube: <https://youtu.be/oAc8wwfNI3M>

Fall Marketing Strategies – Kevin Laurent, Beef Specialist
YouTube: <https://youtu.be/2iSJCzSLXEE>

Organizing for the Breeding Season – Les Anderson, Professor
YouTube: https://www.youtube.com/watch?v=L7jBh3U-LBQ&list=PLC5aJFY_Be8XJZ_03_QI73TK0826T8Fjq&index=6

Preparing for Winter Feeding – Katie VanValin, Assistant Professor

YouTube:

https://www.youtube.com/watch?v=vGFsQLRD6RM&list=PLC5aJFY_Be8XJZ_03_QI73TK0826T8Fjq&index=7

Winter Feeding Structures – Steve Higgins, Director of Environmental Compliance

YouTube:

https://www.youtube.com/watch?v=jOpPLpbAryY&list=PLC5aJFY_Be8XJZ_03_QI73TK0826T8Fjq&index=5

Structures and Working Facilities – Morgan Hayes, Assistant Professor and Josh Jackson, Assistant Professor

YouTube: https://www.youtube.com/watch?v=bcgOGfLsc_o&feature=youtu.be

