

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER MARCH 2020



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

Cooperative Extension Service
University of Kentucky

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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Timely Tips

Les Anderson, Ph.D., Beef Extension Specialist, University of Kentucky

Spring-Calving Cows

- Observe spring-calving cows closely. Check cows at least twice daily and first-calf heifers more frequently than that. Be ready to assist those not making progress after 1 to 2 hours of hard labor. Chilled calves should be dried and warmed as soon as possible.
- See that each calf gets colostrum within an hour of birth, or administer colostrum (or a commercial colostrum replacement) with an esophageal feeder, if needed.
- Identify calves with ear tags and/or tattoos while calves are young and easy to handle and record birthdate and Dam ID. Commercial male calves should be castrated and implanted as soon as possible. Registered calves should be weighed in the first 24 hours.
- Separate cows that have calved and increase their feed. Energy supplementation to cows receiving hay is necessary to prepare them for rebreeding. For example, a 1250 lb cow giving 25 lb/day of milk would need about 25 lb of fescue hay and 5 lb of concentrate daily to maintain condition. If you need to go from a condition score of 4 to 5, you will need to add about 2 more lb of concentrate. Cows must be in good condition to conceive early in the upcoming breeding season.
- Watch for calf scours! If scours become a problem, move cows that have not calved to a clean pasture. Be prepared to give fluids to scouring calves that become dehydrated. Consult your veterinarian for advice and send fecal samples to diagnostic lab to determine which drug therapy will be most effective. Try to avoid feeding hay in excessively muddy areas to avoid contamination of the dams' udders.
- Continue grass tetany prevention. Be sure that the mineral mix contains high levels (~15%) of magnesium and that cows consume adequate amounts. You can feed the UK Beef IRM High Magnesium mineral.

- Plan to vaccinate calves for clostridial diseases (Blackleg, Malignant Edema) as soon as possible. You might choose to do this at the prebreeding working in late April or early May.
- Obtain yearling measurements on bulls and heifers this month (weight, height, pelvic area, scrotal circumference, ultrasound data, etc.) if needed for special sales. Heifers should be on target to be cycling by the start of the breeding season.
- Prepare bulls for the breeding season. Increase feed if necessary to have bulls in adequate condition for breeding. Obtain Breeding Soundness Evaluation (BSE) on bulls, even if they were checked last breeding season.
- Finalize plans for your spring breeding program. Purchase new bulls at least 30 days before the breeding. Order semen now, if using artificial insemination.

Fall-Calving Cows

- Bull(s) should be away from the cows now!
- Plan to pregnancy check cows soon. You can also blood test for pregnancy as early as 30 days after bull removal.
- Creep feed calves with grain, by-products or high quality forage. Calves will not make satisfactory gains on the dam's milk alone after about 4 mos. of age – since there isn't much pasture in March, fall calves need supplemental nutrition. Consider creep grazing on wheat pasture, if available. Calves can also be early-weaned. Be sure that feed bunks are low enough that calves can eat with the cows.
- Calves intended for feeders should be implanted.
- Consider adding weight and selling your fall calves as “heavy” feeder calves. Keep them gaining!

General

- Repair fences, equipment and handling facilities.
- If you have a dry, sunny day, use chain-link harrow to spread manure in areas where cattle have overwintered. This may be done in conjunction with renovation.
- Renovation and fertilization of pastures should be completed.
- Start thistle control. They can be a severe problem in Kentucky pastures. Chemical control must be done early to be effective.
- Watch for lice and treat if needed.

Are You Ready for a Change?

Katie VanValin, PhD, Beef Extension Specialist, University of Kentucky

I want to preface this article with saying the purpose is to invoke thought and give some helpful tips and resources. The purpose is not to cause fear or anxiety, in fact just the opposite.

The recent weeks have been filled with great turmoil, including devastating tornadoes impacting the Kentucky and Tennessee region, and anxieties about the spread of COVID-19, that have led to uncertainty in the markets. We at the University of Kentucky have been asked to reflect on and reevaluate when necessary, how we prefill the land grant missions of teaching, research, and extension. This started me thinking this week about our cattle industry, are we prepared to implement change if we are faced with hard times?

Several different circumstances could impact how our industry operates and the way we prepare for and respond to each of these circumstances may look a little different. With that said having a plan in place for the “what if...” can help to ease the immediate aftermath to a natural disaster or disease outbreak impacting

humans and/or livestock.

It is important to ensure that everyone on a given operation is cross-trained to perform all duties especially those involving animal care. Do you know that saying “we are only as strong as our weakest link”? The time to strengthen that link is not after an emergency or disaster has taken place. Have a plan in place so that if one member of the operation was unable to provide affective animal care, that the quality of animal husbandry would not diminish. For some operations this might mean reaching out to close neighbors and being ready to lend a helping hand if need be.

In the event of an animal disease outbreak, it is a very real possibility that we would be looking at a hold in place order, meaning that animal transport would be halted immediately. Do you have adequate feed inventory on hand to maintain your herd for 15-30 days? Keep in mind that disruptions to the transport and marketing system could always last longer than this but having this buffer in place would allow you time for a plan for continuation to be adapted.

Unfortunately, many of our producers are not strangers to damage from severe thunderstorms, tornadoes, flooding, and drought (sometimes all in one season). It is important to have an organized plan on how to deal with each of these events. This would include moving animals out of flood prone areas when conditions exist for flooding, as well as having a plan in place if access to a particular farm or pasture was limited in the event of a flood. In the response to events such as severe thunderstorms and tornadoes where perimeter fencing may become compromised it is important to have a plan in place to be able to quickly contain livestock still on the property. Individual animal identification practices such as tattoos, freeze branding, and ear tags, are an important step that can be taken prior to a natural disaster that can aide in the immediate aftermath of a natural disaster.

Another thing to think about is access to your farm. In the event of an animal disease outbreak we would likely be looking at limiting access to your farm. Do you have space available to quarantine new animals coming to your operation and/or ill animals for 30 days? Do you have a location that trucks, and trailers can access the farm for transport of animals, and delivery of feed that is not directly accessible to livestock? On the flips side, in the event of a natural disaster accessibility is a key part of response. Can emergency response personnel easily and safely access your property? Is there more than one access point available, if flooding or fallen debris is present?

Each operation should take the time to develop a personal emergency plan, which would outline emergency contact information for immediate family members, close neighbors, local veterinarians, and local emergency management personnel. This plan should also outline basic details about the operation including the approximate number of animals on the property (as we know this can ebb and flow), feed stuffs available on site, and potentially location of utilities, and pesticides (or other hazardous chemicals).

Again, I hope that this article will give you things to think about to aide in the preparation for an emergency or disaster by lessening the immediate impacts, through the development of preventative measures.

Emergency response of any kind starts at the local level, so I encourage you to work with your neighbors, county extension agents, and local emergency management personnel when putting plans in place for an emergency response. The agriculture community is one of the most resourceful and resilient group of people I can think of. I encourage us all to work together when emergencies and disasters arise. It is important to remember that these situations can evolve quickly...If you had asked any UK basketball fan two weeks ago if they thought their season would be over today, they would have likely told you NO WAY.

Lastly, remember that the time to prepare is not in the midst of or during the immediate aftermath of an emergency or disaster, so take simple steps now that can make the difficult times a little less difficult.

Biosecurity Basics for Cow-Calf Operations

Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

With Coronavirus in the headlines, this is an excellent time to review what biosecurity is and why it is important in cattle operations. “Infectious agents” that cause disease, whether they are viruses, bacteria, or parasites, are spread primarily through physical contact, inhalation of aerosolized droplets, or they can be consumed in contaminated feed or water. These organisms can be carried into the environment by other infected animals, including wildlife or vermin, by insect vectors, or they can be found on dirty clothing, boots, vehicles, or equipment. “Biosecurity” simply means reducing the risk of disease by minimizing exposure to infectious agents. Biosecurity measures are not limited to keeping disease-causing organisms off the farm but also preventing disease from exposure to organisms already on the farm.

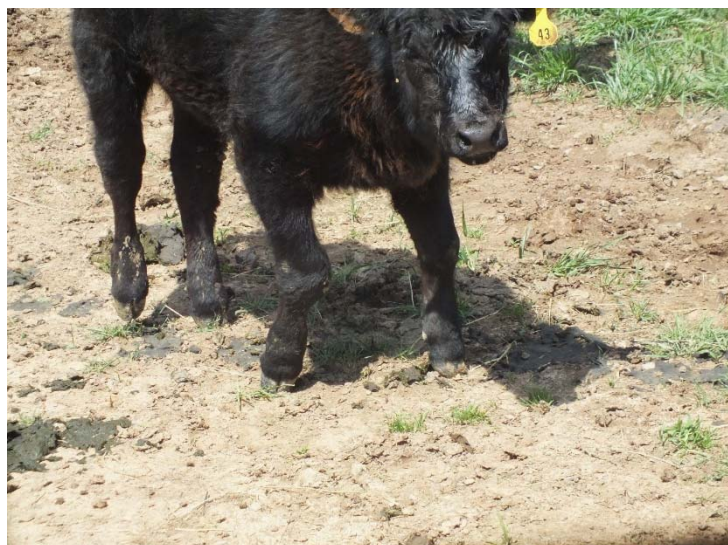


Figure 1: Calf with “joint ill” affecting the right front carpus (knee). Bacteria from the bloodstream localize in the joints and cause arthritis. This condition often occurs in calves born in unsanitary conditions with delayed or inadequate colostrum intake.

Every year, the UKVDL receives submissions of 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 (Figure 1). These calves are also at greater risk for developing diseases such as diarrhea, pneumonia, and meningitis. Most grow poorly and die prior to or at weaning. The big question is always “why did this happen?”.

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 umbilicus (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. Most septicemic calves also 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 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 and the calf simply could not latch on or reach them. 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 mouth to the digestive system. 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.

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 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 negatively impact the health of her unborn calf. A nutritionally-deprived cow will also 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. Calves born to energy deficient dams will have less of the brown fat needed for energy to stand and nurse. Poor sanitation, cold, wet weather and overcrowding in calving areas also contribute to a higher risk of disease. Checking on cows and heifers close to calving allows early detection of difficulty and intervention if needed during calving. 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. 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 to feed the calf at least 2 quarts during the first 6 hours of life (the earlier, the better).

Once the calf has received colostrum, biosecurity measures still come into play to prevent the pathogens ("bad bugs") in the environment from overwhelming the calf's immune system. Numbers of bacteria and other pathogens will build up exponentially in the environment as the calving season progresses. If clean pasture is available, pregnant cows close to calving should be rotated to the clean pastures 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. Even the best calving management practices will have no effect if the first thing a calf ingests is manure from the calving area. If cows are dragging their teats through mud and manure to reach feeding areas, move to a new area with good drainage to feed. In addition, make plans now to install a heavy use feeding pad before next winter to prevent walking through deep mud. For guidance, consult the UK Extension Fact Sheet AEN-115 "Appropriate All Weather Surfaces for Livestock" at <http://www2.ca.uky.edu/agcomm/pubs/AEN/AEN115/AEN115.pdf> and other publications by Dr. Steve Higgins and the Agriculture Engineering faculty for installation instructions on various types of feeding structures.

The other focus of biosecurity, keeping infectious agents off the farm, is very often overlooked or ignored by cattle producers. 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. Even show animals returning to the farm from events should be isolated to prevent introduction of disease when they re-enter the herd. 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 and health history. 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.

Questions often arise about how to effectively clean surfaces to remove infectious organisms. Cleaning and disinfection are two distinct processes. Cleaning should be done first by scrubbing surfaces with soapy water to remove organic matter including dust, dirt and manure. Power washing, while effective at removing debris, is usually discouraged because bacteria and viruses can be aerosolized and easily inhaled when using a pressure washer. After scrubbing, rinse with water and allow the area to drain and air dry. Once dry, the area should be soaked with a disinfectant. Different chemicals will kill different bugs and each chemical requires a certain minimum amount of "contact time" to be effective (see box: selecting a disinfectant). Smooth, non-porous surfaces are easiest to disinfect while wood and porous concrete are more difficult. Dirt cannot be disinfected but it can be cleaned of all bedding and allowed to dry, especially with the aid of sunlight. It is important to remember that there are several "zoonotic" organisms which cause disease in humans but come from animals. The most common zoonotic agents passed from livestock

Selecting a disinfectant: (From: Ontario Veterinary College*)

Disinfectants will not work well unless organic material is removed, the detergent flushed well and the premises dry. After that, the main considerations are environmental hazard, the agent to be killed and availability. Make absolutely sure that you read the directions well for preparation and use and acquaint yourself with the efficacy of the various compounds against bacteria and their spores, viruses, fungi and parasites and their eggs. Many of the compounds do not work well in the presence of any organic material (e.g. manure) and require prolonged contact time to be totally efficacious. A short description on the uses of common disinfectants follows.

Phenols: These are commonly found in household disinfectants (e.g. Lysol) and often have a pungent smell. They are effective against a broad range of bacteria, particularly gram-positive bacteria but not against bacterial spores (e.g. Clostridial diseases, Anthrax), as well as some viruses. They are also corrosive and irritating to skin.

Quaternary Ammonium Compounds (QUATS): They have a broad spectrum of activity against gram + and gram - bacteria and enveloped viruses. Not effective against Mycobacterium sp. (e.g. Johne's disease), bacterial spores, fungi and non-enveloped viruses. They are useful in general disinfecting and cleaning, even in the presence of trace organic debris. They are often the disinfectant of choice since they are effective and non-toxic. Some individuals may develop contact dermatitis with repeated exposure.

Alcohols: This is usually ethyl alcohol or isopropyl alcohol. They are effective against a wide range of organisms but not bacterial spores or some non-enveloped viruses. The concentration must be high to be effective (60-90%). Repeated use on rubber equipment can cause damage, they are irritating to the skin with prolonged use and are expensive to use for cleaning of large surfaces.

Hypochlorites (Chlorine): e.g. Bleach is sodium hypochlorite. It is very effective against many bacteria and viruses but inactivated in the presence of organic material and not effective against bacterial spores. Ammonia (animal urine) will also inactivate. Sodium and calcium hypochlorites are effective but corrosive. It is useful for disinfecting metal equipment. 1 part 6% bleach to 2 parts water makes an effective solution of 2% bleach.

Iodine and Iodine Based Disinfectants: Aqueous (Lugol's) and alcoholic iodine (tincture) are often used as antiseptics on wounds. Iodophors (iodine + carrier) release iodine in an acid medium and are effective in the presence of trace organic material against bacteria and viruses. They can be used as skin disinfectants or for general disinfection and cleaning.

Hydrogen Peroxide (30%): A stabilized peroxide makes an excellent disinfectant for surfaces and works against almost all pathogens including enveloped and non-enveloped viruses, bacteria, fungi and some activity against bacterial spores. These products may be blended with QUATS, peracetic acid and iodophors.

Chlorhexadine: Used as skin cleaners in low concentrations but less so against coliforms and viruses. It can be used for cold sterilization of surgical instruments if they are rinsed clean first. It does not work well in presence of organic material.

manure to people include *Salmonella*, *Cryptosporidia*, *Campylobacter* and *E. coli*. Washing hands thoroughly, especially prior to eating, will go a long way towards prevention of these problems in humans. There will always be exposure to infectious agents, despite the best farm biosecurity measures. However, keeping the level of environmental contamination minimized and not introducing new pathogens into the herd by observing a period of isolation for new arrivals are two tried and true methods to decrease disease occurrence. 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 is kept in check so that transmission is unlikely. With newborn calves, survival does not simply depend on colostrum intake but also on 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 influenced by the day-to-day management practices instituted year round on the farm.

Staying Positive and Lessons Learned

Kevin Laurent – Beef Extension Specialist, University of Kentucky

It's a rainy Saturday and I'm in the office at the UKREC in Princeton trying to write this article for Cow Country News and Off the Hoof. It's been quite a week, one that I don't think any of us will ever forget. This week the coronavirus outbreak was officially declared a pandemic sending the world financial markets and our everyday lives into turmoil. Schools have closed, March Madness was cancelled, and we have learned new terms such as "social distancing". The commodity markets have been especially hard hit with feeder cattle contracts declining the limit two days in a row.

How much of this is a panic or an overreaction? I'm not quite sure. Speculators in the marketplace do thrive on volatility and many times, it seems to be at the expense of the folks with the muddy boots and calloused hands. But to the individuals suffering from this virus, their families, and the workers in the health care industry, this situation is very real. I myself worry about members of my family who are in compromised health.

Staying positive during these troubled times can be quite challenging, but at the end of the day I can't think of a more resilient and optimistic group than farmers and ranchers. Spring grass is just a few weeks away and calving season is in full swing marking the beginning of hopefully a better and more promising 2020 production year. With that in mind, I would like to discuss a few lessons (good and bad) we learned this past year in the PVAP-Precondition program.

- 1. Protein matters.** Feeding a balanced ration is key to good gains on growing calves and one item that can't be compromised is protein. **PVAP Example One:** Producer fed 13 lbs. of cracked corn to calves grazing late planted cereal rye. Calves gained only 1.6 lbs./day at a feed cost of gain (excluding hay and mineral) of \$0.57/lb. Good news is he still netted \$60.89/head preconditioning these calves for 47 days. Bad news is he left roughly an additional \$40/head on the table by not balancing protein in the diet. Replacing 3 lbs. of corn with dried distillers grains (ddgs) would have resulted in a 14% protein ration and daily gains closer to 2.35 lbs. at a feed cost of gain of \$0.47/lb. **Lessons:** Late planted cover crops (in this case late September) are usually not far enough along in growth to provide significant nutrients during the fall grazing season. Protein matters and feed cost is not just about dollars per ton. Adding dried distillers grains to the ration at \$250/ton would have raised the price of his feed from \$140/ton to \$170/ton, yet it would have yielded increased gain and net dollars.
- 2. Feed the calves.** A common mistake when preconditioning calves for the first time is simply not feeding enough concentrate. Newly weaned growing calves are at the most efficient phase of their postweaning growth curve and will respond favorably to concentrate diets. Couple this with the fact that since most preconditioning programs are less than 60-90 days, there is not much time to add weight to ensure a profit for the preconditioning enterprise. **PVAP Example Two:** Producer transitioned calves during the first week of weaning to a 14% complete ration with monensin fed in a self-feeder. Calves were fed 49 days and average feed consumption was 18 lbs/day. Calves gained 3.46 lbs./day at a feed cost of gain of \$0.56/lb. This producer netted \$104/head over all preconditioning costs when sold in the CPH-45 sale. **Lessons:** This producer checked all the boxes. She had good calves weighing 593 lbs. that were castrated at a young age and ready for weaning. She fed a quality complete ration that seemed a bit pricey at first glance (\$215/ton) but gave excellent performance. A good rule of thumb for precondition programs is to feed a minimum of 2% body weight of a 14% protein concentrate. If your precondition period is less than 60 days and you have above average genetics, consider 2.5% body weight or even a self-fed ration.

3. Castrate early. As stated in the last example, the length of preconditioning periods leaves little time for set-back in performance and health. Calves simply can't afford to have a bad day. Any surgeries such as castration or dehorning need to be done at an early age when it is less stressful. **PVAP Example Three:** Producer castrated bull calves at weaning and transitioned them to a 12% self-fed ration. Calves average 438 lbs. at weaning and consumed 18.5 lbs of feed per day. Heifers gained 2.51 lbs./day and steers gained 2.28 lbs./day. Producer netted \$78/head over all preconditioning costs. **Lessons:** The steers in this case gained slower than the heifers due to being set-back from late castration. If the bulls had been cut early in life and implanted, they may have gained 0.4 lb. a day more during the precondition period. Additionally, a 14% ration would have been more appropriate for 400 lb. calves at weaning. This was probably a \$20/head lesson.

The best part of these examples is that any of the negative lessons are easily fixed. Remember marketing plans begin early. The management we do now, can affect how marketable our calves are next fall. If you have never preconditioned calves before, talk to your county agent about enrolling in the PVAP-Precondition program. But most of all, take care, stay healthy and pray for stable markets and more peaceful times.

Emergency Preparation Considerations for Beef Operations

Jeff Lehmkuhler, PhD, PAS Associate Extension Professor

As we see the events unfold in response to COVID-19, I thought I would share a few things to consider in any emergency. Emergency preparedness first came to light for me early in my graduate student career when the hurricane hit North Carolina and my swine colleagues shared pictures of boats carrying feed to swine facilities. Being prepared became more evident in the aftermath of hurricane Katrina and the impacts on beef cattle operations near the coast. Granted we may not be near the coast and hurricanes are not a concern but, when the tornado went through eastern Kentucky a couple years ago, having plans for dealing with emergencies again become evident as we were rebuilding fences and accessing the supplies needed to do so. The following does not pertain to just the current situation and should provide a spark to think about preparing for emergencies you may experience on your operation.

Identify major weaknesses that are critical points in your operation to maintain the necessities for the wellbeing and care of your animals. Start with the basics of nutritional considerations for assuring livestock will have access to feed and water. Then consider animal health management items that may be impacted if supplies are limited or take longer to acquire. This is not to say that you should hoard products, but rather plan well and consider the "what ifs".

As we are entering spring and pastures are greening up, feed resources may not be top of mind. You should consider a plan for an emergency that may occur at any time of the year. Short hay stocks this past winter was an example. Buying hay tarps to store extra hay to allow a 20-30% carryover is just one option to consider.

I recently read that vitamin A and E prices have already increased 25-45% in some countries as a result of supply issues since many of the feed additives are manufactured overseas. A bag of mineral with a target intake of 4 ounces provides 200 cattle feeding days. Consider having enough mineral to carry you a couple months under current situations. If you have 20 cows and 20 calves, then you can plan for a bag of mineral to last about 5-7 days.

Check feed bins and allow extra time for delivery. Often, we forget about checking the feed bin or creep feeders then scramble to have the feed mill deliver feed the next day. Consider having a few hundred pounds in bags or alternative storage such as metal drums as a backup. When considering feed for backup,

rotate the feed and don't purchase feed that has moisture added in the form of molasses or other wet feedstuffs that would encourage mold growth while in storage for a month.

Those that utilize solely municipal water should always have a backup plan. A busted water main could shut off your water supply until it is repaired. During the ice storm of 2009 electricity was out for an extended period and those on well pumps needed a backup generator to pump water. Above ground storage tanks can be used during warmer months and in-ground storage can be considered for year-round access. Dr. Higgin's water capture from barn roof system is a great example of having an alternative water source. These are not new concepts but bringing back the old cisterns approach that we have abandoned. Developing stream, creek and pond water sources can also be considered if available on the farm.

Animal health products that are a routine part of your operation should also be considered. As an example, you may consider acquiring your vaccines for immunization earlier than normal. Many of the products have an extended shelf life and when stored under the label recommendations will be effective to the date on the box. If you have not already done so, you should consult your veterinarian to develop herd treatment protocols for potential diseases and disorders. Many antibiotics today require a prescription from your veterinarian and having a valid client-patient relationship improves your ability to obtain speedy professional consultations.

Larger operations may need to consider alternative labor pool resources. In the event of a family emergency, who is trained to take care of your livestock? Do they have access to phone numbers for the neighbors, veterinarian, feed supplier and others? Farmhands may have a family emergency and be unable to work which places their tasks on you or other personnel. You may need a plan for extra help whether it be family, a neighbor or a hired hand that is trained in livestock management. Accidents happen on the farm and thinking through the labor supply may be all that is needed so you can act quickly.

This is not an inclusive list of things to consider when preparing for emergencies. The intent of the article was only to provide a foundation to stimulate the thought process of developing action plans in the event of an emergency. Being prepared and planning will alleviate some stress and allow you to better focus on the tasks at hand. Reach out to your county Extension offices for emergency preparation information. USDA resources are available online that are basic points for consideration when developing contingency plans. Take some time to consider your operation's emergency preparations and develop plans if they are not in place already.

Bull Qualifications for CAIP Beef Genetics Program

Darrh Bullock, Beef Genetics Specialist

For those of you that have bought bulls through the CAIP Beef Genetics Program you know that there were some significant changes to EPD guidelines this year. The biggest changes came in the Carcass Merit category, but we also included economic selection indexes as an option for the Balanced Trait category for some breeds. Slight adjustments were made to some of the other categories and breeds that reflect some changes in the breed's evaluation and to account for genetic trends within the breed.

A major change will take place next year, as all bulls will need to have genomically enhanced EPDs or have an accuracy value for Calving Ease Direct of .30 or above. This is an early notification to seedstock producers that sell bulls into the program, you will need to contact your breed association and learn the process of submitting DNA samples so that your bulls will qualify.

The University of Kentucky has developed a calculator to assist producers to determine if a bull qualifies for the CAIP Beef Genetics Program (<http://afs.ca.uky.edu/beef/KBAT>). There are two separate calculators, one to assist producers who are purchasing a bull, to determine if that bull qualifies for the category that they desire, and one to assist seedstock producers that would like to determine which categories their bulls qualify for. In both calculators, producers simply enter the EPD information of the bull in the appropriate space and click the “Check Eligibility” tab and the results are displayed. Remember, this is just one requirement of the program and does not ensure that you will receive cost-share money. The first step is applying for CAIP money through your county’s program. If approved then follow all of the guidelines to make sure your bull qualifies, including the EPD requirement that these calculators will assist with. More information on this program can be found at: https://agpolicy.ky.gov/funds/Documents/caip-current/caip-20_animal-large.pdf.

If you have specific questions about CAIP programs you can contact the Governor’s Office of Ag Policy (govkyagpolicy@ky.gov). For questions specific to the EPD guidelines or the calculator can be addressed to me (dbullock@uky.edu).

Approaches for Reestablishing Hay Feeding Areas

Chris Teutsch, UK Research and Education Center at Princeton



Figure 1. Excessive rainfall and high livestock concentration in and around hay feeding areas has resulted in almost complete disturbance.

Wet conditions this winter have resulted in almost complete disturbance in and around hay feeding areas. Even well-designed hay feeding pads will have significant damage surrounding the pad where animals enter and leave. These highly disturbed areas create perfect growing conditions for summer annual weeds like spiny pigweed and cockle bur. Their growth is stimulated by lack of competition from a healthy and vigorous sod and the high fertility from the concentrated area of dung, urine and rotting hay. The objective of this article is to outline approaches for dealing with these areas.

Approach I: Planting cool-season grasses and legumes

The first strategy is to seed cool-season grasses or a mixture of grasses and legumes in the spring. While this is commonly done, results are usually less than spectacular in most years. This is due to several reasons. The first is that seedings are normally delayed until late spring or early summer. This does not allow adequate time for the seedlings to develop a large enough root system to sustain them through a hot and often dry summer. The second reason is that summer annual weed pressure is very high. Summer annual weeds like foxtail, crabgrass (?), goosegrass, spiny pigweed, cockle bur and others actively compete with cool-season seedlings for light and water, often causing stand failures.

If you decide to attempt a spring planting of cool-season grasses and legumes, there are several things that you can do to enhance, but by no means guarantee success. These are listed below.

Plant adapted forage species. Plant forages that are well adapted to Kentucky and the soils and drainage found on your farm. Tall fescue, red clover and ladino clover are by far are best adapted and most versatile forage species for pastures in the Commonwealth. Information on the best varieties to use can be found on the [UK Forages](#) webpage.

Consider leaving legumes out of the mix. While legumes are an important part of grassland ecosystems, herbicide options for controlling weeds in grass-legume mixtures are limited. Leaving legumes out will allow you to apply selective herbicides to control broadleaf summer annual weeds.

Use the high end of the seeding rate. Seeding rates are normally given as a range. For spring seedings, make sure and use the high end of this range. Rapid canopy closure is critical to suppressing summer annual weeds.

Plant as early as possible. Spring seeded cool-season forages should be planted starting in early to mid-March. Early plantings will have more time to emerge and form a canopy that can shade summer annuals weeds. They will also have additional time to develop a root system that can sustain the developing seeding during the summer months.

Plant in two directions. If drilling, cut your seeding rate in half and plant in two directions. This will aid in obtaining quicker canopy closure and hopefully prevent and shade summer annual weeds.

Check seeding depth. Small seeded cool-season forages should not be planted deeper than ½ inch. Make sure to check and recheck your seeding depth. Seeding deeper than ½ inch will delay emergence, result in uneven stands, and in many cases cause complete stand failure.

Control broadleaf weeds in cool-season grasses. Once seedling have four collared leaves, some herbicides can be applied. Always consult and follow label directions. For more information on using herbicides on new seedings, contact your local extension agent.

Clip or flash graze new stands. Summer annual weeds compete very aggressively for light, water, and nutrients with cool-season grass seedlings that are trying to establish. If this competition is not controlled, it will likely result in stand failure. The most effective control this competition is to flash graze these paddocks before weeds get to far along. Flash grazing is accomplished by placing a large number of animals in small areas for a short period of time. This reduces selective grazing and increase grazing uniformity.

Approach II: Planting a warm-season annual grasses

The second strategy involves planting a summer annual grass in late spring or early summer and has much higher probability of success. Summer annual grasses, especially sorghum-sudangrass or sudangrass, have very rapid emergence and canopy closure. This will prevent summer annuals weeds from germinating and provide forage for grazing or harvesting during the summer months (Figure 2). Perennial cool-season grasses can then be reseeded under more ideal conditions in late or summer or early fall.

If you decide to use summer annuals grasses, there are several things that you can do to enhance your success. These are listed below.

Plant adapted summer annuals species. Always plant forages that are well adapted to Kentucky and the soils and conditions on your farm. Summer annuals that can be used to reclaim hay feeding

areas include sudangrass, sorghum-sudangrass, pearl millet, and crabgrass. Detailed information on the adaptability, establishment, and management of these species can be found in



Figure 2. Sorghum-sudangrass (left) formed a quick canopy that was able to shade out summer annual weeds compared with a mixture of forage soybeans and pearl millet (right).

Use the high end of the seeding rate. Seeding rates are normally given as a range. Make sure and use the high end of this range. Even with summer annuals, rapid canopy closure is critical for reducing summer annual weeds.

Plant after soil warms. For summer annual grasses to germinate and rapidly emerge, soil temperatures at planting should be at least 60 degrees F. As a general rule, this is about two weeks after the “ideal” corn planting date. This should allow plenty of time to let the area dry out and to get it smoothed up prior to planting. If there is a delay in planting the summer annuals after final tillage, it may be a good idea to do one more pass of light tillage to disturb any weed

seedling that may have germinated.

Control broadleaf weeds. Once warm-season annual grasses are established, some herbicides can be applied to control summer annual broadleaf weeds. If you plan to reseed cool-season perennials in the fall, make sure and check the label for reseeding restrictions prior to application. Always consult and follow label directions. For more information on using herbicides on summer annual grasses, contact your local extension agent.

Grazing summer annuals grasses. Allow taller growing summer annuals like sorghum-sudangrass and pearl millet to reach a height of 18-24 inches before grazing and stop grazing at 8-10 inches. Regrowth can be stimulated by applying 40-60 lb N/A after each grazing, but the last. Crabgrass can be grazed once it reaches a height of 6 to 8 inches. Cattle should be pulled off once it has been grazed to a height of 3 to 4 inches.

Haying summer annual grasses. Allow taller growing to reach a height of 30 to 40 inches before mowing. This will optimize yield and forage quality. If regrowth is desired, do not mow closer than 6 inches apply 40 to 60 lb N/A after each cutting, but the last. Crabgrass should be cut for hay at the late boot-stage. Care should be taken to not mow crabgrass closer than 3 to 4 inches.

Reseeding cool-season grasses in the fall. Pastures should be sprayed with a non-selective herbicide in late summer to control any remaining summer annual grass and any weeds that have germinated. Cool-season grasses can be no-tilled into the killed pasture area.

FORAGE MANAGEMENT TIPS FOR MARCH

- ✓ **Interseed legumes into pastures using a no-till drill.**

✓ Continue hay feeding to allow pastures to rest and spring growth to begin.
✓ Seed cool-season grass and legumes by mid-March.
✓ Smooth and reseed hay feeding areas.
✓ Graze pastures that have been overseeded with clover to control competition.
✓ Provide free-choice high magnesium mineral to prevent grass tetany.
✓ Make plans to attend one of the Kentucky Fencing Schools.

For more information on renovating pastures and no-till seeding techniques visit UK Forage Extension website at <http://forages.ca.uky.edu/> or contact your local extension office.

UPCOMING EVENTS

Kentucky Fencing Schools

Where and When: Glasgow, KY on April 14 and Grand Rivers, KY on April 16

More information can be found at <https://forages.ca.uky.edu/Events>

Kentucky Grazing School

Where and When: Princeton, KY on April 21-22

More information can be found at <https://forages.ca.uky.edu/Events>

Kentucky Fencing Schools

Where and When: Frankfort on May 19, KY and Campton, KY on May 21

More information can be found at <https://forages.ca.uky.edu/Events>

Western Kentucky Summer Forage Tour

Where and When: Palmer Farms. Almo, KY on August 6

Details will be posted <https://forages.ca.uky.edu/Events>

FEATURED VIDEOS: This month's featured playlist is: "[2020 Mid-South Stocker Conference](#)". These videos are from the 2020 Mid-South Stocker Conference that was held in Bowling Green, KY on February 26, 2020. They can be found on the [KYForages YouTube Channel](#).

Kentucky Beef Cattle Market Update

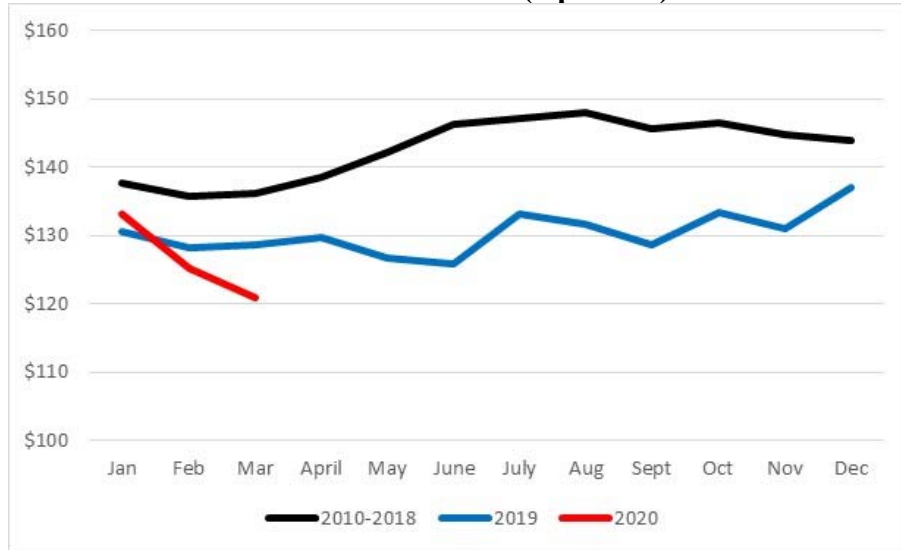
Dr. Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

I'm on the record being relatively optimistic about cattle markets in 2020. After some very tough years, decreasing cattle numbers and a positive outlook for exports gave me reason to expect better prices in 2020. The first couple of months even seemed to confirm my prediction. But, here we are and I see very little reason to talk about much other than the main topic at hand this month. Virtually every market that exists is currently trying to grasp the impact of the COVID-19 virus. In truth, there is little precedent for something like this in the marketplace, so making predictions is nearly impossible. Further, the situation is evolving as we speak and will undoubtedly change between the time I write this (3-16-20) and the time it is read. Obviously, I can't address the medical side of the issue, but I thought it might be useful to talk through some things relative to the cattle markets.

I am including monthly price charts through the second week of March, but they don't completely tell the story at hand as quickly as markets are moving. Heavy feeder cattle prices were extremely strong as we

closed out 2019 and dropped considerably in January and February (see figure 1). This drop is seasonally normal, but it was a sharper drop than usual this year and COVID-19 may have been part of the reason for that. Still, through the end of February, the impact seemed relatively small. However, things changed quickly as average prices fell by \$10 per cwt from the third week of February to the second week of March.

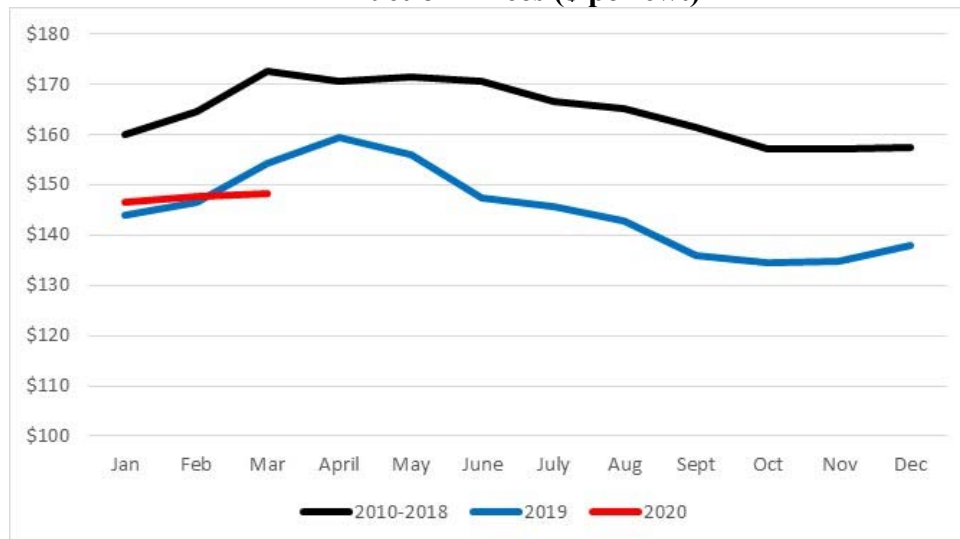
**Figure 1. 850# Medium & Large Frame #1-2 Steers
KY Auction Prices (\$ per cwt)**



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

Unlike heavy feeder cattle, calf markets tend to move higher as we get closer to grazing and they seemed to be shrugging off most anything negative as it looked like things were setting up for an early spring. The calf market didn't show any weakness at all until the second week of March (as I was writing this article). Even then, the impact was much less than was seen in heavy feeder cattle markets. Often, market shocks like this have greater impact on cattle that are closer to harvest, which would imply more impact on fed cattle than heavy feeders and more impact on heavy feeders than calves. I think the positive impact of what looked like an early spring grazing season offset most negative impacts on calf markets.

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



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

I think it's important to remember that feeder cattle markets are expectation markets. Feeder cattle and calves that are sold will be placed on feed, or placed into a growing system, and harvested several months later. It is really the expected impact on supply and demand for fed cattle and beef in the future that drives the value of feeder cattle and calves today. In the case of COVID-19, the short run supply impacts are likely pretty small as there is little reason to expect much immediate change in beef production or cattle numbers. However, there is potential for longer run supply impacts if depressed markets continue as producers tend to delay marketing, cattle spend more time on feed, weights increase at harvest, etc. This usually creates a backlog of cattle that eventually has to work through the system before things can return to normal and ends up prolonging the price depression.

While some supply impact is likely in the cattle markets the longer prices are impacted, COVID-19 largely represents a demand shock. And the impact of this shock really comes down to how significantly, and for how long, beef demand is impacted. The initial impacts on the market in January and February were probably related to exports as markets tried to anticipate the impact of slowing Asian economies that the US exported beef to. Exports are a significant driver of beef prices, so this was (and still is) a very real concern.

While exports are important, about 88% of US beef is consumed domestically. Since early March, the domestic impacts are starting to become the larger concern and the price impacts have been greater. In the short run, I don't expect people to consume less beef. In fact, beef sales have likely increased as some people have stocked up on food. However, remember that is likely a trade-off, meaning purchases may be lower the next few weeks due to increased purchases this week. But I do expect that consumption will shift somewhat away from foodservice / restaurants and more towards at-home consumption. A lot of restaurants to going to push carryout and delivery, but I believe restaurant sales will decrease considerably. Away-from-home beef consumption is extremely important to the beef market and this will have an impact on beef prices very quickly.

In the longer run, the slowing of the economy is the largest concern. The cancellations of major events, conferences, athletic tournaments and seasons, and a great deal of domestic and international travel clearly has an economic impact and that impact will work its way through the system. These types of changes have the potential to lead to layoffs, reduction of hours, and other impacts on workers. And, the longer the issue persists and the greater the concern of recession becomes, the more likely consumers shift to less expensive meat products. Since beef is a relatively expensive meat, it becomes more vulnerable to substitution than its competitors. Put simply, the longer COVID-19 stresses the economy, the more severe the impact on beef prices is and the longer it will last.

This is yet another "black swan" event that is virtually impossible to predict yet has the potential for major market impacts. I feel like I say this a lot, but risk management strategies such as forward contracting, futures and options markets, and Livestock Risk Protection (LRP) insurance offer protection opportunities from these types of price shocks. However, there is nothing counter-cyclical about any of these strategies. You must protect your sale price before market fundamentals change. Unfortunately, this is another reminder of how quickly this can happen and how important protecting ourselves from things like this is.