

# OFF THE HOOF

*Kentucky Beef Newsletter August 2018*

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*Published Monthly by Dr. Les Anderson, Beef Extension Specialist, Department of Animal & Food Science, University of Kentucky*

## Contents

This month's newsletter includes:

Timely Tips – Burriss

KY CPH-45 – It's Still the One! – Burriss

Beef Bash – Crites

Bull Value Assessment Program – Bullock

Weaning 101 Workshop: "Capturing value from on-farm weaning" – Crites

Is That Tree or Shrub Poisonous? What You Don't Want Your Cattle to Eat (Part II) – Arnold

Mid-year Cattle Inventory Suggests Slower Expansion Ahead – Burdine

## Timely Tips

*Dr. Roy Burriss, Beef Extension Professor, University of Kentucky*

### Spring-Calving Cow Herd

- Fescue pastures don't generally produce much this month, however rain in June and early July has given us some forage going into the usually dry months. Keep rotating pastures to permit calves to continue gaining weight. Keep minerals available at all times.
- Bulls should have been removed from the cow herd by now! They should be pastured away from the cow herd with a good fence and allowed to regain lost weight and condition. It is a good time to evaluate physical condition, especially feet and legs. Bulls can be given medical attention and still have plenty of time to recover, e.g., corns, abscesses, split hooves, etc.
- Repair and improve corrals for fall working and weaning. Consider having an area to wean calves and retain ownership for postweaning feeding rather than selling "green", lightweight calves. Plan to participate in CPH-45 feeder calf sales in your area.

### Fall-Calving Cow Herd

- Dry cows should be moved to better pastures as calving time approaches. Cows should start calving next month. Yearling heifers may begin "headstart" calving later this month. Plan to move cows to stockpiled fescue for the breeding season, so it will soon be time to apply nitrogen fertilizer.
- Prepare for the fall-calving season (usually September). Get ready, be sure you have the following:
  - record book
  - eartags for identification
  - calf puller
  - castration equipment

## General

- Provide shade and water! Cattle will need shade during the hot part of the day. Check water supply frequently – as much as 20 gallons may be required by high producing cows in very hot weather.
- Select pastures for stockpiling. Remove cattle and apply nitrogen when moisture conditions are favorable. Stockpiled fescues can be especially beneficial for fall-calving cows after calving.
- Avoid working cattle when temperatures are extremely high – especially those grazing high-endophyte fescue. If cattle must be handled, do so in the early morning.
- Do not give up on fly control in late summer, especially if fly numbers are greater than about 50 flies per animal. You can use a different “type” of spray or pour-on to kill any resistant flies at the end of fly season.
- Keep a good mineral mix available at all times. The UK Beef IRM Basic Cow-Calf mineral is a good choice.
- Cattle may also be more prone to eat poisonous plants during periods of extreme temperature stress. They will stay in “wooded” areas and browse on plants that they would not normally consume. Consider putting a roll of hay in these areas and/or spraying plants like purple (perilla) mint which can be toxic.
- Take soil samples to determine pasture fertility needs. Fertilize as needed, this fall.

## **KY CPH-45 – It’s Still the One!**

*Dr. Roy Burris, Beef Extension Professor, University of Kentucky*

Kentucky’s Certified Preconditioned for Health (CPH-45) feeder calf program is still the premier management program for weaned calves in the country. That’s a bold statement but I believe it to be true. Preconditioning (preweaning and vaccinating calves prior to marketing) has NOT always been an accepted practice.

Certified Preconditioning programs have evolved over time with Kentucky’s program starting in 1979 when 9 other states also started programs. Southeastern calves, which were generally unweaned, unvaccinated, not dehorned, not dewormed and not castrated, were severely discounted but both producers and buyers were reluctant to change. It would require effort on the cow-calf producer’s part and require more money from the feedlots. Cattle feeders, until they could be proven wrong, preferred to buy high-risk calves at cheap prices and process them with their own crews. Did they worry about death losses? Of course, but they just built in about a 7% death loss and took it off the price they were willing to pay. This new concept of “preconditioning” was going to be “a tough nut to crack” for Extension folks in the southeast region. Most states soon gave up but Kentucky kept plugging away because we believed strongly that it was the right thing to do for our state and the beef industry.

Kentucky was fortunate to have producers who realized they needed a better market for their calves and who were willing to work toward that end. It was immediately obvious that special sales must also be held for these calves in order to have adequate numbers to merchandise and command a premium.

We tried several sales over the years and the Pennyriple area was a good example of a continuous running sale and was an example of what could be done if all parties worked together. Mr. Dell King of King Livestock was committed to marketing quality feeder calves from Kentucky and put a lot of effort and money into these sales. The farmer-feeders of the Midwest were our best customers at that time but the larger lots, especially in the southwest continued to reject the program. About that time one Texan explained to me why they didn’t buy Kentucky feeder calves – “they all get sick, they’re all straight breeds, the males aren’t castrated and the heifers must be born pregnant!” We had some work to do...and we did it.

Texas researchers were slow to adopt the concept but came to agree that preweaning was a good practice and prevaccinating was also good. So why wouldn’t they be even better together? They would be. Soon, Dr. John

McNeill of Texas A & M started their program called VAC-45 and had good results and the move was underway to get this concept accepted nationally once Texas got on board.

The Pennyryle Area (see picture) and the Green River Area sales are long-running sales with a history of cattle producers, yards and Extension agents working together.



Some folks still don't believe that weaned calves will make rapid and efficient gains. They will. Try it! If you can get efficient gains, extend ownership and receive a better price for your calves; that should work for you. If the feeder can buy a load of "low risk" calves with increased immunity that will walk off the truck knowing how to eat and drink, and that have already been dehorned and castrated, that will work for them. It's a win-win situation that we need to keep going.

Individual sales committees can make additional requirements but the minimum requirements for a KY CPH-45 calf if shown below.

#### KENTUCKY CPH REQUIREMENTS

1. Owned by seller a minimum of 60 days.
2. Weaned a minimum of 45 days.
3. Trained to eat feed from a bunk and drink water from a trough. (Do not overfeed; fleshy calves should be avoided and are likely to be discounted.)
4. Dehorned and healed (no visible horns or scurs).
5. Males castrated and healed (knife castration is strongly recommended). Late castrated calves may lead to stags, which are discounted. The scrotal sac with testicles must have fallen off "banded" calves.
6. Treated for grubs and lice according to label recommendations for time of year.
7. Dewormed with an endectocide a maximum of 60 days before the sale.
8. Vaccinated for Clostridia (7-way) subcutaneously in the neck.
9. Vaccinated and boosted for IBR, PI3, BVD, and BRSV (booster injection for viral diseases must be modified live vaccine)
10. Vaccinated for *Manheimia haemolytica* (pasteurella)

**Note: All vaccines are boosters must be administered no more than 90 days and at least 14 days prior to sale.**

11. All processing recorded on body map and chart on CPH certificate.
12. Identified with official Kentucky CPH tag.
13. Heifers are guaranteed open at time of sale and steers are guaranteed not to be bulls. Seller agrees to reimburse buyer \$200.00 for pregnant heifers or intact bulls. All claims must be properly verified by a veterinarian within four (4) months of sale.
14. Calves must have access to a free choice mineral supplement which contains a minimum 1,400 ppm copper (no copper oxide), 26 ppm selenium, 3,000 ppm zinc, 3,000 ppm manganese and 18- 25% salt based on a 4 oz. daily intake. No other salt available.

These calves carry a blue tag that has a unique number. They represent your farm and the Kentucky beef industry at the next level. There are lots of reasons to do it but let me just say that it is becoming the industry standard and it's the right thing to do! Support your nearest CPH-45 feeder calf sale!

## Beef Bash 2018

*Mr. Ben Crites, IRM Coordinator, University of Kentucky*

The University of Kentucky and Kentucky Cattlemen's Association are proud to host the 6<sup>th</sup> biennial event, Beef Bash, this year on September 20<sup>th</sup> at the University of Kentucky Research and Education Center in Princeton, KY. This event is one of the larger field days offered to Kentucky beef producers. Participants have the opportunity to hear from a variety of extension specialists, researchers, and industry experts. A large number of commercial vendors will be on display representing a variety of different products and services. With historical attendance between 400-500 participants, a large amount of networking will take place.

The demonstrations and educational exhibits this year will cover a variety of different topics. Some of the topics to be covered include: mineral and reproduction interactions, breeding programs, coproduct feedstuffs, environmental management techniques, forages, sex-sorted semen, and controlling wildlife problems. Registration begins at 8:30 a.m. CDT, and programs and tours start at 9 a.m. CDT. 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 ([benjamin.crites@uky.edu](mailto:benjamin.crites@uky.edu))

## **Bull Value Assessment Program - New Program - Fall 2018**

*Dr. Darrh Bullock, Extension Beef Specialist, and Ben Crites, IRM Coordinator, University of Kentucky*

Kentucky has a beef cattle population of over 1 million head, ranks 3<sup>rd</sup> in the nation in cattle density and has a financial worth estimate of over \$1.5 billion. With a cow to bull ratio of 25:1 it requires 40,000 bulls to service the commonwealth's cow herd; considering a useful life of 4 breeding seasons over 10,000 bulls are purchased by Kentucky beef farmers annually. Approximately 75% of the genetics in a calf crop, when heifers are retained, comes from the bulls used over the past five years; reinforcing the point that proper bull purchases are critical to genetic and overall improvement. There are enormous consequences associated with purchasing a bull and introducing his genetics for both the calf crop to be marketed and the future cow herd, if replacements are being retained. The purpose of this educational program is to improve beef farmers' ability to purchase the correct bull for their management conditions, in a cost effective manner, and then manage the bull properly to facilitate reproductive success.

Matching genetics to management, breeding soundness exams, bull nutritional and health management and the economic considerations of each of these topics will be addressed by Extension professionals with expertise in each of these areas. Auctions can be intimidating events for small cattle producers and after making their purchases there is no measuring stick to determine if their purchase may actually lead to future financial gains or losses. A mock auction will be utilized to reinforce the key points made in the educational program and to provide teachable moments without actual financial risk.

The Bull Value Assessment Program is a two-part educational program. The first session will be formal classroom education using the modules described below. At the conclusion of the educational program each producer will be assigned one of five scenarios. Scenarios may include varying levels of base cow herd production, management and marketing strategies.

Participants will also receive a sales catalogue with the charge to research the bulls and determine which ones would be suitable in their assigned scenario. Videos of the bulls will be available online for viewing. Participants will return the following week for the second part of the program with the responsibility of buying a single bull to fit their assigned scenario. This session will be the "Mock Auction". Every attempt will be made to simulate a real auction. Producers can come early and view the bull videos and ask questions to the sales team. At the designated time the auction will begin and all bulls will be sold to the highest bidder while viewing the video of each bull.

Utilizing economic index selection methods, each bull will be assigned a value for each scenario. With economic indexes a bull that has extremely high value in one scenario may have a much lower value in a scenario that emphasizes other traits or has a different marketing scheme. Therefore, each bull will have a computed estimated value for each scenario.

At the conclusion of the sale the "sales team" will determine the relative value of each sale; this will be done by comparing the sale price against the determined value of each bull (i.e., if a bull is purchased for \$2500 and his computed value was \$3500 then that producer would have a plus \$1000 value; however, if that producer had paid \$4000 then they would have a minus \$500 value). The producer with the highest value purchase within each scenario will be recognized.

### **Session 1 Topics**

- **Breeding Soundness Exams:** The importance of BSE, potential production and economic losses associated with undetected bull infertility and proper procedure for conducting BSE. Additional information will be provided on scrotal circumference verses service capacity and limitations on age of bull.

- **Bull Nutritional Management:** Nutritional management of bulls after purchase, during the breeding season and through the rest of the year.
- **Matching Genetics to Management:** Assessing resources, labor and nutrition, and determining what level of production is optimal for each case.
- **Targeting Selection for Specific Markets:** Identifying available markets and determining what traits should be targeted for selection.
- **Tools for Selection:** Techniques for selecting bulls, including specific information on understanding and using Expected Progeny Differences and implementing a crossbreeding program.

## **Five Regional Locations**

This program will be offered at five locations across the state and will be limited to 50 producers per location. It is required to attend the first educational session in order to participate in the sale the following week. A light meal will be served at each program session. It is important to note that all material will be consistent across locations and sessions will begin at 6:00 pm local time.

### **Western KY**

- Hopkins County Extension Office
- Session 1: October 9
- Session 2: October 16

### **Central KY**

- Madison County Extension Office
- Session 1: October 11
- Session 2: October 18

### **South Central KY**

- Barren County Extension Office
- Session 1: October 22
- Session 2: October 29

### **North Central KY**

- Shelby County Extension Office
- Session 1: October 23
- Session 2: October 30

### **Eastern KY**

- Fleming County Extension Office
- Session 1: November 1
- Session 2: November 8

The cost to attend the program is \$25 per individual. This will include dinner at both sessions along with all program materials. Space is limited to 50 individuals per location and will be filled on a first come, first serve basis. To register and to secure your spot for any location, please email Ben Crites at [benjamin.crites@uky.edu](mailto:benjamin.crites@uky.edu). Additionally, registration is available online by visiting <https://www.eventbrite.com/o/university-of-kentucky-cooperative-extension-16891600267>. If you have any questions or would like more details on the program, please contact Ben Crites ([benjamin.crites@uky.edu](mailto:benjamin.crites@uky.edu)) or Dr. Darrh Bullock ([dbullock@uky.edu](mailto:dbullock@uky.edu)) or your local ANR Extension Agent.

## **Weaning 101 Workshop: “Capturing value from on-farm weaning”**

*Mr. Ben Crites, IRM Coordinator, University of Kentucky*

The Kentucky Beef Network and Extension Specialists from the University of Kentucky will host the Weaning 101 Workshop again this year on September 12<sup>th</sup> at the Eden Shale Farm. This program provides producers with an opportunity to hear from Industry Experts and University of Kentucky Extension Specialists on a variety of areas pertaining to the weaning period. Topics to be covered during the day event include: Vaccination Protocols, Implanting Strategies, Feeding Programs for Weaned Calves, Improving Management Efficiency, Feeder Cattle Grading, and Marketing Options.

Producers involved in the workshop will be divided into three groups and assigned a set of 10 calves. Participants will have the opportunity to gain hands-on, chute-side experience of processing calves; including proper vaccine handling and injection sites and implanting techniques from Mr. Brent Tolle with Boehringer

Ingelheim. All of the calves will be weighed, dewormed, and will receive their weaning vaccinations. As a group, producers will work together to develop a feeding program for their 10 calves. At the conclusion of a four week feeding period, calves will be re-weighed to determine post-weaning average daily gains. Mr. Tim Dietrich, from the KY Department of Agriculture, will join us to explain the differences in feeder cattle grades. The morning will conclude with Dr. Steve Higgins providing insight on infrastructure design, shade structures, heavy-traffic pads, and other areas to improve management efficiency.

The afternoon sessions will begin with Mr. Brent Tolle, from Boehringer Ingelheim, discussing herd health protocols. Information on weaning methods will also be covered in the afternoon. Rounding out the afternoon sessions, attendees will hear from Dr. Kenny Burdine on marketing options of weaned calves.

This year's program will take place on September 12<sup>th</sup>, 2018 with registration beginning at 8:30 a.m. ET. The Weaning 101 Workshop is free to producers, but space is limited to the first 30 people. Lunch will be provided and is sponsored by Boehringer Ingelheim. To reserve your spot, please call the Kentucky Cattlemen's Association at (859)-278-0899.

Additionally, the results from this workshop will be presented at the Eden Shale Farm Open House. The Open House is planned for Saturday, October 13<sup>th</sup> at the Eden Shale Farm. If you have any questions about the Weaning 101 Workshop, please contact Jeff Lehmkuhler ([jeff.lehmkuhler@uky.edu](mailto:jeff.lehmkuhler@uky.edu)), Becky Thompson ([bthompson@kycattle.org](mailto:bthompson@kycattle.org)), or Ben Crites ([benjamin.crites@uky.edu](mailto:benjamin.crites@uky.edu)).

**Is That Tree or Shrub Poisonous? What You Don't Want Your Cattle to Eat (Part II)**  
*Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL) and a special thanks to JD Green, PhD (Extension Professor (Weed Scientist), UK Plant and Soil Sciences Department)*

Poisonous trees and shrubs are responsible for considerable losses in livestock although producers are often somewhat familiar with their potential for harm. Wilted wild cherry tree leaves, hedge trimmings from Japanese Yew (*Taxus* species), acorns and buckeyes are common causes of illness and death in Kentucky cattle every year. The potential for poisoning depends on the availability, type and quantity of the toxin within the leaves, seeds and sometimes the bark of the tree or shrub. A majority of the time, cattle will not consume them unless pasture is limited due to drought or overgrazing or they are baled up in hay. However, if cattle have access to hedge trimmings carelessly thrown over a fence or a cherry tree loses a limb during a thunderstorm, cattle may quickly eat enough to result in death despite having plenty of pasture available. Usually large quantities are required to cause problems (as is the case with buckeyes) but some plants, such as Japanese Yew, are deadly with just a few mouthfuls. Plant (tree, shrub or weed) poisoning should be considered a possibility in cattle on pasture with a sudden onset of unexplained symptoms such as diarrhea, salivation or slobbering, muscle weakness, trembling, incoordination, staggering, collapse, severe difficulty breathing or rapid death. Oftentimes plant poisonings only affect a few cattle in the herd and severity of symptoms primarily depends on the amount consumed over what period of time (rate of consumption). Many plant parts retain toxicity when dried and are considered dangerous in hay. Seeds or fruits can be a potent source of toxin and may be consumed directly or inadvertently end up in grain fed to cattle or accumulate in watering troughs. Prevention of problems begins with recognition of potentially poisonous trees and shrubs and awareness of when problems are likely to occur. Primarily, do not overgraze pastures because animals will usually avoid alternate sources of feedstuffs as long as there is plenty of hay or grass available. In addition, the following precautionary measures should be undertaken to intercept problems before they occur:

- 1) Pastures should be checked for fallen cherry tree limbs after thunderstorms or excessively windy days
- 2) Fences near homes, especially in suburban areas, should be monitored for signs of dumping (limbs, hedge trimmings) and uninformed neighbors may need educating on the risks of poisoning cattle with this method of disposal
- 3) Strategically fencing off areas of woods in the spring and fall may help prevent toxicity from oak and buckeye trees.

The following summary addresses the major poisonous trees and shrubs found in Kentucky pastures along with a few of lesser importance. These were chosen because of their potential for some symptoms to result from consumption and they are relatively common so the risk of exposure is elevated. If available, information on the amount necessary to be toxic in cattle is included. As mentioned in Part I, this series of articles does not address forage disorders such as grass staggers from mold, fescue toxicosis, slobbers from moldy clover, and will only briefly address nitrate and cyanide (prussic acid) poisoning where applicable. UK Extension fact sheets are available on these and other forage disorders at the UK Extension Website <http://www2.ca.uky.edu/agcomm/pubs.asp> under the “Publications” tab or ask the county extension agent for this information.

Two common toxicities in Kentucky resulting in sudden death in cattle are consumption of wilted wild cherry tree leaves and consumption of hedge trimmings from Japanese Yew, although the mechanisms causing death are quite different. Cherry tree leaves contain both cyanogenic glycosides and the enzymes needed to convert the glycosides to free cyanide gas but these components are isolated away from each other within the plant cells. When cherry tree leaves are damaged (wilted, chewed, crushed, frozen), the cyanogenic glycosides and the enzymes can physically come together and rapidly form free cyanide. When cattle consume wilted leaves and/or very new growth, the cyanide gas is absorbed directly from the rumen into the bloodstream where it



Buckeye Fruits-accessed 8/3/2018 from <https://www.midwestgardentips.com/trees-index-1/buckeye-trees>

prevents hemoglobin in red blood cells from releasing oxygen to the tissues. Small quantities can be detoxified but large quantities quickly overwhelm the system. The lethal dose of cyanide is in the range of 2-2.5 mg/kg body weight. To put this in perspective, wild cherry tree leaves contain 140-370 mg cyanide per 100 grams of plant tissue, with young, rapidly growing leaves having the highest concentration of glycoside. For a cow weighing 1100 pounds, she would need to eat about 1- 1.5 pounds of cherry tree leaves, if they contained 200 mg cyanide/ 100 grams of leaves, to be fatal. Cattle may develop signs of rapid breathing, slobbering, trembling, staggering then collapse and usually die within 5-15 minutes. Veterinarians can administer sodium thiosulfate as an antidote. Hay is considered safe because the curing process allows the cyanide to dissipate. In the case of Japanese Yew, the toxicity is due to cardiotoxic taxines present in the leaves, bark, wood, and seeds that interfere with conductivity and heart rhythm, resulting in heart block. The lethal amount in livestock (0.1-0.5% of body weight or approximately 1-5 lbs of green yew foliage for an 1100 pound cow) is so small they can easily and quickly consume enough to cause death. Livestock are frequently poisoned when fed prunings from cultivated yews or if yews are planted too close to fences and can be reached by cattle. Drying does not decrease toxicity. Few signs are observed prior to sudden death but it is possible to observe depression, nervousness, tremors, weakness,

staggering, difficult breathing with grunting, diarrhea, and convulsions. Death often occurs within minutes but can be several days after consumption. Once signs occur, it is generally too late for treatment. Activated charcoal or rumenotomy (surgically removing the foliage from the rumen) may help if caught early and magnesium sulfate by stomach tube may aid in evacuating the rumen.

Buckeye and Horsechestnut trees (*Aesculus* spp.) including Ohio Buckeye (*Aesculus glabra*), Common Horsechestnut (*A. hippocastanum*), Red Buckeye (*A. flavia*) and Sweet Buckeye (*A. octandra*) can cause neurologic problems in the fall when fruits are consumed or in the spring from ingestion of leaves and buds. The toxic effects are due to a mixture of saponins, the most well-known is the glycoside esculin in the young shoots, leaves, and mature seeds. Saponins are irritating to the GI tract and cause inflammation which improves

absorption of the toxin. The esculin glycosides are converted to aglycone in the rumen and cause neurologic signs approximately 16 hours after consuming a toxic quantity. Studies found ground nuts at 0.5% of body weight produced severe signs in calves, at 1% of body weight (for example, 5 pounds of buckeyes for a 500 pound calf), it was deadly. Neurologic signs begin with reluctance to move and a sawhorse stance progressing to muscle twitching, tremors, weakness, hopping gait (esp. rear legs), and sometimes somersaults. Signs progress to muscle spasms, recumbency (unable to rise), and star gazing (head is turned, facing the sky). Once down, they rarely recover. No specific treatment is available except laxatives and fluid therapy and tranquilizers to control seizure activity. Buckeyes are usually found in the rumen contents at necropsy since a large number is needed to cause intoxication. However, buckeyes can also contaminate water troughs and cause clinical signs without ingesting the seeds.

Oaks (*Quercus* spp.) contain gallotannins that cause inflammation within the digestive tract and directly damage the kidneys. Acorns (especially green), young shoots, leaves, sprouts, and fall buds all contain tannins but content varies with oak species and with leaf age. Cases of natural oak tannin toxicosis have been reported when feed is scarce and animals eat large amounts of oak shrubs, leaves, or acorns usually over several days. This causes irritation to the digestive tract and increased absorption of the toxin into the bloodstream. When blood runs through the kidney, the toxin destroys the kidney tissue. Cattle will go off feed but are often excessively thirsty and urinate frequently. The urine may be brown-colored or dark early on but will usually return to clear. Initially cattle are constipated followed by loose/sometimes bloody diarrhea that is frequently described as black and tarry. Often cattle will grind their teeth and hunch up due to abdominal pain then death



Kentucky Coffee Tree-Accessed 8/3/2018  
[http://www.wcisel.com/plants/kentuckycoffeetree/coffee\\_tree-04622.jpg](http://www.wcisel.com/plants/kentuckycoffeetree/coffee_tree-04622.jpg)

occurs within a week from kidney failure. Treatment with supplements containing calcium may be beneficial due to binding of calcium with the tannin to form insoluble tannin complexes. Polyethylene glycol at 10-25 grams per day added to the water or diet is also beneficial. Early treatment may allow regeneration of kidney function over several weeks or more but marked weight loss is expected during recovery. If the damage is extensive, chronic kidney disease may develop with little chance of recovery. Calves born to cows that consumed a large amount of acorns may be born with deformities. "Acorn calves" may have joint laxity, short legs (dwarfism), deformed hooves and skull abnormalities (domed skull or long narrow head). These calves are stunted and never grow well. Acorn calf syndrome may be due to protein malnutrition and/or an unrecognized teratogen but it is not attributed to the gallotannins.

The final trees and shrubs mentioned here are less common problems but Mountain Laurel (*Kalmia latifolia*), Rhododendron or Great Laurel (*Rhododendron maxium*), Kentucky Coffee Tree (*Gymnocladus dioica*), and



Black Locust (*Robinia pseudoacacia*) are all potential causes of poisoning in livestock. All cause irritation to the digestive tract initially so signs may include slobbering and diarrhea, bloat, abdominal pain, and possible regurgitation of rumen contents. If severe intoxication, will see labored breathing, weakness, collapse and death. Mountain Laurel and Rhododendron (both members of the Heath family) contain grayanotoxins in all plant parts,

Black Locust Tree- Accessed 8/3/2018 from  
[https://www.extension.iastate.edu/forestry/iowa\\_trees/trees/black\\_locust.html](https://www.extension.iastate.edu/forestry/iowa_trees/trees/black_locust.html)

especially the leaves. Rhododendron has a toxic dose of 0.2 % body weight in cattle, while Mountain Laurel has a toxic dose of 0.4 % body weight. Black Locust contains robinin and a glycoside robinin throughout the plant with the inner bark as highest risk but young shoots, leaves (especially wilted), pods and seeds can cause problems. Horses are most susceptible. The toxin involved in KY Coffee Tree is thought to be a quinolizidine alkaloid cytisine, found in leaves, seeds, and pulp surrounding the seeds but, interestingly, the dried seeds are nontoxic. Trimmings or sprouts from stumps may increase risk of poisoning, especially new foliage in late spring, and can see problems if pods fall in watering troughs.

In summary, cattle most often consume poisonous plants when they are forced to do so to survive because grass and hay are unavailable. However, in some cases, hay or silage may be contaminated with a high percentage of poisonous plants and cause toxicity or cattle may be simply looking for something green to eat in early spring and weeds are generally first to emerge. Sometimes poisoning is the result of opportunity due to disposal of hedge trimmings across a fence or a thunderstorm damaging a tree. No matter the reason, it is best to be aware of potential problems and proactively take steps to avoid them if possible.

## **Mid-year Cattle Inventory Suggests Slower Expansion Ahead**

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

USDA's January Cattle Inventory Report suggested that growth in the size of the US cow herd was slowing. July's numbers generally pointed in a similar direction. Both beef cow numbers and total cattle and calves were up about 1% from July 2017, which suggests a more moderate growth rate. This was coupled a 2% reduction in heifers held for beef cow replacement. Beef heifer retention as a percent of beef cow inventory was 14.2%, which generally does not suggest expansion. While this is significant, I tend to put more stock in the January numbers than the July numbers and January heifer retention was still pointing to some herd growth.

Several factors drive beef cow numbers, with calf prices likely at the top of the list. Our current calf market is very similar to where it was last year. Given the much higher meat supplies and uncertainty on the international trade front, I actually think this cattle market has been incredibly resilient. While many producers aren't pleased with calf prices, I don't think calf prices are low enough yet to be encouraging liquidation at the national level. On the other hand, weather is becoming a growing concern for many.

While there are always exceptions, this has been an excellent year for forage growth in Kentucky. A quick glance at the drought monitor would suggest it has been pretty good year for much of the southeast. However, dry conditions are becoming a larger issue for a good portion of cattle country. Significant drought (and abnormally dry conditions) appears to extend from Missouri south to Louisiana and west from there, taking in much of the southern plains. While we don't get state-level estimates in July, it is very possible that this may partially explain the decreased heifer retention. As we move towards fall, it will be interesting to see if we see much movement of cows, or increased cow slaughter, in the region. This has the potential to greatly impact beef cow numbers between now and winter.

Lastly, I would briefly comment on cattle-on-feed numbers. July 1 cattle-on-feed numbers were estimated to be 4% above year-ago levels. I would remind everyone that cattle-on-feed numbers were up 9% in March. From a big picture perspective, feedlot inventory was going to be larger in 2018 because the 2017 calf crop was larger. But, feedlot inventories were also artificially higher this spring due to poor wheat grazing conditions last winter forcing a lot of calves on feed sooner than usual. It continues to appear that we have worked through a lot of that inventory. A summary of the mid-year inventory report can be seen in the following table.

**USDA July 1, 2018 Cattle Inventory Estimates**

	<b>2017 (1,000 hd)</b>	<b>2018 (1,000 hd)</b>	<b>2018 as % of 2017</b>
<b>Total Cattle and Calves</b>	102,200	103,200	101
<b>Cows and Heifers That Have Calved</b>	41,600	41,900	101
<b>Beef Cows</b>	32,200	32,500	101
<b>Milk Cows</b>	9,400	9,400	100
<b>Heifers 500 Pounds and Over</b>	16,200	16,300	101
<b>For Beef Cow Replacement</b>	4,700	4,600	98
<b>For Milk Cow Replacement</b>	4,200	4,200	100
<b>Other Heifers</b>	7,300	7,500	103
<b>Steers 500 Pounds and Over</b>	14,500	14,500	100
<b>Bulls 500 Pounds and Over</b>	2,000	2,100	105
<b>Calves Under 500 Pounds</b>	27,900	28,400	102
<b>Calf Crop</b>	35,808	36,500	102
<b>Cattle on Feed</b>	12,800	13,300	104

Source: NASS, USDA