

# OFF THE HOOF

*Kentucky Beef Newsletter July 2016*

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

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## **Timely Tips**

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

### **Spring-Calving Cow Herd**

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

### **Fall-Calving Cow Herd**

- Fall-calving cows should be dry and pregnant now. Their nutrient needs are minimal and they can be maintained on poor pasture to avoid over fattening. Keep a good free-choice mineral mix available at all times. You can use a lower phosphorus mineral supplement now, if you want to save a little money. These cows are regaining body condition after a long winter feeding period.

- De-worm cows in mid-July with a product that is effective against inhibited ostertagia.
- Get ready for fall calving and plan to have good pasture available at calving and through the breeding season.

### Stockers

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

### General

- Be sure that clean water is always available, especially in hot weather. Make routine checks of the water supply. Cattle need 13 to 20 gallons of clean water in hot weather. Cattle should have access to shade.
- Maintain a weed control program in permanent pastures and continue to “spot-spray” thistle, honey locust, etc.
- Have forage analyses conducted on spring-cut hay and have large, round bales covered. Begin planning the winter feeding program now. Most of the hay was cut late due to a wet spring but a dry period permitted it to be put up without getting it rained on – so overall not a bad haying season – just cut late.
- Check pastures for downed wild cherry trees after storms (wilted wild cherry leaves are toxic to cattle).
- Start soil testing pastures to determine fertilization needs for this fall.

## **Can We Talk Science**

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

Science has been responsible for many advances that have benefitted the human race. However, there seems (at least to me) to be some recent reluctance to fully support education, especially at the level of colleges and universities. Maybe I have just been listening to too much political rhetoric on the news channels but I find this to be troubling. What is this all about?

Ever since Isaac Newton watched an apple fall to the ground in 1664 and came up with his law of gravity, science and scientific discoveries have been developing at a rapid pace. But Isaac Newton, as Copernicus had before him, believed that the sun is a motionless body in the center of The solar system with planets revolving around it. That is in apparent conflict with the biblical account in Joshua that says that “the sun stood still”. Couple that with differences in the scientific estimates of the age of the earth and the biblical account, and some folks find the literal interpretation of the Bible and science at odds. So reconciling the literal accounts in the Bible with science may be troubling to a lot of folks. Most folks don’t even want to discuss it, so I’ll leave that for the readers to work out – each according to their own belief system. I do hope that we don’t let it get in the way of scientific discovery.

I believe that we should continue to support science because of the many scientific advances that we have enjoyed. Science has given us electricity, penicillin, X-rays ... and the atomic bomb. So recent advances can be scary to some folks. Watson and Crick made one of the greatest discoveries as recently as 1953 when they discovered the double-helix structure of DNA that creates the instruction for the human body to follow.

Most folks didn't have a lot of trouble understanding or accepting Gregor Mendel's concepts of dominant and recessive genes but now we can alter genes or control genetic expression. That scares some folks but it also enables us to deal with things like curing or preventing heart disease and cancer. This is exciting stuff!

My first cousin recently died of brain cancer, so I was more than a little intrigued when I saw that Duke University researchers had some success at destroying brain tumors in a couple of people. It seems that they genetically altered the polio virus and it destroyed the tumor. That is just one of many recent, exciting advances that are being made. Now you could ignore advances in medicine and just pray for a miracle, and I hope you get one, but we do have the knowledge and ability to do great things with science.

That reminds me of a story (imagine that) that a preacher once told. It seems that a big flood was coming and a man was on top of his house watching the river rise. As the water approached him, he prayed for God to save him. As he sat there, a row boat came for him and he waved it off sure that God was going to save him. Same thing when a man in a motor boat appeared. Then a helicopter appeared and he waved it off. Finally he drowned, the story goes that he went to heaven and demanded to know why God didn't save him. To which God replied "I sent you a row boat, a motor boat and a helicopter. What else did you want?" I think that we are a lot like that guy on the rooftop.

So regardless of your belief system, scientific advances still benefit mankind and agriculture, bringing discoveries that make life easier, make us well fed and medicines and technologies that keep us healthier for longer periods of time. It is important to support education that allows these advances to happen. The problem is that you can't use what you learned in eighth grade science class and understand things like genetic engineering. Scientists don't just sit down and come up with a theory. Knowledge is obtained "one block at a time" over many years and you build and build until you are working on things at the intracellular level which are hard for the average layman to grasp. But trivializing science, or ignoring it, might cause us to miss out on the next big discovery. Support your colleges and universities!

### **Atypical Interstitial Pneumonia in Cattle Grazing Perilla Mint**

*Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL) and JD Green, PhD (Extension Professor, Weed Scientist), UK Plant and Soil Sciences Department)*

In the Southeastern US, a severe type of pneumonia can result from ingestion of the leaves and seeds of perilla mint (*Perilla frutescens*). This common weed is also known as perilla, purple mint, mint weed, beefsteak plant, and wild coleus. Perilla thrives in late summer, when pastures are frequently dry and dormant.

Perilla mint is a summer annual that reaches 20 to 30 inches in height at maturity. The opposite ovate leaves attached to square stems can be dark green to purple with toothed leaf margins. The white to whitish-purple flowers and subsequent seed which occur in late summer are attached to terminal spikes. The plant also has a distinct, minty odor, especially as it becomes more mature. The weed prefers shaded areas along creeks, in fence rows, and the edges of the woods and partially shaded pastures. Once it becomes established, perilla produces many seeds and large colonies can develop in succeeding years. The time of year when perilla reaches the seed stage often corresponds to periods when desirable pasture grasses are scarce, enticing cattle to consume plants they normally avoid.

The flowering or seed parts of perilla mint contain the highest concentration of perilla ketone, considered the most toxic agent involved. The perilla ketone is absorbed into the bloodstream and carried to the lungs where it damages the lung tissue. The early pre-seed stage of the weed is of



*Perilla mint has a distinctive mint aroma, dark green to purplish square stems and serrated leaves with a purple tint. Mature plants reach 2-3 feet tall and produce small, white to purple flowers with abundant seeds. Picture accessed from: <http://cal.vet.upenn.edu/projects/poison/plants/ppperil.htm>*

relatively low toxicity while the flowering and green seed stage plant is most toxic, especially the seeds themselves. Dried hay is less of a risk than green plants but still can be lethal while frosted plants have relatively low toxicity.

Ingestion of perilla mint causes “acute respiratory distress syndrome”, a sudden and dramatic onset of severe breathing difficulty. Affected animals are frequently found dead. Mature cattle are most often affected but it can occur in yearlings and calves.

Treatment is of limited value and severe cases seldom survive. Prevention involves implementing effective weed

control and offering supplemental forage or feed when pasture is limited so cattle are not forced to graze toxic weeds.

Perilla ketone and other related furan compounds are activated in the lung and cause atypical interstitial pneumonia (AIP). This type of pneumonia is straightforward to diagnose at necropsy when the chest cavity is opened because the lungs are found fully expanded with rib indentations on them rather than collapsed as a normal lung. AIP affected lungs are heavy and have a firm, rubbery texture instead of the expected light and spongy lung tissue. These necropsy findings are confirmed at the cellular level with a very distinct pattern of damage to the lung cells recognizable with a microscope.

The leaves and distinct square stems are easily identifiable in rumen contents. The clinical signs of acute respiratory distress syndrome include a sudden onset of open-mouth breathing with the head and neck extended, nostrils dilated, a sway-back appearance, tongue protruding with foam coming from the mouth, an open-shouldered stance, and sometimes aggression. Breathing is shallow and rapid (35-75 breaths per minute) and may have a loud expiratory grunt. Temperature is typically normal but may be mildly elevated due to the severity of the condition. In extreme cases, air under the skin (subcutaneous crepitation) may be felt over the upper portions of the neck, shoulders and back. Mild exercise may cause the animal to collapse and die. Generally there is an absence of coughing and no signs of infection such as fever or depression. Severely affected animals usually die quickly but animals that live 48 hours typically survive although may develop chronic lung problems or heart failure. The stress of handling cattle can cause prompt death so treatment, if attempted, must be handled very cautiously. A dart gun may be necessary to avoid moving the animal to a treatment facility.

Treatments administered or recommended by a veterinarian may include diuretics, nonsteroidal anti-inflammatory medications and corticosteroids used in an extra-label manner.

The best time of the year to begin scouting for perilla mint is late spring (May and June). During the late summer months when plants are flowering and producing new seed, grazing infested fields should be limited. Mowing can be used to control perilla but must be timely to reduce new seed production.



*Photo used with permission from Dr. Alan Doster, University of Nebraska-Lincoln.*

Unfortunately, mowing or clipping fields may not be feasible in some areas since many of the plants may be growing in or near trees and edges of fence lines. Chemical control options include herbicides labeled for use in pastures and hay fields that consist of single or premixed active ingredients of 2,4-D, dicamba (eg. Weedmaster), or aminopyralid (eg. GrazonNext). For best results herbicide applications should be made to smaller,

actively growing plants. Control is likely to be reduced when applied to taller, flowering plants. Grazing animals should be removed for a period of time following herbicide treatment since they may be more attracted to consuming perilla mint plants. Furthermore, use good stewardship and precautions when applying herbicides. The presence of perilla mint in pastures and hay fields may be an indication that other desirable forage grasses and legumes are sparse. Therefore, where it is practical use management practices to thicken the stand and improve the growth of desirable forages which can compete with the emergence and growth of perilla mint and other annual weeds.

## **Some Ideas on Converting from Year-round Calving to a Controlled Breeding Season**

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

Maintaining a controlled breeding and calving season can be one of the most important management tools for cow-calf producers. A uniform, heavier, and more valuable calf crop is one key reason for keeping the breeding season short. Plus, more efficient cow supplementation and cow herd health programs are products of a short breeding season. However, converting from a year-long breeding season to a shortened 2 to 3 month breeding season should not be done haphazardly.

A system for converting from year-round to a 75-day controlled calving season over a period of two years would present less loss and fewer problems than to try to convert in one year. The following steps are suggested for getting on a controlled breeding system:

1. Determine the ideal time of year and the length of your new calving season. For example, my cows will calve from February 15<sup>th</sup> to April 30<sup>th</sup> (74 days).
2. Determine the reproductive status of each cow in your herd. First, go to your record book to determine the last date each cow calved. If you don't keep records, try to match the cows and

calves up and estimate their age. For example, let's assume we have 30 cows. Calving dates from fall 08 to spring 09 are as follows: Last Aug 08 = 0 cows calved, Sept = 2 calved, Oct = 2 calved, Nov = 1 calved, Dec = 0 calved, Jan = 0 calved, Feb = 3 calved, Mar = 9 calved, Apr = 5 calved, May = 5 calved, June = 2 calved, July = 1 just calved. Keep in mind that the 5 cows that calved in the fall are likely pregnant.

3. Based upon the reproductive status of your herd, determine if you would like one, controlled calving season or two. In our example, 5 cows calving in the fall are likely not worth the hassle so they will be held over and should NOT be exposed to a bull until next spring. If, however, half of your herd calved July-December, it is a better economic decision to make these your fall-calving cows and the ones that calve from January-June your spring-calving cows.
4. Build a good strong bull pen or well-fenced bull pasture. An electric fence in addition to the regular fence may be needed.
5. Remove your bull(s) from the herd. Select the removal date to coincide with about a 120 day season for your spring-calving cows. In our example, we would remove the bull(s) near the end of August. He would stay in the bull pen until May 7<sup>th</sup> of next year.
6. Sixty days after removing the bulls from the herd (or at a convenient time near this date), pregnancy check all cows and cull all non-pregnant dry, breeding-age females that have been running with the bull and all non-pregnant cows with calves 5 months of age or older. Your fall-calving cows have likely either calved or are very close to calving.
7. You may want to consider starting the breeding season of your replacement heifers 20 to 30 days ahead of the final breeding date for your herd. Most extended calving seasons are the result of failure of young cows to rebreed in a timely fashion. The additional 20-30 days enhances the opportunity for these young cows to rebreed next season. So, your replacement heifer breeding season would start around April 10<sup>th</sup> and these females would begin calving around January 20<sup>th</sup>. I realize that this is a bit early for calving and you might experience 1-2% higher calf death loss. Financially, 1-2% death loss is easier to swallow than a 25% decrease in pregnancy rate the following year.
8. The second year, follow the same system as outlined about except remove the bull on the week of July 20<sup>th</sup>. If you have fall and spring calvers, then put the bull in for the fall cows around November 20<sup>th</sup> and remove him around January 20<sup>th</sup>