Martin-Gatton College of Agriculture, Food and Environment

OFF THE HOOF

Kentucky Beef Cattle Newsletter November 2025
Beef IRM Team

Newsletter Features:

Each article is peer-reviewed by UK Beef IRM Team and edited by Dr. Les Anderson, Beef Extension Specialist, Department of Animal & Food Science, University of Kentucky

Timely Tips

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

Spring-calving cow herd

- If you need to replace cows, consider buying bred heifers in some of the Kentucky Certified Replacement Heifer sales that are being held across the state this month.
- Extend grazing for as long as possible to decrease the amount of stored feed needed. The drought is making this difficult for most of the state in 2025.
- Evaluate body condition of cows. Sort thin (less than body condition score 5) cows away from the cow herd and feed to improve their condition. Two and three-year olds may need extra attention now. These cattle can use the extra feed/nutrients.
- Dry cows in good condition can utilize crop residues and lower quality hay now (but don't let them lose any more body condition). Save higher quality feed until calving time. Keep a good mineral supplement with vitamin A available.
- It is imperative that producers contact their herd veterinarian to determine pregnancy in your cows if you have not already done so. The extreme heat and drought has resulted in thin, stressed cows during the breeding season and pregnancy rates may be significantly compromised. Pregnancy can also be determined using blood sampling. Several diagnostic labs will analyze blood samples for pregnancy and a chute-side test is on the market. Culling decisions should be made prior to winter

feeding for best use of feed resources. Consider open, poor-producing, and aged cows as candidates for culling.

- A postweaning feeding period will allow you to put rapid, economical gains on weaned calves, keep them through the fall "runs" and allow you to participate in Kentucky CPH-45 sales. Consider this health and marketing program which is designed for producers which are doing a good job of producing high quality feeder calves.
- Replacement heifers require attention during the winter, too. Weaned heifer calves should gain at an adequate rate to attain their "target" breeding weight (2/3 of their mature weight) by May 1.

Fall-calving herd

- Continue to watch fall-calving cows. Catch up on processing of calves including identification, castration, and vaccinations.
- Cows that have calved need to go to the best pastures now! If your pastures are dried up, feed the good quality hay with an appropriate supplement to meet their daily nutrient requirements to help them maintain body condition prior to breeding in December.
- If at all possible, try to get animals vaccinated 60 days or longer before the breeding season.
- Start the breeding season in late November or early December for calving to begin in September. If you are using AI and/or estrus synchronization, get your supplies together now and schedule your technician.
- Make final selection of replacement heifers now.
- Don't forget to contact your herd veterinarian to schedule a breeding soundness exam (BSE) for your bulls. All herd sires need a BSE at least 30 days before the onset of the breeding season. A BSE can be useful insurance that your bull has the physical ability to breed cows. Even though BSE's aren't perfect, they are the best tool we have to identify infertile bulls.

General

- Have your hay supply analyzed for nutritive quality and estimate the amount of supplementation needed. Consider purchasing feed now.
- Take soil tests and make fertility adjustments (phosphate, potash, and lime) to your pastures.
- This is a good time to freeze-brand bred yearling heifers and additions to the breeding herd.
- Graze alfalfa this month after a "freeze-down" (24 degrees for a few hours).
- Don't waste your feed resources. Avoid excessive mud in the feeding area. Hay feeding areas can be constructed by putting rock on geotextile fabric. Feed those large round bales in hay "rings" to avoid waste. Concrete feeding pads could be in your long-range plans.
- Consider bale grazing to decrease damage to your pastures and to more evenly distribute nutrients across your pastures.

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Beef Management Webinar Series

Dr.Darrh Bullock, Extension Professor, University of Kentucky

We are happy to announce that the schedule for the 2025-26 Beef Management Webinar Series has been set. Please note that we have changed the day that we are holding the series to the second Thursday of the month. If you have registered for the webinar series in the past and get the announcements, that means you are registered and will automatically receive the invitation and password the morning of each session. If you have never registered or no longer receive the announcements, then you need to register by sending an email to dbullock@uky.edu and put Beef Webinar Series in the subject line and your name and county in the body. Remember, if your ANR agent approves them, these sessions are eligible for CAIP educational credit; please contact your county agent for more information. At the conclusion of each session, we provide a password that goes in the speaker signature section and then you submit it to your county agent for their signature. We hope you will join us for the webinars for timely information on beef cattle in the comfort of your home.

FAQs – Bovine Theileriosis

Dr.Michelle Arnold, DVM, MPH UK Ruminant Extension Veterinarian

What is “bovine theileriosis”? Theileriosis is a disease caused by the tick-borne protozoan parasite *Theileria orientalis* Ikeda genotype that infects the white and red blood cells in cattle, resulting in hemolytic anemia. Clinical signs seen in infected cattle are due to anemia (lack of red blood cells) and typically include lethargy, anorexia, fever, exercise intolerance, rapid breathing, foamy nasal discharge, pale mucous membranes early or jaundice (yellow mucous membranes) later in the disease course, and abortions may occur in pregnant cattle. Although the infection often causes mild anemia, the disease may become severe and occasionally fatal, especially due to co-infections and/or other stressors. Calves can also be infected and sometimes have diarrhea in addition to the signs listed above. After the initial infection, animals that survive become carriers of the organism for life but are protected from recurrence except under exceptional stress. Carriers will return to normal productivity in approximately 60 days when the anemia resolves but tend to be more susceptible to diseases and deficiencies later.

How does this disease spread? *Theileria* sporozoites (the infective stage) are primarily transmitted to susceptible cattle through the bite of an infected Asian Longhorned Tick (ALT). As of 2024, ALT has been identified in 22 states and Washington DC. The ALT, scientifically known as *Haemaphysalis longicornis,* requires warm-blooded animals such as humans, wildlife (white-tailed deer, raccoons, birds), and domestic animals to feed on for survival but cattle are the preferred host. Only parthenogenetic strains of ALT exist in the USA, meaning male ticks are not required for reproduction. In the US, all ALTs are female, and each can produce 1,000-2,000 female offspring, allowing the tick population to rapidly explode. While cattle deaths in KY due to theileriosis have been limited in number, they continue to occur as the tick becomes established throughout the state. *T. orientalis* Ikeda is not a public health concern and contact with affected cattle does not pose a human health risk.

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Are there alternate ways to spread the disease other than a tick bite? The *T. orientalis* organism can be transmitted by blood transfer from cow-to-cow, for example from biting lice or reusing hypodermic needles. There is also a very low rate of transplacental transmission during pregnancy that has been reported. In Australia, where they have dealt with this disease since 2006, researchers have determined that the organism must come from the tick bite to cause a high enough parasite level in the blood, known as "parasitemia", to cause obvious disease. This is the reason disease outbreaks occur primarily within the known range of the tick vector. Direct blood transfer without going through the tick results in subclinical infection without symptoms of disease.

How is bovine theileriosis treated? Unfortunately, there are no vaccines to prevent disease and there is no treatment available that is effective against this protozoan parasite. Studies are ongoing to develop control and eradication programs but until then, tick control and careful management of cattle and cattle movement are the backbones of disease control.

If my cattle show signs of theileriosis, will I find ticks on them? While ticks are the primary vector, that does not mean you will see ticks. In an Australian study reviewing their Theileria cases from 2006-2022, only 5% of cases reported observing ticks on cattle. The AL tick spends 90% of its lifetime off the host, usually in the soil or at the base of plants. ALT is a "three-host" tick species, meaning they seek a new individual animal on which to feed for each life stage. The tick lifecycle consists of four consecutive stages – eggs hatch into larvae, larvae feed on blood (from Host #1), fall off and molt to nymphs, nymphs feed on blood (from Host #2), fall off and molt to adults, and adults feed on blood (from Host #3) then lay eggs. Regardless of life stage, whether larva, nymph or adult, the AL tick acquires the *Theileria orientalis* blood parasite when it feeds on an infected cow and the tick remains infected throughout its life stages. All tick stages live at the base of pasture plants and "quest" (search) for a host by climbing up plant stems and attaching to a passing animal. Blood-feeding lasts anywhere from 5 to 14 days, longer with older life stages. The most common areas on cattle that ticks will be found are around the tailhead, on the udder, inside the legs, on the brisket, in the ears (particularly near the insertion sites of ear tags) and occasionally on the face and neck. Wildlife can serve as tick hosts and accelerate their spread in the absence of cattle. The ticks are light brown and often smaller than a sesame seed. The adult female is about the size of a pea when full of blood (Figure 1).

Photo credit: CDC and Tick and Hand Photo credit: Michael Greenwood

Figure 1: Asian longhorned ticks are light brown in color and are very small, often smaller than a sesame seed, as seen in the photo on the fingernail. Bottom left: The nymph and adult stages (a dime is in the background). Bottom right: The adult female is only about the size of a pea when it is full of blood.

When does theileriosis occur in KY? Most theileriosis cases occur between April-June and September-November, which closely follows the nymph and adult tick life stages that can transmit the organism. Infected nymphs that go dormant during winter (known as "diapause") in the grass and woods transmit the disease to cattle the following spring. Adult tick numbers peak in the summer with *Theileria* cases following in early fall. Larval tick stages peak in the fall and, if able to obtain a blood meal from an

infected cow, will molt into an infected nymph, go dormant and emerge in the spring. All stages may be observed questing throughout the warm seasons (Figure 2). Cattle begin to show signs of disease 5-6 weeks after infected ticks take their blood meal and drop from the host.

What disease looks like Theileriosis? This disease is often mistaken for anaplasmosis, another tick-borne disease resulting in hemolytic anemia caused by a red blood cell bacterial parasite, *Anaplasma marginale*. Anaplasmosis usually occurs in the fall (September-November), only affects adult cattle, and affected cattle tend to show more aggressive behavior. The anemia is more severe and deaths more common than with Theileriosis. Anaplasmosis is treatable with appropriate antibiotics, and a provisional vaccine is available. Both diseases may occur simultaneously in an individual animal.

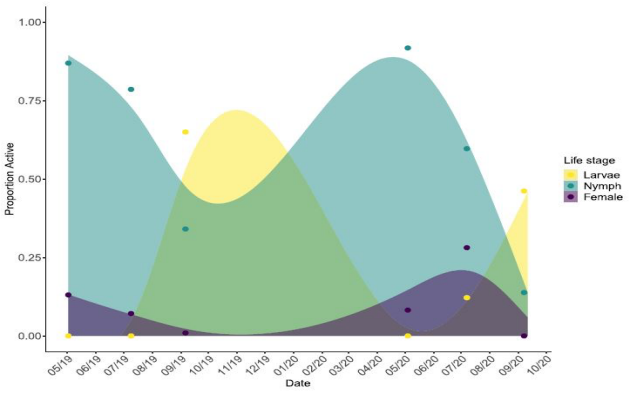

Figure 2: Seasonal activity of *Haemaphysalis longicornis* life stages from 2019-2020 in Albemarle County, Virginia. Nymphs (blue) were most active during the spring, with adults becoming active in summer (purple) and larvae becoming active in the fall (yellow). Accessed 10/7/2025 from Thompson, Alec et al., "A multi-seasonal study investigating the phenology, host and habitat

Is there a test available to detect the *Theileria orientalis* blood parasite? At the UKVDL, diagnostic testing for detection of *T. orientalis* in live animals is performed on whole, anticoagulated bovine blood (collected in purple top blood tubes) or from the spleen of a deceased animal collected at necropsy. A duplex PCR, the "Anaplasma/Theileria Tick Panel PCR" ($69.00 + Accession fee) can detect both blood-borne organisms that cause anemia, *Theileria orientalis* and *Anaplasma marginale*. There are 11 different genotypes related to *T. orientalis* so a second test, the "Theileria Duplex Real-time PCR" ($40 + Accession) is necessary to confirm the Ikeda genotype.

If I find a tick, where can I send it for identification? Extension professionals and producers may submit ticks through the Tiffin BITE Lab at UK. Instructions on how to ship ticks can be found here: https://entomology.mgcafe.uky.edu/ticksurveillance2022 .The submission form can be found at: https://forms.gle/2GwVsBHe4MTNeLt98

What is the best pesticide to use for ALT? Currently there are no known "acaricides" (tick pesticides) labeled for use against the ALT. The use of pesticide impregnated ear tags, pour-ons, sprays, and back rubs labeled for control of the American dog tick and the Lonestar tick should also provide beneficial AL tick control. Employing more than one control method at the same time for cattle (such as using ear tags and back rubbers) will yield better results. Control through treating cattle with acaricides alone is difficult due to the limited time ticks are attached to the host as ticks spend nearly 90% of their lifetime in the environment. Virginia Cooperative Extension has produced a fact sheet entitled "Managing the Asian Longhorned Tick: Checklist for Best Management Practices for Cattle Producers" that covers animal inspection, chemical control, and herd management options. It may be downloaded at https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/ENTO/ento-382/ENTO-382.pdf

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Is chemical control of ticks the only strategy to reduce theileriosis in cattle? Integrated parasite/pest management (IPM) involves reducing or breaking parasite transmission to cattle through multiple avenues to reduce the impact of infection. IPM strategies to reduce theileriosis include tick identification and surveillance, altering tick habitat, strategic application of insecticides to cattle and vegetation, and careful management of cattle movement. The main environmental goals are to modify the habitat, so ticks are unable to survive there, and hosts are not present in the tick-infested areas. Environmental control involves mowing pastures, especially overgrown grasses and weeds, and for extreme numbers of ticks, acaricides can be applied to vegetation. Apply acaricide using label instructions to sections of pasture with the highest number of ticks, such as along woodland edges, during times when ticks are most actively seeking hosts. Warrior II®, a lambda-cyhalothrin synthetic pyrethroid insecticide, is one example of a currently approved tick control product for pasture applications in Kentucky; check with your local county agent or regulatory official before using any pesticide. Perimeter fencing of a minimum of 20 feet from wooded areas will also help reduce cattle contact with ticks in the pasture. Lastly, remember that when animals move, infected ticks move with them whether it is across state lines or across personal properties, and expand the tick's range.

Why is cattle movement considered a major risk factor for disease? When rebuilding or expanding herds, it is important to know something about the area the cattle are coming from and make sure to inspect and treat new purchases to remove ticks, quarantine the new cattle for observation and ask your veterinarian to conduct appropriate diagnostic tests before mixing the new cattle with the home herd. Perhaps more important is the movement of naïve cattle from areas with no AL ticks and no theileriosis into areas with AL ticks and into herds already infected with theileriosis. These new additions will often get severely ill within 5-6 weeks of arrival into the new herd, and many will succumb to the rapid onset of anemia.

When did this disease arrive in KY? In late June 2022, the UKVDL received a yearling Hereford bull for necropsy with a history of "symptoms of pneumonia." At necropsy, the sclera (white of the eye), mucous membranes, and fat were yellow (jaundiced). Serologic (blood) testing for *Anaplasma sp.* was negative and PCR testing for *Anaplasma marginale* was also negative. A sample of spleen tested positive for *Theileria orientalis* and further genotyping confirmed the genotype as Ikeda. This was the first known case of "bovine theileriosis" diagnosed in Kentucky, the tick-borne disease caused by the protozoon blood parasite *Theileria orientalis* Ikeda genotype.

Cattle Pest Survey

Dr.Hannah Tiffin, University of Kentucky, Department of Entomology

Are you dealing with pests like flies, ticks, and no-see-ums on your cattle? We want to hear from you. Researchers at the University of Kentucky are conducting a short survey to learn which pests are affecting Kentucky cattle and what control methods you've tried on your farm. Your responses will guide the development of Extension resources that are useful to producers and help shape research on better pest management strategies.

The survey only takes a few minutes, and your input will directly support UK's efforts to improve cattle health and productivity across the state. To access the survey, please click on the QR code or use this link: https://uky.az1.qualtrics.com/jfe/form/SV_1G3v1QaTKqGhBcO. Thank you for helping us better serve Kentucky cattle producers.

To Feed or Not to Feed, Soybeans that Is

Dr.Jeff Lehmkuhler, Extension Professor, University of Kentucky

The current low grain commodity prices have sparked several questions regarding feeding soybeans to beef cattle. There are several factors to consider when deciding whether to feed or sell beans to the elevator. The following will touch on a few of these items to consider when making that decision.

Let's first review the nutrient content of soybeans on a dry matter basis. In general, soybeans are used as a protein supplement as they contain approximately 40% crude protein. Soybeans also contain a significant amount of oil, near 20%, which makes them an energy supplement as well. Soybeans contain an inverted calcium to phosphorus ration which may require the diet to be supplemented with calcium. Looking at the calcium to phosphorus ratio is particularly important when feeding grain-based feedstuffs such as corn silage, wheatlage, or grain-heavy rations such as finishing diets.

Table 1. Nutrient content of whole soybeans from Dairy One Feed Composition Library (accessed 11/3/2025).

Nutrient	Value	# Samples
Crude Protein, %	39.0	2900
Crude Fat, %	21.2	1317
Starch, %	1.5	134
Calcium, %	0.26	942
Phosphorus, %	0.64	944
Nem, mcal/lb	1.25	1413
Neg, mcal/lb	0.90	1413

The oil content is the diet inclusion limiter. Excessive unsaturated oil can result in reduced forage digestibility. Research suggests that total diets containing near or greater than 6% total fat/oil can lead to reduced microbial fermentation of dietary fiber. Additionally, higher levels of dietary fat/oil reduce passage rates of feed through the gastrointestinal tract. Our forages may contain 2% which would mean soybeans would be limited to contribute an additional 3% to the total diet. For mature cows with an expected dry matter intake, the amount of soybeans fed would need to be limited to not more than 4 pounds as-fed.

To feed or not to feed is really going to be dependent upon the price one may receive at the elevator and the cost of an alternative feed. These prices can be used to calculate the cost per unit of protein from the feedstuffs. As an example, fall soybean prices are running in the $9.80 to $10.30 per bushel price range. If one backs out the grain hauling costs of say $0.35 per bushel, the soybean price used for comparison may be $9.75 per bushel accounting for the haul expense. Let's say that we can get dried distillers grains delivered to the farm at $235 per ton with a protein content of 28% DM basis. The price per pound of protein from both feedstuffs are the same at $0.47. Thus, if protein was the only consideration, feeding soybeans would be just as cost effective as dried distillers grains.

Soybeans contain more oil and subsequently more energy than dried distillers. To make a better comparison, we need to account for the protein and energy from feedstuffs. One way to do this is to use reference feedstuffs and valuing the protein and unit of energy based on these reference feeds. Corn is often used as the energy reference feed and either soybean meal or dried distillers grains may be used for

protein. Using corn with a price of $5.05 per bushel if bought as feed ($180/ton) and a price of $235 per ton for dried distillers grains, soybeans would need to be less than $7.26 per bushel to consider feeding. Under this scenario, selling beans at the elevator and feeding corn/dried distillers grains may be more cost effective when considering a backgrounding ration.

In summary, often feeding soybean requires the beans to receive a significant discount at the elevator to be priced into diets. The oil content of the whole bean limits the amount that can be offered in the forage-based diets. If you are interested in learning more about feeding whole soybeans to beef cattle read the fact sheet ASC-245 Feeding Soybeans to Beef Cattle which can be downloaded at https://publications.mgcafe.uky.edu/sites/publications.ca.uky.edu/files/ASC245.pdf . You can also reach out your local county Extension office or consult with your nutritionist for more information.

** Other Ways to Connect **

Kentucky Beef Extension specialist Jeff Lehmkuhler and his guests share general information on beef cattle production, research and other related information.
https://afs.mgcafe.uky.edu/extension/beef/beef-bits-podcast

Scan the QR code or use this link:

IRM Team Facebook Page:

University of Kentucky Beef Extension: https://www.facebook.com/KyBeefIRM

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