OFF THE HOOF

Cooperative Extension Service
University of Kentucky
Beef IRM Team

KENTUCKY BEEF CATTLE NEWSLETTER JULY 1, 2025

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

This month's newsletter includes:

Timely Tips

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

Spring-Calving Cow Herd

- Consider removing 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 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.
- 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.
- Heat stress can lead to low conception rates, low libido in bulls, and embryonic loss (abortion) between days 6 and 45 of pregnancy. Keep a close eye on your herd. Plan to diagnose your herd for pregnancy early this fall to identify open cows for future planning.

Fall-Calving Cow Herd

- De-worm calves in mid-July with a product that is effective against inhibited ostertagia.
- 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.

- 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

- Check pastures for downed wild cherry trees after storms (wilted wild cherry leaves are toxic to cattle).
- 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.
- Start soil testing pastures to determine fertilization needs for this fall.
- Be aware of the heat when planning your cattle handling. Work cattle early in the morning to avoid excessive heat stress.
- Avoid grazing pastures containing endophyte-infected fescue if possible. The alkaloids (chemicals) produced by the fungus exacerbates heat stress in livestock and can lead to numerous negative outcomes including decreased growth rate and decreased conception rate.

The New World Screwworm: Texas is at Risk but what about Kentucky?

Dr. Michelle Arnold, Rminant Extension Veterinarian, University of Kentucky

The New World screwworm (NWS, *Cochliomyia hominivorax*) is a blow fly that is native to the Western Hemisphere. Unlike most species of blow flies, adult female screwworms do not lay eggs on dead and decaying flesh. Instead, they lay eggs on living mammals at the borders of fresh wounds or at the edge of body orifices. The larvae (maggots) feed on the host's living flesh, causing extensive damage by tearing at the host's tissue with sharp mouth hooks (see Figure 1). The term "myiasis" is used to refer to the infestation of wounds by fly larvae/maggots. The wound will become larger and deeper as more eggs hatch and larvae feed on the living tissue, which

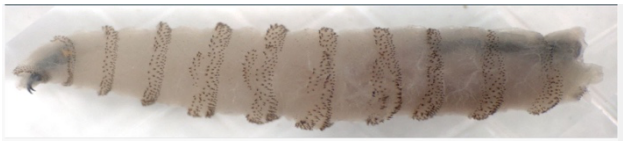

Figure 1: NWS larvae are pale with encircling black spines and sharp mouth hooks. Accessed from "Update on New World Screwworm 2025"; Gleeson Murphy; Parasitology, Chemistry, Analytical Services (PCAS), USDA, APHIS, Veterinary Services.

may result in secondary infection and death if left untreated. New World screwworm is a pest that poses a dangerous and significant agricultural, economic, and public health threat to livestock, wildlife, pets, and people.

Adult New World screwworms are metallic blue or green blow flies about the size of a common housefly or a bit larger with three distinct stripes that run down the top (thorax) of the fly just behind the head with large orange eyes (see Figure 2). The Old World screwworm fly, (OWS, *Chrysomya bezziana*), is found in Africa, the Indian subcontinent, and southeast Asia. OWS and NWS are designated "the primary screwworms." *Cochliomyia macellaria* (the secondary screwworm) is also a metallic blue blow fly with three distinct stripes that lives in the Americas and Caribbean, but the adult secondary screwworms primarily lay eggs on dead and decaying flesh (carrion). Although the secondary screwworm does not pose a threat to animal health, the adult flies and maggots look very similar to NWS, making confirmation of NWS myiasis much more challenging.

As mentioned previously, adult female NWS flies lay eggs on living mammals at the borders of wounds or at the edge of body openings on the mucous membranes. Almost any wound is attractive to the female, whether the wound occurred naturally (for example, from fighting, predators, thorns, disease, tick or insect bites) or was man-made (from shearing, branding, castrating, dehorning, tail docking, and/or ear-tagging). The most commonly infested wounds are navels of newborn animals and the vulva and perineum of their dams, especially if there was any trauma when giving birth. Flies are also highly attracted to velvet shedding in deer. Eggs may also be deposited on mucous membranes that enable maggots to invade through natural body openings including the nostrils and associated sinuses, the eye orbits, mouth, ears, and genitalia. One female fly can lay 200-300 eggs at a time and on average will lay 4 batches in her 10–30-day lifespan. Screwworm eggs are creamy and white and are deposited in a shingle-like raft on or near the edges of superficial wounds or body openings. This distinct pattern helps distinguish them from the eggs of other species of flies, which are generally not organized.

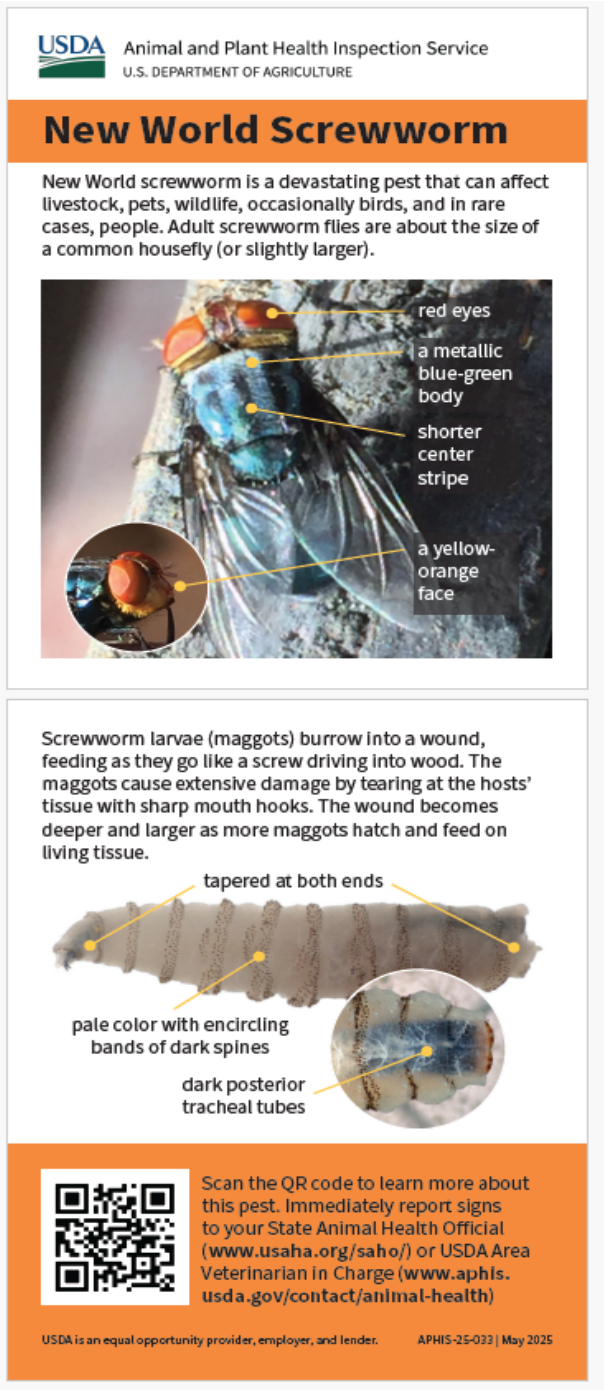

Figure 2: Accessed from https://www.aphis.usda.gov/sites/default/files/nws-pest-card.pdf

The eggs hatch within 12–24 hours and the larvae immediately begin to feed, burrowing head-downwards into the living tissue. Larvae can usually be observed within the wound by the third day and are oriented with their rear ends up toward the surface. There can be as many as 200 maggots packed in deeply from a single infestation. Existing infestations often attract additional NWS female flies to lay their eggs, resulting in deep and gaping wounds that may contain hundreds or thousands of larvae in various stages of development. Large pockets of screwworms can also exist despite only small openings in the skin, but movement can be seen under the skin beneath the wound. Mature larvae can reach 17 mm in length (2/3 of an inch) and have spines that protrude from the body and wrap around in a spiral fashion, giving them the appearance of a wood screw and thus the name "screwworm". Also, the name screwworm refers to the feeding behavior exhibited by the maggots as they burrow (screw) themselves deep into the wound. After developing through three larval stages in 5-7 days, the larvae leave the wound and drop to the ground, where they burrow into the soil to pupate. If the host dies before the larvae are mature enough to leave the wound and pupate, their survival is curtailed as they require living tissue as a food source. The duration of the life cycle in the ground is temperature and humidity dependent and can last from 7 days to 2 months, but the pupae cannot survive sustained temperatures below 46° F. The entire life cycle may be completed in as little as 3 weeks depending on temperature, moisture, and soil type.

New World screwworm was eradicated from the US, Mexico and Central America by repeatedly releasing sterile male flies that mated with wild female screwworms to produce unfertilized eggs. This "sterile insect technique" (SIT) was effective because males mate with multiple females while the female mates only once. This led to a reduction in screwworm numbers and eventually complete elimination from the US in 1966. This approach, along with regular active surveillance and animal inspections to prevent entry of any animal infested with larvae, proved highly successful and pushed the fly population south of Panama to the Darién Gap (along the border between Columbia and Panama) in 2006. APHIS maintains the only NWS pupae sterilization facility in North America known as COPEG, which stands for "Panama-United States Commission for the Eradication and Prevention of Screwworm". Located in Pacora, Panama but managed jointly by USDA and Panama, COPEG produces, sterilizes, and releases 20 million pupae per week for maintenance of the barrier with the capacity to increase to 100 million pupae per week during an outbreak.

The Darien Gap quarantine line held with only occasional cases in areas west of the Panama Canal until 2023, when the New World screwworm became reestablished north of the Panama Canal (Figure 3). There have been over 6,500 cases in 2024, and on 11/22/2024, Mexico notified APHIS of a positive detection. On February 26, 2025, APHIS announced it was shifting sterile fly dispersal to the northern most point in Mexico of the current outbreak. As of May 2025, the fly had moved as far north as Veracruz, Mexico. On May 11,

Figure 3: Screwworm movement northward beginning in 2023. Accessed from "Update on New World Screwworm 2025"; Gleeson Murphy; Parasitology, Chemistry, Analytical Services (PCAS), USDA, APHIS, Veterinary Services

2025, U.S. Secretary of Agriculture Brooke Rollins suspended live cattle, horse, and bison imports from Mexico through U.S. ports of entry along the southern border since the most probable pathway for NWS to enter the country is through infested individuals or animals arriving at border crossings or interior ports of entry. APHIS is investing $109.8 million to keep the pest from spreading into North America with the goal of eradicating NWS in Central America and Mexico and re-establishing the biological barrier in the Darien Gap. The last time NWS was in the US was the Florida Keys outbreak in 2016-2017: 5 dogs, 2 pet pigs, 2 cats, 1 raccoon, and 135 Key Deer were affected (15% of the Key Deer population died) during the outbreak and it cost $3.2 million to finally eradicate the fly.

Texas is at high risk for NWS because of its border with Mexico but what about Kentucky? Every state is at risk due to international travel of people, pets, and livestock. If you suspect NWS (see Box 1), immediately report any suspicious wounds, maggots, or infestations to a local accredited veterinarian, your State Animal Health Official, or a USDA veterinarian. Definitive field identification of screwworm adults and larvae can be difficult, even with a microscope, and can only be confirmed by submitting specimens for expert diagnosis. A USDA accredited veterinarian or state/federal authority will take the necessary samples and send them to NVSL for identification. The affected animal will be held in quarantine until official parasite identification is obtained and, if confirmed, treatment is administered until no larvae remain in the wound. Treatment is generally by application of organophosphate insecticides into infested wounds, both to kill larvae and to provide residual protection against reinfestation. A list of effective pesticides is available at https://www.aphis.usda.gov/sites/default/files/pesticides-for-nws.pdf. Preventive measures include the spraying or dipping of susceptible livestock with organophosphate compounds and, more recently, use of avermectins (ivermectin, doramectin) as subcutaneous injections to animals 'at risk'. For more information, APHIS maintains a dedicated website at: https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm

Box 1-What to look for:

- Maggots in wounds or other body openings, such as the nose, ears, and genitalia or the navel of newborn animals.
- Wounds that have bloody discharge and foul odor
- Wounds that become deeper and larger as the maggots grow and feed on living tissue. Larvae may not be seen at all if the wounds are deep.
- Animals that are showing signs of pain including depression, irritability, not eating, and isolating themselves from other animals or people. Animals may be seen rubbing against trees and/or standing in water.
- Co-infestation with maggot species that feed on dead tissue may also occur. Because they feed on live flesh, NWS maggots may burrow deep into wounds or openings, while other species of maggots may appear around the outer surface of the wound and hide the screwworm larvae from detection.

Hay Testing Even More Important in 2025

Dr. Chris Teutsch, UK Research and Education Center at Princeton

In many parts of Kentucky first cutting hay was delayed. Although yields were good, forage quality is another story. As the grass plant reaches maturity (gets mature seed) yield goes up, but quality decreases (Figure 1). This year we were on the right side of this figure, good yield but lower quality. We have already got our hay testing results back from the lab for our first cutting and that is exactly what they show (Table 1).

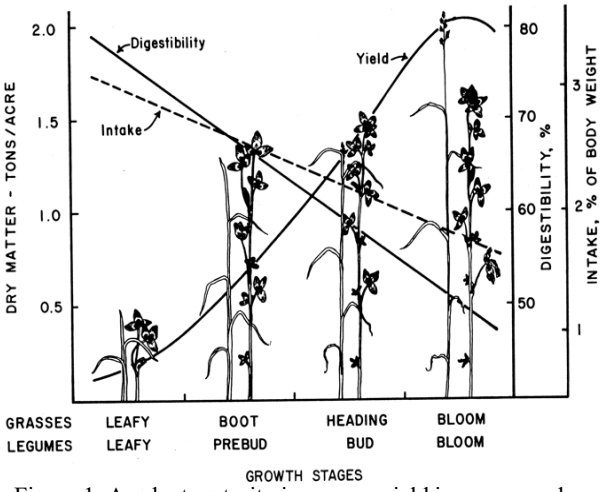

Figure 1. As plant maturity increases, yield increases and forage quality (digestibility and crude protein) decreases. The single most important factor impacting forage quality is stage of maturity at harvest.

I wish we could have been more timely in our hay harvest this spring but weather conditions were just not conducive to dry hay harvest. In fact, weather records indicate that we are seeing a trend toward fewer baling days in May (baling day = 3 curing days + 1 harvest day). It is just getting tougher to be timely with our first cutting harvested as dry hay. So, the question becomes what do we do? The list of practical solutions is short; in fact, there is really one viable alternative and that is baleage. High quality baleage can be made with a curing window as short as 2 days (one day to mow and wilt and a second day to bale and wrap). This provides more opportunities to harvest at the correct stage of maturity (late boot to early head).

Field	CP†	ADF	NDF	TDN	Meet CP Requirements		Meet TDN Requirements	
	%	%	%	%	Dry	Lactating	Dry	Lactating
1	8.9	40.1	59.1	55.5	yes	no	yes	no
2	9.9	39.4	60.0	56.2	yes	no	yes	no
3	8.2	41.6	67.2	53.8	yes	no	yes	no
4	10.6	41.0	64.5	54.5	yes	yes	yes	no
5	8.3	40.7	65.6	54.8	yes	no	yes	no
Avg	**9.2**	**40.6**	**63.3**	**55.0**	**yes**	**no**	**yes**	**no**

Table 1. Forage quality of 2025 first harvest hay at UK Research and Education Center in Princeton. †CP, crude protein, ADF, acid detergent fiber, NDF, neutral detergent fiber, TDN, total digestible nutrients.

Hay Testing Even More Important in Wet Years

In years like this one, hay testing becomes even more important. Since most of Kentucky's first cutting hay was put up at an advanced stage of maturity, testing is going to be a critical part of making sure that we meet the nutrient requirements of our cows this winter. The single most important factor impacting rebreeding in cow herds is body condition at calving. To design an effective supplementation program

for our lower quality hay we must know what the quality it. If you have never tested your hay, this is the year to start!

FORAGE MANAGEMENT TIPS

✓	Test first cutting hay and use the results to develop a supplementation strategy for this winter.
✓	Graze summer annuals pastures and fertilize with 40-60 lb N/A if regrowth is desired.
✓	Identify pastures to stockpile for winter grazing. Pastures should be well drained and have a strong sod. Limit summer grazing so that they are ready to grow as conditions cool and rain comes in late summer.
✓	Do NOT mow hayfields or graze pastures closer than 4-5 inches.
✓	Soil test pastures to determine nutrient needs.
✓	Use UKY variety testing results to select varieties that will be planted in the fall.
✓	If drought occurs, confine animals to one pasture and feed hay.

Managing Heat Stress in Cattle: Tips for Summer Success

Dr. Katie VanValin, Assistant Extension Professor, University of Kentucky

Temperatures and humidity are on the rise, and this combination makes cattle more susceptible to complications from heat stress. Cattle have a thermoneutral zone which is a range of temperatures and humidity where they do not need to expend extra energy to maintain their body temperature. When environmental conditions are outside of this zone than cattle are susceptible to cold or heat stress. Heat stressed cattle will exhibit increased respiration and panting to try and stay cool. Heat stress results in decreased feed intake, milk production, and average daily gains. Some cattle are more susceptible to heat stress than others, and it is important to understand that heat stress compounds other conditions such as fescue toxicosis, or respiratory disease intensifying complications from these conditions. While we have little control over weather patterns, there are several steps that can be taken to minimize the negative impacts of heat stress on the herd.

Provide adequate shade

Shade is critically important for combatting heat stress in beef cattle. In grazing animals, care should be taken to ensure cattle have access to natural shade from trees or artificial shade from shade structures. For cattle in confinement or dry lots, artificial shade sources might be a better long-term solution due to the impacts that cattle can have on tree health when provided continual access for longer periods of time. Shade structures can be portable or permanent, and both options can be effective at providing shade. Depending on the goals and needs of the operation, one option might be more practical than another. There are also plans available online for DIY construction of shade structures, as well as commercially available structures that can be purchased. Consider stability of the structure, as these structures will be susceptible to the elements, and some structures may fare better than others. A common mistake that is made with shade is not providing enough shade per animal. Beef cows need around 30-40 square feet of shade per head, with calves requiring 15-20 square feet. When looking at shade within a grazing system, proper planning can ensure that cattle have access to paddocks with ample shade during the hot and humid summer months. While it takes time to develop natural shade through tree plantings, this can be a worthwhile long-term investment to improve the utilization of the grazing system. As the saying goes, "The best time to plant a tree was 20 years ago, the second-best time is now." For assistance with selecting tree species for pastures, reach out to your local county extension office.

Ensure clean and accessible drinking water

Cattle also need access to clean drinking water. Water intake is increased in larger cows, and in lactating cows compared to dry cows; water intake is also increased when temperatures are higher. Water requirements can reach upwards of 30 gallons per head per day for lactating cows under heat stress but

may range from 15-30 gallons. Research shows that cattle drink less when water is dirty, so ensure cattle have access to clean drinking water at all times. This includes cleaning waterers and troughs regularly. Steps should be taken to prevent cattle from entering ponds, as wading and defecating in the water can increase dissolved solids and decrease consumption. It is important to monitor all water sources regularly to ensure cattle always have access, including natural water sources like ponds and streams, as dehydration can cause death quickly.

Consider forage type and fescue toxicosis

Forage type can also impact heat stress in beef cattle, especially in the fescue belt. Cattle grazing toxic endophyte-infected tall fescue, such as KY-31, and experiencing fescue toxicosis suffer from vasoconstriction, or constriction of the blood vessels, which makes it harder to dissipate heat and puts them at greater risk of heat-related complications and performance losses. One strategy to address this issue is pasture renovation—specifically, converting toxic endophyte-infected tall fescue to novel endophyte tall fescue. Novel endophyte varieties do not produce the toxic compounds found in traditional varieties but still contain the endophyte that provides persistence and stress tolerance to the plant. Pasture renovation can be costly, and not all fields are well suited for complete renovation. However, if renovation is being considered, a novel endophyte variety of tall fescue should be a top choice.

It's important to note that the impacts of ergot alkaloids—the toxic compounds in infected fescue—can linger in cattle for weeks to months after removal from the pasture. For this reason, grazing cattle on novel endophyte tall fescue in the spring can be especially advantageous.

Interseeding legumes, such as clover, provides producers with another tool for mitigating fescue toxicosis. This has long been recommended as a tool for managing fescue toxicosis, but newer research highlights an added benefit beyond diluting consumption of toxic tall fescue. Compounds called isoflavones, especially those found in certain red clover varieties, may help alleviate the vasoconstriction caused by toxic fescue.

Producers can also consider incorporating warm-season or summer annuals into a portion of the operation. These forages can be grazed during the hottest months, allowing cool-season pastures time to rest. Take time to plan how these alternative forages can be strategically integrated into your grazing system.

Provide mineral supplementation

Mineral supplementation is important, but especially during heat stress. As cattle consume more water, urination increases, and along with that comes a loss of minerals. Cattle will crave salt, which should be provided in the form of a complete free-choice mineral supplement to cattle on pasture or can also be mixed directly into the feed for cattle in confinement. Avoid using a plane salt block to meet cattle’s desire to consume salt, because they are also losing other critical minerals such as potassium or magnesium which will not be replaced through consumption of a salt block alone. Keep a close eye on mineral feeders and ensure adequate consumption. A 50-lb bag of mineral formulated for 4 ounces per head per day should last 40 cows about 5 days, but it is important to remember that calves will also be visiting the feeder, so mineral may run out more quickly.

Adjust feeding schedule
Adjusting the feeding schedule can provide some relief for heat stressed cattle. Heat is produced as a by-product of ruminal fermentation as cattle digest their feed. This heat production peaks about 4-6 hours after eating, so if cattle are consuming a large meal in the morning, the peak heat production would occur during the hottest part of the day. Feeding a larger portion of the daily feed in the late afternoon and evening will result in peak heat production occurring during the cooler overnight hours. Cattle are creatures of habit, so take time to slowly shift feeding towards the afternoon when hot temperatures are predicted in the extended forecast.

Modify handling practices
If possible, avoid working or transporting cattle during extreme heat events. If necessary, get cattle up early in the day before temperatures rise. This will also help to ensure the health and safety of livestock handlers as well, as people will also be at risk of developing heat-related illnesses.

Final thoughts
Summer heat events are common in the mid- and southern United States, so taking steps to improve the resiliency of the operation to heat stress will be beneficial for many years to come. Some practices like tree planting and forage renovation may take time but can have long lasting benefits. If you have any questions about managing heat stress in cattle, please reach out to your local county extension office.

Time for Change

Dr. Les Anderson, Extension Professor, University of Kentucky

Times are good, finally, if you are in the cow-calf industry. Input costs (feed, etc.), although still high, have held steady while feeder calf prices reach all-time highs and profits are finally obtainable for many. It might seem odd but now is the perfect time to evaluate your production system and make necessary changes to prepare for when, inevitably, the market declines.

To determine what factors to adjust, producers first need to determine if they are marketing efficiently by producing a product that fits the intended market. The best example of this is a producer that wants to market feeder calves (400-600 pounds) at the stockyards, yet this producer does not control the calving season and has calves born throughout the entire year. The most inefficient method to market feeder calves is to sell “singles” meaning to sell each calf individually. Research from the UK AgEcon group has shown that singles are about $12/cwt less valuable than similar calves sold in a group of five or more. So, this producer loses $60 per head (five weight calf) on average simply because the production system does not match the market strategy. This loss ($60 per head) may not seem like much today but is often the difference between profit and loss in smaller operations, particularly in a down market.

The easiest fix to the above problem is to enroll the calves in a CPH-like feeder calf marketing program. Multiple value-added sales like CPH occur throughout the year. These sales are designed to help producers capture value in their calves by marketing them in larger groups. Another solution is to gain control of the calving season. Identify the month(s) you want to market in and the desired weight of your calves at marketing. So, if you want to market eight weights in June, you will want to calve from early September until the middle of October. If the calving season is currently year-round, shifting to this calving season will take some planning. The University of Kentucky has a couple of publications that can assist (https://afs.ca.uky.edu/beef/publications/reproductive-management).

The benefits of a controlled calving season reach far beyond simply increasing market value. Short calving seasons reduce labor inputs and costs and increases the efficiency of most systems by increasing weaning weights and decreasing inputs costs. Research on 394 ranches in the southwest indicated that year-round calvers sell 46 fewer pounds per year while spending $70 more to get their 500-pound calves to market. Less product to market at a higher cost is typically not an ideal for most small businesses.

Another factor to consider is the overall fitness of the herd. Fitness refers to age, temperament, physical characteristics such as feet/leg and udder soundness, and producing ability (is she weaning a profitable calf?). Another "fitness" factor to consider is expected calving date. If you have cows that are not going to calve in your profit window, consider selling them and increasing your replacement rate. Cull cows are high and now is the perfect time to improve the fitness of your herd. Gradually getting the cow herd younger and more fit during a high market is a great strategy to prepare for future profitability.

Producers should consider a few other things when profits are high. After the bills are paid, investing into your small business (cattle operation) may pay dividends later. Do you need to improve your handling facilities? Quicker, easier, stress-free handling is best for both the cattle and the handlers. Does the grazing and pasture management system maximize your grazing days to reduce feed costs? Now is the ideal time to evaluate your operation. Contact your local ANR Agent and KBN facilitator if you need another "set of eyes" on your production system.

Sustainability has been a buzz word in the industry talks a quite a bit about sustainability especially sustainability of the small farm. Small farm sustainability revolves around financial stability and optimizing profits during high and low market scenarios. Every cow-calf producer should be making money now, but can cow-calf producers maintain this when calf prices fall? If the answer is yes, then the production and marketing systems are in sync and the cow-calf operation can be sustainable. If the answer is no, then let's make some changes. The industry needs our small operations to stick around!