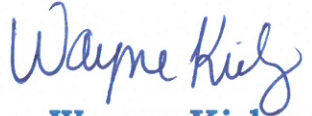


Spring 2024 Agriculture Newsletter

Cooperative Extension Service
University of Kentucky
Knox County Extension
215 Treuhaff Blvd., Ste # 7
Barbourville, KY 40906-7361
(606) 546-3447
Fax: (606) 546-3110
<http://knox.ca.uky.edu>


Wayne Kirby,
ANR Agent

Important Dates

- March 4th @ 7:00 a.m. – News and Views
- March 12th Pesticide Training (There will be 2 training times but you only need to attend one class.)

Class one – 10:00 a.m.

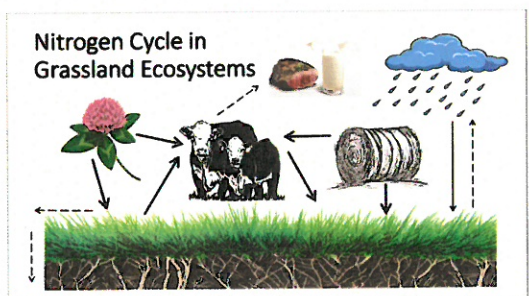
Class two – 6:00 p.m.
- March 14th @ 6:00 p.m. - Beef Series @ WTA Marketing Alliance
- March 19th @ 7:00 p.m. Knox County Cattleman's
- March 21st @ 6:00 p.m. at the Laurel County Extension Office – Area Corn Meeting
- March 23rd Cumberland Gap Cattle Conference
- March 25th @ 6:00 p.m. - Horse Series @ the WTA Marketing Alliance
- April 2nd @ 7:00 a.m. – News and Views



The Gift that Keeps Giving...Clover

Legumes are an essential part of a profitable grazing systems. Clover's superpower is its ability to fix nitrogen from the air into a plant available form. After photosynthesis, nitrogen fixation is the second most important biochemical process on earth. Clover also increases forage quality and quantity and helps to manage tall fescue toxicosis.

Strong nitrogen cycles can develop in well managed pastures and hayfields. Nitrogen enters the system via imported hay and supplements, nitrogen fixation in legumes, and atmospheric deposition (minor amounts). Nitrogen leaves the system via volatilization, denitrification, leaching, runoff, and animal products removed. A cow-calf pair will consume approximately 280 lb N/year in the grasses and legumes they're consuming of which 200 lbs is retained in the grassland ecosystem (Lory and Kallenbach, 1999).



Over time, clover stands in pastures can thin and will require reseeding. Although there are several approaches for reintroducing clover back into pastures, perhaps the simplest and most cost-effective is frost seeding. Frost seeding is accomplished by broadcasting clover seed onto existing pastures or hayfields in late winter and allowing the freezing and thawing cycles to incorporate the seed into the soil. It works best with red and white clover. Below you will find a few tips for enhancing frost seeding success.

- Control broadleaf weeds—Ideally, broadleaf weeds should be controlled prior to seeding legumes since most herbicides will damage clover seedlings. This is best accomplished by controlling weeds the season prior to renovation. See AGR-207 "Broadleaf Weeds of Kentucky Pastures" for information.

- Soil test and adjust fertility—Prior to frost seeding clover, soil test pastures and hayfields then lime and fertilize according to the soil test recommendations.

- Suppress sod and decrease residue—The existing sod must be suppressed and plant residue reduced prior to seeding to allow seed to reach the soil surface. This is best to accomplished by hard grazing in late fall and early winter.

- Ensure good soil-seed contact—Good soil-seed contact is required for seed germination and emergence. In frost seeding's, this occurs when freeze and thaw cycles form cracks in the soil surface, often referred to as a honeycomb. Soil to seed contact can be enhanced by dragging pastures after broadcasting seed.

- Seed on proper date—Frost seeding is best accomplished in late winter (February).

- Use high-quality seed and adapted varieties— Choose clover varieties that have been tested in Kentucky. See current variety test results at the UK Forage website.

- Legume mixtures for Kentucky—In Kentucky, a good mixture for renovating pastures with is 6-8 lb/A of red clover, 1-2 lb/A of ladino or intermediate white clover. On rented farms or where soil fertility is marginal, adding 10-15 lb/A of annual lespedeza can be beneficial.

- Use correct seeding rate—Make sure to maintain and calibrate broadcast seeding equipment prior to planting (see video on KYForages YouTube) so as not to seed at too high or too low a rate.

- Inoculate legume seed—Most improved clover seed comes with a lime-based seed coating that contains the proper rhizobia bacteria, but if it's bare seed make sure to inoculate. Store extra seed in a cool dry location and reinoculate after one year.

- Check seed distribution pattern—When using a spinner type spreader/seeder make sure and check your spreading pattern. In many cases small seeded forages are not thrown as far as you think. This can easily be done by driving over a large tarp or laying out buckets or cake pans perpendicular to your drive pattern and weighing the amount of seed in each.

- Use GPS guidance—Simple portable GPS guidance systems will allow you to maintain a consistent distance between passes and speed. Without GPS research has shown that many people waste seed by too much overlapping.

- Control post-seeding competition—Not controlling post-seeding competition is one of the most common causes of stand failures. One of the best management practices is to leave cattle on pastures that have been overseeded with clover until the clover seedlings have germinated. Then remove animals from the pasture and allow the clover to reach a height of 6-8 inches. Some producers flash graze the pasture once the grass starts to shade the clover seedlings. If the existing vegetation is not controlled, the new clover seedlings will be shaded out.

Optimizing baleage quality: A guide for Kentucky forage producers

Source: Jimmy Henning, plant and soil science professor

Round-baled silage has emerged as a preferred method for preserving high-quality forage in Kentucky, offering numerous advantages for livestock feeding. However, this technique presents unique challenges. Notably, achieving the ideal moisture content (MC) of 40-60% and ensuring the forage is adequately oxygen-free when wrapped in plastic.

A fermentation report helps producers evaluate the quality of their baleage and assess potential feeding risks. Poorly fermented baleage can lead to clostridial bacterial growth, and even botulism.

Here are some ways to optimize your baleage quality:

- **pH and its Importance:** Ensiling lowers bale pH through the production of lactic acid. A pH of 5.0 or lower inhibits clostridial bacteria growth. The target pH varies with forage type and moisture content. For example, legume baleage is stable at a higher pH than grasses.
- **Moisture Content and Dry Matter:** Achieving a MC within the 40-60% range is essential for effective fermentation. The sweet spot for fermentation is between 50-60% MC, fostering robust lactic acid production and maintaining a pH below 5.0, thereby inhibiting harmful clostridial bacteria. Baleage with MC lower than 50% may have restricted lactic acid production and elevated pH levels, potentially affecting fermentation. However, bales kept anaerobic by at least six layers of UV-resistant plastic can remain valuable feed, even if not fully fermented.
- **Crude Protein:** The forage's crude protein content, determined by its nitrogen content multiplied by 6.25, is a key indicator of

fermentation potential. Early-cut forages, which usually have higher crude protein levels, also possess more fermentable carbohydrates, crucial for a successful fermentation process.

- **Lactic and Acetic Acids:** Lactic acid, the primary product of anaerobic fermentation, is pivotal in reducing pH and stabilizing baleage. Desired lactic acid levels are above 3% on a dry matter basis. However, levels often fall below this target, especially when MC is under 50%. These lower levels are not overly concerning if the bales are wrapped in plastic which remains intact until feeding. Acetic acid, vital for preventing yeast and mold growth once bales are exposed to oxygen, should ideally be between 1-4% (DM basis). Excessive acetic acid may signal issues like high moisture content or clostridial fermentations.
- **Propionic and Butyric Acids:** These acids should be minimized, with propionic acid below 1% and butyric acid under 0.5% (DM basis). Elevated levels indicate possible fermentation problems, such as insufficient sugars for fermentation or secondary fermentation by clostridial bacteria, potentially affecting livestock health.
- **Ammonia and Ash Content:** Ammonia, measured as a percentage of total nitrogen or as a crude protein equivalent, indicates the extent of clostridial fermentation. Ammonia-N levels exceeding 15% suggest significant clostridial activity. Ash content can reveal soil contamination; levels above 11% often mean dirt intrusion, a primary pathway for clostridial bacteria into baleage.
- **Physical Observation:** Evaluating baleage's physical attributes, such as odor, bale shape and effluent presence, is also crucial. A pleasant smell, the absence of seepage and intact plastic wrapping are good indicators of successful fermentation.

Forage Timely Tips: February

- Continue grazing stockpiled tall fescue if available.
- Assess grass stands. If thin, consider adding legumes.
- Begin frost seeding with at least 6lb/A red and 1lb/A White clover on closely grazed pastures.
- Consider applying nitrogen in mid to late February on some pastures to promote early growth.
- Sign up shared use drills for spring renovation.
- Service and calibrate no-till drills.
- Apply lime and fertilizer according to soil test if not done in fall.

Recommendations for Starting Disease-Free Vegetable Transplants

Home gardeners and commercial growers likely have placed their seed orders or have last year's seed saved. Over the next few weeks, many will plant those seeds in order to establish transplants for spring and summer gardens. In some cases, those seeds may germinate, wither, and die (Figure 1). In other cases, plants may establish but become diseased shortly after transplanting. This damping-off can be caused by a number of soilborne fungi or fungus-like water molds, often the result of infected seed or from contaminated soil or containers. More information on damping-off diseases can be found in the publication *Damping-off of Vegetables & Herbaceous Ornamentals* ([PPFS-GEN-03](#)). Numerous steps can be taken to prevent the occurrence of seedling diseases.



Purchase Pathogen-Free Seed

When purchasing seeds from suppliers, select seeds that are certified free of disease-causing pathogens. Different sellers may have different seed-testing practices. Information about whether or not seeds are certified disease-free can be found online, in seed catalogs, or on seed packets.

Heat-Treat Seed

Many home gardeners choose to save seeds from year to year, particularly in the case of heirloom varieties. However, pathogens may be present on the exterior and/or interior of seeds, even if not visible. This may also be true of purchased seeds that are not certified disease-free. Hot water seed treatment may be used for certain types of vegetables to kill pathogens. In this process, seeds are pretreated in a water bath at 100°F for five minutes. Seeds are then transferred to a second water bath set at a specified temperature, typically between 118 and 125°F, for a specified period of time. The temperature and treatment time varies depending on the type of seed being treated. Reference Cornell University's Vegetable MD Online article entitled [Managing Pathogens Inside Seed with Hot Water](#) and Appendix I in UK *Vegetable Production Guide for Commercial Growers* ([ID-36](#)). There are certain types of vegetable seeds that cannot be heat treated, such as peas, beans, and most cucurbits; seed pretreated with fungicides also should not be hot water-treated.

Surface Sterilize Transplant Trays

Reused transplant trays can harbor disease-causing pathogens. If trays are reused, all soil and plant debris should be removed. Trays can then be sterilized using a solution of one part household bleach to nine parts water (10% bleach) or a disinfectant. Pots and metal stakes should be sterilized in a similar way. For additional information on cleaning and disinfection of trays can be found in the [Cleaning & Disinfecting Home Garden Tools & Equipment](#) and [Cleaning & Sanitizing Commercial Greenhouse Surfaces](#) publications.

Pasteurize Planting Media

Planting media can also contain pathogen propagules that may infect seeds or seedlings. Always use new planting media for starting seeds, as most purchased media is typically pathogen-free. If media is suspected of being contaminated, pasteurization (heating up soil) can eliminate pathogens. To pasteurize, put well-moistened soil in a metal container (such as a disposable cake pan) and heat at 200°F for 46 to 60 minutes, or microwave in a glass pan for 30 seconds, mix, and repeat until soil is evenly heated (approximately 3 minutes total time).

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER FEBRUARY 6, 2024

Cooperative Extension Service
University of Kentucky
Beef IRM Team

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

- Study the performance of last year's calf crop and plan for improvement. Plan your breeding program and consider a better herd sire(s). Select herd sires which will allow you to meet your goals and be willing to pay for superior animals.
- Consider vaccinating the cows to help prevent calf scours.
- Keep replacement heifers gaining to increase the probability of puberty occurring before the start of the spring breeding season.
- Start cows on the high magnesium mineral supplement soon. Consider protein supplementation if hay is less than 10% crude protein. If cows are thin, begin energy (grain) supplementation now. Cows must reach a body condition score of 5 before calving to maximize their opportunity for reproductive success. Supplementation now allows adequate time for cows to calving in adequate body condition score.
- Get ready for the calving season! See that all equipment and materials are ready, including obstetrical equipment, record forms or booklets, eartags, scales for obtaining birthweights, etc. Prepare a calving area where assistance can be provided easily if needed. Purchase ear tags for calves and number them ahead of time if possible. Plan for enough labor to watch/assist during the calving period.
- Move early calving heifers and cows to pastures that are relatively small and easily accessible to facilities in case calving assistance is needed. Keep them in good condition but don't overfeed them at this time. Increase their nutrient intake after they calve.

Fall Calving Cow Herd

- Provide clean windbreaks and shelter for young calves.
- Breeding season continues. Keep fall calving cows on accumulated pasture as long as possible, then start feeding hay/grain/supplement. Don't let these cows lose body condition!
- Catch up on castrating, dehorning and implanting.

General

- Feed hay in areas where mud is less of a problem. Consider preparing a feeding area with gravel over geotextile fabric or maybe a concrete feeding pad. Bale grazing is an option for producers to help control mud while spreading nutrients across pastures.
- Increase feed as the temperature drops, especially when the weather is extremely cold and damp.
- When temperature drops to 15°F, cattle need access to windbreaks.
- Provide water at all times. Cattle need 5 to 15 gallons per head daily even in the coldest weather. Be aware of frozen pond hazards. Keep ice "broken" so that cattle won't walk out on the pond trying to get water. Automatic waterers, even the "frost-free" or "energy-free" waterers can freeze up in extremely cold weather. Watch closely.
- Consider renovating and improving pastures with legumes, especially if they have poor stands of grass or if they contain high levels of the fescue endophyte. Purchase seed and get equipment ready this month.



Saturday, March 23, 2024

Lincoln Memorial University's

DeBusk Teaching Center in Ewing, VA

Cost (includes lunch): \$25 for single & \$40 for couple

Register Due: March 15th

To register contact your Extension Office or visit

<https://cgcattle.weebly.com/>

Topics

- Renovating Pastures
- Herbicide Applications
- Humane Euthanasia
- Weed Control
- Forage Nutrition
- Forage Fertility

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Lee County Extension Office at (276) 698-4506 between 8 a.m. – 5 p.m. to discuss accommodations 5 days prior to the event. TDD number is (800) 828-1120.

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**Cumberland Gap Cattle Conference
March 23, 2024**

9:00 am – Registration

9:30 am– Welcome

9:35 am- Forage Nutrition, Dr. Mason- University of Tennessee

10:20 am– Break

10:30 am– Forage Fertility, Dr. Henning- University of Kentucky

11:15 pm- Break

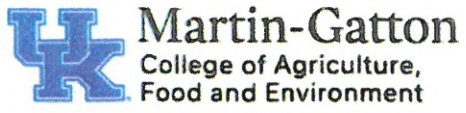
11:25 pm– Weed Management for Pastures, Dr. Flessner- Virginia Tech

12:10 pm- Lunch

1:00 pm– Hands– On Sessions (30 minutes each)

- Renovating Pastures- Dr. Teutsch, UK
- Herbicide Applications- Dr. Flessner, VT
- Humane Euthanasia- Dr. Just, LMU
- Grazing Strategies- Dr. Mason, UT

3:00 pm- Evaluations/Door Prizes



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