Forage News

Keeping Forage- Livestock Producers in Kentucky Informed
Dr. Ray Smith and Echo Gotsick, MS editors
February 2026

KY Alfalfa and Stored Forage Conference – Feb. 24 – Russellville, KY

The 2026 KY Alfalfa and Stored Forage Conference will be a "back to basics" hay production and marketing conference. We will hear from the two newest UK Extension Specialists, numerous professionals, producers and hay buyers. It will be held Feb. 24, 2026 from 8:00 to 3:30CST (9:00 to 4:15EST) in Russellville, KY at the Logan County Extension Office, 255 John Paul Ave, Russellville, KY with lunch provided. The topics and speakers are as follows:

- New UK Hay Testing Program - Jennifer Combs, Hay Testing Coordinator
- Hay Market Reports: Finding Data for Hay Sales in KY and the U.S., Dr. Ray Smith, UK
- New Product Line-Up – Equipment Sponsors
- Weed Control for Hay Production: Getting Ahead of Problem Weeds – Dr. Marcelo Zimmer, UK Weed Specialist
- Do I Have Insecticide Resistance: What Can I Spray? – Drs. Raul Villanueva and Felipe Colares Batista – UK Extension Entomologists
- Promo for KFGC Hay Baler School – Dennis Wright
  New Discoveries of Beneficial Compounds in Alfalfa – Dr. Brittany Davis
- Fertilizing to Maximize Hay Production – Dr. Ricardo Ribero, UK Soil Specialist
- What I Look for When Buying Hay – Hay Buyer Panel
  Take-Home Lessons from the meeting - Dr. Chris Teutsch, UK Forage Specialist

Registration is only $45 and students are $15. Exhibitors can register for only $250. Register online at https://KYAlfalfa2026.eventbrite.com or mail a check payable to KFGC at Katy Trimble, P.O. Box 469, UK Research & Education Center, Princeton, KY 42445. For questions, please contact Katy at (270) 625-5366.

Forage Timely Tips: February

- ✓ Remove animals from waterlogged pastures to limit pugging and soil compaction.
- ✓ Continue grazing stockpiled tall fescue if available.
- ✓ Assess grass stands. If thin, consider frost seeding legumes.
- ✓ Begin frost seeding with at least 6-8 lb/A red and 1 -2 lb/A ladino white clover on closely grazed pastures.
- ✓ On pastures with lower fertility, consider adding 10 -15 lb/A annual lespedeza to the above recommendation.
- ✓ Consider applying N in mid to late February on some pastures to promote early growth.
- ✓ Sign up for shared use drills for spring renovation.
- ✓ Apply lime and fertilizer according to soil test if not done in fall.
- ✓ Control problem weeds like buttercup in late February when day temperatures are forecast above 50 for 3 consecutive days.

Upcoming Pastures Please! For Horse Owners—Feb. 17th

The 19th annual Pastures Please! Program will be held Tuesday Feb. 17 at the Fayette County Extension Office, 1140 Harry Sykes Way, Lexington, KY 40504. The program is free but please call the office at to reserve a spot. Details of the program are shown below:

- 5:30—Meal
- 6:00—Current Weed Concerns & Control Strategies- Dr. JD Green
- 6:30—Compost/Muck Management- Dr. Bob Coleman
- 7:00—Economics & Nutrient Value of Muck- Garrard Coffey & Steve Musen

Pub of the Month: Frost Seeding

Now is the time of the year to frost seed red and white clover. Dr. Teutsch recently updated our frost seeding publication and added some information about including annual lespedeza if you have low

fertility or droughty soils. The direct link for the publication is below or you can go to the UK Forage Website (google KY Forages) under the Establishment tab. There are many other useful publications on establishment methods on this site.

http://www2.ca.uky.edu/agcomm/pubs/AGR/AGR271/AGR271.pdf

Highlighting AFGC Poster Presentations

Over the next few months, we will be highlighting poster presentations given by UK faculty, staff and students at the recent American Forage and Grassland Council annual conference. This month's highlight is the excellent poster presentation given by Dr. Teutsch's senior technician at Princeton, Brittany Hendrix. The title of the poster was Increasing Soil Fertility in Pastures through Bale Grazing.

Pasture productivity in the southeast is often limited by poor soil fertility. However, high prices of commercial fertilizers can limit their use in low-input pasture systems. Utilizing nutrients already contained in hay may provide a convenient and cost-effective way to increase soil fertility in pastures. The objective of this study was to document the impact of bale grazing on pasture soil fertility. This project began in February 2023 at the University of Kentucky Research and Education Center in Princeton, KY and was repeated annually. Before bales were placed, soil samples were taken at a depth of four inches every 20 feet along two permanent transect lines placed in the pasture. Initial soil test results indicated that soil pH was in the optimal range, but P and K values were in the low range. Varying by year, 40 to 50 bales averaging 851 lb were placed uniformly across a 10 A pasture containing stockpiled forage. Fifty-one to sixty-one cow-calf pairs were grazed for an average of 15.7 d. Temporary electric fencing was used to allocate 2 to 3 days' worth of forage at a time. Data was collected on hay quality, residual hay, pasture damage, manure distribution, manure weight and nutrient content. For every ton of hay on a DM basis, there was an average of 32, 10 and 31 lb of N, P_2O_5, K_2O, respectively. Average residual hay following bale grazing was 178 lb DM/bale with an average area of disturbance of 789 sq ft around each bale. Average manure density was 1,615 piles/A with an average dry weight of 0.79 lb/pile. In a post grazing assessment, 54% of the pasture area showed disturbance with an average pugging depth of 1.2 inches. After bale grazing, soil P, K, Ca, Mg, Zn, and organic matter all increased. This project will continue annually to document cumulative impacts of bale grazing over time.

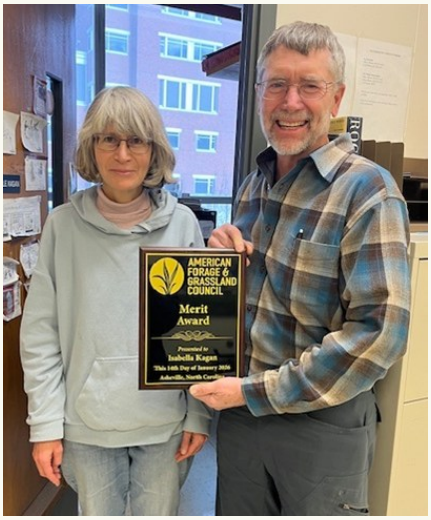
If you would like more details on this project just email Brittany (brittanyhendrix@uky.edu) and she would be glad to send you the full paper published in the AFGC Proceedings.

AFGC Merit Award

Dr. Isabelle Kagan is one of the unsung heroes of forage agriculture in the last 20 years. She has spent her career exploring the chemical composition of forages, including both primary and secondary metabolites of grasses and legumes. Isabelle has not sought acclaim for her contribution, but she played a critical role in the identification of biochanin A in red clover and showing that it was a natural antimicrobial in the rumen that can be used as a natural alternative to growth promoting feed antibiotics. She also has worked to profile other phenolic compounds in legumes.

Isabelle has many other scientific accomplishments in forage agriculture and a selection of these include the following. She developed a method to aid in determining the presence of *Slafractonia leguminicola* in red clover leaves (causal agent of blackpatch, which causes excessive salivation or "the slobbers"). In collaboration with an equine nutritionist and forage extension specialist, Isabelle analyzed water-soluble carbohydrates and phenolic compounds of cool-season grasses to understand the potential of these compounds to affect equine health. She also profiled forage fructans from fermented tissue as part of collaborative studies on fructan disappearance in the rumen. Isabelle, working with others, is also developing methods to analyze mycotoxins in hemp.

In addition, Dr. Kagan has authored 50 peer-reviewed journal publications, co-authored 6 book chapters, co-authored 6 proceedings papers, presented 10 first-author poster presentations, and given 17 professional oral presentations.

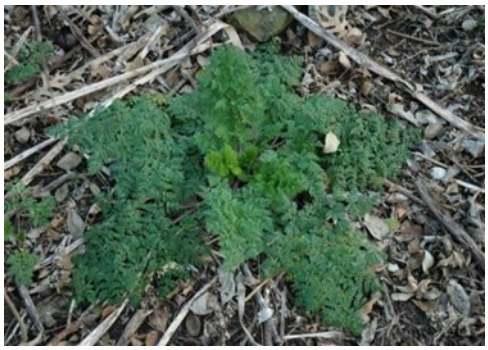


Target Poison Hemlock Now to Reduce Populations this Spring

Poison hemlock (*Conium maculatum*) has become widespread throughout most of Kentucky. Although this plant is often seen

along roadways, fence rows, and other non-cropland sites, it has expanded out into grazed pasture lands and hay fields. It has also become an increasing concern in residential locations when it is observed in areas that are not frequently mowed, such as vacant and abandoned lots. The concern not only stems from its invasive nature, but also from the fact that it is one of the most toxic plants in the world. Throughout history, the toxicity of poison hemlock has been well known for accidental deaths of humans and other animals.

Description– Poison hemlock is classified as a biennial weed that reproduces only by seed. It is capable, however, of completing its lifecycle as a winter annual in Kentucky if it germinates during the fall months. New plants emerge in the fall or late winter, forming a cluster of leaves that are arranged as a rosette on the ground (Figure 1). The individual leaves are shiny green and triangular in appearance. Although poison hemlock is most noticeable in late May and June during the flowering stage of growth, the vegetative growth stage is readily observed during the cooler months of the year (Figure 2) with its parsley-like leaves, which are highly dissected or fern -like.



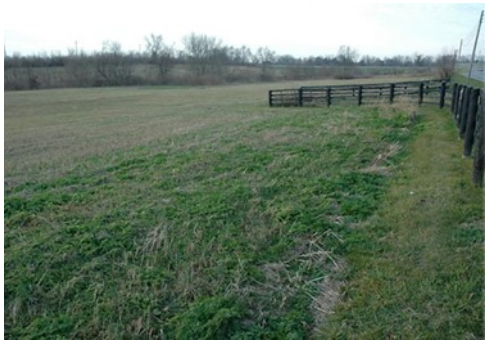


Figure 1 (left)- Poison hemlock rosette. (Photo by JD Green)
Figure 2 (middle)- . Poison hemlock plants growing along a fence line in late December. (photo by JD Green)
Figure 3 (right)- Mature poison hemlock plant. (Photo by JD Green)

As the plant begins to produce flower stalks in the spring, the leaves are alternately arranged on the main stem. Each individual leaf is pinnately compound with several pairs of leaflets that appear along opposite sides of the main petiole. As the plant matures, poison hemlock creates a taproot and grows upwards to about 6 to 8 feet tall. At maturity, the plant is erect, often with multi-branched stems (Figure 3). Poison hemlock has smooth hollow stems with purple spots randomly seen along the stem and on leaf petioles (Figure 4). These features allow us to distinguish poison hemlock from wild carrot (*Daucus carota*), also known as Queen Anne's lace, which has hairy stems and lacks purple spots. Poison hemlock flowers, when mature, are white and form a series of compound umbels (an umbrella-shaped cluster of small flowers) at the end of each terminal stalk.

Poison hemlock can be associated with areas that have adequate moisture throughout the year, as well as drier environments. It can grow abundantly in well-protected areas such as fence rows and the edge of tree lines.

Toxicity - Exposure to poison hemlock toxicity occurs primarily through ingestion. When ingested, even small amounts can result in possible death to all mammals. The principal toxin in poison hemlock is coniine and a few other toxic alkaloids, which are present in all parts of the plant, including the seeds and roots. A well-known case of human toxicity was the death of Socrates, a Greek philosopher, who was sentenced to death in 399 BC by ingestion of a poison hemlock potion. There have been some concerns expressed that toxicity, such as dermal reactions, may occur simply by being in proximity to poison hemlock plants. However, it is unlikely that most people will experience skin rashes who come in direct contact with poison hemlock as opposed to exposure to other plants such as wild parsnip (*Pastinaca sativa*) or other potentially toxic plants within the carrot plant family (Apiaceae). Despite a lower risk of skin exposure, personal protective equipment (gloves, safety glasses, etc.) should always be worn if attempting to hand-pull or remove poison hemlock plant parts from a field.

If consumed, all classes of livestock are known to be affected by poison hemlock. Cattle, horses, and goats are the most susceptible domestic animals, although other animals can be affected as well. Symptoms of poisoning can occur rapidly, anywhere from 30 minutes to 2 hours, depending on the animal, quantity consumed, and other factors. Initial symptoms can include nervousness, trembling, muscular weakness and loss of coordination, dilation of pupils, coma, and eventually death from respiratory paralysis. Lethal doses for cattle are in the range of 0.2 to 0.5% of the animal's body weight. Poison hemlock is also known to cause fetal deformation when pregnant animals consume the plant.

Fortunately, most animals tend to avoid grazing poison hemlock if other forage is readily available. However, animals may be more prone to consume green plants in poorly managed or overgrazed pastures during the late winter and early spring when other forage species are more limited. Also, animals may be more attracted to consume poison hemlock when plants are treated with a herbicide. Toxicity may be somewhat reduced in dried plants, but the potential for toxicity still exists, particularly when enough are consumed in dried hay. Therefore, extreme caution should be considered before feeding animals hay known to contain large quantities of poison hemlock.

Control -The best overall management practice for reducing poison hemlock populations is to prevent new seed

production each year, which can be a challenge since a fully mature plant can produce 35,000 to 40,000 seeds. Once plants flower, it is generally too late to apply herbicides. Whereas, mechanical control efforts (if feasible), such as mowing or cutting down individual plants, should be initiated just before peak flower production to reduce the amount of new seed being added to the soil seedbank.

As a primary strategy, make note of areas known to contain poison hemlock and begin to look for the emergence of new plants in the fall and during the winter months. Herbicide treatments are more effective for poison hemlock control when applied during the fall (October/November), or late winter (February/March) when plants are actively growing and in the rosette stage of growth. Herbicide products containing 2,4-D alone can be effective when applied to young plants that are small and actively growing. As poison hemlock rosettes become more mature, premixtures of 2,4-D + dicamba, 2,4-D + triclopyr, or aminopyralid are needed for best results. Spot treatments with products containing 2,4-D, triclopyr, or glyphosate can also be used, depending on the location. Always consult herbicide product labels for approved sites of application and for precautions that should be considered when applying herbicides.

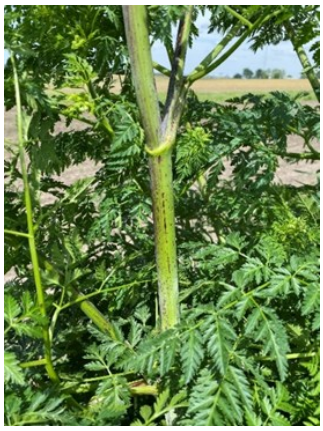
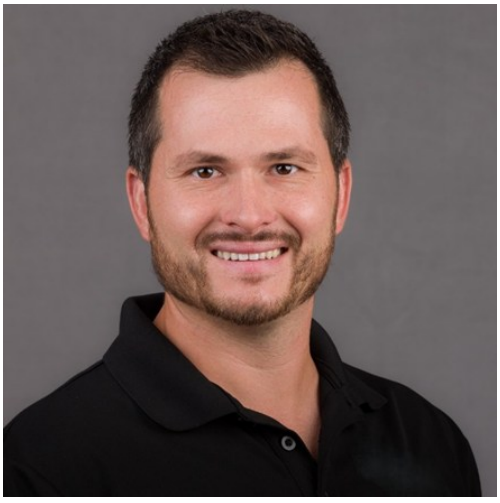


Figure 4 (right) - Purple spots along the stems and petioles of poison hemlock. (Photo by Marcello Zimmer)

~Marcelo Zimmer and J. D. Green, Extension Weed Scientists

Welcome Dr. Marcelo Zimmer to the University of Kentucky



Dr. Marcelo Zimmer is the newest addition to the University of Kentucky Integrated Pest Management team. He is an Extension Weed Scientist in the Plant and Soil Sciences department, focusing on the management of weeds in pastures, forages, roadsides, and other perennial systems, with primary responsibility for developing and implementing Extension weed science programs in central and eastern Kentucky. His research and Extension programs are based in Lexington, KY.

Dr. Zimmer obtained his M.S. and Ph.D. from Purdue University and was a Program Specialist in the Purdue Weed Science Extension program from 2019 to 2025. He obtained a B.S. degree in Agronomy at the Federal University of Pelotas in Brazil. Marcelo originates from Princesa, Santa Catarina state, a small town in southern Brazil, where he grew up on a row crop and dairy cattle farm.

Dr. Zimmer brings a wealth of experience to the University of Kentucky and the Commonwealth, and we are excited to have him as part of the group.

UK Division of Regulatory Services launches Forage Testing Program to support KY livestock farmers

With support from the KY Agricultural Development Fund (KADF), the UK Forage Quality Testing Program is now fully operational, offering comprehensive nutritional analysis of forages. Ray Smith, Extension forage specialist in the Department of Plant and Soil Sciences at UK Martin-Gatton College of Agriculture, Food and Environment, said he is pleased that UKDRS is now offering this high-quality forage testing. “This will be a tremendous benefit to livestock and hay producers in the state,” Smith said. “Having this testing at the same location as UK Soil Testing offers a user-friendly format and quick turnaround. It also facilitates county Extension agents working with specialists to explain the results to their clients.”

According to Smith, forage makes up more than 80% of most ruminant and equine diets, yet many horse owners and livestock producers feed hay or ensiled forages without knowing their nutritional value. To know how to best use hay to meet a horse’s nutrient needs, UK associate professor and equine nutrition specialist Bob Coleman says horse owners need a forage analysis. “Feeding hay is just part of owning horses,” Coleman said. “Having the analysis tells a lot about the hay, allowing horse owners to make better use of the hay and their feed budget. It is exciting to have this service available at UK.”

Experts also agree that most cattlemen wouldn’t buy a bag of feed labeled only ‘Cattle Feed’ without nutrient guarantees. "Forage testing provides the foundational information to build a cost-effective supplement strategy to meet the nutritional needs of beef cattle and ensure performance goals are met,” said Jeff Lehmkuhler, Extension professor of beef cattle nutrition. “Without this information, we are using book values, which may lead to overspending on unnecessary supplements or lost production due to nutritional deficiencies.”

For producers who sell their hay, forage testing allows producers to assess market value, monitor quality changes and make informed sales decisions. It also supports participation in the KDA’s hay grading program.

The UKDRS Forage Testing Program analyzes samples for moisture and dry matter, crude protein, fiber, sugars, starches, minerals, energy values and digestibility. The standard test is $22 per sample; silage and haylage samples are tested for pH at no additional charge. Optional wet-chemistry mineral analyses are available for an extra fee.

Once testing is complete, a process that averages three business days, producers can work with their local Extension agents to interpret the results and balance rations for ruminants or equines. Reports are reviewed for accuracy, and retesting is free if requested within seven days of the report date.

By transitioning forage testing to UK, KDA will retire its forage testing program and expand its forage marketing services by adding hay grading and a monthly USDA hay market report. "It made sense for producers that KDA transitioned the state's forage testing program to the University of Kentucky Regulatory Services," Agriculture Commissioner Jonathan Shell said. "Farmers who are already utilizing the soil lab through their local extension agent can now add a follow-up forage analysis and consultation through UK Cooperative Extension, resulting in a more complete soil and forage improvement plan."

Producers who test their hay for marketing purposes through a certified lab, such as UKDRS, can submit results to KDA. That lot will then be assigned a USDA hay quality grade and included, free of charge, on the KDA "Hay for Sale" website. Untested hay may also be listed on the Hay for Sale site, but it will not show a quality grade and will not have an analysis to verify the quality. Submitting the analysis to KDA is as simple as checking the box on the UK Sample Submission Form to email results to "KDA for Marketing."

Another new addition to the KDA hay program is the monthly hay market report, a collaboration among producers, KDA staff and USDA. KDA will gather Kentucky hay sales data monthly and submit it to the USDA for publication of the market report. Anyone interested in participating in the monthly hay market report by providing their sales data can contact KDA's hay program coordinator Kimberly Field at Kimberly.Field@ky.gov.

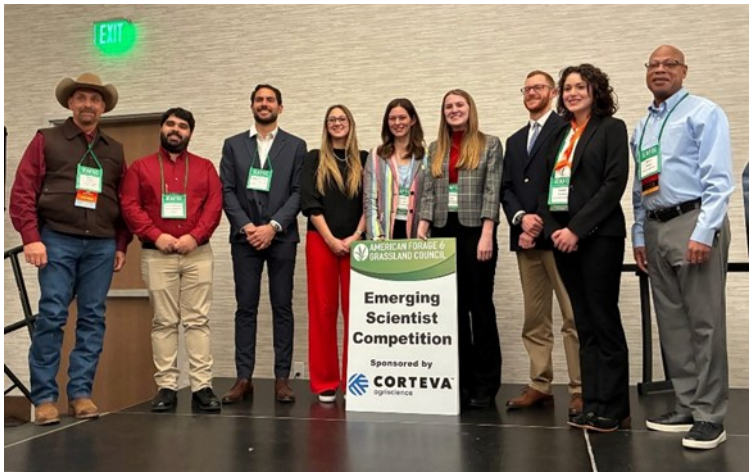
Jenny Combs, agriculture research specialist and administrator of the Forage Testing Program, said proper sampling is critical. "Producers or agents should collect a representative core sample and clearly label the samples and services requested on the sample form," Combs said. She also recommends that producers and Extension agents complete the free one-hour hay-sampling course offered by the National Forage Testing Association (NFTA) at https://www.foragetesting.org. Once samples are collected and labeled, Combs said they should be delivered or shipped via UPS or FedEx during regular lab hours: Monday through Friday, 8 a.m. to 4 p.m. ET. Haylage should not be shipped on Fridays due to the risk of mold. Samples should be shipped to: UK Regulatory Services, Attn: Forage Testing Program, 103 Regulatory Services Building, Lexington, KY 40546-0275.

Craig Wood, assistant director for agriculture, natural resources and horticulture with UK Extension, said the Forage Testing Program is a valuable resource for Kentucky's agricultural community.

"By providing accurate, science-based forage analysis, it empowers producers to make smarter decisions, improve animal health and enhance profitability," Wood said. For more information on the UKDRS Forage Testing Program, visit https://www.rs.uky.edu/ForageTesting or contact the program at UKDRSforage@uky.edu or 859-218-2449.

~ excerpt of article by Jennifer Elwell with UK Ag. Communications, jennifer.elwell@uky.edu

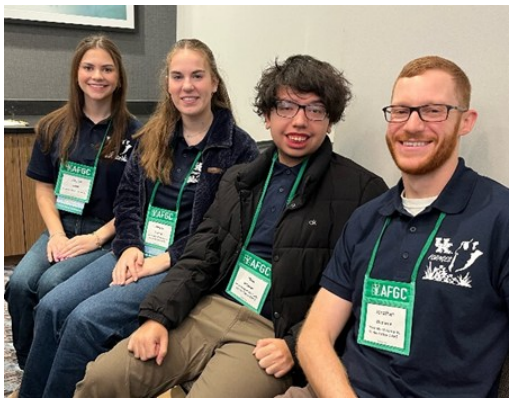
AFGC Emerging Scientist Competition



Jonathan Stephens, a second-year master's student at UK, placed 3rd in the Emerging Scientist Competition recently held at the AFGC Annual Conference. He highlighted his research into the effects of temperature on isoflavone concentrations in red clover. Prior USDA research has shown that red clover naturally produces chemicals known as isoflavones. These compounds help counteract tall fescue toxicosis when consumed by cattle, even in very small amounts. The goal is to produce a red clover-amended mineral or red clover pellets to be used as a supplement for cattle that must consume toxic tall fescue. Drying and processing of red clover exposes the material to high temperatures, possibly in excess of 200 degrees Fahrenheit! Prior to this research, the only available data regarding the persistence of isoflavones in response to high temperatures was for those up to 160 degrees Fahrenheit. Jonathan's results suggest that while temperatures at and above 180 degrees Fahrenheit sometimes reduce isoflavone levels to a small degree relative to 140 degrees Fahrenheit, they are otherwise persistent at high temperatures. This is good news! The UK Forages Team has test-run processing dried red clover into pellets and the results are great, as verified by some very happy cows. If you would like to further

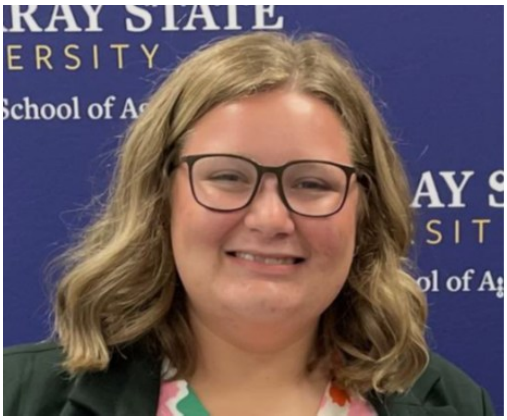
discuss this research, Jonathan can be reached via email at jonathan.stephens@uky.edu.

UK/ Murray State Forage Bowl Team



The combined UK/Murray State Forage Bowl team outlasted two very strong Forage Bowl teams from Arkansas and from the University of TN in the 1st and 2nd rounds of play of the National Forage Bowl at the AFGC Annual Conference. They then faced a Kansas State team who had won the previous four years. The KY team played outstanding and ended up in second place out of seven teams from around the country. Team members pictured below from left to right include undergraduate students Kaylee Ladd (Murray State), Harper Ritchey (UK), and Jose Villanos (UK). Maggie McLaughlin (UK) was also an integral part of the team, though she was unfortunately unable to attend the conference. They were coached by Jonathan Stephens.

New Master Grazer Coordinator



Katy Trimble serves as the Master Grazer Coordinator at the University of Kentucky, where she supports forage education and producer outreach across the state. She earned her bachelor's degree in animal science from Murray State University. Following graduation, she continued her work with the University of Kentucky as an intern in the Forages Department at the University of Kentucky Research and Education Center in Princeton, Kentucky.

In November 2025, Katy accepted the role of Master Grazer Coordinator. In this position, she coordinates materials and logistical preparations for many of the University of Kentucky's forage-related workshops, field days, and conferences. She also manages the UK Master Grazer social media accounts and enjoys engaging with producers to share educational resources and promote forage-based learning opportunities. If you are interested in learning more about future UK forage events, visit the UK Forages website (https://forages.mgcafe.uky.edu/), or contact Katy by email at: katy.trimble@uky.edu.

NAFA's Alfalfa Intensive Training Seminar (AITS) February 17 & 18

Due to the government shutdown, NAFA's 2025 **Alfalfa Intensive Training Seminar (AITS)** has been rescheduled to coincide with the 2026 Midwest Forage Association Symposium, on February 17-18, 2026 in Wisconsin Dells, WI. AITS is a must for anyone working with alfalfa, including agronomists, seed dealers, crop advisors, nutritionists, extension agents, and alfalfa farmers. AITS features national leading experts in the fields of alfalfa production and management.

A partial list of topics to be covered includes: the role of alfalfa in the ruminant diet; pest management; genetics, seed and seed production; growth and development; irrigation and water use; and much, much more. *Registration and agenda are available here*. ***Early-bird registration ends Monday, February 2.***

Southern Indiana Grazing Conference on **Friday, March 13, 2026**, at the **Shiloh Community Center in Odon, Indiana**.

The one-day conference runs from **8:30 a.m. to 4:00 p.m. (ET)**, with registration opening at **7:30 a.m.** Conference topics will cover **bale grazing, soil health, animal-source foods, fertilizer reduction strategies**, and the connection between grazing systems and long-term farm sustainability. This year's keynote speaker is **Peter Byck**, filmmaker and creator of the documentary series *Roots So Deep: Stories of Forage, Fertility, and Farmer Ingenuity*. Byck's work explores regenerative grazing systems and their impact on soil, climate, and farm resilience. Other featured speakers include:

• **Dr. Peter Ballerstedt**, **Barry Fisher**, and **Dr. Greg Halich.** Pre-registration is **$40 per person** and must be completed by **February 28, 2026**.

Online registration **for SIGC** is available at: **https://sigc2026.eventbrite.com**

Join/ Renew KFGC Membership

We encourage you to show your support for Forage/Livestock agriculture in Kentucky and join the Kentucky Forage and Grassland Council. A bonus to joining KFGC is an automatic membership to the American Forage and Grassland

Council. A bonus to joining KFGC is an automatic membership to the American Forage and Grassland Council. A great two for one value for only $25. If you are already a KFGC member, then I encourage you to renew your membership today.

The easiest way is to go to AFGC.org, then click on Membership and Join/Renew Now. Make sure you join as an Affiliate Member of Kentucky Forage and Grassland Council. If you want to mail in your membership then write a check payable to KFGC for $25 and mail to our KFGC Treasurer: Brittany Hendrix, UKREC, PO Box 469, Princeton, KY 42445. Make sure to include your name, address, phone, and email with your check.

Videos from 2026 Forages at KCA Available on KYForages YouTube

Last week we held the “Forages at the KCA” session at the Cattlemen’s Annual Conference in Owensboro. If you were unable to attend, you can watch videos of the presentations on our KYForages YouTube Channel in a playlist entitled “Forages at KCA-2026”. It can be found at https://youtube.com/playlist?list=PLrq6psn95pUz8K604cbcUEi5QyCR5mp9p&si=dzEipeqXRUZcmJ7k.

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Forage News

Martin-Gatton
College of Agriculture,
Food and Environment
University of Kentucky

Upcoming Events (see Forage website for details and to register, click on EVENTS)

Feb. 3 - Equine & Endophyte Workshop, Lexington, KY
Feb. 17 – Pastures Please!, Lexington, KY
Feb. 24 – Alfalfa and Stored Forage Conf., Russellville, KY
Mar. 5 - Cropland To Forage Conversion Workshop, Elkton, KY
Mar. 26 – Hay Tool School, Elizabethtown, KY
April 4 – Winter Feeding Field Day, Princeton, KY
Apr. 21-22 – Beginning Grazing School, Morehead, KY
April 28 - Spring Fencing School, Maysville, KY
April 30 - Spring Fencing School, Elkton, KY

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