



4-1-2016

Forage News [2016-04]

University of Kentucky Department of Plant and Soil Sciences

[Click here to let us know how access to this document benefits you.](#)

Follow this and additional works at: https://uknowledge.uky.edu/forage_news

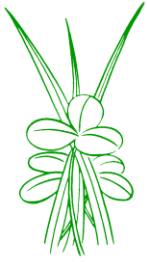


Part of the [Plant Sciences Commons](#)

Repository Citation

University of Kentucky Department of Plant and Soil Sciences, "Forage News [2016-04]" (2016). *Forage News*. 23.
https://uknowledge.uky.edu/forage_news/23

This Newsletter is brought to you for free and open access by the Plant and Soil Sciences at UKnowledge. It has been accepted for inclusion in Forage News by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.



FORAGE NEWS

For more forage information, visit our UK Forage Extension Website at: <http://www.uky.edu/Ag/Forage/>

April 2016

S. Ray Smith, Extension Forage Specialist and Krista Lea, MS

Advanced Kentucky Grazing School April 12

The Master Grazer program will be hosting the Advanced Grazing School at the UK C. Oran Little Research Unit in Versailles, KY on April 12, 2016. The program will be held in the pastures of the Beef Research Unit off US 60.

The advanced grazing school is designed to provide participants in-field learning opportunities and see forage management and grazing systems first hand. Topics that will be covered include: establishing new alfalfa stands, using alfalfa in a grazing system, keys to successful baleage and spring grazing of winter annuals.

Registration will begin at 5:00 p.m. EDT and the Grazing program will be over at 8:00 p.m. There is no registration fee for this program and dinner and refreshments will be provided. For more information please contact Master Grazer Coordinator Austin Sexten at (859) 257-7512, austin.sexten@uky.edu or download flyer for directions at the UK Forage Extension Website.

How Does the Value of Poultry Litter Compare to Commercial Fertilizer?

We are commonly asked how the value of poultry litter compares to that for commercial fertilizer. The short answer is that this depends on many factors. These factors include the field soil test values and subsequent fertility recommendations, nutrient content of the manure, environmental conditions when applied, and the price of manure and commercial fertilizer.

The first thing to consider in determining whether to utilize poultry litter or commercial fertilizer is what the plant requires. If a legume is being grown (e.g. straight alfalfa) then there should be no need for supplemental nitrogen as legumes provide needed nitrogen through their symbiotic relationship with N fixing rhizobia bacteria. So, if nitrogen is not needed but still applied there is a cost with no benefit. The same is true with soil test phosphorus and potassium levels. If soil test levels of one or both of these nutrients are high, then research indicates no yield response will occur - another cost without economic benefit.

Determining the nutrient content of poultry litter is a key to pricing and proper utilization as these contents can vary considerably. How you sample litter is as critical and challenging as soil sampling, but is the foundation for proper litter utilization. Samples can be analyzed at most soil test labs, including the University of Kentucky through county cooperative extension service offices.

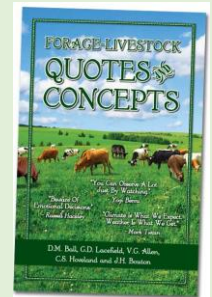
Environmental conditions typically influence the nitrogen component of litter more than other nutrient components since nitrogen can be lost due to ammonia volatilization, denitrification, and leaching. Unless applied litter is washed off the field with heavy rainfall, the phosphorus and potassium components will generally stay where placed. Incorporation of litter will conserve the nitrogen component, but is not always feasible such as in No-till cropping systems. Fortunately, pastures and hayfields usually show the greatest nutrient utilization since runoff potential is lower and vegetation is present throughout the year.

Finally, as the price of commercial fertilizer changes, the value of the manure also changes. For example, if poultry litter contains 50 lb K₂O/ton and 0-0-60 fertilizer can be purchased for \$0.40/lb K₂O, the value of the K₂O in the manure is \$20/ton. Poultry litter is a good alternative source of nutrients for crop production, when utilized properly and economically priced. For more information regarding the value of poultry litter, please contact your county extension agent or the authors. ~Dr. Edwin Ritchey, Dr. Josh McGrath and Jordan Shockley, UK Soil Specialists

Forage News Quote of the Month

“Fear of Bloat Costs More than Bloat Itself”

Bloat is a digestive disorder of ruminant animals that is characterized by over-distention (expansion) of the rumen by gas. Legume bloat, which is associated with consumption of lush, high quality forage of some legumes, can be a serious problem resulting in animal deaths. However, legumes can increase forage yield, improve forage quality, increase animal performance, lengthen the grazing season and provide nitrogen to plants via their relationship with *Rhizobium* bacteria. Numerous factors can affect the likelihood of legume bloat, but practical management can usually prevent it. When proper management is exercised to minimize bloat hazard, the economic advantages of legumes make their use well worth the effort. See the UK Publication “Managing Legume-Induced Bloat in Cattle, ID-186” for more information. Go to publications and animal disorders at the UK Forage Website. To purchase the Forage-Livestock Quotes and Concepts book, contact KFGC at ukforageextension@uky.edu. Books are \$5 each.



70th Southern Pasture and Forage Crop Improvement Conference Registration May 2-4

The Southern Pasture and Forage Crop Improvement Conference is scheduled for May 2nd – 4th in West Monroe, LA. Conference registration ends April 25th and reduced hotel rooms are available through April 18th at the Hilton Garden Inn West Monroe. County agents and innovative producers are encouraged to attend this meeting. For more details, visit <http://agrilife.org/spfcic/>.

Eastern Tent Caterpillar Egg Hatch begins in Central Kentucky

Eastern tent caterpillar egg hatch was reported March 17 in Scott County. “This year’s first observed hatch is seven days earlier than 2015, reflecting the warm spring temperatures,” said Dr. Lee Townsend, UK College of Agriculture, Food and Environment extension entomologist. Consumption of large numbers of caterpillars by pregnant mares precipitated staggering foal losses in the Mare Reproductive Loss Syndrome outbreak of 1999-2001. MRLS can cause late-term foal losses, early- and late-term fetal losses and weak foals.

Townsend said horse owners and farm managers with pregnant mares should begin to monitor fence lines containing wild cherry and other host trees in early April. They should look for small tents produced by developing caterpillars. If practical, farm managers should plan to move pregnant mares from areas where these trees are abundant to minimize the chance of caterpillar exposure. The threat is greatest when the mature tent caterpillars leave trees and wander to find places to pupate and transform to the moth stage.

To get rid of active caterpillars, Townsend recommends pruning them out and destroying the nests if practical. Farm managers can also use any one of several biorational insecticides registered for use on shade trees. Spot treatments to the tents and the foliage around them can be applied according to label directions, which vary by product.

For more information about how to assess trees for egg masses, the UK Entomology publication, Checking Eastern Tent Caterpillar Egg Masses is available at <https://entomology.ca.uky.edu/ef449> ~ Holly Wiemers, UK Equine Programs Communication Specialist

Heart of America Grazing Conference Highlight: Putting Some Pop Back in Your Crop: Alfalfa in Crop Rotations

According to the U.S. Census of Agriculture, the acreage devoted to corn and soybeans has risen by 64 and 255%, respectively, over the last 30 years, while the land use for alfalfa and pasture has declined by 15 and 28% over the same period. Despite a shift to “corn-centric” agriculture, the use of perennial forage species in crop rotations, such as alfalfa or tall fescue, is vital to the long-term success of grain crop operations. A meta-analysis (an analysis that combines the published results from multiple experiments) was performed in order to determine the “true” impact forage species may have in these systems.

While soybeans may also have the ability to form a symbiosis with Rhizobia, they tend to fix less atmospheric N than forage legumes. The results of the meta-analysis show that N fixed by alfalfa would replace nearly 130 lbs of N fertilizer in the first year corn. Red clover produced a similar N fertilizer replacement value (NFRV) as alfalfa (107 lbs N/acre). Soybeans, however, had a NFRV that was

approximately half of these forage species (55 lbs N/acre). While soybeans are undoubtedly capable of fixing more N, the lower NFRV is likely a result of its grain production. Because forages are typically a multi-year phase (2-3 year) in the rotation cycle, the N fixed by forage legumes is compounded annually and results in a larger reservoir that is slowly mineralized in subsequent years. This is evident by the fact that alfalfa and red clover still capable of replacing a sizable portion of the N requirement (NFRV: 40-65 lbs N/acre) of corn planted two years after these forages, but there is very little N left from soybeans after two years.

In pasture, there is greater potential to return N, as well as most other nutrients to the field. Only 20-40% of soil nutrients found in the forage are removed by grazing livestock compared to nearly 80-100% with hay or silage harvests. A cool-season grass hay, such as tall fescue or orchardgrass, with a yield of 3.25 tons DM/acre would remove approximately 120 lbs N, 40 lbs P₂O₅, and 175 lbs K₂O per acre. Grazing of the field would restore roughly 80 lbs N/acre, 30 lbs P₂O₅, and 120 lbs K₂O/acre, which corresponds to 70%, 60%, and 58% of corn’s requirement of these nutrients, respectively. Allowing stover to remain on the field following the harvest of grain crops also promotes some cycling of soil nutrients, but its nutrient content is considerably lower than forage herbage and may lead to other agronomic issues if present in high quantities.

Incorporating forages into a crop rotation may improve soil quality by supplying an abundant source of carbon (C). The extensive root system of forage species combined with the tissue turnover that results from frequent defoliations provides a pool of C in the soil. This C effectively acts as “glue” that holds soil particles together making them more resistant to degradation and improving soil structure. A long-term rotational study in Iowa found that a 2 year rotation of alfalfa improved soil C by 25% compared to continuous corn. Rotation with small grains improved soil C by 10% over the same period, while incorporating soybeans into the system had minimal changes in soil C. The stability of soil aggregates was increased by 35, 17, and 1% for the alfalfa, small grain, and soybean rotations, respectively, indicating a larger potential for forages to improve soil health.

The complete proceedings article and the full list of references is available at www.uky.edu/ag/forage under the 2016 Heart of America Grazing Conference. ~ Dr. Ben Goff, UK Forage Legume Agronomist

Featured Publication: Stand Establishment and Seeding Year Weed Control Considerations in Alfalfa

The National Alfalfa and Forage Alliance recently released this publication discussing seeding recommendations and management challenges of establishing alfalfa. Concepts include seedbed preparation and planting, nurse crops, clear seedings and herbicidal weed control. Thanks to the National Alfalfa and Forage Alliance for this excellent publication, available at <http://www.alfalfa.org/pdf/23.pdf>.

Upcoming Events (full details at UK Forage Website – www.uky.edu/Ag/Forage)

APR 12 Adv. Grazing School, Versailles, KY

MAY 2-4 SPFCIC. Monroe, LA

MAY 14 UK Equine Nutrition Short Course, Lexington, KY

MAY 17-18 KY Grazing School, Versailles, KY

JULY 17-22 International Rangeland Congress, SK, Canada.