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## Forage News [2009-10]

University of Kentucky Department of Plant and Soil Sciences

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# FORAGE NEWS

Research & Education Center  
Princeton, KY 42445

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

## October 2009

*Garry D. Lacefield and S. Ray Smith, Extension Forage Specialists • Christi Forsythe, Secretary*

### 10<sup>TH</sup> KENTUCKY GRAZING CONFERENCE

The 10<sup>th</sup> Kentucky Grazing Conference will be held at the UK Research & Education Center in Princeton on October 29 beginning at 8:00 a.m. CST.

We have a great day planned with exhibits, silent auction, awards program, forage spokesman, short KFGC Business Meeting and a great group of topics and speakers:

8:00	Registration, Visit Exhibits, Silent Auction
8:30	Welcome
8:35	Why Should I Improve my Grazing Program? – Dr. Garry Lacefield
8:45	New Developments in Grazing Species & Varieties – Dr. Ray Smith
9:00	Our Experiences with Eastern Gamagrass – Mr. Tommy Yankey
9:20	Controlling Weeds in Pasture – Mr. Jon Doran
9:40	Tall Fescue Grazing Research – Dr. Glen Aiken
10:00	Break, Visit Exhibits, Silent Auction
10:30	Stored Feed Needs: How much? What Quality? – Dr. Jeff Lehmkuhler
11:00	Extended Grazing and Reduced Stored Feed – Mr. Ed Ballard
11:30	Animal Welfare – Animal Rights: Role of Grazing – Dr. Roy Burris
12:00	Lunch, Visits Exhibits, Silent Auction
1:00	KFGC Business Meeting KFGC Awards Silent Auction Results
1:30	Forage Spokesman Contest
3:00	Adjourn

Registration is \$15.00 at the door and includes a proceedings and other educational materials, a delicious meal and refreshments. CCA credits will be available. More information is on our website at [www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage).

### 30<sup>TH</sup> "ANNIVERSARY" KENTUCKY ALFALFA CONFERENCE

Mark your calendars and plan to attend the 30<sup>th</sup> Kentucky Alfalfa Conference to be held at the Cave City Convention Center February 25, 2010. We are lining up the "Who's Who of Alfalfa" to speak including: Dr. Joe Bouton, University of Georgia; Dr. Don Ball, Auburn University; Mr. Ron Tombaugh, Past President of the National Hay Association; Dr. Gary Bates, University of Tennessee; along with Mr. Ken Johnson, President of the Society for Range Management. We will also have Mr. Bill Talley, President of Summit Seeds; Dr. Ray Smith and Dr. Bob Coleman. More details are available on our website at [www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage).

### KFGC UPDATE

The September 3, KY Forage and Grassland Council Field Day at the James "Buddy" Smith Farm was a huge success with an estimated 262 individuals in attendance. Special thanks to the Smith family for hosting the field day and for their hard work in preparing the farm to showcase their forage operation, which included eastern gamagrass and field corn for winter grazing. Thanks to Farm Credit Services of Mid-America, Anderson County Farm Bureau and the Anderson County Cooperative Extension Service for funding the evening meal. The ribeye steak dinner was prepared and served by members (men and women) of the Anderson County Cattle Association. Thanks ladies for those wonderful homemade desserts. Special thanks to Tommy

Yankey, Anderson County Agriculture and Natural Resources agent, who helped develop the field day and worked behind the scenes on the many details that make for a successful educational program of this type. Last and not least, thanks to Dr. Garry Lacefield, Dr. Ray Smith, Dr. Glen Aiken, Dr. Jeff Lehmkuhler, Ralph Quillin and Tommy Yankey who were the program speakers. Check out the KFGC website for photos of the field day.

While I'm in the "Thanking" mode, I would like to take this opportunity to recognize and thank the members of the KFGC Board of Directors, who are instrumental in giving purpose and direction to KFGC. The twenty-four Board members represent the three sectors of the forage industry: producers, industry and public (education). This month I will introduce you to the producers on the Board and will follow up with the industry and public Board members in future articles: Todd Clark is a commercial hay and tobacco producer and backgrounder from Fayette County, Gene Dobbs is from Campbell County and raises replacement heifers, Clayton Gerald is a commercial hay producer from Hart County, John Nowak is a commercial hay producer from Christian County, Roy Reichenbach is a backgrounder and commercial hay producer from Lincoln County, Daniel Smith is a beef/forage producer from Scott County and Jeff Stephens of Fleming County has a cow-calf and commercial hay operation. Thanks producers for your continued support to KFGC.

Upcoming forage programs include the KY Grazing School, October 8 and 9 in Woodford County and the KY Grazing Conference, October 29 at the UK Research and Education Center in Princeton. For information on these and other upcoming forage programs go to [www.kfgc.org](http://www.kfgc.org) or UK's forage website at [www.uky.edu/Ag/Forage](http://www.uky.edu/Ag/Forage). (SOURCE: Don Sorrell, KFGC President)

### GROWING ALFALFA IN THE SOUTH

A new sixteen page color brochure entitled "Growing Alfalfa in the South" was recently released by the National Alfalfa and Forage Alliance. The publication was written by forage extension specialists from Kentucky, Georgia, South Carolina and Alabama. The publication is available for purchase (\$2.00 per copy plus postage) and will soon be available on the NFA website in a downloadable format. For more information visit [www.alfalfa-forage.org](http://www.alfalfa-forage.org).

### EFFECTS OF A FREEZE ON FORAGES

When plants freeze, changes occur in their metabolism and composition that can poison livestock. But you can prevent problems.

Sorghum-related plants, like cane, sudangrass, shattercane, and milo can be highly toxic for a few days after frost. Freezing breaks plant cell membranes. This breakage allows the chemicals that form prussic acid to mix together and release this poisonous compound rapidly. Livestock eating recently frozen sorghums can get a sudden, high dose of prussic acid and potentially die. Fortunately, prussic acid soon turns into a gas and disappears into the air. So wait 3 to 5 days after a freeze before grazing sorghums; the chance of poisoning then becomes much lower.

Freezing also slows down metabolism in all plants. This stress sometimes permits nitrates to accumulate in plants that are still growing, especially grasses like oats, millet, and sudangrass. This build-up usually isn't hazardous to grazing animals, but green chop or hay cut right after a freeze can be more dangerous.

Alfalfa reacts two ways to a hard freeze, down close to twenty degrees, cold enough to cause plants to wilt. Nitrate levels can

increase, but rarely to hazardous levels. Freezing also makes alfalfa more likely to cause bloat for a few days after the frost. Then, several days later, after plants begin to wilt or grow again, alfalfa becomes less likely to cause bloat. So waiting to graze alfalfa until well after a hard freeze is a good, safe management practice.

Frost causes important changes in forages so manage them carefully for safe feed. (SOURCE: Bruce Anderson, University of Nebraska)

## GRAZING AND ELIMINATIVE BEHAVIOR OF HORSES GRAZING BERMUDAGRASS

**ABSTRACT:** Hummock patches of bermudagrass resulted from herbage growth stimulated by urinary N. Mares stopped grazing momentarily during urination, but defecated in motion, hence the spatial arrangement of hummocks reflected the pattern of grazing. Mares sought out and grazed down bermudagrass herbage growing over urine deposits in a classic patch grazing behavior, albeit the reciprocal of dogma. Grazing patterns indicate that mares used a strategy in line with foraging theory, i.e. they grazed hummocks because they could maximize energy intake with least expenditure of energy. The behavior of mares in the rotational grazing system refutes the concept that confinement and high stocking rates or stocking densities cause the "lawn and rough" landscape. In three years of grazing bermudagrass we never observed mares moving from areas of grazing to areas dedicated to urination and defecation, i.e. "latrine behavior". The amount of N and K excreted in as few as three urinary events per day over small area (each about 2 ft<sup>2</sup>) was equivalent to broadcast applications of over 2.5 tons/A of urea fertilizer and 2 tons/A of KCL. Our data indicates that urination of grazing mares may contribute to nitrate and K in ground water in the absence of active pasture growth. (SOURCE: C.T. Dougherty, R.L. Coleman and E.S. Flynn, University of Kentucky IN Proceedings 63<sup>rd</sup> Southern Pasture and Forage Crop Improvement Conference, Lexington, KY 2009)

## SPATIAL DISTRIBUTION OF LIVESTOCK CONCENTRATION AREAS AND SOIL NUTRIENTS IN PASTURES

**ABSTRACT -** Livestock frequently congregate at feeders, shades, or other sites on pastures, which severely disturbs soil and vegetation leading to erosion and nutrient runoff. Our objective was to determine the extent and spatial distribution of soil nutrients in livestock concentration areas on pastures and quantify the relationships among the soil nutrient gradients, vegetation, and surface runoff. We located and measured all concentration areas on five farms (four grazing dairies and a beef farm) during 2 yr. Selected areas were sampled to 0-2 and 0-6 inch depths to determine soil nutrient levels compared with unaffected areas of the pasture. On one farm we installed runoff plots at three landscape positions on two concentration areas to examine nutrient losses in surface water runoff from simulated rainfall. Concentration areas associated with paddock gates were the largest in number, whereas feed areas (e.g., hay and mineral feeders, sacrifice paddocks) accounted for the most pasture area affected. Soil nutrient levels were usually higher in concentration areas than unaffected areas of the pasture; however, there were some important exceptions where concentration areas had lower soil nutrient levels than unaffected parts of the pastures. (SOURCE: Matt A. Sanderson, Corinna Feldmann, John Schmidt, Antje Herrmann, and Friedhelm IN 2009 AFGC Proceedings & Abstracts, Grand Rapids, MI)

## EFFECT OF HUMATE APPLICATION ON THE FORAGE YIELD AND QUALITY OF BERMUDAGRASS AND TALL FESCUE

**ABSTRACT -** Forage producers are tempted by claims in the popular press that amending the soil with humate can increase the availability of nutrient resources for crop production. The objectives of this research were to compare the yields and quality of 'Russell' bermudagrass and 'KY31' tall fescue treated with commercial fertilizer or poultry litter with and without the addition of humate. From 2006 through 2008, a forage field trial was conducted within two stands of forage ('Russell' bermudagrass and 'KY-31' tall fescue) in Banks and Stephens Counties in Georgia. All sites were soil sampled, analyzed, and fertilized and limed according to the University of Georgia (UGA) soil fertility recommendations, excluding nitrogen. Five treatments were

applied in a randomized complete block design. These treatments included 1) ammonium nitrate (AN: 60 lb actual N/acre), 2) broiler poultry litter (PL: 60 lb available N/acre), 3) ammonium nitrate and humate (ANH: 60 lb actual N/acre + 100 lb/acre of humate), 4) broiler poultry litter and humate (PLH: 60 lb available N/acre + 100 lb/acre of humate), and 5) no nitrogen fertilizer or humate amendment (C). The humate came from Enviromate, Inc. (Fort Worth, TX). The broiler litter used in the study came from a neighboring poultry farm. The amount of available N from the broiler litter was calculated as total N x 0.60, in accordance with UGA recommendations. The treatments were applied immediately following the grower's first cutting of hay. No prior nitrogen had been added. Hay was harvested at the same maturity that the farmer was able to harvest the field (tall fescue:early flower, bermudagrass: 5 week intervals). Grab samples were dried, weighed, used for dry matter correction, and analyzed for quality characteristics via NIRS at the UGA Feed and Environmental Water Lab. From 2006 to 2007 there was no significant difference between fertilizer options with or without humic acid. In 2008, the PLH treatment resulted in lower forage yields than the PL treatment in the tall fescue field. Neither the humate addition nor fertilizer sources exhibited any other significant effect on yield or forage quality in either forage system. We conclude that humate will not improve forage yield or quality in tall fescue or hybrid bermudagrass. Further, NE Georgia forage producers can significantly reduce fertility costs by using readily available poultry litter in place of commercial nitrogen fertilizer. (SOURCE: R.C. Waldorf, F.J. Connelly, D.W. Hancock, and J.G.Andrae IN 2009 AFGC Proceedings & Abstracts, Grand Rapids, MI)

## EFFECT OF REPEATED OR ONE-TIME GRAZING OF KUDZU BY SHEEP AND GOATS IN CENTRAL GEORGIA

**ABSTRACT -** Kudzu [*Pueraria lobata* (Willd.) Ohwi.], a hardy perennial warm-season legume, grows throughout the southeastern United States, generally as a volunteer species, and is widely considered a noxious weed. Due to its extensive root system it is tolerant of drought and acidic, infertile soils. This root system also makes it difficult to eradicate through mowing/mechanical, fire, or chemical means. As kudzu is highly palatable to livestock, small ruminants, such as sheep and goats, may be useful for biological control of this plant. A grazing study was performed in central Georgia to determine the effects of limited versus repeated grazing on the production of kudzu over a one-year period. A combination of sheep (n=192) and goats (n=45) were used to remove all vegetative material in a mature kudzu stand once or continuously throughout the growing season. These treatments were compared with an ungrazed control. Three pasture replicates were used for each of the three treatments. Plant material in 4 randomly-placed quadrats (3.28 x 3.28 ft) per paddock were cut during spring and fall, 2007, and spring 2008, with leaves and stems hand separated. After leaf number and area were determined, the leaves and stems were dried and weighed and the leaves ground for crude protein (CP) analysis. A single grazing reduced following-year growth by approximately 35%, while continuous plant removal in year 1 reduced year 2 growth by 65%. Leaf CP remained high (20-22%) regardless of grazing treatment. Grazing with sheep and goats can effectively reduce subsequent growth of kudzu, with a linear response to grazing pressure. High quality forage can be maintained during this process. (SOURCE: T.H. Terrill, W.R. Getz, S.L. Dzimiński, W.F. Whitehead, B. Singh, and J.P. Muir IN 2009 AFGC Proceedings & Abstracts, Grand Rapids, MI)

## UPCOMING EVENTS

OCT 8-9 Kentucky Grazing School, Woodford County Extension Office, Versailles  
OCT 29 10<sup>th</sup> Kentucky Grazing Conference, UK Research & Education Center, Princeton

### 2010

JAN 15 Forages at KCA, Lexington  
JAN 20-21 Heart of America Grazing Conference, Wilmington, OH  
FEB 25 30<sup>th</sup> Anniversary: Kentucky Alfalfa Conference, Cave City Convention Center

  
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October 2009