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2-1-2016

Forage News [2016-02]

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Repository Citation

Department of Plant and Soil Sciences, University of Kentucky, "Forage News [2016-02]" (2016). *Forage News*. 25.

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FORAGE NEWS

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

February 2016

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

Successful Heart of America Grazing Conference

The Heart of America Grazing conference was hosted by the University of Kentucky and the Kentucky Forage and Grassland Council on January 25-26 in Lexington. The event was a tremendous success with 170 participants from Kentucky and several surrounding states. Highlights from the meeting will be included in subsequent issues of Forage News, including Dr. Michael Flythe's work with Isoflavonoids (see article on page 2).

Special Forage Seminar to be held March 8th at UK

A special Forage Seminar "New Forage Varieties: Application on Your Farm" has been announced. Keynote speaker is Dr. Joe Bouton. Dr. Bouton is known worldwide for his practical approach to forage breeding. His focus has been to develop varieties that are adapted and persistent and that make a profit for farmers across the southeast. Through his work at the University of Georgia and the Noble Foundation, he has released more groundbreaking forage varieties than any other breeder in the last 25 years, including Alfagraze alfalfa, MaxQ tall fescue and Durana and Patriot white clover. The seminar will be held March 8th, 7-9 pm at the University of Kentucky Good Barn Conference facility.

Kentucky Represented in American Forage and Grassland Council Awards

The annual AFGC Awards banquet was held on January 12th in Baton Rouge, LA, and two USDA-ARS Forage Animal Production Research Unit researchers from Lexington were honored.

Dr. Jimmy Klotz is a Research Animal Scientist and adjunct faculty at the University of Kentucky. Dr. Klotz was an AFGC Merit Award Winner; his research has been instrumental in improving the understanding of the mechanisms by which ergot alkaloids adversely affect grazing animal physiology and well-being.

Dr. Glen Aiken was honored with AFGC's highest award, the Medallion Award. Dr. Aiken is a Research Animal Scientist and Agronomist and has been the Research Leader at the USDA-ARS FAPRU in Lexington, KY since 2013. Dr. Aiken's research is focused on developing animal and pasture management approaches to improve forage productivity and persistence, and the efficiency of growth on pasture by beef cattle. Dr. Aiken is a Fellow in the American Society of Agronomy and the Crop Science Society of America, and is an Adjunct Professor in the Plant and Soil Sciences and the

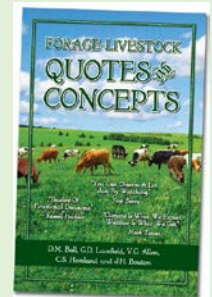
Animal and Food Sciences Departments at the University of Kentucky.

How Could Mild Winter Affect Alfalfa Insects?

Winter temperatures have a significant impact on insect survival and can greatly affect pest activity for the upcoming growing season. Above-normal temperatures can result in earlier appearance, greater numbers, and increased damage from common pests. In some cases, problems may develop with species that seldom cause injury. The abnormally mild conditions during the early part of this winter favor key alfalfa pests and perhaps some that we do not see too often. It is still early so cold weather during February through March can bring things back to near-normal, but it is worth looking ahead just to be prepared. Pests that may exhibit early activity or increased injury due to a mild winter include Alfalfa Weevils, Potato Leafhopper and Black Legume Aphid. ~ Lee Townsend
See full article in January 2016 issue of Kentucky Pest News, go to "KY pest news" link on Forage website.

Forage News Quote of the Month "Feeding Seed is a Bad Idea"

Livestock producers often see evidence of grazing animals having spread seed of forage plants through dung droppings. This sometimes inspires them to consider feeding seed to livestock to facilitate spread of desirable species around the farm. However, the extent of survival of seed that has passed through the digestive tract of an animal is generally low, especially with grass seed. In the case of legume seed, survival of passage through an animal is low except for "hard seed," which for most legumes is a small percentage of the total. Uneven distribution of seed and (for legume seed) lack of inoculation with nitrogen-fixing bacteria are additional problems associated with depending on animals to distribute seed. To purchase the Forage-Livestock Quotes and Concepts book, contact KFGC at ukforageextension@uky.edu. Books are \$5 each.



Kentucky Alfalfa Awards Given at Heart of America

The KY Alfalfa awards, normally handed out at the KY Alfalfa Conference, were given out at the Heart of America Grazing conference on January 26th. The Charlie Schnitzler Producer Award went to Flynn Farms, Mark and Ron Flynn operate a highly successful alfalfa hay farm in

Jefferson County. Dr. Kenny Burdine is the Ag. Economics extension specialist at UK and received the Garry D. Lacefield Public Service Award. Kenny has delivered practical economic information for hay producers and cattlemen in KY for over 10 years. The Warren Thompson Industry Award went to Hank Bendorf, who has been one of the most supportive industry reps for KY alfalfa producers throughout his career. He worked closely with Warren Thompson to implement many on-farm alfalfa demonstrations throughout the southeast.

American Forage and Grassland Council Annual Meeting

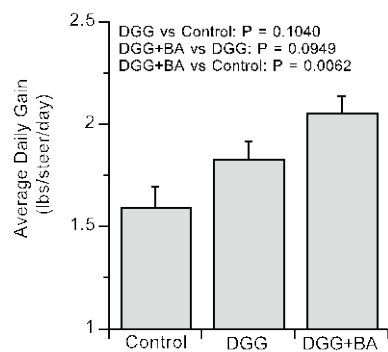
Kentucky had the largest contingency of out of state attendees at the recent AFGC meeting in Baton Rouge January 10-12. Those in attendance included research scientists, extension specialists, county Ag. agents, producers and UK students. Kentucky Forage Spokesperson Jay McElwain gave an excellent presentation on his farm and represented KY well in the contest. The Emerging Scientist contest had two students from UK: Eric Billman presented his work on grazing preference of dairy cattle and Kelly Prince, the overall winner and only female in the contest, presented her master's work on carbohydrates in cool season grasses. UK undergraduate student AnnMarie Kadnar presented a poster on the stability of ergovaline in tall fescue samples. Speakers from Kentucky included Garry Lacefield, Glen Aiken, Ray Smith, Scott Flynn and Michael Flythe. The National Forage Bowl Contest, chaired by UK's Krista Lea was also a tremendous success, with Kansas State University beating University of Wisconsin-River Falls to be the champs for the second straight year. Challenge to all KY schools: let's send several teams from the state next year.

Heart of America Grazing Conference Highlight: The Secret Ingredients of Clover: Biochanin A and Isoflavonoids

It is well known that an important value of clover is free nitrogen. What many do not realize is that clovers also contain a class of chemicals called isoflavones, and recent discoveries show that the isoflavones positively influence the way that ruminants digest protein.

The USDA laboratory in Lexington, KY determined that the red clover isoflavone, biochanin A, could reduce ammonia production from rumen bacteria by killing the same bacteria as

anti-microbial growth promoters. Two feeding trials were carried out (spring and fall 2015). In each trial, 48 Angus cross steers were put on pasture (clover-free, novel endophyte fescue) in one of three groups: pasture only (control), pasture plus dry distillers' grains (DGG) or pasture plus dry distillers' grains with added biochanin A (DGG+BA). The biochanin A was given at 7 g/head/day, which would be equivalent to the amount of biochanin A in a diet that was approximately 1/3 red clover. The average daily gains were calculated the end of the 63- and 61-day trials. In both cases, the addition of biochanin A improved average daily gain.



Biochanin A also shows benefits in other ways. A survey of research done on humans and non-ruminant animals revealed that isoflavones were also used to treat hypertension. Previous researchers showed that biochanin A could dilate a blood vessel (the aorta) in rats. Consider this with the common wisdom about clovers in tall fescue pastures. Fescue toxicosis is caused by toxic alkaloids produced by a fungus that lives in the grass. The alkaloids cause the blood vessels to constrict, which causes many of the negative health effects associated with tall fescue. It has long been held that clovers in the pasture can "dilute" the concentration of alkaloids in the diet; that is, the animals will consume less tall fescue because they also have clover. However, if isoflavones could relax blood vessels in ruminants, then clover might directly counteract blood vessel constriction by fescue alkaloids.

Preliminary research at USDA with goats clearly showed that clover extract dilated blood vessels previously constricted from consuming tall fescue with high alkaloid levels. The discovery that clover isoflavones can counteract at least one of the negative effects of toxic tall fescue gives us another reason to maintain clovers in pasture where fescue is prevalent. Isoflavones are estrogenic, which means that they have to be carefully used. For example, different feeding levels might be recommended for backgrounding and finishing beef versus pre-weaning or in dairy production. There are also special considerations for sheep, which are believed to be particularly sensitive to reproductive effects of plant estrogens. Clearly, more research is needed on the biologically active chemicals made by forage legumes, as well as how to best utilize them as "functional feed" in each industry supported by forage. However, the above results indicate that this research is well worth pursuing. ~ Michael Flythe, Glen Aiken and Isabelle Kagan, summary from Heart of America Grazing Conference Proceedings. Full proceedings are available online at www.uky.edu/ag/forage.

Featured Publication: Inoculation of Forage Legumes (AGR-90)

Legumes can improve grass-based forage programs by increasing yield, improving quality, improving summer production, and converting atmospheric nitrogen into a chemical form that the legume plant can use, thus reducing the need for applied nitrogen fertilizer. In order for the legume to "fix" nitrogen, they must have active nodules on the roots. Nodules are formed when proper bacteria are in contact with the seed during the establishment period. Supplying this bacteria in sufficient quantities can be done through the addition of rhizobia bacteria prior to seeding on the farm or at the factory when seed are pre-inoculated with large quantities of rhizobium. This and other publications can be found at www.uky.edu/ag/forage under the publication tab.

Important Reminder: February is the month to frost seed clovers in KY.

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

- FEB 6 KY Small Ruminant Grazing Conf. Catlettsburg, KY
- FEB 11 Pastures Please Equine Conf., Versailles, KY
- MAR 8 New Forage Varieties Seminar, Lexington, KY
- APR 12 Adv. Grazing School, Versailles, KY
- MAY 2-4 SPFCIC. Monroe, LA
- MAY 17-18 KY Grazing School, Versailles, KY
- JULY 17-22 International Rangeland Congress, SK, Canada.