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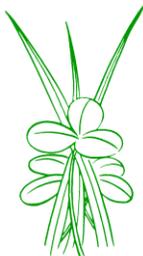
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FORAGE NEWS

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

October 2015

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

Research Accomplishments for the Forage-Animal Production Research Unit

The University of Kentucky is home to many outstanding researchers in agriculture, including scientists from the USDA Agricultural Research Service (USDA-ARS). The Forage-Animal Production Research Unit (FAPRU) under the leadership of Dr. Glen Aiken focuses on improving the productivity, competitiveness and sustainability of forage-based enterprises with a major focus on tall fescue and fescue toxicosis. Just a few examples of research projects include:

- Dr. Randy Dinkins, Molecular Genetics Program. Mechanisms between the endophyte and tall fescue plant and genetic manipulation of flowering by legumes
- Dr. Michael Flythe, Ruminant Microbiology. Effects of beta acids and isoflavones on rumen and hindgut fermentation.
- Dr. Isabell Kagan, Plant Physiology and Biochemistry. Exploring soluble sugars in grasses and isoflavone a production in clovers
- Dr. Jimmy Klotz, Ruminant Physiology. Effects of ergot alkaloids on vasculature and digestive system.
- Dr. Glen Aiken. Mitigation of tall fescue toxicity effects in grazing beef cattle.

USDA research analysts at the FAPRU Unit include Brenda Coe, Troy Bass, Gloria Gellin, Adam Barnes, Tracy Hamilton and Dr. Dwight Semen. As part of the FAPRU-UK partnership, collaborative research with over 20 UK faculty is also possible through a Specific Cooperative Agreement. http://www.ars.usda.gov/main/site_main.htm?modecode=50-42-05-00

Frost and Freezes Increase Cyanide Poisoning Risk

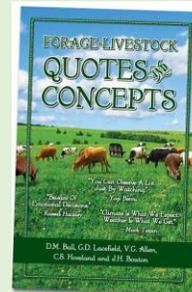
Cyanide poisoning, more commonly referred to as prussic acid poisoning, can have a very abrupt and deadly effect on ruminant livestock grazing forages and requires careful management as frosts and freezes begin in the area. Plants, such as sorghum, sudangrass, sorghum-sudan hybrids, Johnsongrass, wild cherry, and others, contain compounds that produce free cyanide when these plants are damaged by frost or drought conditions. Grazing these plants when they are producing young shoots (less than 18 inches tall) also increases the risk. Using caution when grazing these forages during times of stress can usually eliminate the possibility of cyanide poisoning in livestock. Waiting for two weeks after a light frost (temperature greater than 28°F) is recommended. For a killing frost, wait until the material is completely dry

and brown (usually cyanide dissipates within 72 hours). Grazing at night when a frost is likely is not recommended as high levels of cyanide are produced within hours after frost occurs. Delay feeding silage for six to eight weeks following ensiling of forages in the sorghum family. If cut for hay, allow to dry completely so the cyanide will volatilize prior to baling. For more information, follow this link to the UK publication "Cyanide Poisoning in Ruminants": <http://www2.ca.uky.edu/agc/pubs/ID/ID220/ID220.pdf>.

Forage News Quote of the Month

"Some Folks Pay for a Hay Barn They Never Build"

In humid climates there can be severe penalties associated with storing hay outside without protection from the elements. Dry matter loss resulting from respiration and leached nutrients often exceeds 30% in some areas. Forage quality, especially digestible dry matter, often drops sharply. Also, weathered hay is less palatable to animals, which can greatly increase refusal and feeding loss. As a result, in some cases half or more of the hay produced is unnecessarily lost. Many producers could easily and quickly pay for building a hay barn through savings realized by reducing outside storage losses. To purchase the Forage-Livestock Quotes and Concepts book, contact KFGC at ukforageextension@uky.edu. Books are \$5 each.



New Master Grazer Coordinator: Austin Sexton

We are very excited to introduce Austin Sexton as the new Master Grazer Coordinator. Austin hails from a diversified farm in Ohio with a strong beef background. After getting his Bachelor's degree in Animal Science from the University of Kentucky, Austin managed a purebred Angus operation in Kentucky for a period of time before departing for Oklahoma. Austin received a Master's in Animal Sciences from Oklahoma State University in which he investigated new hay feeder designs to reduce feeding waste. He stayed in the central plains area of Kansas as a county Ag agent for a few years before making his way back east with his family. Austin's practical livestock background,



coupled with his research training and Extension experience will be a great asset to our forage-based livestock programming efforts. In addition, his wife, Andrea, is a new faculty member at Eastern Kentucky University in Animal Science. We hope you will join us in welcoming Austin and his family back to the Bluegrass state. – Master Grazer Program.

To receive *Grazing News*, sign up at www2.ca.uky.edu/grazer/

Could Plant Secondary Metabolites Boost Performance?

Secondary metabolites in plants are compounds produced from primary metabolites (protein, carbohydrates and lipids) for a specific function. These include nectar for attracting



Photo: Wikipedia

pollinating insects, cyanogenic glucosides for protection and nicotine and caffeine for pest deterrence.

While many secondary metabolites are marketed for human use such as ginseng, ginkgo and sage, new research by the USDA-ARS researcher Dr. Michael Flythe is looking into compounds to improve performance in beef steers. In vitro (laboratory) studies have suggested that beta acid (from hops) and biochanin a (from red clover)

decrease ammonia production in the rumen and improve protein utilization in cattle. Grazing studies are now underway to further explore the effects of red clover in pastures and it's effects on average daily gain in cattle. Potential impacts of this information includes the use of feed additives derived from natural sources (such as hops or red clover) over synthetic additives. For more information, see the full article "Plant Secondary Metabolites: The Good and the Bad" by Dr. Glen Aiken in the August 2015 issue of Cow Country News. www.kycattle.org/cowcountrynews.html

Heart of America Grazing Conference Agenda Announced

The 2016 Heart of America Grazing Conference will be held at the Downtown Hilton in Lexington, KY on January 25-26, 2016. Monday evening's program will include "History of Forage Research, Extension and Teaching in Kentucky" by Ray Smith and "Gratitude: A Personal Prospective" from Garry Lacefield. Tuesday will include:

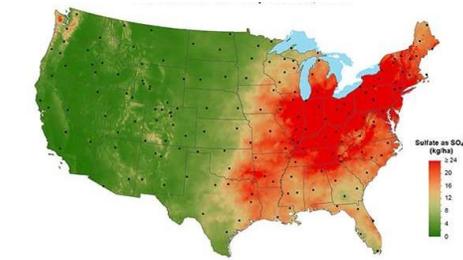
- The Secret Ingredients of Clover: Biochanin a and Isoflavonoids (Michael Flythe)
- Soyhulls: More than Just a Feed Supplement (Glen Aiken)
- Suppress Seedheads to Improve Forage Quality
- "Lacefield MaxQII" Novel Tall Fescue (Tim Phillips)
- Grazing Alfalfa: Producer Perspective
- Low Lignin Alfalfa: Advantages for Hay and Grazing (Ray Smith)
- Alfalfa as a Green Manure: Putting Some Pop Back in Your Crop (Ben Goff)
- Native Warm Season Grasses: Naturally Adapted productive Pastures (Pat Keyser)
- Grazing Corn to Maximize Late Summer and Fall Gains (Jeff Lehmkuhler)
- The Economics of Extended Grazing (Greg Halich)

The HOA conference is a 5 state initiative (MO, IL, IN, OH and KY) and this year is hosted by the University of Kentucky

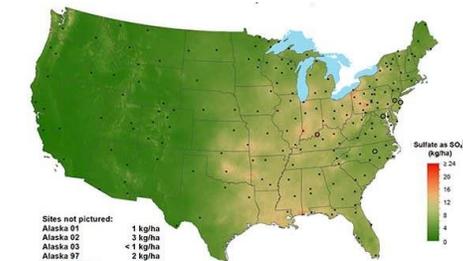
the Kentucky Forage and Grassland Council. Full details and registration info will be available on the UK Forage website.

Sulfur and Crop Growth

For decades now, acid rain has deposited more than adequate amounts of sulfur onto crop fields, especially in the eastern US. However, legislation including the Clean Air Act of 1970 (amended 1990) has significantly reduced sulfur



National Atmospheric Deposition Program/National Trends Network
<http://nads.lewis.illinois.edu>



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Sulfate ion deposits 1990 (above) and 2013 (below).

emissions. Some universities and testing facilities are now seeing sulfur deficient crops including alfalfa and corn for silage, mainly on

sandy and low organic matter soils. Sulfur, similar to nitrogen, is a mobile element in the soil and difficult to accurately test for. Plant tissue

samples are a more accurate

test for sulfur deficiency. Fields found to be deficient should be treated with manure or commercial sulfur amendments. The full article by Mike Rankin can be found in Hay and Forage Grower. <http://hayandforage.com/article-268-A-government-program-that-actually-worked.html>

Kentucky Forage and Grassland Council Announces 2015 Award Winners

The KFGC Award winners for 2015 were announced at the annual KFGC Field Day on September 17th at Woodland Place Farm. Kimberly Field, KY Dept. of Ag. won Public State level and Christian County Ag Agent Jay Stone won the Public County level award. Producer Caldwell Willig of Rivercrest Farm in Prospect, KY received the Grassroots Award and Ken Carpenter of Caudill Seed received the Industry Award. KFGC awards began in 1976 and are voted on by the Board of Directors each year based on service to the industry and promotion of Forages in Kentucky. – Krista Lea

Upcoming Events (details at Forage Website)

- OCT 10 Forage and Beef Field day. Edenshale, KY
- NOV 20-24 International Grassland Congress. New Delhi, India.
- DEC 4 Farm Bureau Forage Meeting. Louisville, KY
- DEC 13-16 National Grazing Lands Coalition Conf. (GLCI). Grapevine, TX.

2016

- JAN 10-12 American Forage and Grassland Council Annual Meeting. Baton Rouge, LA.
- JAN 16 Forages at KCA. Owensboro, KY
- JAN 25-26 Heart of America Grazing Conf. Lexington, KY
- FEB 6 Kentucky Small Ruminant Grazing Conf. Danville, KY