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Forage News [2007-06]

Department of Plant and Soil Sciences, University of Kentucky

UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

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Princeton, KY 42445

FORAGE NEWS

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

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

KFGC Summer Grazing Tour

Make plans to join us at the John Hagan Farm in Mt. Hermon (Monroe County), Kentucky June 14, 2007 for the KFGC Field Day. The program will begin at 4:00 with wagon tours and a delicious meal. Details and directions to the farm can be seen on our website www.uky.edu/Ag/Forage or contact Kevin Lyons, Monroe County Agriculture Agent, klyons@uky.edu, 270-487-5504; or, Garry Lacefield glacefie@uky.edu, 270-365-7541, Ext. 202.

UK Field Day Offers Something for Everyone

Tours, demonstrations, exhibits, youth activities, family and consumer science activities, good food, fellowship and FUN are all on tap for the 2007 University of Kentucky All Commodity Field Day to be held at the UKREC in Princeton on July 26.

Hop on either wagons or buses for any one of eleven agriculture tours and you will be off for an hour and a half to learn details of research and extension results relating to most areas of agriculture. The most popular tour has been the “Station Overview” tour which is a non-stop, narrated tour covering an overview of all activities at the Experiment Station.

There will be many youth, Family & Consumer Science activities along with demonstrations throughout the day. The exhibit tent will be full of booths offering information on a wide variety of agriculture topics.

The program will get started at 8:00 with a welcome and tours will run continuously from 8:30 – 3:00. For more information, visit our website at www.uky.edu/Ag/Forage or check with your County Extension Office.

KADB Approves $650,000 for Biomass Project

The Kentucky Agricultural Development Board approved the Kentucky Forage and Grassland Council for a total of $650,000 in state funds to contract with the University of Kentucky, College of Agriculture, Department of Plant and Soil Sciences to conduct a biomass and hay production applied research and demonstration project.

The Kentucky Forage & Grassland Council will use these funds to demonstrate that the electrical generating utilities and the cellulosic ethanol industry in Northeast Kentucky is capable of utilizing Kentucky biomass crops that are sustainable and economical; to develop viable markets for biomass; and to develop and promote viable hay production and marketing strategies. Much of the funding will help establishment and manage switchgrass fields on 20 farms within a 60 mile radius of Maysville, KY. Ray Smith and Tom Keene will be the coordinators at UK for this project.

USDA-ARS and Cooperative Extension Sponsors Eastern Gamagrass Field Day

The USDA-ARS Forage and Livestock Lab and Cooperative Extension Service are sponsoring an Eastern Gamagrass field day August 1. The field day will start at 9:00 a.m. at the Anderson County Extension Office. The morning session will include talks by experts from KY and other states on how to establish, manage and harvest (grazing and hay) this productive, high quality warm season native grass. After lunch, participants will tour farms in Anderson County to see first hand how to establish Eastern Gamagrass and then on to a farm in Mercer County to review a 50 acre hay field that has been in production for 10 years. Complete details can be found on the Forage Website in mid-June or in the next issue of Forage News.

Roundup Ready Alfalfa Injunction Is Permanent

Late last week an injunction against planting Roundup Ready alfalfa was made permanent.

Monsanto Company "is disappointed with the decision ... not to allow farmers to resume planting Roundup Ready alfalfa until the U.S. Department of Agriculture completes an environmental impact statement," according to a statement released by the company. The injunction was issued by the Federal Northern District Court of California following a lawsuit brought by the Center for Food Safety and others against USDA, called Geertson Seed Farms, Inc. et. al v. Mike Johanns, et. al.

Monsanto petitioned the court to become a party in the case to defend grower choice to use the technology. But the court upheld its decision that USDA did not adequately follow National Environmental Policy Act procedural requirements before deregulating the transgenic crop. The court maintained that, under the Plant Protection Act, USDA would have to prepare an environmental impact statement in place of the environmental assessment that was completed.

Roundup Ready alfalfa planted by March 30 can still be grown, harvested and sold as forage. But a federal order will be issued within 45 days of the May 3 judgment, imposing the following requirements:

- Pollinators can't be added to Roundup Ready alfalfa fields grown only for hay production.
- Farm equipment used in transgenic alfalfa production must be properly cleaned after use.
- The crop must be handled and clearly identified to minimize commingling after harvest. "Immediately after harvest, growers or seed producers shall store Roundup Ready alfalfa in specifically designated and clearly labeled containers," according to the ruling.

The court also requires the locations of all existing Roundup Ready alfalfa seed and hay acreage be provided to USDA within 30 days for future public availability. Monsanto is reviewing its options, including the possibility of an appeal of the court's decision.
(SOURCE: e-Hay Weekly, May 8, 2007)

No Roundup Ready Harvest Restrictions Yet

There are no restrictions on Roundup Ready alfalfa harvested this spring until growers are notified by USDA's Animal and Plant Health Inspection Service (APHIS), points out Dan Undersander, University of Wisconsin extension forage specialist.

Judge Charles Breyer's permanent injunction prohibiting the sale of Roundup Ready alfalfa allows that existing fields (planted before March 30, 2007) can continue to be grown, harvested and sold. But he imposed several conditions and required that APHIS draft regulations to implement them. APHIS is required to notify growers individually of the restrictions within 45 days of the May 7 order.

"The important consideration is that no restrictions are in effect until the growers receive the notice from APHIS," says Undersander. *(SOURCE: e-Hay Weekly, May 15, 2007)*

Effects of Forage on Steer Performance

Batesville, AR – Spring 2004

	Novel Endophyte Fescue	Toxic KY-31 Fescue
Grazing Dates	March 17 to July 8	March 17 to July 8
ADG lbs	2.03	1.00

(SOURCE: University of Arkansas Livestock and Forestry Branch Station)

Effects of Forage on Stocker Profits

Batesville, AR – 2003-2005

	Forage Type		
	Novel Endophyte Fescue	Toxic KY-31 Fescue	Wheat/ Wintergrazer 70 Rye
	Profit ($/A)		
2003-2004	147.61	5.08	1.44
2004-2005	44.18	(-140.07)	(-81.13)

(SOURCE: University of Arkansas Livestock and Forestry Branch Station)

Grazing Days – Fescue vs. Small Grains

Batesville, AR

	Fall 2003		Spring 2004	
	Novel Endophyte Fescue	Wheat/ Wintergrazer 70 Rye	Novel Endophyte Fescue	Wheat/ Wintergrazer 70 Rye
Grazing Dates	Sept. 16 - Dec. 23	Nov. 11 - Jan. 23	Mar. 17 - July 8	Mar. 17 - May 12
Grazing Days	98	72	113	56
Total Gain (lbs/A)	252	256	575	261

(SOURCE: University of Arkansas Livestock and Forestry Branch Station)

Forage Has Cellulosic Ethanol Potential

As the price of corn goes higher, the term "cellulosic ethanol" is mentioned more often, indicating a potential new market for forage producers. As the name implies, cellulosic ethanol would be made from cellulose-containing plant parts such as cornstalks, wood, straw or switchgrass. "Cellulose and hemicellulose provide a rich supply of carbohydrates that are ultimately used to produce ethanol," explains Joe Bouton, senior vice president and director of the Forage Improvement Division of the Samuel Roberts Noble Foundation, Ardmore, OK.

A U.S. Department of Energy (DOE) and USDA report predicts that, by 2030, a billion tons per year of biomass could produce enough biofuel to replace 30% of the current U.S. consumption of petroleum, says Bouton. In the report, perennial crops would account for about 377 million tons of that annual production. However, the technology to create cellulosic ethanol is not ready for mass production. "Although most of the pieces are in place, the key is to continue to make it more cost-effective and economically competitive," Bouton says.

DOE has identified switchgrass as an energy crop because of its potential for high fuel yields, drought tolerance and the ability to grow well on marginal land without heavy fertilizing or intensive management. "By this definition, the traditional high-yielding forages like bermudagrass, tall fescue, red and white clover and alfalfa are also good candidates," Bouton says. "However, the requirement of low cost of the delivered feedstock, possibly as low as $40-50/ton, is the greatest hurdle for growers of these crops to overcome."

Alfalfa, for example, would have to be divided into components; leaves could produce high-value meal and stems could be sold to the biorefinery. "If co-products such as high-value, natural compounds that benefit animal or human health are simultaneously extracted from the leaf material, this allows the economics of using alfalfa as a biofuel crop to work even better," Bouton says. Each region of the country could have its own cropping system to supply a local biorefinery, based on crops that work best in that area. "Co-cropping alfalfa or tall fescue with switchgrass could help achieve an off-season supply of biomass, or intercropping switchgrass with alfalfa or clovers could help supply nitrogen into the production system."

The Noble Foundation and Ceres, Inc., a California biotechnology company, are developing feedstocks for the ethanol industry. The foundation's Forage Improvement Division is researching switchgrass and other crops that may have dual purposes as forages and bioenergy crops. *(SOURCE: Joe Bouton, Noble Foundation IN eHay Weekly, January 2007)*

Maintaining Forage Harvester For Fuel Efficiency

With higher fuel prices, the proper operation and maintenance of forage harvesters (choppers) becomes more important to ensure maximum forage production profitability. Some simple maintenance steps can have a significant impact on the fuel usage in harvesting alfalfa or grass silage and the machine's capacity. A well adjusted forage harvester will require an estimated 1.5 gallons of fuel per acre. Using a fuel price of $3.00 per gallon, the fuel cost is $4.50 per acre.

Three adjustment/maintenance steps that will have a significant impact on fuel consumption are theoretical length of cut, knife sharpness and knife/shearbar clearance. For the forage harvester, the energy/fuel consumption can be divided among 1) pickup and feed rolls (20%), 2) cutterhead (40%) and, 3) blowing (40%) for a properly adjusted machine. The three adjustment/maintenance steps influence the portion of the energy required by the cutterhead.

As the cutterhead knives wear, the power requirement increases. In one report, worn knives doubled the fuel requirements of the cutterhead. Therefore the estimated cutterhead fuel requirement goes from 0.6 gallons (1.5 times 0.4) per acre to 1.2 gallons per acre. For $3.00 fuel, the added fuel cost is $1.80 per acre. The added fuel requirement will be greatly affected by the degree of wear.

The power requirement increases as the knife/shearbar clearance increases. When considering a clearance of 0.01 inches versus 0.02 inches, the power requirement of the cutterhead is doubled when increasing the clearance. This result is similar to the worn knives, an increased fuel cost of $1.80 per acre. If the clearance is 0.03 inches, the fuel cost increase over 0.01 inches of clearance is $3.60 per acre. If the machine has worn knives and a knife/shearbar clearance of 0.03 inches, the added fuel cost will be estimated at $5.40 per acre.

Increasing the theoretical length of cut will reduce the fuel consumption. Carefully select the theoretical length of cut to meet the requirements of the animals and storage system. If there is a choice go with longer length of cut.

Another hidden cost with higher fuel consumption is the machine driveline wear due to the higher loads on the gears, shafts, and chains. A higher fuel usage leads to a shorter machine life. Also the increased fuel consumption will reduce the machine capacity with respect to acres per hour and tons per hour.

Again these are estimates of the increase in fuel consumption. Nonetheless properly adjusting the forage harvester cutterhead will lead to lower fuel consumption, higher field capacity and a more profitable forage production system. The machine's operator's manual provides the details on adjustment procedures for the most productive operation of the forage harvester. *(SOURCE: Ronald T. Schuler, University of Wisconsin-Madison, WCM-News, 5-22-06)*

Upcoming Events

JUN 14	KFGC Field Day, Monroe County
JUN 24-27	American Forage & Grassland Council Annual Meeting, State College, PA
JUL 26	UK All Commodity Field Day, UKREC, Princeton
OCT 25	8th Kentucky Grazing Conference, WKU Expo Center, Bowling Green

2008

JAN 7-8	Heart of America Grazing Conference, Columbia, MO
JAN 26-FEB 1	SRM/AFGC Forage Conference, Louisville
FEB 21	28th Kentucky Alfalfa Conference, Cave City

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