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Forage News [2010-04]

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>

April 2010

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

31ST KENTUCKY ALFALFA CONFERENCE DATE SET

The 31st Kentucky Alfalfa Conference will be held February 24, 2011 at the Fayette County Extension office in Lexington. The program committee is already at work on the program and has Dr. Dan Undersander, University of Wisconsin scheduled as the keynote speaker. Dr. Undersander is one of the top alfalfa scientist in the World. More details will be available in future issues of Forage News and on our website at www.uky.edu/Ag/Forage

30TH ALFALFA CONFERENCE PROCEEDINGS AND PHOTOS

Proceedings for the 30th Kentucky Alfalfa Conference have been posted on our website along with photo highlights.

WARM SEASON GRASS VARIETY REPORTS

Results from the University of Kentucky 2009 Native Warm Season Perennial Grass and the 2009 Summer Annual Grass tests are available on our forage website www.uky.edu/Ag/Forage and at County Extension Offices.

WEG FORAGE SUPPLIES

The World Equestrian Games will be in Lexington KY Sept 25 – Oct 10 2010. This international equine event will host over 600 horses from around the world. A common question regarding this event is where will all the feed come from to provide for these horses and can KY forage producers supply any of the needed feed. All the feed used at the games must meet very strict criteria in order to maintain the health of all horses involved. To meet all those restrictions feed is being sourced for the games through a specific supplier and all of the forage requirements have been taken care of. This means that the forage for the horses has been sourced from areas outside the state in order to meet the various restrictions on feed as determined by the organizing committee. (SOURCE: Bob Coleman, UK Extension Horse Specialist)

KENTUCKY GRAZING SCHOOL APRIL 14-15

The spring Kentucky Grazing School will be held at the University of Kentucky Research & Education Center in Princeton on April 14-15. Program for the two day event includes:

Wednesday April 14, 2010

- 7:30 Registration & refreshments
- 8:00 Introduction of staff and participants
- 8:20 Benefits of rotational grazing – Lacefield
- 8:40 Growth of grasses and legumes and their response to grazing – Smith
- 9:20 Understanding traditional forages – Lacefield
- 9:50 Establishment of forages in pasture systems – Smith
- 10:15 Break
- 10:30 Meeting nutritional needs on pasture – Amaral-Phillips
- 11:15 Grazing Math Concepts – Lehmkuhler
- 11:45 Value of shade and water – Lehmkuhler
- 12:05 Portable/seasonal water systems - Laurent
- 12:20 Lunch
- 1:05 Fence chargers for effective grazing - McGill
- 1:30 Travel to field site
- 1:40 Introduction to temporary fence and setting up water systems– McGill

- 2:00 Hands-on building a rotational grazing system in the field: assessing pasture yield and setting up small paddocks – Smith and Lehmkuhler
- 3:45 Fence building: Understanding how to build and use temporary fencing and high tensile fencing. - McGill
- 5:00 Methods to assess pasture production and determine stocking rate: Grazing Stick, Hand sampling, Rising plate meter - Smith and other speakers
- 6:00 Adjourn for the day- Supper on your own

Thursday April 15, 2010

- 7:30 Refreshments
 - 8:00 Extending the grazing season: plant considerations- Lacefield
 - 8:30 Forage systems for beef production
 - 9:00 Cost share programs from NRCS
 - 9:30 Minerals for grazing cattle – Amaral-Phillips
 - 10:15 Break
 - 10:30 Parasite control and rotational grazing - Bilderback
 - 11:00 Fundamentals of laying out a grazing system. – Ray Smith
 - 11:30 Producer panel
 - 12:00 Lunch
 - 12:45 Designing your own grazing system- all
 - 1:35 Travel to field site
 - 1:45 Field exercise. Observe grazed paddocks and hear reports of each group
 - 2:45 Tour demonstration plots of annual forages for fall grazing
 - 3:30 Discussion of multiple benefits of managed grazing: fertility, weeds, etc.
 - 4:00 Review your grazing system
 - 4:30 Graduation and final comments
- Registration fee is \$45 which includes all materials, grazing manual, lunch and breaks. To registration, make a check to Kentucky Forage and Grassland Council and send to Adam Probst, N222C Ag. Science, University of Kentucky, Lexington, KY. For more information call Adam at 859-257-0597 or e-mail adam.probst@uky.edu.

Windrow Spacing and Conditioners Aid in Curing Process

Hay growers are always looking for the best management to achieve a high-quality crop. Here are some suggestions to refine alfalfa curing practices to maintain quality of harvested hay.

Rapid, uniform curing of alfalfa is most desirable. However, recent research reveals forages don't dry at a uniform rate. Proper cutting and management practices can help offset curing time and potential quality losses. "Growers may think when alfalfa has been cut, it's dead," says Dr. Bill Mahanna, coordinator of global nutritional sciences for Pioneer. "Those cells continue to live. They're living, functioning and metabolizing in the windrow until the plant reaches about 48 percent moisture."

"There are three main reasons for quality loss," Mahanna continued, "respiration losses in the field, leaf shatter from harvesting equipment and the worst – leaching due to any kind of rain." Through proper curing practices, losses can be minimized. Alfalfa curing has three phases. The initial and intermediate phases occur rapidly. The final phase takes progressively more time.

"There is a misconception that leaves dry primarily through the surface, but the surface is covered with a waxy cutin layer for protection," says Mahanna. "The drying process actually occurs through stomates – where the moisture escapes." Stomates are openings in the leaves, small holes that act like lungs. Oxygen and

moisture exit the alfalfa plant through these holes. Stomates open during the day and close at night. "In order to keep stomates open and functioning properly, growers need to look at their windrows. If a windrow is narrow and shaded, the stomates will close," says Mahanna. "In return, you won't achieve the initial phase of rapid drying." Spreading out a windrow creates more surface area for exposure to the sun and wind, allowing stomates to open and facilitate the removal of moisture through the leaves. "By understanding what those openings do – act like lungs – growers can aid the drying process through good windrow management. This allows moisture to escape and the crop to move into the intermediate phase of drying," says Mahanna. "At that moisture level, it is safe to silo to hay at harvest.

Another option for growers is conditioners. A conditioner on a harvester along with a wide windrow is most beneficial when a grower is planning to bale alfalfa for dry hay. "If growers want dry hay, that's where conditioners are most beneficial. We still can have the wide windrow, but it helps considerably to utilize a conditioner, so when the stem is crushed there is radial movement of moisture from it," says Mahanna. (SOURCE: PFGC News, Vol. 20 #1)

PRESEASON HAY EQUIPMENT MAINTENANCE

Looking for something to do while waiting for snow to melt and spring arrive? Preseason maintenance of hay equipment now might save you time a couple months later. Stick around.

Hay equipment needs proper maintenance to perform well. Preseason maintenance also can help prevent costly downtime when delays can be very costly. Let's briefly review some important maintenance steps.

First off, inspect, lubricate, and service all power driven areas such as belts, bearings, chains, and gears. Set tension on belts and chains as well. Also check, sharpen, or replace cutterbar sections or disc blades and adjust wear plates, hold-down clips, and guards. Make sure your cutterbar has proper knife register.

Conditioning rollers often are overlooked. Check the spacing between the rolls and adjust roll timing for your crop. Better conditioning will help your hay dry faster.

On round balers, inspect belts, chains, and slats or rollers frequently for wear. Trim frayed edges and repair belts as needed to maintain uniform tension. When not in use, keep belts clean and release belt tension.

Rectangular balers need plunger knife clearance and plunger alignment checked. Also inspect the tying mechanism and adjust it as needed. Pick-up teeth on balers and on rakes frequently are broken or bent. Replace defective teeth and adjust height if necessary.

Also, be sure you have replacement parts on hand of frequently broken or replaced items. And most important of all, review your owners manual to identify recommended maintenance procedures and proper settings.

Take a little time now and you will reduce down time later. (SOURCE: Bruce Anderson, University of Nebraska)

OVERVIEW OF BMR SUDANGRASSES AND SORGHUMS

The genus *Sorghum* includes three distinct types that are used as forages: forage sorghums, sudangrass, and sorghum x sudangrass hybrids. These three types have grossly different phenotypes and different modes of principal utilization. Forage sorghums have very coarse stems and wide leaves, similar to corn, very low tillering capacity, and very slow speed of regrowth after cutting. Consequently they are used predominantly as a silage crop, and occasionally for hay production and direct pasture. Sudangrass in comparison is very grassy, characterized by very fine stems and narrow leaf blades, profuse tiller development, and exceptionally rapid recovery after cutting or grazing. Sorghum x sudangrass hybrids which result from crossing a sorghum female with a sudangrass male are generally intermediate in character expression between sorghum and sudangrass.

Of the *Sorghum* species grown for forage, sudangrass has the finest stems, tillers most profusely, and has the most rapid regrowth following cutting or grazing. The finer stems give it better drying characteristics than other *Sorghums* for hay making. The fine stems, extensive tillering, and rapid regrowth of sudangrass make it better suited to pasturing than other types of *Sorghum*. Sudangrass and sorghum x sudangrass hybrids are widely grown commercially for direct pasture, hay, haylage, greenchop, and silage.

Brown midrib (BMR) is a visible marker associated with the reduction of lignin in corn, sorghum and pearl millet. In *Sorghum* species the BMR trait is expressed in the midrib of young leaf tissue and in the stem, rind, pith, and vascular tissues of maturing plants. Studies with corn and sorghum document the improved forage digestibility associated with BMR genes.

In spite of well-understood benefits of BMR on forage quality, BMR mutants were not used commercially until the 1990s and widespread use was limited because BMR types showed lower yield and vigor in corn and sorghum. BMR forage sorghum and sorghum x sudangrass hybrids are now being introduced into the market at a very fast rate. The Sorghum Industry estimates that within five years as much as 80-85% of sorghum related varieties will contain the BMR trait.

In the present market, some forage sorghum and sorghum x sudangrass hybrids have experienced significant problems with lodging under field production conditions. The first true sudangrass x sudangrass hybrids with the BMR trait are currently being introduced into the market. (J.M. Reich, Cal/West Seeds; this article excerpted from "Utilizing the BMR trait in sudangrass and sorghums," published in the Spring 2010 issue of the American Forage and Grassland Council Magazine, Forage News). Go to www.afgc.org to join AFGC and obtain your subscription to this quarterly magazine.

SWITCHGRASS MOVED BY BARGE TO POWER PLANT

Over the past three years, UK's Dr. Ray Smith and Tom Keene have recruited and worked with a group of 20 farmers in Northeastern Kentucky to plant, cultivate and harvest 5 acre plots of switchgrass. In 2008, these farmers produced about 70 tons of switchgrass. In an historic first for Kentucky, that switchgrass was mixed with coal and used as fuel to generate electricity at East KY Powers Spurlock Station in Maysville in December 2009.

In 2009, the test plots produced about 265 tons of switchgrass. In recent months, UK has coordinated the harvest, processing and pelletization of the switchgrass. And, in the past week, the pelletized switchgrass was delivered by river barge to Spurlock Station, where it is being mixed with coal and used as power plant fuel. This project will continue for another year, but has shown that switchgrass can be efficiently grown and transported for electricity generation in Kentucky.

Currently, no commercial company is purchasing switchgrass or other grasses for biomass in KY, but the interest continues to grow. This demonstration project was funded by the Kentucky Forage and Grassland Council through a grant from the Kentucky Agricultural Development Fund.

UPCOMING EVENTS

- APR 14-15 Kentucky Grazing School, UK Research & Education Center, Princeton
- AUG 9-10 Kentucky Grazing School, UK Animal Research Center, Versailles
- SEP 1-4 National Hay Association Annual Conference, Lexington 2011
- JAN 25-26 Heart of America Grazing Conference, Louisville
- FEB 24 31st Kentucky Alfalfa Conference, Lexington



Garry D. Lacefield
Extension Forage Specialist
April 2010

Table 1. Characteristics of sudangrass, forage sorghum, and sorghum x sudangrass hybrids. All measurements are provided as average ranges.

Characteristic	Sudangrass	Sorghum x sudangrass	Forage Sorghum
Stem diameter	0.25-0.375 inches	0.50-1.00 inches	1.50-2.50 inches
Leaf Width	0.75-1.00 inches	1.00-1.50 inches	1.50-2.50 inches
Tillering capacity	Very High	Medium	Very Low
Regrowth potential	Very High	Medium	Very Low
Adaptation for hay	Excellent	Fair	Poor
Adaptation for pasture	Excellent	Very Good	Poor
Adaptation for silage	Fair	Excellent	Excellent