



8-1-2010

Forage News [2010-08]

University of Kentucky Department of Plant and Soil Sciences

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University of Kentucky Department of Plant and Soil Sciences, "Forage News [2010-08]" (2010). *Forage News*. 91.
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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>

August 2010

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

KFGC FIELD DAY

The Kentucky Forage and Grassland Council Field Day will be held on September 14, 2010 at the farm of Jim and Baker Landis of Glasgow, Kentucky. The Landis Farm is located in Barren County at 970 Bristletown Road. Registration will begin at 3:00 p.m. (central daylight time) with the tours starting at 3:50 p.m. Four topics include: layout of the farm rotational grazing system, forage species management supporting a good rotational system, watering system layout, nitrogen fertilization to stockpile fescue pasture, matching forage quality to animals' needs through fall and winter. Four speakers will include: Mr. Jim Landis, Dr. Garry Lacefield, Mr. Kevin Laurent, Dr. Greg Schwab, Mr. Tom Keene, and Dr. Roy Burris. Two hands-on demonstrations will be offered beginning at 6:45 p.m. following the meal: "Tricks" when using high tensile fence, Jeremy McGill (Gallagher Fence Co.) and Calibrating forage seeding drills, Dr. Ray Smith. The Landis Farm is a beef cow-calf production farm with a stocking rate of one cow per acre.

The program flyer and directions are available at your local Extension office and on the KFGC and UK websites at www.kfgc.org and www.uky.edu/Ag/Forage (SOURCE: Don Sorrell, President, KFGC)

BEEF BASH 2010

We are busy planning for Beef Bash 2010 which is scheduled for **Thursday, September 23, 2010** at the University of Kentucky Research and Education Center in Princeton. Those of you who participated in 2008 may remember that we had an excellent turnout our first year with nearly 500 participants and 60 exhibitors.

This field day features hands-on demonstrations, stand alone exhibits, and seminars while offering plenty of time to visit with producers under a large tent which serves as the staging area for all activities.

Please put this date on your calendar and **make plans now** to be part of this event and visit the website to stay up-to-date about demonstrations and exhibitors.

<http://ces.ca.uky.edu/beefIRM/bash/> (SOURCE: Lori Porter, Educational Program Leader, University of Kentucky)

GRAZING SUDANGRASS, PEARL MILLET, AND SORGHUM HYBRIDS

Most of the sudangrass and sorghum-sudan hybrids planted this spring will be ready to graze soon, but they contain a compound called prussic acid that is potentially poisonous. Prussic acid is nothing to fear, though, as long as you use a few precautions to avoid problems.

Most importantly, do not turn hungry animals into sudangrass or sorghum-sudan pastures. They may eat so rapidly that they could get a quick overdose of prussic acid.

Secondly, since the highest concentration of prussic acid is in new shoots, let the grass get a little growth on it before grazing to help dilute out the prussic acid. Begin grazing sudangrass at about 18 inches in height. Since sorghum-sudan hybrids usually contain a little more prussic acid, wait until they are 20 to 24 inches tall before grazing. If you planted pearl millet these grazing precautions aren't needed because it does not contain prussic acid. So let your animals graze pearl millet when it reaches 12 to 15 inches tall.

Next – summer annual grasses respond best to a simple, rotational grazing system. Divide fields into three or more smaller paddocks of a size that permits your animals to graze a paddock down

to about eight or so inches of leafy stubble within 7 to 10 days. Repeat this procedure with all paddocks. If some grass gets too tall, either cut it for hay or rotate animals more quickly so grass doesn't head out.

A well-planned start, a good rotation, and a little rain will give you good pasture from these grasses all the rest of the summer. (SOURCE: Bruce Anderson, University of Nebraska)

INTAKE AND DIGESTIBILITY OF IMPROVED SELECTIONS OF TALL FESCUE AND ORCHARDGRASS HAYS

ABSTRACT—Improved cool-season grass cultivars may add production potential to ruminant enterprises across the North–South transition zone. Quality among hays of 'MaxQ' ('Jesup' with novel endophyte), HM4 ('HiMag' with novel endophyte No. 4) and 'Cajun' (without endophyte) tall fescues [*Lolium arundinaceum* (Schreb.) Darbysh.] and 'Persist' orchardgrass (*Dactylis glomerata* L.) was evaluated. Forage was harvested in the flag-leaf stage in three of 4 yr and a regrowth (late flag-leaf to heads-emerging stage) in 1 yr. Goats (four trials) consumed MaxQ, HM4, and Persist similarly ($P = 0.12$; mean = 2.49 kg 100–1 kg body weight [BW]) and Cajun least ($P < 0.01$; mean = 1.62 kg \times 100–1 kg BW). Apparent digestibility was similar among tall fescues ($P \geq 0.07$; mean = 609 g kg⁻¹), but MaxQ and Cajun were greater than Persist ($P \leq 0.05$; mean = 610 and 623 vs. 582 g kg⁻¹). Digestible dry matter intake (DMI) was similar among MaxQ, HM4, and Persist ($P \geq 0.09$; mean 1.49 kg 100–1 kg BW). Steers (three trials and Cajun not evaluated) consumed more Persist than MaxQ ($P = 0.01$; 2.40 vs. 2.14 kg 100–1 kg BW) or HM4 ($P = 0.01$; 1.98 kg 100–1 kg BW). MaxQ had greater apparent digestibility than HM4 ($P = 0.01$) or Persist ($P = 0.04$; 626 vs. 585 vs. 597 g kg⁻¹, respectively) but digestible DMI of MaxQ and Persist was similar ($P = 0.12$; mean = 1.39 kg 100–1 kg BW). Improved tall fescue cultivars, with novel endophyte, offer the ruminant producer a cool-season forage of similar quality as orchardgrass for their enterprise. (SOURCE: J.C. Burns and D.S. Fisher IN Crop Science, Vol. 50, January-February 2010, pp. 419-426)

AG GROUPS APPLAUD SUPREME COURT RULING ON BIOTECH ALFALFA

June 21, 2010 – The U.S. Supreme Court reversed a lower court's nationwide ban on the cultivation of biotech alfalfa. This remands the case back to the District Court and then back to the United States Department of Agriculture (USDA) to determine what interim measures can be implemented while the agency completes its environmental impact statement process.

The news was welcomed by a coalition of agricultural organizations who had filed a joint friend-of-the-court brief to the Supreme Court in support of the petitioners in "Monsanto Co. v. Geertson Seed Farms." The brief was submitted by the American Farm Bureau Federation (AFBF), Biotechnology Industry Organization (BIO), American Seed Trade Association, American Soybean Association (ASA), National Alfalfa and Forage Alliance (NAFA), National Association of Wheat Growers (NAWG), National Cotton Council and National Potato Council.

In the lower court case, environmental groups and individual organic alfalfa farmers sued USDA claiming the agency's decision to grant deregulated status to glyphosate-tolerant (or "Roundup Ready®") alfalfa violated the National Environmental Policy Act (NEPA). After finding a NEPA violation, the lower court enjoined almost all planting and sale of Roundup Ready® alfalfa and the Ninth Circuit affirmed.

The Supreme Court reversed the injunction, finding that the District Court went too far in presuming that the only remedy available for a NEPA violation is a nationwide injunction rather than the USDA Animal and Plant Health Inspection Service's (APHIS) proposed partial deregulation. The court explained that "a partial deregulation need not cause respondents any injury at all, much less irreparable injury."

Accordingly, the court concluded that "the District Court abused its discretion in enjoining APHIS from effecting a partial deregulation and in prohibiting the possibility of planting in accordance with the terms of such a deregulation."

(Editor's Note: The ruling does not permit planting of RR Alfalfa until a new regulation is approved by USDA-APHIS; the new regulation could be subject to legal challenge. Monsanto said it hoped to "have everything in place for growers to plant in fall 2010.") (SOURCE: *KFB Commodity Update, Vol. 5, No. 6, June 28, 2010*)

THE POTENTIAL OF BIOFUELS IN KENTUCKY

There has been a lot of talk in the last few years about the potential of switchgrass to be grown for biofuel production. Switchgrass and other forages can be used for either cellulosic ethanol production or co-firing for power generation. Cellulosic ethanol is a liquid fuel that is used as a substitute for, or blended with, gasoline. Co-firing mixes biofuels with coal and/or other energy sources to generate electricity. Although switchgrass is most often highlighted for potential biofuel production, miscanthus also has good potential for this purpose. Other forms of biomass include corn and wheat stover (the stalk residue left after grain harvest), as well as woodchips and municipal waste such as grass clippings.

Kentucky is said to be uniquely suited for growing biofuels and that this could be an excellent opportunity for Kentucky farmers. Is this true? Kentucky does have great conditions for growing a number of forage crops, and I've been told by a leading biofuels researcher in the upper-Midwest that Kentucky may have the best switchgrass growing conditions in the whole country. So in May 2010, I went to see firsthand, along with other extension specialists, how this market is emerging in Kentucky.

Our first stop was at a five-acre field of switchgrass in Bracken County being grown as part of a program with the University of Kentucky. This program is designed to give UK specialists and producers experience in growing this forage; producers are paid through a grant for participating in the trial. The farm was located in an area with limited row-crop potential and thus the opportunity cost of this land was relatively low. It was impressive to see how much growth had already occurred with this warm-season grass by late May.

Next, we toured the Eastern Kentucky Power plant in Maysville that has used switchgrass for co-firing electricity generation. This plant is burning the switchgrass for experimental purposes to gain experience with biofuel co-firing. They burned 263 tons of switchgrass (around 100 acres) produced in 2009 in just under one hour. Finally, we visited a pelleting plant in Greenup County that converts the bulky switchgrass round bales into a dense pellet the size of a car piston. Pelletizing allows the product to be transported more efficiently, although at the current time the pelleting cost is quite high.

Although we were amazed by what we saw on that trip and the possibilities biofuels presented, the main problem is that there is just not much of a market for cellulosic biofuels at the current time. The EPA dropped the 2010 Renewable Fuels Standard (RFS) blending mandate for cellulosic ethanol from 100 million gallons to 6.5 million gallons. This is largely because most plants are still in the pilot or experimental stage and have limited actual capacity. Moreover, few of these plants are using dedicated energy crops like switchgrass. Most are using "waste" materials such as wood, grass clippings, and corn and wheat stover that are relatively cheap to acquire.

The RFS cellulosic ethanol mandate for 2012 is around 200 million gallons, plus an additional 300 million gallons of other cellulosic biofuels. The latter would be primarily for co-firing in electrical generation. Given that none of the RFS mandates have been binding so far, the likelihood that we will reach the 2012 targets is questionable at best.

To help put these numbers into context, we are producing roughly 10.6 billion gallons of ethanol through corn-based production. Thus, the current cellulosic ethanol production is about 1/10 of one percent of corn-based production. Even 100 million gallons (the original 2010 mandate), would still not represent 1% of total ethanol production. If we combined the 2012 mandates for all biofuel-based production (ethanol and electricity generation), this would still be under 5% of current corn-based ethanol production.

In other words, there is not yet a widespread market for cellulosic-based biofuels, and it is unlikely that one will materialize for several years. Farmers need to keep this in mind when considering long-term investments in energy crops. In five to ten years this could change, but for now, one should cautiously evaluate potential markets.

Switchgrass does have the advantage of being able to be used as a livestock forage, especially hay. So limited plantings of this grass can give farmers experience in establishing and growing stands and still being able to utilize their product even if the biofuel market does not emerge. Ultimately, the development of a legitimate cellulosic-based biofuel market will hinge on whether the RFS cellulosic mandates become mandatory. With the current cost structure, cellulosic-based biofuels cannot compete against corn-based ethanol production or fossil fuel electricity generation. (Greg Halich, *UK Economic and Policy Update, Vol. 10, No. 6, June 18, 2010*)

CALIBRATING YOUR FORAGE SEEDER CAN SAVE BIG MONEY WHEN SUMMER SEEDING

Farmers who grow corn or soybeans have generally checked the seeding rate they are planting. However, when asked about the rate at which they seed alfalfa they may be a little less certain. In fact, many of those that think they know their alfalfa seeding rate may be off by several pounds.

In a recent study, large differences were found between seeding rates of different varieties of alfalfa when seeded through the same seeder. Coated seed flowed easier than uncoated seed which resulted in higher seeding rates than was expected (considering the reduction in seed numbers per pound because of the increased seed size associated with seed coating). With uncoated seed, the seeding rates ranged from 14 to 21 lb/acre without changing the settings on the seeder. While this range in seeding rates does surround the normally recommended alfalfa seeding rate (15-18 lb/acre), the variation can be very expensive. If a farmer thought he was seeding 15 but was actually seeding 20 lb/acre the additional cost per acre for seed would be substantial.

The difference between variety seeding rate was attributed to small differences in seed size and shape. It is a general rule-of-thumb that a pound of alfalfa contains 220,000 seeds but the recent study showed a range from 196,000 to 224,000 seeds per pound. In addition, some seeds were slightly rounder and flowed through the metering device faster than other varieties. Recommended alfalfa seeding rates will normally result in 75 to 90 seeds per square foot. However, the range in seeding rates that was observed resulted in ranges from 70 to 105 seeds per square foot.

Unfortunately, varieties showed no consistent trends in variation. Therefore, seeder calibration is an important consideration when alfalfa varieties are changed. This can be done rapidly by driving the seeder over a tarp spread on the ground, and counting the seeds that are dropped in a couple square foot areas on the tarp. Seeders which drop between 75 and 90 uncoated seeds per square foot are planting at recommended rates. Seeders should also be calibrated annually before starting to seed since slightly worn seed metering devices on the seeder can cause large changes in alfalfa seeding rate.

(SOURCE: *Dr. Marvin Hall, Extension Forage Specialist, Pennsylvania State University, IN Pennsylvania Forage and Grassland News, Vol. 20, No. 3, Summer 2010*)

UPCOMING EVENTS

AUG 9-10	Kentucky Grazing School, UK Animal Res. Ctr., Versailles
SEP 1-4	National Hay Association Annual Conference, Lexington
SEP 14	KFGC Field Day, Barren Co., KY
SEP 23	UK Beef Bash, UK Res. & Education Center, Princeton
2011	
JAN 25-26	Heart of America Grazing Conference, Louisville
FEB 24	31 st Kentucky Alfalfa Conference, Lexington



Garry D. Lacefield
Extension Forage Specialist
August 2010