FROM THE COUNTY AGENT’S DESK...

Spring appears to have come and gone in a hurry. Cool nights that slowed down bermudagrass production gave way to highs in the 90s and overnight lows around 70 in a hurry.

The good news is that there's plenty of soil moisture to go with the temperatures and sunshine to really make the bermudagrass go. Fescue, on the other hand, has taken a nose dive on quality in the past few weeks and has gotten awfully stemmy.

Unfortunately, all this rainfall and soil moisture has another side to the coin. Lots of producers have been unable to get a quality cutting of fescue before it all went to seed. I'd expect there'll be a lot of low quality fescue hay on the market this fall which leads right into the next topic of this newsletter – hay quality.

I know that it's only July, but planning for winter feeding needs to be done in the coming weeks. I hope that many of you will take hold of the opportunity presented in the next section.
Fulton County
Cooperative Extension Service
118 West Locust/PO Box 308 • Salem, AR 72576
(870) 895-3301 • www.uaex.edu/fulton

FULTON COUNTY HAY FERTILIZATION & QUALITY

How Well Do You Know Your Hay?

Brad Runbick, Fulton County Ag Agent and Dr. Shane Gadberry, Extension Beef Nutrition Specialist

If you’re interested in knowing more about the quality (and quantity) of hay that you produce or sell, or if want to be able to fertilize your hay as efficiently as possible, then heads ups. This is for you. How much N-P-K is removed per ton from an acre of hay is a known amount for any given species (bermudagrass, fescue, etc.). Couple that information with a soil test and accurate records of how much tonnage is actually taken off of a field, and a producer can make very precise fertilizer recommendations to feed the hay crop that a particular field produces. Just tossing out 250-300 lbs. of 17-17-17 or 19-19-19 and hoping for the best and is a practice of the past and a not very cost-effective one at that. Countless dollars are wasted each year on hay fertilizer applications that aren’t specific enough for a given situation. Add to that a winter feeding program that either overfeeds for a herd’s particular needs, isn’t balanced, or underfeeds, and it can really impact a farmer’s bottom line. This program should help greatly correct both of those input cost losses.

I’m looking for a maximum of 8 participants, first come-first serve. Sometime this late summer/early fall, I would set up a schedule with each person, and I’d come to you. We would weigh a few of your bales (5-10) and sample them for a routine forage test. This would cover beef nutrition basics such as crude protein, TDN, dry matter, acid and neutral detergent fiber. Additionally, major mineral analysis would be done to see just how much P and K are being removed from your fields each year.

Once the testing is finished, myself and Dr. Shane Gadberry, our own Extension beef nutrition specialist will sit down with you one-on-one to discuss your results winter feeding plan recommendations.

Program cost:

This year, the fee will be $11/sample submitted. $9/sample is submitted with the samples for analysis and $2/sample remains in the county to support future programming. Normally, the cost of these hay samples is $18 plus postage, so you’re getting a really good deal here.

What You, The Farmer, Will Get Out of This

1.) A formulated ration for winter feeding that will help you reach your herd’s goals. If it’s just maintaining weight on dry cows, feeding lactating cows, or putting gain on growing animals, we can formulate for whatever you need.

2.) Provide very accurate fertilizer recommendations for the following year (2016) for each field that is hay and soil sampled.
What the Fulton County Extension Office will do: Come out, weigh and pull samples on your bales, and body condition score the cattle both before and after the winter feeding period.

What I'd expect from participants: Be available to assist with weighing and sampling bales (need a tractor) and take accurate soil samples of your hay fields (after the last cutting), and agree to complete the end-of-winter breeding and feeding survey.

Once I get 8 producers enrolled or the deadline gets here for turning in the form below, I'll work on setting up times with all participants to come out to your place where the hay is located and take the samples and weigh the bales.

If you're interested in participating, fill out this form and return it to the Fulton County Extension Office by September 15, 2015.

Name _____________________________________________________________________________

Phone ____________________________________________________________________________

Address ____________________________________________________________________________

Email (if available and one you check regularly) _____________________________________________

Location and directions to where hay is stored: (Please don’t assume that I necessarily know where so and so's barn or place is, because I may not. Road names and mileages work best.)

________________________________________________________________________________________________________________

________________________________________________________________________________________________________________

________________________________________________________________________________________________________________

_______________________________________________________________

_________________________________________________ 

Type of hay (bermuda, fescue, orchardgrass, mixed, etc.)____________________________________________
JUNE–JULY BEEF CATTLE TIPS

UofA Extension Animal Science Dept.

Tips for Spring Calving Herds:

- Processing spring-born calves at 3 months often occurs during the June–July period. Now is a good time to implant castrated male calves. Implanting calves can improve weight gain by approximately 10-15%.
- Fact Sheet 3019
- Make sure your cattle are protected against Blackleg. Summertime is when Blackleg issues are generally reported. With the inexpensive cost of the vaccine and the high value of cattle, Blackleg vaccination is very cheap insurance. Follow label directions.

Tips for Fall Calving Herds:

Check body condition scores

- Assessing body condition scores is essential in maximizing cow herd efficiency.
- It is much easier to increase condition in cows before rather than after they calve.

Plan heifer development for replacement heifers

- Acquiring or raising high quality replacement heifers is an essential and major investment for the cow-calf producer. The replacement heifer becomes the genetic building block for the cow herd.
- General goals for developing heifers should be to:
  - Reach puberty by 12 to 14 months of age.
  - Have a high percentage conceiving early in the breeding season.
  - Be structurally large enough at calving to minimize calving difficulty.
  - Rebreed in a timely manner.
  - Raise a good calf to weaning.
- As summer and hot weather approaches, cattle will require fresh water. Many factors influence the amount of water required by cattle. The following table shows average water needs for various classes of beef cattle.

Note water consumption varies considerably, depending on temperature and stage of production. These allowances are not absolute requirements and should only be used as a guide in developing water sources or as a starting point for supplying water to penned cattle.

Forage Management Tips:

Fertilization of warm-season grasses:
- Fertilize bermudagrass pastures according to soil test reports taken earlier in the year for projected management (grazing or haying)
- Split N applications by fertilizing after each harvest

Weed control:
- Apply herbicides to summer annual broadleaf weeds
- MP 522 and MP 44 are outstanding resources for weed identification and control

Warm season annual forages:
- Sorghum-sudan or pearl millet are popular choices as summer annual forages
- Harvest for hay to graze
- In either case, leave 6 inches of stubble to reduce risk of nitrate poisoning
- In sorghum-sudan, prussic acid content can be high enough to be toxic, it will also be present in leaves after the plant is stressed from drought and/or low temperatures
- Reference Fact Sheet 2032

Hay management:
For cool season grasses, leave 2-3 inches stubble height to encourage regrowth
- Cut at boot stage/early bloom for optimum forage nutritive value

For bermudagrass:
- Cut when about 18 inches high, then cut approximately every 30 days

For more information on Management of Hay Production refer to MP 434

ALTERNATIVE FERTILIZERS – SEPARATING CLAIMS FROM FACTS

Brad Runsick, Fulton County Ag Agent

Every year or two, it seems, the alternative fertilizers on the market make the rounds. Anytime fertilizer costs start to creep up, you can bet there’ll be products show up on shelves that claim to substitute or be a supplement to traditional N-P-K fertilizers. You’ll get to hear lots of testimonial claims that the product will do this or that. At the end of the day, if it doesn’t improve soil fertility and grow more grass, it probably ought to stay right there on the shelf where it was found. There’s a whole host of them, but the claims are usually fairly similar. A lot of times,
there'll even be pictures to prove it. What you don’t know, however, is when these testimonials and pictures were taken and under what conditions? Was it in an unusually wet year, when everyone grew lots of grass, regardless of fertilizer applications? Were results between the alternatives compared with results from traditional fertilizers on similar soils under similar conditions? When making comparisons such as this, we need to be sure that we aren’t comparing apples to oranges. In the past, the University of Arkansas Cooperative Extension Service has conducted forage trials with many of these alternative fertilizers side by side with traditional nitrogen fertilizer.

First of all, past research has indicated that for every ton of grass, a plant will use about 40 lbs. N, 15 lbs. P$_2$O$_5$, and 50 lbs. K$_2$O (Table 1). That is the equivalent of roughly 120 lbs. of ammonium nitrate (34-0-0), 33 lbs. triple superphosphate (0-46-0), and 83 lbs. potash (0-0-60). And that is only for 1 ton of grass for the entire season. Most fields with good rainfall will produce much more than that. Now, if that is being taken off as hay, then none of those nutrients will be cycling back through a cow, unless you’re feeding your hay in your hayfields. If we’re talking about pastures, soil test recommendations still call for anywhere from 40-60 lbs. of actual nitrogen at greenup, depending on what grass you’ve got. If phosphorus and potassium are in good shape (usually they’re not here in Fulton Co.), then there may be no need to apply any P or K fertilizer. In which case, just apply the recommended nitrogen.

So, now on to the alternatives. The guaranteed analysis of some of these products should tell you all you need to know. For example, there is Monty's Plant Food (analysis 8-16-8), Fish Emulsion (analysis 5-1-1) and Sea 90 Mineral (less than 1% of each N, P, and K). Try getting 40 lbs. of actual N out of a product that contains only 8% nitrogen. It’d take 500 lbs. of the product to do so, and if it’s coming in a gallon jug, it’s going to take a lot of gallon jugs to satisfy the nitrogen requirement.

### Table 1. Nutrients removed in hay by various forages in Arkansas

<table>
<thead>
<tr>
<th>Forage Species</th>
<th>N</th>
<th>P$_2$O$_5$</th>
<th>K$_2$O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lbs removed/ton DM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bermuda</td>
<td>42</td>
<td>14</td>
<td>48</td>
</tr>
<tr>
<td>Fescue</td>
<td>36</td>
<td>14</td>
<td>48</td>
</tr>
<tr>
<td>Clover / Grass</td>
<td>40</td>
<td>13</td>
<td>45</td>
</tr>
<tr>
<td>Ryegrass</td>
<td>37</td>
<td>14</td>
<td>47</td>
</tr>
</tbody>
</table>

Univ. of Ark. Forage Database http://feedanalysis.uaex.edu/
Even with these low fertilizer guaranteed analysis numbers, trials were still done to compare total forage yield with these products. Traditional fertilizers were applied at the soil test recommended rate. Alternative fertilizers were applied at the rate suggested by the manufacturer. When the two were applied together, the traditional fertilizers were applied at the soil test recommended rate and the alternatives were applied according the manufacturer. Plots were fertilized with ammonium nitrate, urea, urea + Agrotain, calcium nitrate, Liquid Sea-90, Dry Sea-90, and Sea-90 with ammonium nitrate. Also, one plot was left unfertilized as a control.

The results are shown below in Table 2. The trials done with the alternative fertilizers were similar to that of the control, unfertilized check plot. When traditional nitrogen fertilizers were used, forage yields were roughly double that of the control plot. Also, in the plot where Sea-90 was used in conjunction with ammonium nitrate, there was no significant increase in forage yield when compared to ammonium nitrate alone.

Table 2. Fulton County Alternative Fertilizer Trial (2008)

<table>
<thead>
<tr>
<th>Fertilizer Treatment</th>
<th>Average DM Yield/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check</td>
<td>1500</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>1500</td>
</tr>
<tr>
<td>Urea</td>
<td>3000</td>
</tr>
<tr>
<td>Urea + Agrotain</td>
<td>3000</td>
</tr>
<tr>
<td>Calcium nitrate</td>
<td>3000</td>
</tr>
<tr>
<td>Sea-90 + ammonium nitrate</td>
<td>3000</td>
</tr>
<tr>
<td>Liquid Sea-90</td>
<td>3000</td>
</tr>
<tr>
<td>Dry Sea-90</td>
<td>2000</td>
</tr>
</tbody>
</table>

With that said, my recommendation is to stick with what is proven. If you can afford to fertilize, do so with traditional nitrogen fertilizers (litter, urea, ammonium nitrate, liquid urea, etc.). You know what they say about things that sound too good to be true...

Feel free to give me a call at the Fulton County Extension Office at 870-895-3301 if you’ve got any questions.
WARMINER TEMPERATURES MEAN INCREASED WATER NEEDS FOR CATTLE

Adapted from www.uaex.edu

Fast Facts:

- Daily high temperatures of late spring and summer require greater hydration of cattle
- Most cattle require approximately 1 gallon of water for each pound of forage ingested
- Adult cattle require anywhere from 20 to 40 gallons of water a day

FAYETTEVILLE, Ark. — As summer approaches and high mid-day temperatures become the norm, cattle producers should give extra attention to making sure their herds have plenty of water to deal with extreme heat for the next several months.

“Water is probably the most overlooked feature on a livestock farm,” said Dirk Philipp, assistant professor forages for the University of Arkansas System Division of Agriculture. “Clean, abundant drinking water is important for optimal animal importance.”

Philipp said that that access to drinking water typically increases the amount of dry matter, such as hay and other forage, that cattle ingest, which in turn helps regulate body temperature.

Insufficient water intake in cattle can result in decreased rates of rumination and respiration and increased concentrations of urea and potassium in blood serum. Severe shortages over extended periods of time will result in animal losses, Philipp said, with the chance of survival under temperatures greater than 100 degrees Fahrenheit limited to three or four days.

The water needs of individual animals depend on several factors, including outdoor temperature, the age of the animal and the moisture content of the animal’s forage diet. Philipp recommended producers make sure their cattle get approximately one gallon of water per pound of dry matter consumed.
While a typical beef cow needs 20-30 gallons of water per day, lactating beef cows need 25-35 gallons; lactating dairy cows need 30-40 gallons of water each day. Weaned calves need about 10-15 gallons of water each day.

A higher pace of production can place additional demands for water consumption on cattle than the animals would typically need for daily “body maintenance,” Philipp said. Additionally, calves need proportionally more water than mature cows, Philipp said, because water needs are actually linked more to body surface area than to body weight.

“Mature animals have about 10 times more water reserves for metabolic functions than calves,” he said. “Therefore, young animals are much more sensitive to water-related stress and distress, such as diarrhea.”

Philipp said that the best approach to making water readily available to herds is to set up dedicated, waterline-fed access points. Examples include freeze-proof watering stations, tire tanks that can be connected to ponds and stock tanks that are filled periodically with fresh water or hooked up to a water line.

Dedicated pond and stream access points are better than nothing, Philipp said, although bacteria, pathogens and parasites are often abundant in those situations, due to the high contamination potential from cattle feces.

**DID YOU KNOW?**

Adapted from www.arkansas-livestock.com

A number of research studies including a new study published online in the peer-reviewed publication, Nature, suggest that higher protein diets not only help with satiety but may help with long-term weight loss. Subjects in this study who consumed 5.4 percent more energy from protein compared to the control/non-protein group were not only able to lose weight, but also kept it off for six months compared to the control/non-protein group.

Another study published in the journal, *OpenHeart*, suggests that a healthy, balanced diet including high-quality proteins such as beef may be more effective than a diet that restricts fat below 30 percent of daily calories.
All of the meetings and activities listed in the newsletter are open to all interested individuals.

Brad Runsick
Fulton Co. Extension
CEA-Agriculture/4H
870-895-3301
brunsick@uaex.edu

“Like” us on Facebook at Fulton County Coop Extension Service - Agriculture
Follow us on Twitter @FultonCountyAg