



In this edition:

Be a good hay shopper	page 1-3
Should I burn my hayfield?.....	page 3-4
Taking a good forage sample.....	page 5-6
Managing tall fescue toxicosis.....	page 6-7

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Be a good hay shopper

By Charlotte Meeks
Houston County CEA

When shopping for a new truck, you don't buy just because the salesman says it's a good deal. Most shoppers do their research, looking at body style, fuel mileage, towing capabilities, included options and a vehicle history. Shopping for hay should also be carefully researched because making the correct purchase can drastically affect your bottom line. Have you ever met a person that can tell you the value of a truck just by looking at the exterior? Or someone that can tell the quality of hay based on a physical evaluation alone? While a physical evaluation can help us determine several characteristics about the hay, it cannot tell us nutrient content or other potential problems, like nitrates. The only way to know the quality of the hay is by having a forage test done. Knowing the nutritional value of the hay not only helps determine if supplementation is needed, but also will save you money and hopefully avoid any headaches.



Nutrient/Energy Requirement

Knowing what quality of hay you need to purchase all begins with understanding the nutrient requirements for your livestock. Nutrient requirement is the amount of nutrient an animal needs to perform a specific task, or their energy requirement. This is determined by weight, sex, age, growth rate and stage of production. From this we can break down that animal into four nutrient priorities:

1. Maintenance
2. Growth
3. Lactation
4. Reproduction

The largest shift in nutritional requirement is the transition from pregnant to lactation. Animals fed differently from their nutritional requirements will either lose or gain excess weight. Something else to remember is that the energy requirement for livestock increases during the winter, 1% for every degree under 32°F. Your county extension agent can help you determine your livestock's nutrient needs.

Be a good hay shopper cont.

Forage Testing

A forage analysis is the only way to assess the quality of the hay. The quality of the forage is focused on the value of each pound versus the total of pounds consumed. There is a physical limit to how much livestock can consume. Digestibility is the ability of the livestock to extract the nutrients from the hay. The primary nutrient found in hay are protein, carbs, sugars, pectins and fiber. When purchasing hay, ask for the forage test results. If a forage test has not been performed on the hay, it something you can do yourself through your extension office. For more details on how to take a good hay sample refer to Ray Hicks's article in this edition of the newsletter.

Reading the Results

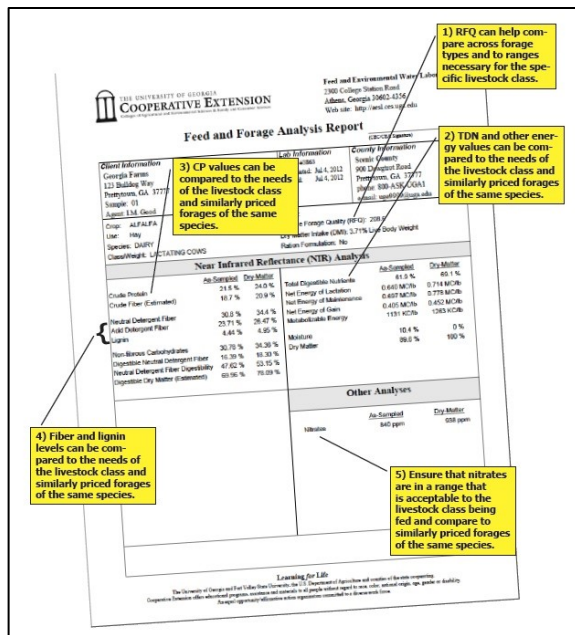
After you receive your forage report, there are some numbers that you want to focus on. Always look at the dry matter levels, not as sampled. The dry matter level is best for comparing forages, ration balance and economic value. Most producers go straight for the protein content, but this is Crude Protein and based on nitrogen levels in the sample. So a sample that is high in nitrates can have a high Crude Protein. Protein is important, but many times is overemphasized. The Total Digestible Nutrients (TDN) is a measurement of digestible energy. This allows you to compare

forages of the same species and compare them to the needs of the livestock. The Relative Forage Quality (RFQ) predicts the energy base based on fiber quality and intake. RFQ allows for comparisons across forage species. We have also been able to link ranges of RFQ to meet the energy requirements for livestock at different stages. This does not mean that a RFQ at that range will automatically provide all the nutrients needed, but provides us with an approximation if the forage will provide a cost-efficient base.

Nitrates are also important to look at. Nitrates over 4,500 ppm need to be fed at restricted rates. As the nitrate levels increase, so does the restrictions on feed until 18,000 ppm when it is considered lethal.

Storage

Another factor that effects forage quality is storage. Hay bales should be stored to protect from rainfall and weathering. Loss from storage can range from 20%-45%. Before hay is stored it should be properly cured. Round bales should be allowed to dry to 15% moisture and square to 18%. Improper curing of hay can result in fires. The best way for hay to be stored is in a hay shed, but if bales have to be stored outside its best they are orientated north/south, the bales are dense and they are elevated. Net wrapping also distributes moisture better than bales wrapped in twine.



Looking for more forage information?

Visit GeorgiaForages.com

UPCOMING EVENTS

AFGC

St. Louis, MO Jan 6-9, 2019

GrassMasters

Forsyth, GA Jan 22 – Feb 12, 2019

Hay and Baleage Short Course

Moultrie, GA February 26, 2019

Beef Cattle Short Course

Tifton, GA March 5, 2019

GFGC Annual Mtg

Calhoun, GA March 14, 2019

Novel Tall Fescue Renovation Workshop

Calhoun, GA March 15, 2019

Hay and Baleage Short Course

Forsyth, GA March 21-22, 2019

GA Forage Conference at GCA Conv

Perry, GA April 4, 2019

Are you a forage enthusiast?

Become a member of the Georgia Forages and Grassland Council!

Find it on Facebook

www.facebook.com/gaforageandgrasslandcouncil/



Be a good hay shopper cont.

Buy by Weight

Finally yet importantly, consider the weight of a hay bale. Whether you are buying square bales or round, consider buying by weight instead of by bale. Humans are not good at estimating the weight of a bale and usually overestimate the weight. So if you can put some bales on a scale and get a good estimate of the lot weight, see if the producer will sale by weight. It will save you some money in the long run.

Summary

1. Consider your livestock nutrient requirements
2. Forage Test
3. Read and understand results
4. Compare your forage options
5. How was the hay stored
6. Buy by weight (if possible)

Should I burn my hayfield?

By Jeremy Kichler

Colquitt County CEC

Every year county agents get questions from producers concerning if they should burn their Bermuda grass hayfields. There are several benefits to burning your hayfield. Burning can help producers manage thatch in their stands. If the thatch layer becomes too thick over time then this can create several issues. For example, this past year in my area, leaf spot diseases were severe in numerous hayfields. Thatch can tie up nutrients, and be a “spore reservoir” for leaf spot diseases. Thick thatch layers can also hinder or delay green up, reduce water infiltration into the soil, and make establishment of winter annuals a challenge. Other benefits of burning include maybe a cleaner first cutting of hay and managing spittlebugs. If you would like more information on leaf diseases it can be obtained below.

[Dealing with Forage Diseases](#)

The optimal time of year to burn is just before spring greenup. If you decide to burn too early then you might have to deal with an early flush of weeds. If you burn too late after greenup has started then early season growth can be suppressed resulting in loss of yield.

Producers need to prepare for burning ahead of time. In the fall, 4 to 6 inches of growth needs to remain to supply enough fuel for a good fire. Producers need to know that varieties such as Tifton 85, Tifton 78 and Coastcross can be damaged by burning due to being more stoloniferous. These varieties do not produce an extensive root system. These bermudagrass varieties should be burned with a head fire rather than a backfire. A backfire is a fire that burns into or against the wind which burns slower and produces a hotter fire. If a backfire has to be used on the stoloniferous varieties then consider initiating the burning operation early in the morning or right after a rain. These measures could result in a cooler fire and be less injurious. Bermuda grass varieties such as Alicia, Coastal and Russell seem to tolerate burning better or more rhizomatous than the ones previously mentioned. Producers need to find out about permits and restrictions before burning. Producers may need a burn permit and your local county Extension agent can help with obtaining that information if needed. Find out if other restrictions apply such as time of day or other regulations that need to be obeyed.

Please take no chances with dealing with fires and have a plan. A person in charge or fire boss needs to be appointed. Producers need to establish fire lanes to manage the burn. Fire lines need to be at least 6 feet wide around the field that is going to be burned. Consider plowing a 10 to 12 foot fire lane if you are dealing with fields in the 5 to 10 acre range of larger. A fire lane can be made wider by using a backfire.

>> Page 4

Burn cont.

Producers need to watch the local weather before implementing a prescribed burn. Please pay attention to wind direction, speed and moisture to ensure that fire does not jump the fire breaks. According to several sources, do not burn if wind speed exceeds 10 to 12 mph. Wind direction is a factor in planning a burn, please avoid burning during times if the wind will potentially blow smoke in the direction of houses or roads.

Burning is a cheap, and effective means of removing thatch, managing foliar diseases and weeds in bermudagrass production. If this is utilized please have a plan so it can be used effective way.



Controlled burn of a Bermudagrass Hayfield – Photo by Shep Eubanks

A great resource to study for planning a bermudagrass burn is <http://www.aces.edu/pubs/docs/A/ANR-0989/index2.tmp> Use of Fire in Bermudagrass Management by Dr. Don Ball.

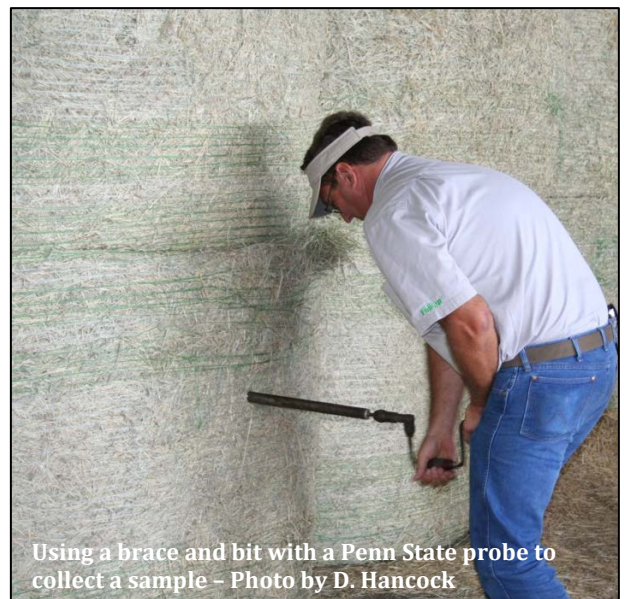
If you have any questions about this subject please contact your local county Extension agent.

Taking a good forage sample

By Ray Hicks
Screven County CEC

Forages are the basis of most of our livestock enterprises. Moreover, the nutritional make up of that forage should be the foundation of a balanced diet for our livestock but many times this is took for granted. Many factors (e.g. variety, maturity, growing conditions, handling practices, etc.) affect forage quality prior to the time it is fed. As a result, predicting forage quality values from standard books often grossly overestimates or underestimates feeding value. A better way to determine feeding value is to have a representative forage sample tested by a laboratory that uses proven and accepted methods of forage analysis. It is strongly suggested that you choose a National Forage Testing Association Certified Lab.

Equipment required for collecting forage samples include a forage probe, a mixing bucket, and sample bags. The two most common types of hay probes are the Penn State or the Colorado. The Penn State probe will require a brace and bit or an electric drill to use. Both probes collect a good sample and are superior to a grab-sample. Most Extension offices have a probe that you can borrow. For more information on selecting a forage probe, refer to this article from Dr. Dennis Hancock: <http://georgiaforages.caes.uga.edu/content/dam/caes-website/extension-outreach/commodities/forages/docs/faqs/028-FAQ-hayprobe.pdf> Forage should be sampled as near to the time of feeding or sale as possible.



Using a brace and bit with a Penn State probe to collect a sample – Photo by D. Hancock

>> Page 5

Taking a good forage sample cont.

The most important step in obtaining a meaningful analysis is to collect a representative forage sample. Extreme variation may occur in hay quality even when harvested from the same field. As a result, a separate forage sample should be tested for each hay “lot.” A “lot” refers to a quantity of similar forage. Each cutting should be sampled and marked in storage area where you know which is which.

For round bales and baleage select a minimum of 10 - 20 representative bales and collect two cores from the round side of each. Combine the cores in a bucket and mix well. Large round bales should be sampled to the center using a long probe or one with an extension adapter. Angle the probe in an upward direction to reduce the potential for water entering the core holes. In baleage, reseal core hole with tape made for sealing agricultural plastic to prevent spoilage. Regular duct tape is not sufficient and will deteriorate quickly in environmental conditions. For small square bales, select 20 bales and sample from the end at a straight inward line. Place the sample to be tested in plastic zip lock bag and label before taking to Extension office. Bags should be labeled with your name, lot name, date harvested, and species of grass. For more detailed information on collecting a forage sample go to www.foragetesting.org.

When the results comes back get with your Extension agent and go over it. They can help you tailor which lot to feed to each class of animal. The cost of the sample is money well spent in balancing your feed needs and will save you money in the end.

Managing tall fescue toxicosis

By Adam Speir
Madison County CEC

Tall Fescue is a forage workhorse for livestock producers from north Georgia to New England. It is a cool-season perennial grass that is tolerant of many conditions, covers more than 1 million acres north of the Fall Line, and supplements bermudagrass pastures for many livestock producers from fall through spring. Despite the important niche that tall fescue fills, there are important downsides to consider when grazing livestock on tall fescue grass.

The problems associated with livestock grazing tall fescue are generally referred to as “Fescue Toxicosis.” This term describes a host of potential issues that can include reduced conception rates, decreased weight gain, decreased milk production, constricted blood flow (especially to extremities), elevated blood temperature, poor heat tolerance, holding of winter coat in the spring, and excessive nervousness. These symptoms are caused by a fungus that lives inside the plant tissue. This fungus is referred to as an endophyte and is toxic to all livestock because of the production of ergot alkaloids, a mycotoxin (If you’re a history buff, you would enjoy researching the role ergot alkaloids have played in history). Kentucky 31, the most common fescue in Georgia, contains the toxic endophyte (E+) which produces these mycotoxins. When Kentucky 31 was first planted, the issues related to this fungus and fescue toxicosis were not known. Decades of research went into determining the causes of these issues. It was USDA researchers in Georgia in the 1970’s that first determined these harmful problems livestock were having while grazing tall fescue was caused by a fungus inside the plant.

While the fungus inside the plant causes detrimental impacts to livestock, it actually helps the plant tolerate stress, which is what initially made it such an appealing forage species. Researchers learned that the fungus is present in fescue seed, and heating the seed or storing it for more than a year could neutralize the endophyte (E-). Unfortunately, the breeding of E- fescue resulted in plants that were not tolerant of grazing, drought, or heat and many stands failed. Later discoveries of non-toxic, “novel” endophytes (NE) by researchers in New Zealand led to breeding of tall fescue varieties more stress tolerant than E- varieties and did not have negative effects on livestock that E+ fescue did.



Photo by Carole Knight

>>Page 6

Managing tall fescue toxicosis cont.

The question for livestock producers is how to best manage the impacts of fescue toxicosis given the production costs to operations. Should producers look to renovate all of their pastures with NE varieties of fescue, utilize other forages, or are there other options that producers can implement to mitigate the risk and damage of fescue toxicosis?

Toxic Fescue Rotation – Producers might be able to manage current stands of E+ tall fescue by understanding the nature, timing, and location of the toxic endophyte within the plant. As mentioned, the fungus is present in the fescue seed. As the seed germinates and the plant develops, the endophyte infects the plant at the base of the leaf. When the plant begins its reproductive cycle, the endophyte moves into the plant stems and eventually the endophyte moves from the stem into the developing seed head and seeds. Producers should time grazing of E+ tall fescue to avoid seed heads and plants that are in reproductive stages of development to reduce the concentration of endophyte toxicity.

Producers should also not graze tall fescue during summer months for several reasons. First, tall fescue is a cool season grass and summer can be stressful for the plant, especially hot, dry summers. Second, the negative effects of tall fescue include hampering an animal's ability to tolerate heat. Animals will want to spend all their time in shade or water and not grazing. Third, high temperatures have been shown to intensify the toxic effects of the endophyte. Producers should plan to include warm season perennial or annual grasses to accommodate removing animals from tall fescue the entire summer.

Tall Fescue Dilution – Producers can dilute the negative effects of toxic fescue by diluting it with other forages, especially legumes. White clover has been shown as a good option for interseeding into toxic fescue stands in Georgia. This mix can reduce the overall intake of toxins by animals selectively grazing the clover which improves overall animal performance. Also, the higher forage quality of the clover will improve the overall forage quality of the stand, also leading to improved animal performance. If you're looking to interseed legumes in fescue, consult with your County Extension Agent to determine the best course of action.

Seedhead Suppression – Some research has been done in Kentucky and Missouri and demonstrations in Georgia using herbicides to suppress seedhead development in tall fescue and reduce toxicity. Studies have shown an increase in conception rates with cattle on herbicide-treated pastures compared to untreated fescue pastures. While use of herbicides such as Chaparral will suppress fescue seedheads, as well as control broadleaf weeds, the metsulfuron will stunt fescue, causing it to yellow and reduce overall yields which ultimately reduces stocking density. The potential tradeoff in lower stocking density is the increase in weaning weights and production. Still more work is needed in looking at the long-term impacts of this strategy on tall fescue, but you can get more information on this approach from your County Extension Agent.

Tall Fescue Replacement – Ultimately, the best long-term strategy for tall fescue management is replacing it with NE fescue varieties. Honestly, this can be a labor-intensive and a time-consuming process not without risk of failure, as is with any new establishment. To replace existing stands of tall fescue, follow a "spray-smother-spray" method. First, prevent seedhead development by mowing at least twice prior to spraying. Spray an infected field with a heavy rate of an effective herbicide such as glyphosate in the spring, growing a smother crop, usually a warm-season annual grass such as pearl millet, in the summer, and then spraying any surviving tall fescue plants and weeds again in the fall with another heavy rate of herbicide before planting the new fescue variety.

Another option – the "spray-spray-plant" method, might be more feasible for smaller producers. You prevent seedhead production in the spring as in the first method, then spray herbicide in late summer and again four-six weeks later followed by planting the new fescue within one day of the second herbicide application. It's best recommended to seed the new variety from mid-September to late October at 15-20 lbs. per acre.

Tall fescue definitely has a place in the forage systems of north Georgia and many livestock producers utilize it as part of their systems. Producers should look into the potential impact it's having on their livestock and possible ways to reduce the damage of fescue toxicosis. You can find more information on the Georgia Forages website, your local county Extension office, or in UGA circular 861 titled "Novel Endophyte-Infected Tall Fescue."