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Rocky Lemus Extension Forage Specialist

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As we enter the hay making season, not many producers think about the impact that hay management practices today might have later in the winter with feeding and nutrient recommendations. Current fertilizer prices are expensive as energy and protein supplements. To make the livestock profitable is important to keep cost down by using efficient ways to reduce fertilizer loses and increase fertilizer use efficiency to maintain production and quality. It is also important to remember that the major cost in livestock production is winter feeding cost of poor quality hay. There is a need to consider several hay management points that might help improve quality and reduce supplementation.

Harvest forages when forage quality is optimal – Most summer forages crops (bahiagrass and bermudagrass) should he harvested in a 25-30 cutting cycle to maintain forage quality due to their rapid growth cycle. There are challenges in making hay due the rain distribution throughout the date, which making use of weather forecast a tool to plan ahead. Rain damage will reduce hay yields and cause bleaching. Use the boot stage to early seed head stage as an indicator of timing for hay production. This is coupled with nitrogen fertilization to maintain consistent production and quality between cuts. How much high-quality hay is needed depends on the livestock species and goals. It is important to estimate how much hay will be needed on the number of animals, their nutrient requirements and the length of the feeding period. Always account for losses based on storage and feeding methods when calculating hay requirements. It is advisable to increase hay inventory by 20-30% in case of unexpected circumstances.

Baling hay at the proper moisture content – One of the most critical factors in making quality dry hay is timing. Hay moisture content is the largest single factor contributing to leaf loss when making hay. Hay baled at moisture content above 15% has much less leaf loss than hay baled below 15 percent moisture. Generally hay is ideally baled at moisture content between 15 to 18%. The upper limit for moisture for large round bales is typically 18 to 20%. The upper moisture level depends on the type of hay, density and size of bale, drying conditions after baling, and other factors. Hay baled much above 20 percent moisture will usually spoil unless chemical preservatives are added to the hay. Effective hay preservatives will prevent excessive heating and mold growth when applied uniformly and at the correct rate. It makes sense to add preservatives when you bale under borderline weather conditions, but small operations generally cannot justify the costs of the needed equipment and cost of preservative. Improperly cured hay (hay above 22% moisture) and placed in the barn can also heat and cause a fire by spontaneous combustion. When the internal temperature of hay reaches 130°F, a chemical reaction begins to produce flammable gas that can ignite if the temperature goes high enough. At 150°F you enter the danger zone. Hot spots or fire pockets can occur at 175°F.

Store economically to maintain yield and quality – Proper hay storage is crucial at the hay inventory for feeding in the winter. Hay loses due to improper storage can range from 10 to 50%. There are several economic ways of protecting harvested hay. To avoid moisture absorption from hay stored on the ground, it is recommended to put dry hay bales on pallets or gravel pads. The use of a tarp at the same time will protect the hay from moisture acquired through rainfall. It is never advisable to store hay along fence lines and under trees since high moisture content will cause mold formation which increases hay dry matter and quality losses as well as refusal by livestock. Fire prevention is also important. Do not store hay freshly baled into a building. Allow bales to undergo the heating process for at least 3-4 weeks before storing them.

Test your forages to measure hay quality - Most of the major failures in a hay feeding and supplementation program is not knowing the quality of the hay being fed. This is an important step for adjusting any nutrient or mineral imbalances. Forage testing will provide the information to make decisions. Understanding the forage components (crude protein, acid detergent fiber, neutral detergent fiber, total digestible nutrients) and major minerals will give an economic competitive and allow to adjust the nutrient requirements of the targeted livestock species. Taking forage samples from different hay lots on the farm enables produces to know the quality of the available hay. Forage samples should be collected

close to the feeding period (at least 3 weeks ahead) to have a better assessment of the adjustments in supplementation.



Know your animal nutritional requirements – Remember that the goals of making good quality hay is to meet the animal's nutritional requirements and therefore, minimizing the cost of feed supplementation. To

accomplish this, it is important that the livestock/forage producer understand the animal requirements. To achieve those nutrient requirements, the producer might need to sacrifice yield to make sure that hay quality is optimum. These means that forage producers might need to adjust the production cycles and maintain a more consistent and efficient nutrient management program.

In summary, production of baled hay uses a large amount of resources (land, labor, seed, fuel, fertilizer, equipment). The way hay is handled from cutting at the proper stage of maturity to



Figure 1. Dry matter and forage quality losses (% of initial crop yield) and different hay storage moisture contents. Source: Wilcke et al., 1999.

feeding in the winter time can have a big effect on losses in hay quantity and quality. It worth implementing sound management practices that protect that investment while fulfilling the nutritional needs of your livestock. Plan ahead for fertilizing hay at the right time, baling under desirable weather conditions, storing hay properly, testing hay for nutritional value and using feeding practices that reduce hay losses. Be smart and reduce future supplementation costs by having a uniform hay inventory.

Upcoming Events:

June 21, 2013: Mississippi Forage & Grassland Council Membership Meeting. Mississippi Cattlemen's Building, Jackson, MS. For connection via Distance Education, please contact your County Extension. For more information, visit http://mississippifgc.org

July 13, 2013: Warm-season Grass Forage Tour. South Farm (Henry H. Leveck Animal Research Farm). Mississippi State University. For more information visit http://mississippiforages.com or contact Julie White (662) 323-5916.

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Mississippi Forage and Grassland Council (MSFGC)



Membership Meeting Update

Mississippi Cattlemen Association Building

Jackson, Mississippi

Time: 9:00 AM to 11:30 AM

MSFGC would like to invite you the *Membership Meeting Update* to discuss the events that the organization has planned for this year and to discuss future changes to the by-laws and membership.

The exploratory committee has been very working hard to get your organization re-established and your input of the overall re-structure of the organization is very important. Remember that **MSFGC is a producer driven organization** and **your voice and participation** is what makes MSFGC unique.

Please let us know if you plant to attend in person by contacting Dr. Rocky Lemus at **Rlemus@pss.msstate.edu** or (662) 325-7718.

If you would like to connect via Distance Education in your county, please contact you County Extension Office. County Offices, please contact Steve Hankins at **steveh@ext.msstate.edu** to add your county.

For more information, please visit MSFGC website at http://mississippifgc.org

Warm-season Grass Forage Tour

July 13, 2013 (Saturday) Mississippi State University Location: Henry H. Leveck Animal Research Farm (South Farm), Forage Unit Starkville, MS Registration: 7:30 A.M.

Tour 8:00 A.M - 11:00 A.M

Topics will include:

- Sorghum Varieties.
- Nitrogen Fertility Demonstrations.
- Warm-season Legumes.
- Bermudagrass and bahiagrass trials.
- Bioenergy crops.

This is a free event, but early registration is encouraged. For more information contact:

Ms. Julie White Oktibbeha County Director Juliew@ext.msstate.edu (662) 323-5916

Dr. Rocky Lemus Extension Forage Specialist RLemus@ext.msstate.edu (662) 325-7718 Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation or group affiliation, age, disability, or veteran status.

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