



# Better Forage, Better Profit: An Integrated System Approach

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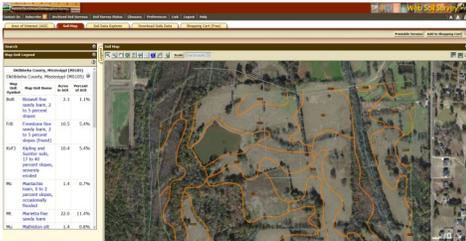
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Although there is a great number of forage species and varieties within those species, livestock producers in the southern USA are not taking advantage of them to improve their grazing efficiency, livestock numbers, meat production output, and sustainability. One area that producers can gain an advantage to increase profitability is improving yield production and nutritive value of the forage system. We all need to be reminded that drivers of any livestock operation will depend on the price of seed and fertilizer, cost of production (dollar per unit cost of production), and management.

To capitalize on this approach, there are several steps that producers need to think about while developing a progressive forage plan:



**Know your soil capabilities and livestock needs** – There is the need to evaluate the production potential of your soils by determining soil capabilities and nutritional limitations. These two things can be achieved by determining your soil types using USDA-NRCS Web Soil survey information and by taking soil samples that could allow you to adjust nutrient deficiencies when selecting a forage crop. Understanding your livestock classes and nutritional needs will also help forage crops that could improve not only yield but nutritive value throughout the growing season.



**Develop a nutrient management plan that optimizes forage production and increases efficiency** – Lack of nutrients can impact stand persistence, productivity, and nutritive value. Fertilizer needs will vary depending on the forage production system (grazing a pasture vs. hay production). A good fertilization program should consider four principles: select the correct fertilizer source for the environmental conditions, apply the recommended rate, apply at the correct time, and apply at the right place.

When selecting a nitrogen source, for example, the use of urea might be more suitable for use in the spring or late fall under cooler temperatures to avoid high volatilization losses. Applying the recommended rate should be based on your soil test recommendation to avoid under- or over-application with economic implications. Fertilizer application at the right time can affect efficacy and efficiency. For example, nitrogen should be applied to forage grasses until they have germinated and have reached at least three inches of growth to increase root uptake and utilization. Application at the right place is also important. For example, legumes will require phosphorus and potassium for growth and no nitrogen. Nitrogen application to legumes might inhibit the biological nitrogen fixation process. A good grazing management program can help better manure distribution over the pasture by increasing nutrient cycling and improving soil fertility.



**Ensure a good stand and establishment of a forage crop** – Many factors can impact how well a forage crop establish and the future productivity and sustainability. Some of those factors include planting date, planting depth, seeding rate, seed quality (purity and germination), planting method (conventional planting in a prepared seedbed, no-till into existing sod, or broadcasting). Always calibrate your planting equipment to optimize establishment success.





**Incorporate adaptable legumes when soil types, fertility, and environmental conditions allow it** – Incorporating legumes can have many benefits such as improving forage productivity, nutritive value, animal performance, reduce nitrogen fertilizer cost, and help extend the grazing season. Providing a soil pH above 6.0 and adequate levels of phosphorus and potassium will be key ingredients to sustain legumes in your pastures.

**Develop a good preventative pest management program** –

There are several pests that can impact forage production in the southern USA such as armyworm, bermudagrass stem magot, leaf spot disease, and sugarcane aphid is forage sorghum and sorghum x sudan hybrids. Scouting your fields and developing an integrated pest management program can help reduce forage production losses.



**Understanding forage-related livestock disorders** – Understanding the effects of tall fescue toxicosis, prussic acid accumulation, and nitrate accumulation can help reduce these potential risks that have a large impact on animal performance. It is also essential to get familiar with weeds that could be toxic to your livestock such as perilla mint. Nitrates are affected by dry conditions while prussic acid is influenced by frost.



**Developing an effective weed control** – Scouting your field in mid-spring and early winter will help develop a weed control that will reduce weed competition in your grazing systems and increase productivity. Keep in mind that weeds always competing with desirable forage species for water, sunlight, nutrients, and space. Controlling weeds in the early growth stages will reduce herbicide rates and reduce seed increase. The more mature the weeds, the higher herbicide rates will be needed and can have an economic impact. Rotating herbicide use will also reduce herbicide weed resistance in your pastures or hayfields. Most weeds that are unpalatable will reduce forage availability and potentially limit intake. There is an argument that livestock will eat weeds. Yes, your cattle will eat weeds as the last resource to survive, not because they provide the best nutrition.



**Understanding the nutritive value of your forages throughout the season** – Most producers are obsessed with greater hay yields that forget about balancing quality and quantity. Harvesting forage crops at the vegetative rather than the reproductive stage will ensure higher crude protein, lower fiber, and better animal intake. It is important to test your hay to determine the nutritive value and develop a supplemental feeding program than guessing on the nutritive value for a specific livestock class. Nutrition affects animal growth, breeding cycles, and reproductive rates. In Mississippi only 9% of producers test their hay in each cutting, while 39% test their hay but not regularly, and 52% do not test their hay.



**Reducing Storage and Feeding Losses** – The reality is that producers spend extensive time in the summer making hay and leaving it in the field along fence lines under shady areas that will increase dry matter losses. In Mississippi, the average storage loss for round bales store outside is between 40 and 60 percent and feeding losses can close to 50%. It is understandable that building a barn cost money, but there are other simple methods to store hay by using pallets and tarps. If producing a ton of hay costs between \$90 and \$110 and you are losing 50%, then you are

losing from \$45 to \$55 per ton of hay. Is that a viable way of sustaining a livestock operation? Another reason why supplementation is the most expensive part of the annual budget to main a cow. Implementing a more sustainable storage and feeding practice can reduce the supplementation cost and reduce winter feed cost per cow.



**Managing your forage production systems** – Developing a rotational grazing system that meets your need and the needs of the goals of your operation is the most pivotal component of being able to transform forages into a profit by producing good quality beef or milk. Producers need to think of a grazing plan that allows adjusting the length of the grazing, grazing height, and resting periods to balance the nutritional needs and recovery of forages throughout the growing season. Rest periods will promote plant recovery, persistence, and root growth. The use of a rotational grazing system can increase forage utilization, extend the growing season, and increase livestock carrying capacity (pounds of beef per acre) and potential economic returns. Keep in mind that most forage crops might need shorter rest periods under good growing conditions (moisture and temperature) and longer rest periods when pasture growth slows down at the end of the season. Not having enough forage available to the livestock can lead

to reducing energy intake, reduced gains, and loss in body condition. There are so many rotational grazing systems out there from slow (2-3 paddocks), medium (4-8 paddocks), to intensive (10 or more paddock or mob grazing (moving animals several times throughout the day). It is better to start slowing and build a system that could sustain the grazing capacity of your farm and evaluate your system each year. Review and adopt a rotation schedule that allows for an increase in herd size and paddock number over time. Another aspect of a well-designed grazing system is maintaining good fences and making sure that water and shelter are provided, especially under the hot and humid conditions of the south.

As a producer, if your pastures are overgrazed and your hay feeding season is more than 60 days, then most likely you have more animals than what your land can handle. It is likely that that you will see more weeds and overall reduced pasture productivity next year. Remember that the amount of beef production depends on having nutritive forage available. To improve the profitability of forage-based livestock production systems, producers need to focus on forage production and grazing management instead of just the livestock. I am not being critical, but if producers will put more emphasis on learning more about the forage production potential in their farm, they can enhance their ability the appropriately stock their farms and be more profitable. A lot of money is being left on the table of the southern USA because of improper grazing management practices. Invest time to develop actions that can enhance forage production, consistency, and persistence for grazing livestock. Knowing the drivers to profitable forage production systems can further seize opportunities for making well-calculated and well-informed decisions about your livestock operation. You could increase your profitability and financial sustainability with the use of essential forage management skills and practices.

### Upcoming Events

For upcoming forage related events visit: <http://forages.pss.msstate.edu/events.html>

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