



Bahiagrass, “The Neglected Forage”

Volume 7, Issue 7

Rocky Lemus
Extension Forage Specialist

July 2014

Visit us at: <http://mississippiforages.com>

Bahiagrass is one of the most common and widely used warm-season perennial grass in Mississippi. It is commonly utilized in the southern US for its adaptation to marginal pastureland. Bahiagrass is a well-adapted warm-season grass that covers approximately 28% of the pastureland in Mississippi. Its major concentration is found in central and south Mississippi. It is adapted to low pH, low fertility and drought conditions due to its deep root system.

One of the grazing advantages of bahiagrass is that it can withstand close grazing and if it is managed correctly it could be of an effective tool in rotational grazing. Bahiagrass tends to mature and develop seed heads much faster than bermudagrass, usually in a 21 to 25-day interval. Although there are several commercially available varieties in the market, the most commonly utilized are:

Traditional or Commonly Used Varieties

Pensacola – It is the most widely used variety in Mississippi. Some unique characteristics are its narrow leaves and taller seed heads (longer seed stems) than other varieties. It has excellent seed production and the ability to grown in marginal to poor soils, making it a persistent variety under intensive grazing.

Argentine – This variety is best adapted to well-drained soils that can retain good moisture during the growing season. Argentine has lower seed production and less cold tolerance that Pensacola and does not has early

spring green up like other varieties. On the other hand, it is highly productive with excellent spreading potential. It not recommended for use in north Mississippi. It also has higher forage quality than most commercial bahiagrass varieties.

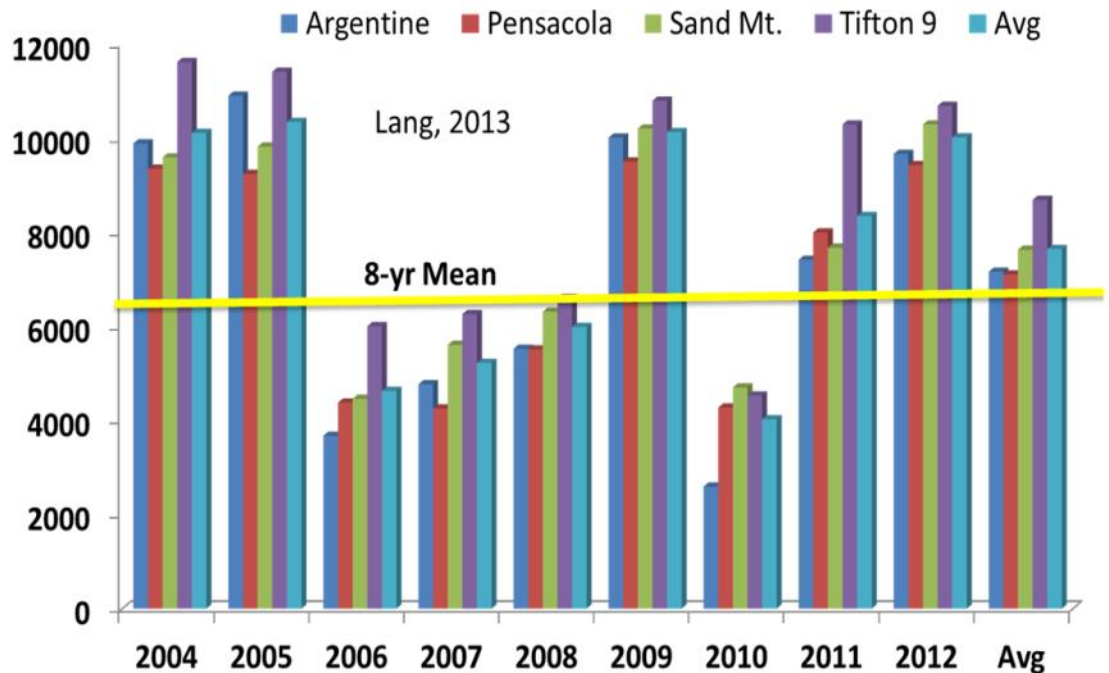


Figure 1. Biomass production of four bahiagrass varieties at Mississippi State University.

Improved Varieties

Tifton 9 – This variety was developed from a selection from Pensacola bahiagrass, but with stronger seeding vigor. This variety is higher yielding than Pensacola, but similar nutritive value and digestibility.

Tifquick – One unique characteristic of this variety is a decreased number of hard seeds, which allows for rapid germination under optimal conditions and allow for a quicker establishment. Due to this advantage it can grow faster than Pensacola or Argentine bahiagrass.



UF-Riata – This variety was selected from Pensacola bahiagrass. This variety was developed to early spring and late fall forage production with less photoperiod sensitivity. Once established, this variety could provide an opportunity to extend the grazing season under a manageable rotational grazing system.

AU Sand Mountain – This variety was developed from Pensacola bahiagrass and has better adaptability to north Mississippi than other varieties. It has better tolerance to moist soils than bermudagrass. In areas where Pensacola and Argentine are commonly grown, Sand Mt. has intermediate forage production when compared to those two varieties.

Other varieties that could be found include common, Paraguay and Paraguay 22. Common is very cold sensitive, but good at spreading due to its prostrate growth habit. It has good persistence under continuous grazing. Paraguay and Paraguay 22 have more upright growth than common, but are not commonly used in pasture or hay production.

Establishment and Management

Optimum seeding dates for bahiagrass in Mississippi are from late March and mid-June. Earlier planting dates are mostly recommended for the southern part of the state. Earlier planting increases the chances of getting a good pasture and have the opportunity for forage production in the first year. Although planting in the middle of the summer could be an option, keep in mind that lack of moisture and weed competition from summer weeds (crabgrass, goosegrass, signalgrass, foxtail) can significantly affect the stand. Keep in mind that it might take the first full growing season to have a good sod. This means that overgrazing can compromise the establishment. It is advisable to wait until bahiagrass has reached at least 8-10" before the first grazing period occurs.

In a well prepared seed bed, seeding rates can range from 15 to 20 lbs per acre. Some practices that producers have used the technique of planting the bahiagrass in the fall in combination with the annual ryegrass. Although some establishment could occur, this technique is a hit and miss approach. Warm fall temperatures could prompt germination and those seedling will be killed by a frost if there has no developed a strong root systems to store nutrients. Also, when a wet late fall, winter or early spring occurs, seeds could deteriorate on clay soils with high water holding capacity. Using these approaches could cause economic losses at establishment due to potential reseeding.

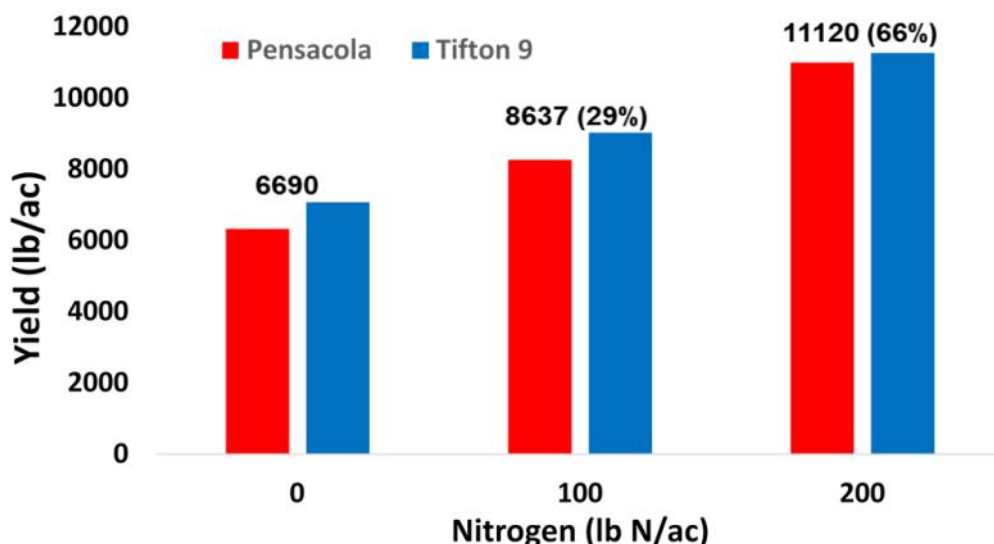


Figure 2. Effect of nitrogen application on bahiagrass seasonal biomass. Numbers above bars represent average biomass yield for each nitrogen treatment. Numbers in parenthesis represent the percent yield increase when compared to the check or no nitrogen applied. Source: Lemus and White, 2014.

Although bahiagrass has tolerance to low soil pH condition, it is recommended to maintain a pH no lower than 5.8. It is ideal to have a pH above 6. At establishment, it is recommended to apply all the phosphorous (P) and 50% of the recommended potassium (K) based on soil testing. Once plants have reached 2-3 inches in height, 30 lbs of nitrogen (N) should be applied. If bahiagrass will be used for hay production, it is recommend to use 50 units of N per acre per cut of hay with no more than 200 units of N per acre per year. Annual for production for bahiagrass can range from 2,000 to 10,000 lbs per acre, depending on nutrient management and moisture conditions.

Forage utilization will vary depending on the intended use. Good grazing management practices include to start grazing when bahiagrass is 10-12 inches tall. Using rotational grazing and high stocking rates could help maintain quality. If used for hay production, cutting intervals might be shorter than bermudagrass since bahiagrass could produce seed

Table 1. Forage quality of bahiagrass. Values expressed on dry matter basis.

Variable	N	Mean	Maximum	Minimum	Range	Std Dev
----- % -----						
CP, %	333	10.95	17.79	5.45	12.34	1.67
ADF, %	334	38.83	46.71	33.27	13.44	2.02
NDF, %	334	63.75	69.63	57.09	12.54	2.35
WSC, %	328	4.79	8.28	1.11	7.17	1.40
TDN Est., %	334	50.70	57.09	41.63	15.46	2.32
RFQ	334	77.81	97.57	58.33	39.24	6.38
P, %	334	0.21	0.25	0.11	0.14	0.02
K, %	334	1.51	2.00	0.35	1.65	0.21
Ca, %	334	0.56	0.71	0.44	0.27	0.04
Mg, %	333	0.56	17.77	0.28	17.49	1.45

TDN = 95.35 - (ADF*1.15); DMI (% BW) = 120/NDF; RFQ = [(DMI, % BW) * TDN (% DM)/1.23]

Source: Lemus and White, 2014.



heads much earlier. To maintain forage quality, a 21-25 cutting interval is recommended. Keep in mind that in a hay production system, potassium will be removed in larger amounts. Yearly maintenance of potassium levels will be necessary to maintain productivity. Forage quality of bahiagrass, like any other grasses, tend to decline with maturity, but also decline late in the season. Even when well fertilized, quality still remains lower than bermudagrass (only 10-12% crude protein).

Bahiagrass could have limitations to meet the nutrient needs of livestock with higher requirements such as stocker cattle or lactating dairy cows. The animal daily gains (ADG) could range from 0.7 to 1.3 lbs per day, however, gains tend to decline from late spring to fall.

Most producers have the perception that bahiagrass is not a productive forage species and tend to neglect its maintenance. Despite of this, bahiagrass provides some great attributes such as good drought tolerance, moderate fertility requirements, resistance to disease and insects, moderate forage quality and resistance to close grazing. Keep in mind that improved varieties could have greater yield potential than Pensacola bahiagrass and therefore, higher carrying capacity when proper grazing rotations are implemented.

For upcoming forage related events visit:

<http://forages.pss.msstate.edu/events.html>

August 27, 2014— Cattlemen College, Town Creek Farm, West Point, Mississippi

August 28, 2014— Cattlemen College, Mathis Farm, Brookhaven, Mississippi

October 3, 2014— Mississippi Hay Contest Entries Due

November 14, 2014— Mississippi Forage & Grassland Annual Conference, Verona, MS.