

SEEDED BERMUDAGRASS

Background

Bermudagrass is very drought tolerant and can be planted throughout the state. Seeded bermudagrass should be planted between April and June at a seeding rate of 5 to 10 pounds of pure live seed per acre. Nitrogen and potassium fertilization are essential for high yields, especially for hay production. To maintain a balance between yields and forage quality in a hay production system, it is recommended to harvest hay in intervals of 30 to 35 cutting days. Bermudagrass production can be negatively affected by leaf spot disease (*Bipolaris cynodontis*) and leaf rust (*Puccinia cynodontis*). In addition to these leaf diseases, a relatively new pest known as the bermudagrass stem maggot (*Anterigona reversura*) can weaken bermudagrass enough to encourage greater leaf disease. These effects can be further amplified when fertility management is lacking in potassium.

Protocol

The experimental design was a randomized complete block with four replications. Plots were 6 feet by 10 feet in size with 2-foot alleys between plots and 3-foot alleys between blocks. The study was planted on May 31, 2018, in Newton, May 25, 2018, in Starkville, and May 23, 2018, in Holly Springs using an ALMACO plot drill. Initial fertilizer application was 335 pounds per acre of 15-5-10 2 weeks after planting date. Nitrogen was applied in July at a rate of 50 pounds of N per acre at each location after the initial clean-off harvest, when no data was collected due to majority weed composition. Harvest took place in the fall when 50% of the plots reached a forage height of 12–15 inches and forages made up the majority of the composition. Plots were harvested with a “Zero Turn” mower to a 3-inch stubble

height by removing a 52-inch swath. Yields were recorded, and subsamples were collected for dry matter analysis. Data were analyzed using the General Linear Model (PROC GLM) of SAS and mean separation was conducted using the LSD at $\alpha = 0.05$. Tables 4–5 present 2018 dry matter yields of seeded bermudagrass varieties in Starkville and Holly Springs. Stand establishment was analyzed using a providence square, which was a meter square evenly subdivided into 25 squares. When bermudagrass was represented in one of the subdivided squares, it accounted for 4% of the plot.

Results

The trial planted in Newton was established, but it was terminated after major rainfall left standing water on the plot area long enough to kill more than 50% of the plots across replications before the first harvest. In Starkville and Holly Springs, plots were established, but heavy weed competition from barnyard grass (*Echinochloa crus-galli*) suppressed growth throughout the season, despite several herbicide applications and clean-off harvest. As a result, only one harvest and stand rating was recorded in the fall. In Holly Springs, differences were not significant between varieties, considering dry matter yield and stand percentages using the providence square. In Starkville, stands were incomplete, averaging only 40% of the area, with the greatest percentage no more than 60% of the area. Typically, forage yields between bermudagrass varieties are the most variable during the establishment year, but the intense competition from weedy species at the Starkville location likely caused much of the establishment issues and could be considered a random effect beyond variety performance.

Table 4. Seeded bermudagrass dry matter yields and stand ratings at Holly Springs, 2018.

Variety	Rating ¹	Harvest date 10/13/18
	%	lb/A
BAR RUB 619	84	791
Cheyenne II	96	727
Common	92	572
ETSCII325102H	100	684
ETSCITNS1115	92	902
Mowhawk	100	663
Sahara II	96	817
Texas Tough+	92	773
Tierra Verde	92	714
Mean	92	738
CV%	10	32
LSD _{0.05}	NS ²	NS ²

¹Rating = Percentage of occurrence within providence square.

²NS = Not Significant

Soil type: Grenada silt loam Planted: May 25, 2018

Herbicide: Quinclorac (75%) at 1 lb/A

Fertilizer: 335 lb/A of 15-5-10 after planting; 50 lb/A of N using (33-0-0S) in July after clean-off harvest

Table 5. Seeded bermudagrass dry matter yields and stand ratings at Starkville, 2018.

Variety	Rating ¹	Harvest date 10/13/18
	%	lb/A
BAR RUB 619	12	554
Cheyenne II	60	799
Common	36	598
ETSCII325102H	60	1386
ETSCITNS1115	56	1267
Mowhawk	44	520
Sahara II	28	727
Texas Tough+	40	559
Tierra Verde	36	752
Mean	40	795
LSD _{0.05}	24	1139
CV%	43	45

¹Rating = Percentage of occurrence within providence square.

Soil Type: Savannah fine sandy loam Planted: May 25, 2018

Herbicide: Quinclorac (75%) at 1 lb/A

Fertilizer: 335 lb/A of 15-5-10 after planting; 50 lb/A of N using (33-0-0S) in July after clean-off harvest