

Mississippi Perennial Cool-Season Forage Crop Variety Trials, 2022

INTRODUCTION

Varieties of forage crops are evaluated every year in MAFES small-plot trials. The seed for the entries are provided by seed companies and state universities and tested at one or more locations across Mississippi. All entries from privately owned companies are tested on a fee basis. Standard varieties were added by MAFES as a reference for comparison purposes. Seed sources are presented in Table 11. This report contains data for tall fescue (*Festuca arundinacea*), perennial clovers (white clover, *Trifolium repens*; red clover, *Trifolium pretense*) alfalfa (*Medicago sativa*), and chicory (*Cichorium intybus*) established in fall 2020. Trial locations are Leveck Animal Research Farm Forage Unit at Starkville,

Black Belt Branch Experiment Station at Brooksville, and Coastal Plain Branch Experiment Station at Newton.

Data presented in Tables 2–10 can be used to evaluate the performance of each forage variety or species within that test. Comparisons were statistically evaluated by using the LSD (least significant difference) at the 0.05 probability level. The LSD represents the amount of yield that must be observed between any two varieties to determine if the differences observed were due to variety variation alone. Coefficient variation (CV) describes the accuracy of the test compared to other tests. Highly variable results between replications will be reflected in a high CV.

PROTOCOL

Tall fescue, perennial clovers, and alfalfa trials across the state were established in October 2020. Soil samples from each location were taken and analyzed at the Mississippi State University Soil Testing Lab. Each trial area was fertilized with lime, phosphorus (P_2O_5), and potassium (K_2O) according to soil test recommendations. Recommendations for phosphorus and potassium in the grass were usually fulfilled with one application of 13-13-13. Tall fescue trials were fertilized with 350 pounds per acre of 13-13-13 at planting, followed by 50 pounds per acre of N using urea ammonium sulfate (33-0-0S) after each harvest. Plot dimensions were 6 feet by 10 feet and planted using a precision cone seeder on a prepared seedbed. Plots were arranged as a randomized complete block replicated four times. Recommended seeding rates were based on pure live seed (PLS) and are presented in Table 1. All grass plots were harvested when 75% of the plots achieved 15 inches of growth. Alfalfa was harvested at 50% bloom, and clovers were harvested when 75% of

plots were 10–15 inches in height. Perennial clovers, alfalfa, and tall fescue were harvested to a 4-inch stubble height. Plots were harvested with a Winterstieger plot harvester equipped with a forage header. A subsample was collected and dried at 131°F to calculate dry matter percentage (DM). Data were analyzed using the general linear model (PROC GLM) of SAS and mean separation was conducted using the least significant difference (LSD) at $\alpha = 0.05$.

Table 1. Seeding rates used in variety trials.¹

Variety	Seeding rate (PLS)
	lb/A
Alfalfa	
Red Clover	
Tall Fescue	
White Clover	
Chicory	

¹PLS = Pure Live Seed.