

## Introduction

Forage NWSG are adapted to the Southern region and offer drought tolerance, good summer growth, and the potential for reduced fertility inputs while still maintaining production potential. Mixtures of big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and indiagrass (*Sorghastrum nutans*) are complementary in their growth habits and offer good palatability and nutritive value, which may provide a warm-season forage option for beef producers in the summer months.

## Objective

The objective of this study was to evaluate the effect of nitrogen (N) fertilizer application rate on forage production, canopy persistence characteristics, and animal performance of beef heifers grazing a mixture of big bluestem, little bluestem and indiagrass at the Black Belt Research and Extension Center (BBREC), Marion Junction AL.

## Project Design

- Six 5-acre plots were randomly assigned to one of two treatments (0 or 60 lb N/acre applied annually in early April; n=3 replications per treatments).
- Paddocks were continuously stocked with four weaned Angus x Simmental beef heifers from late May/early June through mid-to-late August, respectively.
- Put and Take heifers were utilized to manage forage to target height of 15 inches
- Forage mass and canopy heights were collected every two weeks during the trial.
- Visual ground cover ratings and canopy leaf area index were measured at the beginning and end of the trial in each year.



## Results

- There were no differences in beef heifer body weight, ADG (mean 0.94 lb/d), BCS (mean 5.7) or stocking density (mean 855 lb BW/acre) across forage N application rate treatments.
- Nitrogen-fertilized NWSG supported more grazing days per year than no N input (77 vs. 73 days, respectively), and greater canopy heights (17 vs. 14 days).
- However, there were no differences in forage mass or FA (mean 2,969 lb DM/acre and 3.7, respectively).
- Persistence of NWSG as measured by canopy cover was ~ 61% and did not differ across N-fertilization regimes over the 3-year study, illustrating no detected stand decline among treatments.
- Leaf area index decreased across the season for both treatments during the grazing season, with a greater decline in canopy cover for N-fertilized NWSG (-0.93 vs. -2.2 units).



## Conclusions

These data illustrate that NWSG systems may provide a viable grazing system in the summer months under reduced N inputs. End-of-season grazing management is an important consideration to ensure long-term NWSG persistence.

