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Including Legumes in Wheat-Bermudagrass Pastures

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Including Legumes in Wheat-Bermudagrass Pastures

Abstract

Use of legumes in wheat-bermudagrass pastures did not affect summer cow gains in 2018. Forage availability was greater ($P < 0.05$) where nitrogen (N) alone was used than where crimson clover and ladino clover were used in the Legume system. Estimated forage crude protein (CP) was similar ($P > 0.05$) for the Legume and Nitrogen systems.

Keywords

bermudagrass, cows, grazing, crimson clover, ladino clover, wheat, nitrogen

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Including Legumes in Wheat-Bermudagrass Pastures

L.W. Lomas and J.L. Moyer

Summary

Use of legumes in wheat-bermudagrass pastures did not affect cow gains in 2018.

Introduction

Bermudagrass is a productive forage species when intensively managed. However, it has periods of dormancy and requires proper management to maintain forage quality. Legumes in the bermudagrass sward could improve forage quality and reduce fertilizer usage; however, legumes are difficult to establish and maintain with the competitive grass. Clovers can maintain survival once established in bermudagrass sod, and may be productive enough to substitute for some N fertilization. This study was designed to compare dry cow performance on a bermudagrass pasture system that included ladino and crimson clovers (Legume) vs. bermudagrass alone (Nitrogen).

Experimental Procedures

Eight 5-acre 'Hardie' bermudagrass pastures at the Mound Valley Unit of the Southeast Research and Extension Center (Parsons silt-loam soil) were assigned to Legume or Nitrogen treatments in a completely randomized design with four replications. All pastures were interseeded with 90 lb/a of 'Everest' wheat on October 2, 2017. Legume pastures previously interseeded with 'Will' ladino clover were interseeded with 26 lb/a of crimson clover using a no-till drill at on October 3, 2017. Nitrogen pastures were fertilized with 50 lb/a N on January 31 and May 9, 2018, and all pastures received 50-30-30 of N-P₂O₅-K₂O on July 19, 2018.

Thirty-two pregnant fall-calving cows of predominantly Angus breeding were weighed on consecutive days and assigned randomly by weight to pastures on April 4, 2018. Final cow weights were taken on consecutive days before removal from the pastures on August 23 (141 days).

Results and Discussion

Cow performance data are presented in Table 1. Cow gains and gain/a for the Nitrogen and Legume treatments were similar ($P > 0.05$).

Table 1. Performance of cows grazing wheat-bermudagrass pastures interseeded with wheat and fertilized with nitrogen or interseeded with legumes, Mound Valley Unit, Southeast Research and Extension Center, 2018

Item	Management system	
	Nitrogen	Legumes
Number of cows	16	16
Number of days	141	141
Stocking rate, cows/a	0.8	0.8
Cow initial weight, lb	1356	1356
Cow final weight, lb	1682	1637
Cow gain, lb	325	281
Cow daily gain, lb	2.42	2.10
Cow gain, lb/a	260	225

Means within a row followed by the same letter do not differ ($P < 0.05$).