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ALFALFA AS AN ALTERNATIVE FORAGE FOR SUMMER PASTURE FOR STOCKER CALVES

K.A. Cassida, C.B. Stewart, V.A. Haby and S.A. Gunter

Background. Bermudagrass is the standard summer pasture for cattle in much of the southern US, but yields and forage quality are typically poor during periods of hot, dry weather. Alfalfa, a high nutritive value legume that needs no nitrogen fertilizer, is deep-rooted and might be better able to sustain growth and increase livestock weight gains during these periods than bermudagrass. We compared performance of stocker calves grazing each type of pasture in 2000 and 2001 in Hope, Arkansas.

Four replications each of 'Graze King' alfalfa and common bermudagrass pastures were established on a deep sandy loam soil in 1999. Establishment inputs for alfalfa included herbicide to kill existing bermudagrass and weeds, lime, gypsum, fertilizer (P, K, Mg, S, and B), disking, seed, inoculant, and labor. Annual fertilizer applications included P, K, and B for alfalfa and N and K for bermudagrass. Insecticides and defoliation by stocker calves were used to control three-cornered alfalfa leafhopper, alfalfa weevils, and pea aphids. Topclipping and Pursuit herbicide were employed to control weeds in alfalfa, and topclipping, Roundup, and Grazon were used on bermudagrass. In spring 2000, hay cuttings totaling 2 tons/acre were taken from seedling alfalfa pastures in April and May. In 2000 and 2001, pastures were rotationally grazed by beef heifers (initial weight 560 lbs in 2000, 520 lbs in 2001) using the put-and-take method. Rest periods were 18-21 days for bermudagrass and 28-35 days for alfalfa. Alfalfa was not grazed prior to late bud stage. Calves were confined to sacrifice paddocks and fed hay during pesticide withdrawal periods, when forage growth was temporarily lacking, or when pastures were muddy.

Research Findings. Alfalfa provided earlier forage in spring than bermudagrass, but alfalfa pasture was depleted by late August versus late September for bermudagrass. Crown counts were 14.0, 6.8, and 2.9 crowns/ft² in March 2000, May 2001, and October 2001, respectively. Stem counts were 104, 70, and 26 stems/ft² on those dates. Most stand loss was observed in wetter areas of pastures, and loss of plants was noted when conditions turned hot and dry in summer.

There was little difference in calf performance between forages. In 2000, forage did not affect ADG or gain per acre. In 2001, calves grazing alfalfa had slightly higher ADG than calves grazing bermudagrass, but it was not reflected in better gain per acre. Calves generally refused to eat alfalfa stems once plants reached bloom stage, resulting in poor utilization of available forage. In both years, bermudagrass pastures provided more calendar days of grazing and more animal grazing days for stocker calves. An additional 56 animal-grazing-days/acre were

obtained by grazing fall alfalfa regrowth with dry cows from Nov. 14 to 24, 2001.

Application. Rapid maturation of alfalfa made grazing at the proper stage difficult when calves needed to be removed from pastures to accommodate herbicide and insecticide withdrawal times and wet weather. Producers planning to graze alfalfa should be prepared to harvest hay at times when alfalfa becomes too mature for effective grazing.

Table 1. Performance of stocker calves grazing common bermudagrass or alfalfa pastures.

	-----Pasture Type-----		SE	Significance
	Bermudagrass	Alfalfa		
2000				
Calf final weight, lb ¹	668	658	14.4	NS ²
ADG, lb/day	0.92	1.26	0.134	NS
Gain/acre, lb	328	307	45.0	NS
Grazing days	114	65	2.9	P < 0.01
Hay feeding days	0	11	0	P < 0.001
Calf grazing days	406	237	11.2	P < 0.01
2001				
Calf final weight, lb	659	679	13.2	NS
ADG, lb/day	0.72	1.02	0.070	P < 0.06
Gain/acre, lb	463	585	84.3	NS
Grazing days	167	137	1.6	P < 0.001
Hay feeding days	21	18	0	P < 0.001
Calf grazing days	588	526	18.0	P < 0.10

¹All animal weights are presented as full body weights.

²NS=not significant.