EVALUATION OF CATTLE-ASE™ ON GAIN OF YEARLING HEIFERS GRAZING BERMUDAGRASS

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Background. Cattle-Ase™ is a commercial ration additive which contains a source of alpha-amylase and cellulase. In previously conducted feedlot experiments, the addition of Cattle-Ase to rations improved average daily gain (ADG), and feed:gain ratio. The objective of this experiment was to determine the influence of Cattle-Ase, on liveweight gains of heifers grazing bermudagrass pastures. Forty long-yearling (15 mos.) Angus x Brahman (F-1) heifers were stratified by weight (800 lb avg) into eight groups of five head each, and randomly allocated into four replications each of two treatments: (1) pasture + 1 lb/hd/d supplement (SUP), or (2) pasture + SUP + Cattle-Ase. The SUP was a 1:1 mixture of cracked corn:soybean meal with 15% salt to slightly impede consumption. A stocking rate of 1 to 1.5 heifers per acre was used to ensure that forage available for consumption did not restrict *ad libitum* selection of bermudagrass. Heifers were allowed a 7-day period of ration adjustment prior to initiation of gain data. Weight gain data were collected from June 24, 1999 to September 15, 1999 (83 days). Pastures were sampled for forage mass and nutritive value.

Research Findings. All heifers consumed both SUP rations and approximately five minutes per group were required to consume the 1 lb/hd allotment. Thus, even though individual consumption was variable, the addition of salt ensured that ration-gorging by specific animals did not prevent consumption by all. During this 83-day period, heifers which received the SUP + Cattle-Ase had ADG of 1.60 lb/d; whereas, heifers that received SUP gained 1.46 lb/d (Table 1). Thus, a significant (P = .11) improvement of .14 lb/hd/d was detected by adding Cattle-Ase to the SUP ration. The magnitude of gain for all heifers (1.5 lb/d) of this weight class (800-950 lbs) was likely due to supplement and animal genotype since forage nutritive value was considered to be "normal" for bermudagrass pastures during the summer in East Texas (Table 2). Each of the eight treatment pastures was sampled and analyzed separately for forage mass and nutritive parameters; however, the data presented in Table 2 are 4-pasture averages.

Application. With this initial evaluation of using Cattle-Ase in supplemental feed for cattle on pasture, the increase in ADG was encouraging given the class, weight, and sex of animal and pasture-climatic conditions during the summer of 1999. Previous research conducted at TAMU-Overton has documented the biological and economic efficiencies associated with small, daily quantities (.1 to .3% BW) of supplemental protein for bermudagrass pastures. Additional research

is required using enzyme components to enhance digestion and performance of grazing cattle. The delivery system for any substance that promotes health and/or growth remains as a significant economic consideration for feedstuffs.

Table 1. Performance of yearling Angus x Brahman heifers grazing bermudagrass pastures and receiving a corn:soybean meal supplement with or without Cattle-Ase.

Treatment[1]	Initial Wt[2]	Final Wt[2]	Average Daily Gain
	----------lbs----------		lb/day
Corn:SBM Only	811	944	1.46
Corn:SBM + Cattle-Ase	836	957	1.60

[1]Corn:Soybean Meal (SBM) supplement (1:1) hand-fed daily at 1 lb/hd.
[2]Initial and Final weights are averages of all treatment replicates.

Table 2. Percent crude protein (CP), neutral detergent fiber (NDF), and acid detergent fiber (ADF) of bermudagrass pastures during grazing period..

Treatment Pasture[1]	Nutritive[2] Parameter	Date			
		6-28	8-16	8-30	9-13
		----------% DM----------			
Corn:SBM Only	CP	17.6	8.9	8.8	10.2
Corn:SBM + Cattle-Ase	CP	16.1	10.2	9.0	11.2
Corn:SBM Only	NDF	65.8	68.9	73.0	74.7
Corn:SBM + Cattle-Ase	NDF	65.4	66.9	72.9	73.7
Corn:SBM Only	ADF	24.9	33.1	35.9	38.2
Corn:SBM + Cattle-Ase	ADF	25.6	31.3	35.9	36.8

[1]Corn:Soybean Meal (SBM) supplement (1:1) hand-fed daily at 1 lb/hd.
[2]Nutritive values shown for each treatment are 4-pasture (reps) average.