VOLUNTARY CONSUMPTION OF A LASALOCID-CONTAINING COMPRESSED PROTEIN BLOCK BY STOCKER CATTLE GRAZING BERMUDAGRASS

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Story in Brief

Voluntary consumption of a lasalocid-containing compressed protein block by stocker cattle grazing bermudagrass was measured weekly during a 98-day trial (June 22 to September 29, 1989). The compressed block contained 37% crude protein with 16% of the crude protein equivalent from urea. Three groups of 8 steers/group were used in the consumption trial. In addition, a cottonseed meal supplement containing lasalocid was fed at the rate of 1 lb/head/day during the latter part of the trial for comparison of effects of the two protein supplements on cattle performance. Daily consumption of the compressed protein block averaged .85 lb/head or 85 mg lasalocid/head. Performance of steers fed the compressed protein block and cottonseed meal supplements was similar and averaged 1.37 and 1.46 lb/head/day, respectively for the total trial.

(Key Words: Protein Supplementation, Lasalocid, Growing Cattle, Bermudagrass.)

Introduction

Protein supplementation of growing cattle on tallgrass native and bermudagrass pastures during the mid- to late-summer grazing period has proven to be a very effective and economical practice. Some estimate of available forage nitrogen (i.e., pepsin soluble N and(or) total N minus acid-detergent nitrogen) accounted for 52 to 73% of the variation in forage intake by steers grazing bermudagrass throughout the summer (Wilson and Horn, 1979). An initial report of protein supplementation of stocker cattle during the late-summer grazing period on tallgrass native range was reported by Lusby et al. (1982). Subsequently, this supplementation strategy was modified to include an ionophore (monensin or lasalocid), and is known as the Oklahoma Gold Program. More recently, a 7-trial summary (Gill and

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Lusby, 1989) reports that the practice increased gains of stocker cattle over the total grazing period by .49 lb/day at a supplement conversion of 2.16 lb/lb of increased gain. Cottonseed meal or soybean meal was used as the protein source in all of the trials, and the supplements have usually been fed 3 times/week at a level to provide 1 lb/head/day. Development of supplements that can be fed free-choice on pasture would further decrease costs of labor and transportation (i.e., pickup costs) associated with pasture supplementation programs. This would be particularly important for the more extensive production units. The objective of this study was to measure voluntary consumption, at weekly intervals, of a medicated protein supplement in the form of compressed blocks by stocker cattle grazing bermudagrass. In addition, effects of protein supplementation in the form of free-choice compressed blocks and the Oklahoma Gold Program on cattle performance were compared.

Materials and Methods

Forty-three (43) crossbred yearling steers were treated for internal parasites, blocked according to body weight and previous management, and randomly assigned within blocks to one of six pastures. Each pasture consisted of 6.2 acres of Midland bermudagrass which had all of the previous year's residue burned and had been fertilized with 75 lb of N/acre prior to the initiation of the experiment on June 7, 1989. The steers were allowed one week to adapt to the pastures. During the second week, three of the six groups were given free-choice access to a nonmedicated commercial protein supplement in the form of compressed blocks. After the second week these blocks were replaced with similar compressed blocks that contained 37% total crude protein with 16% of the crude protein equivalent from urea, 2.5% calcium, 1.0% phosphorus and 100 mg lasalocid/lb. The primary sources of all-natural protein in the medicated blocks were cottonseed meal, meat and bone meal and dehydrated alfalfa meal. The blocks were fed in weather-vane type mineral feeders (one/pasture) to protect them from rain. The feeders were located within 50 feet of the water supply and were secured to the ground with steel spikes. The steers were observed daily and the supply of blocks was monitored to insure a continuous supply. Beginning on July 27 (i.e., day 50 of the trial), the remaining three groups of steers were fed 3 days/week (Monday, Wednesday and Friday) 2.33 lb/head of a pelleted cottonseed meal supplement that contained (as-fed basis) cottonseed meal, 95.7%; sugarcane molasses, 4.0% and lasalocid, 200 mg/lb. This level of feeding of the cottonseed meal supplement was equivalent to feeding 1 lb/head/day. The steers were weighed at the beginning, after 35 days of feeding the medicated supplement (i.e., day 50 of the trial) and at the end of

the trial. All weights were measured after 16- to 18-hour shrinks without feed and water.

Steers within each treatment were rotated among the three pastures every 2 weeks. Stocking densities averaged 1.29 and 1.08 steers/acre, respectively, for steers fed the medicated block and the pelleted cottonseed meal supplement. Rainfall during the summer of 1989 was well above average and all the pastures contained in excess of 5,000 lb DM/acre of available forage throughout the trial.

Table 1. Consumption of compressed protein blocks by steers (lb/head/day).

Week	Start date	Group 1	Group 2	Group 3
1	6/7	---------- Adapt to pastures ----------		
---------- Non medicated block ----------				
2	6/14	.39	.62	.92
---------- Medicated block[a] ----------				
3	6/22	.41	.98	.82
4	6/29	.37	1.01	.83
5	7/6	.88	.71	.50
6	7/13	1.07	.86	.52
7	7/20	1.26	.45	.41
8	7/27	.91	.67	1.61
9	8/3	1.15	.64	1.61
10	8/10	1.23	.94	1.21
11	8/17	1.46	.91	1.14
12	8/24	.86	.53	1.36
13	8/31	1.58	.62	1.09
14	9/7	1.04	.30	.52
15	9/14	.68	.96	.21
16	9/21	.66	.31	.35
Mean[b]		.97	.71	.87
Standard deviation[b]		.36	.24	.45

[a] Contained 100 mg lasalocid/lb.
[b] Medicated block only.

Results and Discussion

The steers readily consumed both the nonmedicated and lasalocid-containing blocks. Mean consumption of the blocks for each group of steers is shown in Table 1. Daily consumption of the lasalocid-containing blocks during weeks 3 through 16 of the trial averaged .97, .71 and .87 lb/head for the three groups of steers or .85 lb/head overall. This level of intake would have supplied 85 mg lasalocid/head/day.

Initial, intermittent and final weights of the steers are shown in Table 2. Weight gains of steers of the two treatments were similar during all periods of the trial even though the cottonseed meal supplement was fed only during the last 64 days of the trial. Daily gains for the entire 114-day trial were 1.37 and 1.46 lb for steers fed the compressed protein block and cottonseed meal supplements, respectively. In general, utilization of urea by beef cattle is

Table 2. Initial, intermittent and final weights and daily gains of steers.

	Compressed protein block[a]	Cottonseed meal suppl[bc]
Number of steers	24	19
Number groups of steers	3	3
Stocking density, steers/acre	1.29	1.08
Initial weight, lb June 7	652	643
Intermittent weight, lb July 27	721	719
Final weight, lb September 29	807	810
Daily gain, lb[d]		
Initial-intermittent, 50 days	1.38	1.51
Intermittent-final, 64 days	1.35	1.43
Initial-final, 114 days	1.37	1.46

[a] Contained 37% crude protein with 16% of the crude protein equivalent from urea and 100 mg lasalocid/lb.
[b] Contained 38% crude protein and 200 mg lasalocid/lb.
[c] Steers were supplemented with cottonseed meal only during the last 64 days of the trial.
[d] No supplement effect ($P > .15$).

improved as intake of energy or fermentable organic matter is increased. The bermudagrass grazed during this trial was at least of medium-quality during most of the trial, and would have aided utilization of the urea in the compressed protein block as compared with lower quality and(or) dormant forages.

Literature Cited

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