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F. Brazle

Gerry L. Kuhl

L. Corah

See next page for additional authors

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Abstract

Two limited-creep feeding trials were conducted with spring-born, suckling calves on native grass. The high-energy creep rations containing an ionophore were fed during the last 63 or 85 days before weaning in the two trials. Creep intake was limited with salt to about 1.5 lb per calf daily. Calves consuming the limited-creep feeds gained .26 to .31 lb more per head daily and required 4.4 to 5.5 lb of creep per lb of extra weaning weight.

Keywords

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Authors

F. Brazle, Gerry L. Kuhl, L. Corah, and K. Zoellner

Effect of Limited-Creep Feeding Calves of Spring-Calving Cows Grazing Native Grass[1]

Frank Brazle[2], Gerry Kuhl, Larry Corah and Keith Zoellner

Summary

Two limited-creep feeding trials were conducted with spring-born, suckling calves on native grass. The high-energy creep rations containing an ionophore were fed during the last 63 or 85 days before weaning in the two trials. Creep intake was limited with salt to about 1.5 lb per calf daily. Calves consuming the limited-creep feeds gained .26 to .31 lb more per head daily and required 4.4 to 5.5 lb of creep per lb of extra weaning weight.

Introduction

Native grass declines in energy and crude protein during the summer and fall. Milk production of spring-calving cows also declines during this period, resulting in reduced calf nutrition and performance. Traditional creep feeding programs usually have not been economical because of excessive creep consumption and consequent poor creep-to-gain conversion. However, when creep intake is limited, these disadvantages should be overcome. Moreover, the addition of an ionophore to pasture supplements should improve calf performance. Two trials were conducted to evaluate the effectiveness of supplementing suckling calves with limited-fed, grain-based creeps containing an ionophore.

Experimental Procedures

Trial 1 was conducted in 1983 with 58 3-year-old cows and their calves grazing two native grass pastures. On August 8, the calves were weighed and randomly allotted to either control (no creep) or limited-creep plus Rumensin® treatments. The creep feed was 69% ground milo, 15% soybean meal, 8.5% of a 40% protein supplement containing 1200 g Rumensin per ton, 5% salt, and 2.5% dicalcium phosphate. The mixture contained 16% crude protein and 50 mg Rumensin per lb. The creep was fed in one pasture in a self-feeder. The calves were reweighed at weaning after 85 days on trial.

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[2]Extension Livestock Specialist, Southeast Kansas.

Trial 2 was initiated on August 14, 1986 with 174 cow-calf pairs allotted to either control, limited-creep, or limited-creep plus Bovatec® pasture treatments. The creep feeds were self-fed in wind-vane feeders fenced off for calf access only. Creep intake was monitored every 3 days and the salt level was adjusted to maintain intake at about 1.5 lb per day. The cow-calf pairs were rotated among the three native grass pastures to minimize pasture effects. The calves were reweighed and condition scored at weaning, after 63 days on trial. Composition of the commercially prepared limited-creeps is shown in Table 31.1.

Results and Discussion

In trial 1, calves consuming the limited-creep plus Rumensin gained .31 lb more ($P<.01$) per head daily than controls (Table 31.2). In trial 2, both groups of limited-creep fed calves gained .26 lb more ($P<.001$) per head daily than controls (Table 31.3). However, there was no significant difference in calf body condition at weaning among the three treatments. The amount of creep required per lb of additional calf gain ranged from 4.4 lb in trial 1 to 5.5 lb in trial 2. In trial 2, inclusion of Bovatec® in the creep did not increase calf gains, but feed efficiency tended to improve.

The lack of a greater response to Bovatec in the second creep trial may be explained by the fact the cattle were rotated among large pastures every 20 days and the creep-fed calves often did not consume creep for at least 3 days after each rotation. Thus, the relative shortness of the trial (63 days) and the intermittent intake of creep, requiring the calves' rumen fermentation to repeatedly adjust to Bovatec®, may have impacted negatively on the normally beneficial response observed when ionophores are fed to cattle on grass.

Table 31.1. Average Composition of Commercial Limited-Creeps Fed in Trial 2

Item	Limited-Creep + Bovatec	Limited-Creep
Crude Protein, %	16	16
Crude Fiber, %	9.8	9.8
Estimated TDN, %	70	70
Calcium, %	.60	.60
Phosphorus, %	.46	.46
Salt, %	2.0	3.0
Bovatec®, mg/lb	68	----

Table 31.2. Effect of Limited-Creep Feeding on Calf Performance -- Trial 1

Item	Limited Creep + Rumensin	Control
No. Calves	31	27
Initial Wt., lb	308	290
Daily Gain, lb	1.84[a]	1.53[b]
Daily Creep Intake, lb	1.46	----
Feed/Gain, lb	4.4	----

[ab]Means in the same row not sharing a common superscript are different (P<.01).

Table 31.3. Effects of Limited-Creep Feeding With or Without Bovatec® on Calf Gains and Body Condition -- Trial 2

Item	Limited-Creep	Limited-Creep + Bovatec	Control
No. Calves	60	57	57
Initial Wt., lb	373	373	374
Daily Gain, lb	1.42[a]	1.42[a]	1.16[b]
Body Condition Score[1]	6.18	5.99	6.12
Daily Creep Intake, lb	1.44	1.36	----
Feed/Gain, lb	5.5	5.2	----

[1]Calf body condition scored on 1 to 10 system: 1=extremely thin, 10=very fleshy.

[ab]Means in the same row not sharing a common superscript are different (P<.001).