



Effects of Biuret and Lasalocid (Bovatec) Inclusion into a Commercial Mineral Supplement on Growth Performance of Yearling Calves Grazing in the Kansas Flint Hills

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Introduction

- Mineral supplementation can improve growth rate and overall profitability during the summer months in Kansas Flint Hills.
- Adding non-protein nitrogen (NPN) or ruminal modifiers to mineral supplement has been associated with improved growth performance.

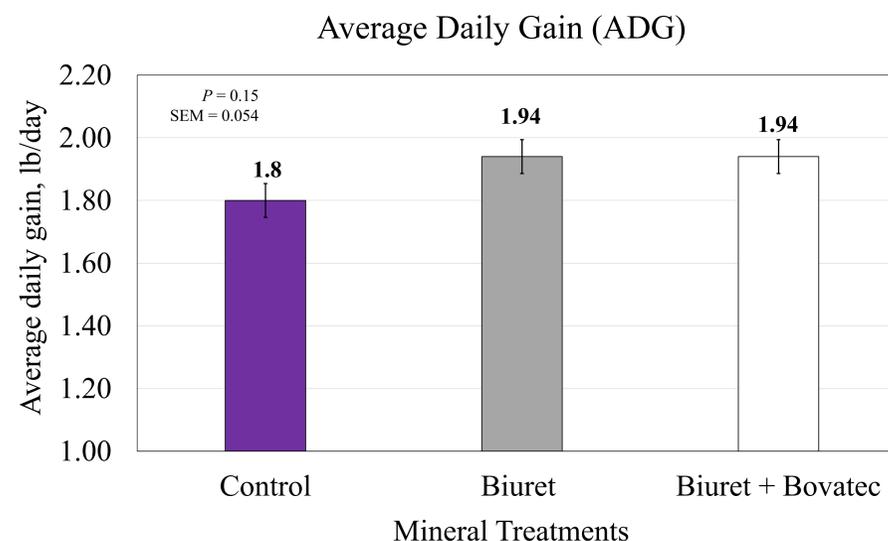
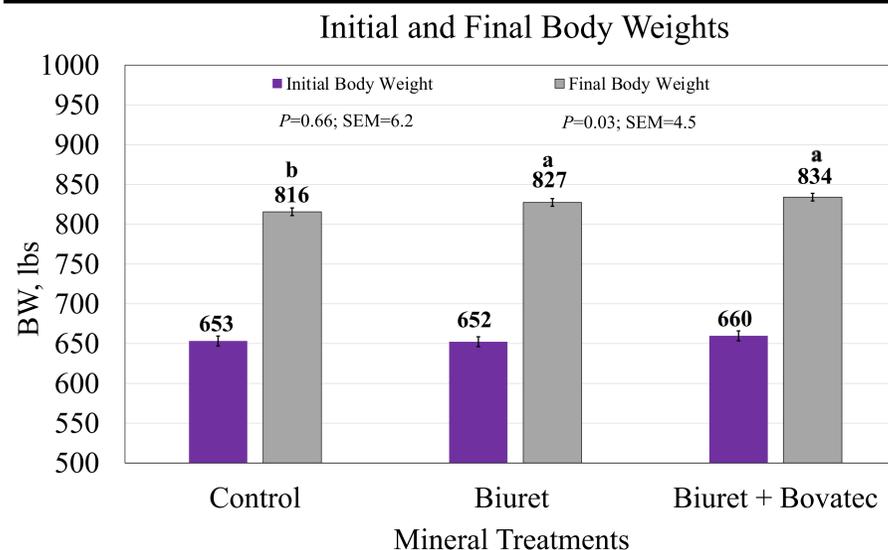
Objective

- The objective of our experiment was to measure the effects of NPN (i.e., biuret) or NPN + ruminal modifier (i.e., biuret + lasalocid) inclusion in a commercial mineral mix on growth performance of yearling beef calves grazing in the Kansas Flint Hills.

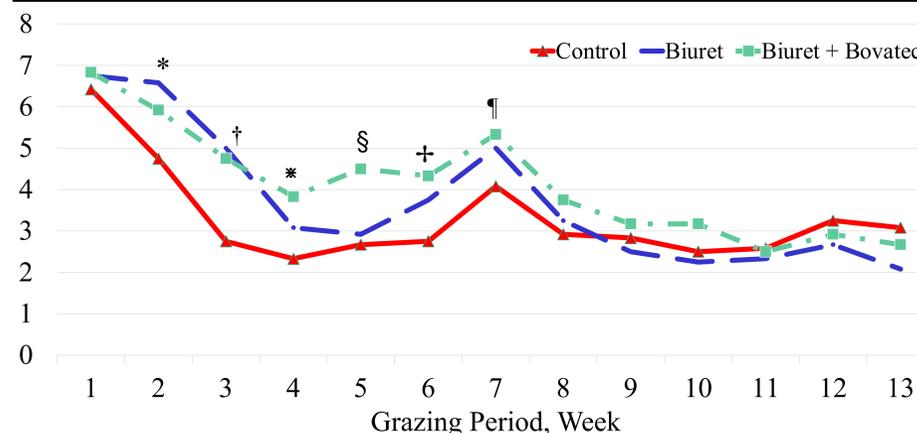
Materials and Methods

- Over two years, seven hundred forty-two crossbred steers (initial body weight; 655 ± 52 lbs) of Texas and Nebraska origin were stratified by body weight and randomly allocated to 1 of 18 pastures.
- Calves were grazed for 90-days from May to August.
- Mineral treatments were randomly assigned to pasture and consisted of basal supplement (control), basal supplement with Biuret (Biuret; 0.6 ounces/head/day), and basal supplement with Biuret and Bovatec (lasalocid; 180 mg/head/day).
- Pasture weights were measured to determine initial body weights prior to turn out.
- Mineral tubs were weighed weekly to determine weekly mineral consumption and were then refilled with respective mineral treatment to allow for 4 ounces/head/day consumption for the week. Tubs were checked daily to determine days-till-empty.
- Following the 90-day grazing period, calves were gathered and pasture weights were measured to determine final body weights, total body weight gains, and average daily gains.

Stocker Cattle Performance



Days Until Mineral Tub Empty



*Week 2 Biuret > Control (*P* < 0.01), Bovatec = Control (*P* = 0.055), Biuret = Bovatec (*P* = 0.27)
 †Week 3 Biuret > Control (*P* < 0.01), Bovatec > Control (*P* < 0.01), Biuret = Bovatec (*P* = 0.68)
 *Week 4 Bovatec > Control (*P* < 0.01), Biuret = Bovatec, Biuret = Control (*P* = 0.22)
 §Week 5 Biuret > Bovatec (*P* < 0.01), Bovatec > Control (*P* < 0.01), Biuret = Control (*P* = 0.68)
 +Week 6 Bovatec > Control (*P* < 0.01), Biuret = Bovatec, Biuret = Control (*P* = 0.34)
 ¶Week 7 Bovatec > Control (*P* = 0.04), Biuret = Bovatec, Biuret = Control (*P* = 0.58)

Mineral Ingredients and Nutrient Composition^a

Ingredient, lb/ton	Control	Biuret	Biuret + Bovatec
Biuret	-	300	300
Sulfur Flour	-	4.25	4.25
Bovatec	-	-	15.5
Salt	485	485	485
Monocalcium Phosphate 21%	385	385	385
Calcium Carbonate	350	300	300.25
Dried Distillers	310	310	310
Magnesium-mica	200	15.75	-
Dried Molasses	120	120	120
Soy Hulls	85	-	-
Soy Oil	20	20	20
Magnesium Oxide	15	30	30
Zinc Oxide	15	15	15
Copper Sulfate	8	8	8
Vit A 60,000/GM	6	6	6
EDDI	1	1	1
Total	2000	2000	2000

^a Formulated for 4 oz of mineral consumption per day
 Dr. Frank Brazle, 2021, personal communication

Conclusions

- Total body weight gains, average daily gains and mineral consumption did not differ between mineral treatments.
- Final body weights were greater for Biuret and Biuret + Bovatec mineral treatments compared with control.
- Initially, Biuret and Biuret + Bovatec led to more days-till-empty than control, but these differences disappeared by week 8.
- At the initiation of the experiment, mineral consumption was low; however, it increased rapidly such that days-to-empty for all treatments reached 2 to 4 days by week 4.
- Coinciding with warmer temperatures in week 7 days-till-empty decreased. However, it returned to a consistent 2 to 4 days-to-empty once temperatures decreased to seasonal norms.
- Our results suggest that the addition of Biuret or Biuret + Bovatec to a commercial mineral supplement may improve growth performance of yearling beef cattle grazing in the Kansas Flint Hills.