MONENSIN LEVELS IN A STEAM-FLAKED MILO FINISHING DIET WITH 4% ADDED FAT

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Summary

Response to monensin (Control, 12.5, or 25 g/ton, air dry basis) by yearling steers fed a diet with 4% added fat was evaluated. For the entire study (104 d), daily gain, feed consumption and feed efficiency were unaffected (P > .25) by monensin. These results are in general agreement with some of our previous reports of diminished animal response to ionophores in fat-supplemented finishing diets. No adverse effects on animal health have been observed in our studies. However, whether withdrawing ionophores from finishing rations with 3.5-4% fat will affect the incidence of digestive upsets in commercial applications is not clear.

(Key Words: Monensin Level, Fat, Cattle, Feedlot Performance.)

Introduction

Results from the previous report as well as from other Kansas State research has suggested that animal response to ionophores may be altered by addition of fat to finishing diets. This trial was conducted to evaluate the effect of two levels of monensin on performance and carcass traits of steers fed a steam-flaked milo diet containing 4% added fat.

Experimental Procedures

One hundred and five, yearling, British × Exotic crossbred steers (821 lb) were utilized to evaluate the effects of two levels of monensin (Control, 12.5, or 25 g/ton, air dry basis) in a finishing diet containing 4% added fat. Steers were processed as described in the previous report and adjusted stepwise on a common diet to full feed in 10 days. Steers were weighed on 2 consecutive days, allotted to pens in a randomized complete block design, and placed on the experimental diet (Table 1). There were five pen replicates (seven head per pen) per treatment. Milo was flaked (26 lb/bu) and fed fresh daily. Tylosin was included in all rations at 10 g/ton (air dry basis). The appropriate levels of monensin and tylosin were added to the daily ration by way of a computer-operated microingredient machine. Steers on the 25 g monensin/ton treatment received 12.5 g/ton for the first 7 d.

Table 1. Composition of Experimental Diet[a]

Ingredient	%, dry matter basis
Steam flaked milo	83.0
Alfalfa hay	4.0
Corn silage	4.0
Pelleted supplement	5.0
Yellow grease	4.0

[a]Contained 12.4% CP, .64% Ca, .32%

At the conclusion of the study (104 d), final weights were obtained on 2 consecutive days, and the steers were slaughtered at IBP, Inc.,

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Holcomb. Carcass data were collected following a 24-h chill.

Results and Discussion

During the initial 28 d of the study, feed intake decreased linearly (P = .10) with increased monensin (Table 2). Daily gain and feed efficiency were not influenced by monensin.

For the entire feeding period, monensin did not affect (P > .25) daily gain or feed consumption. Similarly, improvements in feed efficiency of 2.2 and 1.4% for the 12.5 and 25 g monensin/ton treatments, respectively, were not statistically significant. These data are in general agreement with our previous reports suggesting that animal performance responses to ionophores in finishing diets may be diminished substantially by supplemental fat. However, the effects on animal health of removing ionophores from finishing diets containing fat, particularly as it relates to digestive upsets such as acidosis and bloat, is unknown. Although no health problems have been observed in our studies, work is needed to evaluate the potential management risk involved in commercial applications.

No differences existed between treatments for carcass traits, with the exception of dressing percent, which decreased linearly (P < .05) with increased monensin. This has not been observed in previous studies, and a sound biological explanation for this result is not readily apparent.

Table 2. Fat and Monensin Effects on Steer Performance and Carcass Traits

Item	Monensin level, g/ton 0	12.5	25	SE[d]
No. pens	5	5	5	
No. steers	35	35	35	
Initial wt, lb	821	821	821	.6
Final wt, lb[a]	1184	1194	1192	9.6
0-28 d				
Daily gain, lb	3.07	3.28	2.71	.26
Daily feed, lb DM[b]	17.22	16.95	16.43	.31
Feed/gain	5.73	5.19	6.44	.53
0-104 d				
Daily gain, lb[a]	3.50	3.59	3.56	.09
Daily feed, lb DM	21.96	21.77	22.35	.47
Feed/gain	5.78	5.65	5.70	.15
Carcass data				
Hot wt, lb	748	752	740	5.8
Dressing percent[c]	63.1	63.0	62.1	.33
Backfat, in.	.38	.44	.38	.02
Marbling	Sm[40]	Sm[65]	Sm[63]	.15
Percent choice	72	79	82	8.1

[a]Final weights were pencil shrunk 4%.