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# Effect of Cobactin on the feedlot performance and carcass traits of beef steers


## Abstract

The addition of Cobactin to feedlot rations had no significant effect on average daily gain or feed efficiency, but did improve quality grade of steers fed for 110 days.



## Keywords

Kansas Agricultural Experiment Station contribution; no. 88-363-S; Cattlemen's Day, 1988; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 539; Beef; Cobactin; Feedlot performance; Carcass traits; Steers

# Effect of Cobactin on the Feedlot Performance and Carcass Traits of Beef Steers[1]

Larry Corah and Ron Pope

## Summary

The addition of Cobactin to feedlot rations had no significant effect on average daily gain or feed efficiency, but did improve quality grade of steers fed for 110 days.

## Introduction

Lactobacillus bacteria have been used in animal agriculture for several years. Several reports have indicated that microbials containing lactobacillus can improve the absorption of nutrients.

In this trial, Cobactin®, a newly developed microbial single strain of Lactobacillus acidophilus was evaluated. The product is used in the live form following activation with water.

## Experimental Design

The study involved 150 black crossbred steers from a common origin in Louisiana. Following an intensive native grass grazing program until mid summer, the steers were allotted and placed on trial on August 14, 1986. They were randomized by complete block design using weight as a blocking factor and allotted to five treatments with six groups per treatment and five animals per group. The heaviest group averaged approximately 748 pounds; the lightest, approximately 610 pounds.

The five treatments were as follows: 1) negative control; 2) low level of Cobactin; 3) low level of Cobactin plus Rumensin®/Tylan; 4) medium level of Cobactin plus Rumensin/Tylan; 5) Rumensin/Tylan only.

The cattle were initially weighed after being held off feed and water overnight, and were weighed at 28-day intervals until slaughter (110 days), when a final weight was taken.

To determine the impact of treatments on how the cattle adapted to the feedlot ration, feed intake was recorded and analyzed over the first 5 days, the first 28 days, and for the 110-day trial duration.

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[1]Appreciation is expressed to Doug Ware and Patsy Read, Bio-Technic Laboratories, Inc., for their assistance in conducting the trial and to this company for financial support of the product.

The steers were started on a ration of 60% corn silage, 34.2% grain sorghum, and 5.8% supplement (dry basis). After 19 days, the cattle were gradually worked up to a diet of 15% corn silage, 79.2% grain sorghum, and 5.8% supplement (dry basis). The supplements used in the trial are shown in Table 28.1. Cobactin was mixed in a water solution and sprayed onto the appropriate rations at the time of feeding.

Carcass data collected included hot carcass weights, dressing percentage, actual loineye area, estimated fat cover, estimated yield grades, and quality grade.

Table 28.1. Supplements Fed (per ton)

| Ingredient | Cobactin steers | Control and Steers fed Rumensin/Tylan |
|---|---|---|
| Soybean Meal | 1408.3 | 1379 |
| Limestone | 385.7 | 385.7 |
| Potassium Chloride | 70.6 | 70.6 |
| Salt | 1.05 | 1.05 |
| Z-10 Trace Mineral | 7 | 7 |
| Vit. A - 30,000 | 3.5 | 3.5 |
| Tylan 10 | -- | 20.7 |
| Rumensin - 60 | -- | 8.6 |
| Fat | 20 | 20 |

## Results

There was no significant effect of treatment on average daily gain (Table 28.2). However, gain of steers fed the low level of Cobactin alone approached significance at a probability of .23, compared to the negative controls.

The most notable effect on feed intake and feed efficiency was the addition of the Rumensin/Tylan to the diet, which significantly reduced feed intake for the first 5 and 28 days. This result is consistent with previous research. Rumensin/Tylan addition significantly improved feed efficiency in all three treatments. The addition of Cobactin caused a slight improvement in feed efficiency both when fed alone and when combined with Rumensin/Tylan.

No apparent effect of treatment on dressing percent and loineye area was noted (Table 28.3). However, Cobactin improved actual quality grade and the percent of carcasses grading choice.

Table 28.2. Least Square Means for Treatment Effect on Weight Gain and Feed Efficiency

| Treatment | No. | Starting Wt. | Final Wt. | Weight Change | ADG | Daily Feed Intake (DM) 1st 5 Days[1] | 1st 28 Days[2] | 110 Days[3] | Feed Efficiency |
|---|---|---|---|---|---|---|---|---|---|
| Control | 29 | 700.3 | 1054.2 | 353.9 | 3.22[a] | 10.9[c] | 16.9[c] | 20.8 | 6.5 |
| Cobactin-Low | 30 | 700.8 | 1070.3 | 369.5 | 3.36[b] | 10.5[c] | 16.5[c] | 21.0 | 6.35 |
| Rumensin/Tylan + Cobactin-Medium | 30 | 696.8 | 1062.8 | 366 | 3.36[b] | 7.9[d] | 14.5[d] | 19.8 | 5.97 |
| Rumensin/Tylan + Cobactin-Low | 30 | 694.8 | 1054.3 | 359.4 | 3.27 | 8.6[d] | 14.9[d] | 19.6 | 5.94 |
| Rumensin/Tylan | 30 | 701.6 | 1065.3 | 363.7 | 3.31 | 8.0[d] | 14.7[d] | 19.9 | 6.03 |

[1]Moisture content = 58.6%

[2]Moisture content = 46%

[3]Moisture content = 35%

[ab]Significantly different at P = .23

[cd]Different superscript significantly different at P<.05

Table 28.3. Least Square Means for Treatment Effect on Carcass Traits

| Treatment | No. | Hot Carcass Wt. | Dressing % | Loineye Area | Est. Fat Cover | Est. Yield Grade | Quality Grade[1] | % Choice or Better |
|---|---|---|---|---|---|---|---|---|
| Control | 29 | 641 | 60.55 | 11.3 | .53[a] | 3.09 | 4.34[a] | 84.6 |
| Cobactin-Low | 30 | 647.4 | 60.73 | 11.5 | .55[d] | 3.11 | 4.63[ab] | 89.2 |
| Rumensin/Tylan + Cobactin-Medium | 30 | 645 | 60.61 | 11.2 | .57[b] | 3.23[a] | 4.84[b] | 93.1 |
| Rumensin/Tylan + Cobactin-Low | 20 | 641.8 | 60.67 | 11.4 | .52[ab] | 3.03[b] | 4.76[ab] | 75.0 |
| Rumensin/Tylan | 30 | 646.6 | 60.70 | 11.7 | .51[acd] | 2.93[b] | 4.56[ab] | 93.3 |

3 = slight marbling (good grade)
4 = small marbling (choice grade)
5 = modest marbling (choice grade)

[abcd]Different superscript significantly different at P<.05.