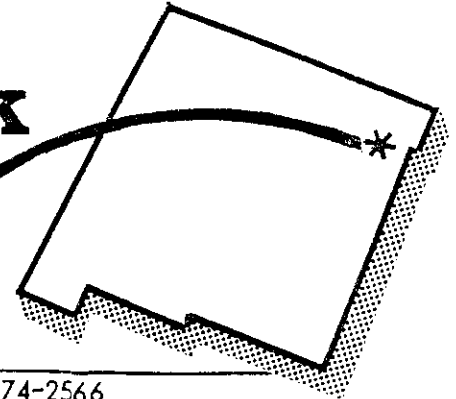




Clayton Livestock Research Center

PROGRESS REPORT



Route 1 Box 109

Clayton, New Mexico 88415

Tel. (505) 374-2566

Progress Report No. 61 (March, 1989)

COMPARISON OF CONTINUOUS WITH DAILY OR WEEKLY ALTERNATE FEEDING OF LASALOCID AND MONENSIN PLUS TYLOSIN ON PERFORMANCE OF GROWING/FINISHING BEEF STEERS

Mark Branine, G. P. Lofgreen, M. L. Galyean, M. E. Hubbert, D. R. Garcia and A. S. Freeman

In previous ionophore rotation research conducted at the Clayton Livestock Research Center (Progress Reports No. 47 and 60), the effects of weekly rotation of lasalocid and monensin on performance of feedlot cattle have been inconclusive. Likewise, in order to maintain adequate liver abcess control with tylosin, the shortest possible rotational period would seem desirable, thus indicating a potential for daily ionophore rotation. The objective of the study reported herein was to evaluate continuous feeding of lasalocid and monensin plus tylosin compared with daily and weekly rotation of the two ionophores in diets of growing-finishing feedlot cattle.

Two hundred yearling steers were assigned randomly to five treatment groups consisting of: no ionophore (C); lasalocid fed continuously (L); monensin plus tylosin fed continuously (MT); alternate feeding of lasalocid and monensin plus tylosin at weekly intervals (WR); and alternate feeding of lasalocid and monensin plus tylosin at daily intervals (DR). Each treatment was replicated in five pens. During the first two weeks, all cattle were fed a 75% concentrate milled diet with grass hay provided for the first week only. Monensin and tylosin were

provided at levels of 13 and 10 g/ton, respectively. On day 15, all cattle were placed on a 90% concentrate milled diet. Monensin and tylosin were provided at levels of 26 and 10 g/ton, respectively. Lasalocid was added to the diet at a level of 30 g/ton throughout the trial. Ionophores, vitamins A, D, E and trace minerals were supplied in a premix at a rate of 1% in each diet.

Results for the entire 134-day feeding period (Table 1) indicated that steers receiving the daily rotation of monensin plus tylosin and lasalocid had a greater ($P < .10$) daily gain (ADG) than C or MT steers, but were not different ($P > .10$) from L or WR steers. Daily feed intake among treatments did not differ ($P > .10$), although L steers had the greatest intake. Feed efficiency was improved ($P < .01$) for DR compared with C, L and MT. Feed efficiency for WR did not differ ($P > .10$) from other treatments. Comparing observed ADG with values predicted from net energy requirements indicated that observed ADG was increased by 4, 6, 5, 11 and 13% for C, L, MT, WR and DR, respectively, compared with predicted values. Correcting for the 4% differences between observed and predicted ADG for C cattle resulted in net improvement of 2, 1, 7 and 9% in observed ADG compared with

predicted gains for L, MT, WR and DR, respectively. Results of this study suggest that daily rotation of lasalocid and monensin/tylosin can be

an effective method for improving performance of feedlot cattle with minimal downside risk.

TABLE 1. AVERAGE DAILY GAIN, FEED INTAKE AND EFFICIENCY DURING THE ENTIRE FEEDING PERIOD

Treatment	No. of Steers	Initial Weight lb	Daily Feed Intake lb	Daily Weight Gain lb	Fed per lb. Gain lb	Final Wt. lb
No ionophore	40	650 ^a	23.33	3.61 ^a	6.46 ^b	1128 ^a
<u>Continuous Feeding</u>						
Lasalocid	37	651 ^a	23.70	3.73 ^{a,b}	6.35 ^b	1147 ^{a,b}
Monensin plus tylosin	40	649 ^a	22.98	3.59 ^a	6.40 ^b	1125 ^a
<u>Ionophore Rotation</u>						
Weekly	38	661 ^b	23.36	3.76 ^{a,b}	6.21 ^{a,b}	1157 ^b
Daily	40	649 ^a	23.49	3.90 ^b	6.02 ^a	1166 ^b
SE ^C		3.0	.34	.08	.08	11.4
Observed significance level		.05	.76	.10	.01	.08

a,b Means in the same column that do not have common superscripts differ (P < observed significance level).
 c Standard error of least squares means, n = 5.

TABLE 2. COMPARISON OF OBSERVED AND PREDICTED WEIGHT GAINS


Treatment	Initial Weight lb	Daily Feed Intake lb	Observed Daily Gain lb	Predicted Daily Gain lb	Observed as Percentage of Predicted %
No ionophore	650	23.33	3.61	3.48	104
<u>Continuous Feeding</u>					
Lasalocid	651	23.70	3.73	3.51	106
Monensin plus tylosin	649	22.98	3.59	3.42	105
<u>Ionophore Rotation</u>					
Weekly	661	23.36	3.76	3.40	111
Daily	649	23.49	3.90	3.45	113

$$NE_g = .039W^{.75}$$

$$g = 694.44 \sqrt{.0001504 + .00288 NE_g/W^{.75}} - 8.5139$$

NE_m of basal diet = .84 Mcal/lb.
 NE_g of basal diet = .53 Mcal/lb.

Bobby J. Rankin, Head, Department of Animal and Range Sciences



Agricultural Experiment Station
 NEW MEXICO STATE UNIVERSITY
 Las Cruces, New Mexico 88003-0058
 David W. Smith, Director
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