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Intermittent Feeding of Chlortetracycline to Finishing Cattle

Jack Riley and Ron Pope

Summary

We used 168 yearling steers in a 139-day finishing trial to evaluate high levels of chlortetracycline (aureomycin¹) fed for short periods at regular intervals during finishing. Since liver abscess rate was low for all treatments including the nonmedicated controls and health status was good, chlortetracycline (CTC) did not significantly affect abscess rate or feedlot performance.

Introduction

Continuous daily feeding of low level CTC reduces liver abscesses and improves gain and efficiency, but restrictions on the amount and number of feed additives that may legally be incorporated into one supplement have encouraged cattle feeders to use intermittent feeding (3, 5, or 7 days per month) of high level CTC (.5-2g/hd/day) instead of two different additive containing supplements. This project was to determine if intermittent high level CTC was as effective as continuous low level daily feeding.

Procedure

The 168 yearling Hereford steers we used were purchased from one source, were weighed individually at arrival, and allotted by weight to seven treatments. Individual shrunk weights were taken (after 12 hours off feed and water) at 28-day intervals during the 139-day trial, which began April 22 and ended September 8, 1980. Hot carcass weights and liver abscess data were collected at slaughter; carcass measurements, 24 hours later.

Steers were started on a 50% concentrate ration that was increased at weekly intervals until the final 80% ground milo, 15% sorghum silage, and 5% supplement ration (dry matter basis) was fed on day 29. The antibiotic was mixed with ground milo to obtain the desired level (Table 3.1). The final rations contained at least 11.5% crude protein, 0.4% calcium, and 0.3% phosphorus.

Results

The steers averaged 597 pounds initially and 993 pounds at slaughter. None of the treatments improved performance, carcass characteristics, or liver abscess incidence. Fastest and most efficient gains were when each steer was fed 1 gm CTC per day for 5 days each 28 day period. That treatment and 70 mg per steer daily, continuously, resulted in fewest abscesses (Table 3.1).

¹Aureomycin is registered trademark name for chlortetracycline, produced by American Cyanamid Co. Aureomycin and partial financial assistance provided by American Cyanamid Co., Princeton, NJ.

Table 3.1. Effect of Chlortetracycline on Steer Performance and Liver Abscesses.

CTC level per day per steer	Days fed per 28 days	No. steers	Initial wt. lbs.	Final wt. lbs.	ADG lbs	Lb. feed/ gain	Abscessed livers
0	all	24	599.4	1007.5	2.94	7.94	2
.5 g	5	24	595.9	990.6	2.84	7.99	3
1.0 g	5	24	595.8	1012.2	3.00	7.63	1
2.0 g	5	24	597.2	992.4	2.84	8.11	3
1.0 g	3	24	599.8	989.9	2.81	8.06	2
1.0 g ¹	7	24	596.7	982.2	2.77	8.19	2
70 mg	all	24	598.4	992.3	2.83	7.89	1

¹Only level currently approved for improved growth rate and liver abscess control.

Combination Clearances

The Food and Drug Administration (FDA) is responsible for regulating the use of feed additives and implants. Numerous individual additives are approved for use in beef cattle feed, however, the mixing of two additives into the same supplement or mixed feed for resale purposes requires FDA approval for each combination. For example, the only antibiotic approved for use with Rumensin is Tylan. Another combination clearance is Chlortetracycline and Sulfamethazine (AS 700). Using additives in combination in the same supplement without proper FDA clearances is illegal. You are urged to check with your feed manufacturer for the latest information on legal feed additive combinations.