Effects of Bovatec, Oxytetracycline (OTC), Bovatec Plus OTC and Rumensin-Tylan Combination on Feedlot Performance and Liver Abscess Control in Finishing Steers[1]

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Summary

Adding Bovatec, OTC, Bovatec plus OTC or Rumensin-Tylan to finishing steer diets did not significantly improve average daily gain in the 133 day feeding period, but did improve (P<.05) feed to gain ratios. The Rumensin-Tylan combination was the only treatment that reduced (P<.05) liver abscess incidence.

Introduction

Currently, Rumensin-Tylan is the only ionophore/antibiotic combination cleared by the FDA for use in beef feedlot diets. The FDA restriction on combination drug use has caused some producers to discontinue antibiotic feeding for liver abscess reduction. This study was designed to see if feeding an antibiotic (OTC) alone or alternately with Bovatec would reduce liver abscesses and what effect alternating these drugs would have on live animal performance.

Experimental Procedure

One hundred and sixty Charolais-Angus crossbred steers were allocated by initial weight to five treatments: 1) Control; 2) Bovatec (30 g/ton, 90% dry matter basis); 3) Oxytetracycline (OTC, 1g/hd/day, 3 days out of 28 days); 4) Bovatec plus OTC; and 5) Rumensin-Tylan (25g and 10g/ton, respectively, 90% dry matter basis). In the Bovatec plus OTC treatment, Bovatec was removed from the feed for the three days per month that OTC was fed. Treatments were replicated, with four pens of eight steers per treatment.

Cattle were vaccinated with IBR, BVD, leptospirosis and 7-way clostridium, wormed with injectable Tramisol and implanted. Individual full beginning weights were shrunk 4% and 133 day ending weights were calculated from carcass weights adjusted to a 64% dressing percent. All steers were full fed a diet which contained the following ingredients on a dry matter basis: 56% rolled high moisture corn, 26.5% dry rolled milo, 6.2% corn silage, 2.2% ground alfalfa hay, 4.1% blended feeding fat and 5% supplement that contained minerals, vitamins, protein and the appropriate treatment drug. Carcass characteristics and liver abscess incidence and severity were evaluated at slaughter.

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Results and Discussion

Performance and carcass data are presented in Table 28.1. All feed additives except OTC alone reduced (P<.05) dry matter intake over the entire trial. All treatments improved (P<.05) feed to gain ratios as compared to controls. No differences in rate of gain were detected during any time period among the treatments.

Table 28.2 shows the liver abscess data. Only the treatment containing Tylan showed a significant reduction in liver abscesses. Both the Bovatec and Bovatec + OTC treatments had a higher (P<.05) liver abscess incidence than controls.

Daily gain was not significantly (P>.05) affected by liver abscess condition, averaging 3.24 lb with no abscesses, 3.17 lb with small abscesses, 3.16 lb with large abscesses, 3.13 lb. with open abscesses.

Table 28.1. Feedlot Performance of Steers on Five Feed Additive Treatments

Item	Control	Bovatec	OTC	Bovatec+ OTC	Rumensin+ Tylan
Initial wt., lb	700	700	703	690	704
Final wt., lb	1164	1172	1172	1130	1154
Quality grade	Gd+	Gd+	Gd+	Gd+	Gd+
Yield grade	2.16	2.12	2.10	2.04	2.12
			Day 0-35		
Daily gain, lb^d	3.83_a	3.68_b	3.79_b	3.76_b	3.90_b
Dry matter intake, lb	22.91_a	20.93_{ab}	21.19_b	20.78_b	20.23_b
Feed/gain	5.98_a	5.69_{ab}	5.59_b	5.53_b	5.19_b
			Day 0-63		
Daily gain, lb^d	3.83_a	3.77_b	3.70_b	3.54_b	3.75_b
Dry matter intake, lb	22.56_a	20.48_{ab}	20.47_{ab}	20.36_a	20.10_b
Feed/gain	5.89_a	5.43_{ab}	5.53_{ab}	5.75_a	5.36_b
			Day 63-133		
Daily gain, lb^d	3.06_a	3.05_{ab}	3.53_a	3.17_b	3.04_b
Dry matter intake, lb	24.00_a	22.63_{ab}	23.48_b	21.47_b	21.12_b
Feed/gain	7.84_a	7.42_{ab}	6.65_b	6.67_b	6.95_b
			Day 0-133		
Daily gain, lb^d	3.42_a	3.49_{bc}	3.53_{ab}	3.31_c	3.39_c
Dry matter intake, lb	23.32_a	21.61_b	22.06_b	20.94_b	20.63_b
Feed/gain	6.82_a	6.19_b	6.25_b	6.33_b	6.09_b

abc Means in the same row with different superscripts differ significantly (P<.05).
d No significant differences (P>.10).

Table 28.2. Liver Data of Cattle on Five Feed Additive Treatments

Liver scores	Control	Bovatec	OTC	Bovatec+ OTC	Rumensin+ Tylan
		Number of head/treatment			
0 = Normal	26	18	24	20	30
1 = Small abscess	2	0	1	1	0
2 = Large abscess	1	9	2	4	1
3 = Open abscess	2[d]	5	4[e]	7	1
4 = Other condemnation	1[d]	0	1[e]	0	0
% Condemned livers	19%[b]	44%[a]	25%[b]	38%[a]	6%[c]

[abc] Means with different superscripts differ significantly (P<.05).
[d] Condemned because offal dropped onto slaughter floor.
[e] Condemned because of telang (parasite).

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Proper Implanting Technique

Implanting is one of the most profitable management tools available to cattlemen, typically returning $10 to $15 for each $1 invested. While implanting is easy, proper technique - especially implant site and cleanliness - is important to assure maximum implant performance and retention.

Proper implant site depends on the product used. Ralgro should be implanted into the small pocket of fat and muscle at the base of the ear. In contrast, Synovex, STEER-oid and Compudose should be deposited between the skin and underlying cartilage in the middle third of the back of the ear between the grooves.

Cleanliness is important to prevent infection with all types of implants. While washing ears isn't practical, simply wiping off the implant needle between animals with a sponge dampened with disinfectant, and rubbing off extremely dirty ears with a wet rag will minimize the risk of infection. Keeping the needle sharp and free of burrs will also help prevent hair and dirt from contaminating the wound site.

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