Comparison of Anthelmintic and Anti-Bacterial Agents Fed Weanling Pigs Reared on Pasture

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Summary

Forty-eight Yorkshire pigs averaging 35 lbs. were used to compare their performance under these feeding sequences: (A) mecadox plus banminth, received until weighing 75 lbs., followed by terramycin to 125 lbs.; (B) worming with tramisol initially and feeding ASP-250 until weighing 125 lbs. To market weight, pigs in both treatment groups were fed a nonmedicated finisher diet. Rate of gain was similar for both treatments; the sequence A pigs, however, required 6% fewer lbs. of feed per pound of gain. Pigs fed banminth had, after 35 days, no ascarid scars in their livers and no ascarids in their intestines. Pigs wormed initially with tramisol had livers with 40 to 50 ascarid scars (both diaphragmatically and viscerally), and one pig had nine ascarids in his intestine. For pigs slaughtered at 125 lbs. and market weight, we observed fewer liver scars and intestinal ascarids in those wormed with banminth than with tramisol.

Introduction

Anthelmintics and anti-bacterial agents have aided the swine producer in obtaining more efficient gains in their swine. Generally, to date the producer has administered the compounds separately to the weaned pig--either in its feed or in combination with 50 g/ton of mecadox until the pig weighs 75 lbs. The objective of this experiment was to evaluate the efficiency of giving banminth-mecadox to young growing pigs (initially averaging 35 lbs.) until they weighed 75 lbs., and then given them terramycin (150 g/ton) until they weighed 125 lbs; and to compare the performance of pigs so treated with those initially wormed with tramisol and fed Aureo SP-250 until they weighed 125 lbs.

Procedure

Forty-eight Yorkshire pigs weighing an average of 35 lbs. were randomly assigned (based on sex and weight) to four pens representing two replicates of two treatments. Each group of pigs was fed in pasture lots. Meal feed was supplied ad libitum from self feeders. Pigs in each pen had access to an 80-gal. gravity waterer. Composition of basal ration is given in table 33 .

Experimental treatments were as follows:

A. From 35 lbs. to 75 lbs. body weight (phase 1)

- T-1 Basal grower ration plus 96 g/ton banminth and 50 g/ton mecadox
- T-2 Basal grower ration plus Aureo SP-250 (100/100/50 g/ton); tramisol administered during the first week

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B. From 75 to 125 lbs. body weight (phase 2)
   T-1 Basal grower ration plus 150 g/ton terramycin
   T-2 Basal grower ration plus ASP-250 (100/100/50 g/ton)
C. From 125 lbs. to market weight (phase 3)
   T-1 Basal finisher ration, nonmedicated
   T-2 Basal finisher ration, nonmedicated.

Two pigs from each treatment group were slaughtered after each phase of the study had been completed. Liver lesions and number and differentiation of gastrointestinal worms were observed.

Table 33 . Percentage composition of basal diet.

Ingredient:	Grower %	Finisher %
Corn	35.8	37.2
Sorghum grain	35.3	36.9
Soybean meal (44%)	22.5	20.0
Molasses	2.5	2.5
Dicalcium phosphate	1.5	1.25
Limestone	1.0	1.0
Salt	0.5	0.5
Trace mineral	0.1	0.1
KSU Vit. premix	0.5	0.5

Results and Discussion

Pigs fed the diet containing the combination of mecadox and banminth until they weighed 75 lbs. gained 8% faster and required 11.5% fewer lbs. of feed per lb. of gain than did those fed ASP-250 (table 34). The two smallest barrows in each treatment were slaughtered to determine liver scars and presence of intestinal parasites at this phase of the experiment. The two barrows fed mecadox-banminth had no diaphragmatic or visceral scars in the liver, whereas those administered tramisol had an average of approximately 60 scars diaphragmatically and 40 viscerally in the liver. One pig wormed with tramisol the first week of the trial had nine ascarids present in his intestines.

Table 34 . Performance of pigs during phase 1 (35 days).

Ration:	Mec+ban	ASP-250[a]
Average daily gain lbs.		
Rep 1[b]	1.46	1.45
Rep 2[c]	1.57	1.36
	1.52	1.40
Feed/gain		
Rep 1	2.36	2.52
Rep 2	2.30	2.67
	2.33	2.60

[a]Tramisol administered during the first week.
[b]Average initial weight 35.4 lbs., 12 pigs per pen.
[c]Average initial weight 35.2 lbs., 12 pigs per pen.

During growing phase 2 (75 lbs. to 125 lbs.), the performance of pigs fed terramycin (150 g/ton) was similar to that of pigs continued on ASP-250 (table 35). For growing phases 1 and 2 combined, pigs fed the sequence of mecadox-banminth-

terramycin performed 7% more efficiently than did those fed ASP-250 (table 36). Liver lesions were present in all four pigs slaughtered at approximately 125 lbs. Two of the smallest gilts from each treatment were slaughtered at this stage. Gilts that had been wormed with banminth had 16 to 19 lesions diaphragmatically and 8 to 28 lesions viscerally. One gilt wormed with tramisol had approximately 50 lesions on both sides of the liver and nine ascarids in the intestine; the other had fewer liver lesions but 37 ascarids in the intestine. Gilts receiving banminth during phase 1 had no ascarids in the intestine at this time.

Table 35 . Performance of pigs during phase 2 (29 days).

Ration:	Terramycin	ASP-250
Average daily gain, lbs.		
Rep 1[a]	1.76	1.80
Rep 2[a]	1.70	1.77
	1.73	1.78
Feed/gain		
Rep 1	2.81	2.89
Rep 2	2.89	3.01
	2.85	2.95

[a]Eleven pigs per treatment.

Table 36 . Performance of pigs during phases 1 and 2 combined (64 days).

Ration:	Mec-ban-terra	ASP-250
Average daily gain, lbs.		
Rep 1	1.59	1.60
Rep 2	1.63	1.54
	1.61	1.57
Feed/gain		
Rep 1	2.58	2.70
Rep 2	2.57	2.84
	2.57	2.77

Table 37 presents the performance of pigs fed the nonmedicated diets in phase 3. Performance of all pigs was greatly impaired by extremely hot weather during phase 3. Rate of gain during phases 1 and 2 combined was 9% better for the pigs fed ASP-250 than for pigs fed the mecadox-banminth -terramycin sequence; however, the latter group continued to be more efficient, 4%.

Table 37 . Performance of pigs during phase 3, nonmedicated (54 days).

Treatment, phases 1 and 2:	Mec-ban-terra	ASP-250
Average daily gain, lbs.		
Rep 1[a]	1.28	1.33
Rep 2[b]	1.26	1.40
	1.27	1.36
Feed/gain		
Rep 1	2.79	2.93
Rep 2	2.81	2.90
	2.80	2.92

[a]Ten pigs per treament pen.

As indicated in table 38, which summarizes the performance of pigs (from 35 lbs. to approximately 210 lbs.), average daily gain was similar for all pigs regardless of treatment. For the entire trial pigs given mecadox-banminth-terramycin were 6% more efficient than those receiving tramisol-ASP-250.

Table 38. Performance of pigs during phases 1, 2, 3 combined (118 days).

Ration:	Mec-ban-terra	ASP-250
Average initial weight, lbs.		
Rep 1[a]	35.7	35.1
Rep 2[a]	35.6	34.8
	35.6	35.0
Average final weight, lbs.		
Rep 1[b]	207.5	211.9
Rep 2[b]	209.7	211.0
	208.1	211.4
Average daily gain, lbs.		
Rep 1	1.46	1.48
Rep 2	1.47	1.48
	1.46	1.48
Feed/gain		
Rep 1	2.66	2.80
Rep 2	2.66	2.86
	2.66	2.83

[a]Twelve pigs per treatment pen.
[b]Ten pigs per treatment pen.

Liver lesions were about the same for the two barrows, slaughtered at market weight. Number of ascarids in their intestines was also about the same at that time.

Table 39. Liver lesions and parasites in intestines of slaughtered pigs, phases 1, 2, 3 combined.

Treatment	Days on test	Total liver scars		Intestinal parasites
		Diaphragmatic	Visceral	
Mec-ban	35	0	0	0
Mec-ban	35	0	0	0
Tram-ASP 250	35	54	43	9
Tram-ASP 250	35	68	38	0
Mec-ban-terra	64	16	8	0
Mec-ban-terra	64	19	28	0
Tram-ASP 250	64	57	49	9
Tram-ASP 250	64	15	10	37
Mec-ban-terra	118	32	26	21
Mec-ban-terra	118	37	43	19
Tram-ASP 250	118	48	33	27
Tram-ASP 250	118	37	55	29