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Antibiotics have been used in swine feeds to improve growth and feed efficiency for approximately 20 years. It was the purpose of this experiment to re-evaluate the effectiveness of aureomycin and to determine if a difference in the response to the antibiotic could be obtained if pigs were confined on concrete or in dirt dry lots.

Experimental Procedure

Eighty crossbred pigs were allotted to replicate groups of four treatments each on the basis of litter, sex and weight. Each lot consisted of six gilts and four barrows and had an average initial weight of approximately 23 lb. One replicate of four lots was housed in a conventional house with concrete floors and had access to an outside concrete lot. The other replicate was maintained in dirt dry lot with access to wooden portable shelters. Feed and water were available ad libitum to all pigs.

The aureomycin treatments were as follows:

1. None
2. 25 g./ton to 110 lb., 10 g./ton from 110 lb. to market weight.
3. 50 g./ton to 110 lb., 20 g./ton from 110 lb. to market weight.
4. 100 g./ton to 110 lb., 40 g./ton from 110 lb. to market weight.

The composition of the basal diet is shown in table 1. The diet was calculated to contain 16% protein until the pigs weighed 110 lb. and 12% protein for the remainder of the experiment.

Results

Average daily gain and feed per gain data are summarized by lots in table 2 and by treatment in table 3. The only effect of feeding the antibiotic occurred during the early growing period. During the growing phase, 23 to 110 lb. average weight, pigs fed feed containing aureomycin gained approximately 1.35 lb. per day and had a feed/gain ratio of 2.43 compared to a 1.26 lb. per day gain and a feed/gain ratio of 2.53 for pigs fed the basal diet. There were no differences in performance of pigs fed the various levels of aureomycin. Gain and feed efficiency were not significantly different during the finishing phase, 110 lb. to market weight. This resulted in only small, nonsignificant differences due to the feeding of aureomycin during the entire experiment.

Pigs reared in confinement on concrete floors and those reared in dirt dry lots grew at similar rates and required nearly the same amount of feed per unit of gain. This was true during both the growing and finishing phases of this experiment.

Summary

An experiment was conducted using 80 crossbred barrows and gilts to study the effect of different levels of supplementary aureomycin on performance of growing-finishing pigs. Aureomycin levels were 0, 25, 50 and 100 g. per ton during the growing phase and 0, 10, 20 and 40 g. per ton during the finishing phase. A comparison was also made of pigs reared in concrete confinement facilities or in dirt dry lot.

A small improvement in rate of gain and feed per gain occurred when aureomycin was fed in the growing diet. However, no benefit was derived from including the antibiotic in the finishing diet. A level of 20 g. per ton of aureomycin in the growing diet and 10 g. per ton in the finishing diet was equally as effective as the higher levels used in this experiment. Pig performance was similar when reared on concrete or dirt lots.

The results of this experiment indicate that there may be very little response when antibiotics are fed to pigs in herds where they have been fed routinely for prolonged periods and no particular disease problems exist. The results also confirm the early antibiotic work that showed the greatest response from antibiotics was obtained during the early growth phase.

Table 1. Composition of Basal Diets (Percent)

	To 110 lb.	110 lb. to market
Ground yellow corn	79.4	89.8
Soybean meal (48%)	17.7	7.9
Dicalcium phosphate	1.7	1.1
Limestone	0.5	0.5
Trace mineral salt	0.5	0.5
Vitamin premix[a]	0.2	0.2

[a] Provided 1,350 I.U. vitamin A, 200 I.U. vitamin D, 2 mg. riboflavin, 4 mg. calcium pantothenate, 9 mg. niacin, 10 mg. choline and 7 mcg. vitamin B_{12} per lb. of diet.

Table 2. Performance of Growing-Finishing Pigs Fed Various Levels of Aureomycin on Concrete or in Dirt Lots[a]

	Avg. daily gain, lb.			Feed/gain, lb.		
Aureomycin, g./ton	23-110 lb.	110-210 lb.	23-210 lb.	23-110 lb.	110-210 lb.	23-210 lb.
Concrete lots						
0	1.24	1.92	1.54	2.52	3.48	3.03
25-10	1.34	1.91	1.59	2.52	3.83	3.20
50-20	1.35	1.68	1.52	2.40	3.50	3.00
100-40	1.35	1.87	1.58	2.39	3.67	3.08
Dirt lots						
0	1.28	1.78	1.51	2.55	3.71	3.18
25-10	1.35	1.75	1.55	2.33	3.74	3.11
50-20	1.37	1.78	1.56	2.52	3.59	3.04
100-40	1.35	1.89	1.61	2.39	3.68	3.13

[a] Ten pigs per lot. Avg. initial wt., 23 lb.; avg. final wt., 210 lb.

Table 3. Summary of Gain and Feed Efficiency by Aureomycin Level and Management System

	Aureomycin level, g./ton				Management	
	0	25-10	50-20	100-40	Concrete lot	Dirt lot
No. of pigs	20	20	20	20	40	40
Avg. daily gain, lb.						
23 to 110 lb.	1.26	1.35	1.36	1.35	1.32	1.34
110 to 210 lb.	1.85	1.83	1.73	1.88	1.84	1.80
23 to 210 lb.	1.53	1.57	1.54	1.60	1.56	1.56
Feed/gain, lb.						
23 to 110 lb.	2.53	2.43	2.46	2.39	2.46	2.45
110 to 210 lb.	3.59	3.78	3.54	3.67	3.62	3.68
23 to 210 lb.	3.11	3.15	3.02	3.11	3.08	3.11