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The Value of Different Levels of Streptomycin-Sulfaquinoxaline
And Chlortetracycline (Aureomycin) for Growing Pigs^{1/}

Richard C. Wahlstrom

Results of previous experiments at this station and elsewhere indicated that several of the antibiotics caused increases in daily gain of growing pigs. High level (50 to 100 grams per ton) antibiotic feeding has resulted in an increase in feed efficiency in trials conducted here the past two years.

During the past year two experiments were conducted to compare feeding different levels of a mixture of streptomycin-sulfaquinoxaline and chlortetracycline. The first experiment was conducted during the winter of 1956-57 and the second experiment during the summer of 1957.

Experimental Plan

The pigs used in the first experiment were fall-farrowed. Seventy-two pigs were divided into 12 lots of 6 pigs each. Two lots were then randomly assigned to each treatment. The pigs were housed in a barn with concrete floors and each pen was provided with an automatic waterer. The pigs were self-fed from feeders located on an adjoining paved outside lot.

Spring-farrowed pigs were used in the second experiment. In this experiment there were eight different ration treatments with two lots of pigs receiving each treatment for a total of 16 lots. Management and housing were similar to Experiment 1. The basal mixtures for each experiment are given in table 1. The experimental treatments are described in tables 2 and 3.

Table 1. Composition of Basal Mixture Fed

<u>From start to 100 lbs.</u> <u>lbs.</u>		<u>From 100 to 200 lbs.</u> <u>lbs.</u>
84.0	Ground corn	91.0
10.0	Soybean oil meal (44%)	5.0
5.0	Tankage (60%)	2.5
0.7	Steamed bone meal	1.0
0.5	Trace mineral salt	0.5
0.1	B-vitamin supplement	0.1

Summary of Results

Experiment 1

The results of the first experiment are summarized in table 2. In contrast to previous experiments the use of the lower levels (10 grams per ton) of either chlortetracycline or streptomycin-sulfaquinoxaline did not result in an increased rate of gain. The higher levels (25 to 100 grams per ton) of streptomycin-sulfaquinoxaline produced increases in average daily gains of approximately 6 to 9 per cent. During the latter growth phase (100 to 200 pounds) there was a slight increase in rate of gain by all lots of pigs fed antibiotic. However, during the early feeding period the antibiotic did not give its usual response.

The use of the antibiotics reduced the amount of feed required per unit of gain. This reduction in feed required offset the additional cost of the antibiotic except at the levels of 50 and 100 grams per ton.

Experiment 2

Table 3 summarizes the results of this experiment. There was an average increase in rate of gain of approximately 10 per cent when the antibiotics were fed. Streptomycin-sulfaquinoxaline was slightly more effective in increasing gains when fed at 25, 50, or 100 grams per ton than when fed at a level of 10 grams per ton. Chlortetracycline, however, was as effective at the 10 gram level as at the higher levels. There was very little difference in feed efficiency between the various lots. In most cases this small difference did favor the pigs fed antibiotic.

In summary it appears that a level of 25 grams per ton of streptomycin-sulfaquinoxaline is as effective as higher levels of this compound in promoting growth and improving feed efficiency of weanling pigs and is better than a 10 gram per ton level. Chlortetracycline was as effective at 10 grams per ton as at 50 and 100 grams per ton in the one trial where these levels were compared.

Table 2. Response of Pigs to Streptomycin-Sulfaquinoxaline
(Winter 1956-57)

Treatment	Basal	Basal / 10 gm. C. per ton	Basal / 10 gm. S-SQ per ton	Basal / 25 gm. S-SQ per ton	Basal / 50 gm. S-SQ per ton	Basal / 100 gm. S-SQ per ton
No. of pigs ¹	11	11	10	11	9	11
Av. initial wt., lbs.	41.7	42.4	42.5	41.6	43.5	41.3
Av. final wt., lbs.	200.3	205.1	208.5	206.8	205.5	205.6
Av. daily gain, lbs.	1.58	1.58	1.62	1.67	1.69	1.72
Av. da. ga. to 100 lbs., lbs.	1.39	1.28	1.32	1.32	1.42	1.46
Av. da. ga. 100 to 200 lbs., lbs.	1.70	1.77	1.84	1.92	1.88	1.89
Av. days on test	102	103	102	99	96	96
Feed consumed/pig/day, lbs.	5.99	6.08	5.78	6.00	6.03	6.19
Feed consumed/cwt. gain, lbs.	398	391	368	367	381	369

¹ Two replicates of 6 pigs each started. One outcome group removed because of poor growth in all lots. Three other pigs died of causes not relating to treatments.

C = Chlortetracycline

S-SQ = Streptomycin-Sulfaquinoxaline (1:1 ratio)

Table 3. Results of Feeding Different Levels of Streptomycin-Sulfaquinoxaline and of Chlortetracycline to Growing Pigs (Summer 1957)

Treatment	Basal	Basal / 10 gm. S-SQ per ton	Basal / 25 gm. S-SQ per ton	Basal / 50 gm. S-SQ per ton	Basal / 100 gm. S-SQ per ton	Basal / 10 gm. C. per ton	Basal / 25 gm. C. per ton	Basal / 50 gm. C. per ton
No. of pigs ¹	12	12	12	12	12	12	12	12
Av. initial wt., lbs.	34.1	34.0	34.1	34.0	34.2	33.9	34.0	34.1
Av. final wt., lbs.	191.8	199.1	202.5	198.5	199.0	203.9	201.0	203.7
Av. days on test	98	98	95	94	96	95	95	94
<u>Start to 100 lbs.:</u>								
Av. daily gain, lbs.	1.47	1.53	1.61	1.65	1.69	1.66	1.64	1.67
Feed/lb. gain, lbs.	2.70	2.73	2.71	2.72	2.73	2.61	2.76	2.68
<u>100 lbs. to final wt.:</u>								
Av. daily gain, lbs.	1.71	1.81	1.89	1.82	1.74	1.87	1.85	1.89
Feed/lb. gain, lbs.	3.81	3.66	3.65	3.64	3.71	3.64	3.82	3.65
<u>Start to final wt.:</u>								
Av. daily gain, lbs.	1.60	1.69	1.77	1.74	1.72	1.78	1.76	1.79
Av. daily feed, lbs.	5.37	5.56	5.80	5.70	5.67	5.75	5.98	5.85
Feed/cwt. gain, lbs.	335	329	328	327	330	323	339	326

¹ Two replicates of 6 pigs each per treatment.

C = Chlortetracycline

S-SQ = Streptomycin-sulfaquinoxaline