1958

The Effect of Certain Feed Additives in Pig Starter Rations

Eldon Juhl
South Dakota State University

Richard C. Wahlstrom
South Dakota State University

THE EFFECT OF CERTAIN FEED ADDITIVES IN PIG STARTER RATIONS [1]/

Eldon Juhl and Richard C. Wahlstrom

Results of experiments at this Station and at other stations have shown that several of the antibiotics will increase the daily gains of young pigs. New antibiotics and other feed additives are constantly being tested to determine their value in swine production. These two trials were conducted to determine the value of various compounds in pig starter rations.

Experimental Plan

Two hundred and sixteen spring pigs were weaned at four weeks of age and used in two trials conducted in April and May, 1958. In trial 1 we used twelve lots of ten pigs each and in trial 2 there were twelve lots of eight pigs each. Two lots of pigs received each ration treatment from four to eight weeks of age.

The composition of the basal rations is shown in table 1. These rations were self-fed in concrete pens. The additions to the basal rations are shown in tables 2 and 3.

Table 1 Composition of Basal Rations (per cent)

	Trial 1	Trial 2
Ground yellow corn	63.5	58.0
Soybean oil meal	20.0	14.3
Dried skim milk	----	11.4
Tankage	5.0	5.0
Sugar	10.0	10.0
Steamed bone meal	1.0	0.7
Trace mineral salt	0.5	0.5
B-vitamin supplement	0.1	0.1

Summary of Results

The results of trial 1 are shown in table 2.

Table 2 The Effect of Some Feed Additives in Pig Starter Rations[a] (Trial 1)

	Lot 1 Basal	Lot 2 25 gm. Chlortetra-cycline Per Ton	Lot 3 50 gm. Furazo-lidone Per Ton	Lot 4 60 gm. Protomone Per Ton	Lot 5 400 mg. Triiodo-thyronine Per Ton	Lot 6 1 gm. Thyroxine Per Ton
No. of pigs [b]	18	20	20	20	20	19
Av. initial wt., lb.	16.3	16.2	16.1	16.1	16.2	16.1
Av. final wt., lb.	24.6	27.2	26.8	26.0	25.6	23.7
Av. daily gain, lb.						
Rep. I	0.32	0.45	0.42	0.46	0.48	0.45
Rep. II [c]	0.27	0.34	0.33	0.22	0.20	0.15
Ave.	0.30	0.39	0.38	0.34	0.34	0.27
Feed/pig/day, lb.	1.09	0.93	0.90	0.86	0.91	0.82
Feed/lb. gain, lb.	3.70	2.37	2.38	2.53	2.58	2.82

[a] Pigs weaned at 4 weeks of age and fed until 8 weeks of age on this experiment.

[b] Two replicates of 10 pigs each on each treatment. Two pigs died in Lot 1 and one in Lot 6.

[c] The pigs in Replicate II were affected with flu and pneumonia and many did very poorly.

The data from this trial are rather inconclusive as the second replicate of pigs developed flu and pneumonia and their performance was very poor. Their data are included, however, to make the record complete. All lots of pigs that received the various additives gained faster than the control lot (Lot 1). In the first replicate with little difference in rate of gain between the various treatments Chlorotetracycline and furazolidone also slightly improved the gains of pigs in Lots 2 and 3 in the second replicate. However, the thyro-active compounds all depressed gains. It is possible that the added stress due to these thyroid stimulating compounds may have caused these pigs to be more susceptable to flu and pneumonia.

Table 3 gives a summary of the results of trial 2.

Table 3 The Effect of Certain Feed Additives in Pig Starter Rations[a] (Trial 2)

	Lot 1 Basal	Lot 2 100 gm. Chlortetra-cycline Per Ton	Lot 3 100 gm. Furazo-lidone Per Ton	Lot 4 200 gm. Furazo-lidone Per Ton	Lot 5 10 gm. Erythro-mycin Per Ton	Lot 6 50 gm. Erythro-mycin Per Ton
No. of pigs [b]	16	15	15	16	16	16
Av. initial wt., lb.	16.5	16.6	16.5	16.4	16.3	16.4
Av. final wt., lb.	26.1	33.1	29.9	32.6	35.8	33.3
Av. daily gain, lb.						
Rep. I	0.40	0.57	0.55	0.57	0.76**	0.67
Rep. II	0.29	0.61**	0.40	0.58**	0.63**	0.54*
Ave.	0.34	0.59	0.47	0.58	0.70	0.60
Feed/pig/day, lb.	1.17	1.30	0.99	1.14	1.45	1.25
Feed/lb. gain, lb.	3.44	2.21	2.11	1.97	2.08	2.07

[a] Pigs weaned at 4 weeks of age and fed until 8 weeks of age on this experiment.

[b] Two replicates of 8 pigs each on each treatment. One pig died in each of Lots 2 and 3.

* Significant at 5% level.

**Significant at 1% level.

Chlorotetracycline and furazolidone were used at higher levels than in trial 1. Both gave significant increases in gains over the control lot. The 200 gram per ton level of furazolidone produced more consistent increases in weight gain than did the 100 gram level. Erythromycin fed pigs gained at the fastest rate with the 10 gram per ton level being superior to the 50 gram level. It has been reported that this antibiotic is somewhat unpalatable at high levels. This would appear to be true here as feed consumption was reduced when 50 grams of erythromycin was fed as compared to 10 grams. However, the 50 gram level of erythromycin produced gains equal to that of pigs fed chlorotetracycline or furazolidone.

Feed efficiency was very good in all lots except Lot 1 which did not receive an antibiotic or furazolidone. Lot 4 which received the higher level of furazolidone required only 1.97 pounds of feed per pound of gain.