1958

Antibiotics for Growing-Finishing Swine

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ANTIBIOTICS FOR GROWING-FINISHING SWINE[1]

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Studies conducted at this Station and at other experiment stations have demonstrated the beneficial effects of antibiotics in swine rations. Aureomycin (chlortetracycline), terramycin (oxytetracycline) and penicillin have all given good results in swine feeding trials. Recently zinc bacitracin has been shown to be of benefit in some swine trials and erythromycin has been reported to increase gains in poultry more than other antibiotics. This experiment was conducted to determine the value of some of the newer antibiotics in comparison with terramycin when fed to growing pigs.

Experimental Plan

Seventy-two pigs, approximately eight weeks old, were allotted to twelve pens on the basis of litter, weight and sex. Two pens of six pigs each were fed each of the following ration treatments:

Basal
Basal plus 10 grams of erythromycin per ton
Basal plus 10 grams of zinc bacitracin per ton
Basal plus 10 grams of terramycin per ton
Basal plus 10 grams of glucosamine per ton
Basal plus 10 grams of terramycin and 10 grams of glucosamine per ton

The composition of the basal ration is shown in table 1. Each group of pigs was self-fed in concrete drylot.

Table 1 Composition of Basal Ration (Per Cent)

	To 110 lbs.	110 lbs. to finish
Ground corn	84.0	91.0
Soybean oil meal	10.0	5.0
Tankage	5.0	2.5
Steamed bonemeal	0.5	1.0
Trace mineral salt	0.5	0.5
B-vitamin supplement	0.1	0.1

Summary of Results

The results of the experiment are summarized in table 2. These data indicate a real difference in performance of pigs fed erythromycin or the terramycin-glucosamine combination when compared to the pigs fed the basal ration. The rate of gain of the pigs fed terramycin alone also approached significance. Pigs fed zinc-bacitracin gained slightly faster than the controls and those fed glucosamine gained at a similar rate to the control pigs. Glucosamine has been shown to potentiate faster blood levels of the antibiotic. It is possible that it might have worked in this way when used in combination with terramycin in this trial since the pigs fed this combination gained faster than those fed terramycin alone.

[1]Presented at South Dakota State College Swine Field Day, September 11, 1958.

Feed consumption was increased in all lots receiving antibiotics. The pigs that received erythromycin consumed slightly more feed daily than did the other pigs. The erythromycin pigs also required the least amount of feed per hundredweight of gain. The most savings in feed occurred during the finishing period.

Table 2 Influence of Various Antibiotics upon Performances of Growing-Finishing Pigs in Drylot

	Basal	Erythro-mycin	Zinc Bacitracin	Terra-mycin	Glucos-amine	Terramycin + Glucos-amine
No. of pigs	12	12	12	12	12	12
Av. initial wt., lb.	32.3	32.1	32.2	32.3	32.3	32.3
Av. final wt., lb.	164.5	194.8	173.8	176.0	165.3	187.0
Av. daily gain, lb.						
To 110 lb.	1.19	1.50	1.26	1.34	1.25	1.40
110 to finish	1.64	1.92	1.74	1.71	1.56	1.84
Entire period[a]	1.34	1.67	1.44	1.50	1.37	1.59
Av. feed/pig/day, lb.	4.3	5.0	4.5	4.8	4.3	4.9
Av. feed/cwt. gain, lb.						
To 110 lb.	282	278	279	294	288	288
110 to finish	373	326	346	353	338	336
Entire period	321	301	311	321	311	311

[a] Significant Mean Difference at 5% level = .17 lb. per day
Significant Mean Difference at 1% level = .23 lb. per day

The results of this trial are similar to those obtained at this Station with pigs from four to eight weeks of age in that erythromycin increased gains more than the "older" antibiotics. It appears that possibly the response to "older" antibiotics has diminished. Research will be continued to try and determine the reasons that these differences exist.