

Various Antibiotics and 3-Nitro-4-Hydroxyphenyl Arsonic Acid in Corn-Peanut Meal Rations for Swine.* (19227)

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Jukes *et al.*(1) reported a marked growth-promoting effect from aureomycin when fed in a corn-peanut meal ration. Later Cunha *et al.*(2) published the results of 12 experiments with corn-peanut meal rations in which aureomycin supplementation approximately doubled the growth rate of pigs. Other investigators(3-5) have demonstrated the value of aureomycin when fed with other type rations. Brown and Luther(6) and Carpenter(7) have reported that terramycin was equally as effective as aureomycin in promoting growth. Carpenter(7) also reported that chloromycetin increased gains but failed to control diarrhea as did penicillin, streptomycin, aureomycin, and terramycin. A growth stimulating effect from 3-nitro-4-hydroxyphenyl arsonic acid has been noted by Carpenter(8).

This study was undertaken to determine the value of adding terramycin, chloromycetin, bacitracin, and the arsonic acid derivative to a corn-peanut meal basal ration. Two levels of aureomycin were also compared.

Experimental. The animals used in the experiment were purebred Duroc, Hampshire,

and Spotted Poland China. They were allotted carefully according to breed, sex, and weight and placed on experiment at approximately 9 weeks of age. The basal ration fed to all groups consisted of yellow corn 57%, peanut meal (hydraulic) 41.5, bone meal 0.5, limestone 1.0, and a salt-trace mineral mixture 0.53 (iodized salt 50 lb, manganese sulfate 921 g, ferrous sulfate 398 g, copper sulfate 125 g and cobalt carbonate 10 g). Crystalline V-vitamins were added at the following levels per 100 lb of ration: thiamine 1 g, riboflavin 230 mg, niacin 2.33 g, pantothenic acid 1 g, pyridoxine 375 mg, choline 19.4 g, folic acid 22.7 mg, and vit. B₁₂ 1 mg. Vit. A and D were administered by capsule at weekly intervals. The animals were self-fed on concrete floors which were washed down daily.

Results. Effects of the various treatments are summarized in Table I. The two levels of aureomycin (lots 2 and 3) and terramycin (lot 4) resulted in an increase in gains over the control lot and all other treatments which was statistically significant at the 5% level. The difference in gains between the two levels of aureomycin was not statistically significant

TABLE I. Effect of Antibiotics and 3-Nitro-4-Hydroxyphenyl Arsonic Acid on Growth of Swine.

Lot No.	1	2	3	4	5	6	7
Supplements to basal (per 100 lb ration)	Basal	Basal+1 g aureomycin*	Basal+2 g aureomycin*	Basal+2 g terramycin†	Basal+ 2 g chlo- romycetin‡	Basal+2 g bacitracin§	Basal+1.7 g 3-nitro-4-hy- droxyphenyl arsonic acid
No. of pigs	6	6	6	6	6	6	6
Days on test	70	70	70	70	70	70	70
Avg initial wt, lb	31.7	31.6	31.6	31.7	31.6	31.7	31.7
" final " "	75.1	106.7	120.6	114.1	77.9	65.3	86.9
" daily gain "	.62	1.07¶	1.27¶	1.18¶	.66	.48	.77
" daily feed "	1.95	3.35	3.47	3.46	2.57	2.26	1.98
Feed/lb gain "	3.07	3.33	2.73	2.94	3.92	4.70	2.51

* Supplied by Dr. T. H. Jukes, Lederle Laboratories, Pearl River, N. Y.

† Supplied by Dr. H. G. Luther, Chas. Pfizer and Co., Brooklyn, N. Y.

‡ Supplied by Dr. O. D. Bird, Parke, Davis and Co., Detroit, Mich.

§ Supplied by Dr. M. A. Schooley, Merck and Co., Rahway, N. J.

|| Supplied by Dr. T. W. Zbornick, Dr. Salsbury's Laboratories, Charles City, Iowa.

¶ Difference from basal statistically significant at 5% level.

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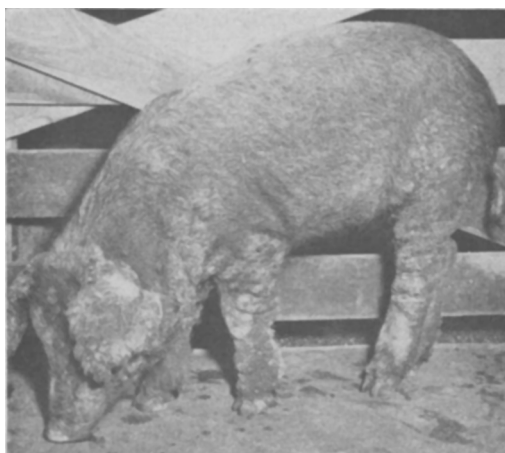


FIG. 1. A pig showing the dermatitis syndrome, observed in all lots except 2 and 3.

nor were the gains of pigs receiving aureomycin significantly different from those of pigs receiving terramycin. Chloromycetin failed to stimulate growth. This is particularly interesting in view of the fact that chloromycetin is a "wide spectrum" antibiotic similar in scope to aureomycin and terramycin. The arsonic acid derivative did not cause a significant increase in gains but did result in feed efficiency considerably better than for all other lots. Aureomycin and terramycin stimulated appetite as indicated by daily feed consumption figures, which probably accounted in part for the large gains.

Occasional scouring occurred during the

first four weeks of the experiment in lots 1, 5, 6, and 7. Scours were most severe and continued longest on the bacitracin (lot 6). Two pigs in each of lots 1, 5, and 6 showed a dermatitis syndrome. One pig each in lots 4 and 7 was afflicted with this condition. All of these animals gained very poorly during the experiment. A typical pig is shown in Fig. 1.

Summary. Of the various substances tested in this experiment only aureomycin and terramycin gave significant growth response. This response was approximately the same in magnitude. These two antibiotics controlled an intermittent type of diarrhea observed on the basal ration. The other treatments were not effective in this respect.

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Observations of 3-Hydroxy-N-Methylmorphinan Hydrobromide (Dromoran®) on Fetal Respiratory Movements of the Rabbit.* (19228)

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3-hydroxy-N-methylmorphinan hydrobromide is a synthetic analgesic chemically related in structure to morphine marketed under the registered name Dromoran®. Clinical

reports(1-3) indicate that it is 3 to 4 times as potent as morphine and that certain side effects common to morphine are minimal or absent. It has not been advocated as an obstetrical analgesic but its chemical relationship to morphine as well as the importance of any analgesic to the obstetrician has led to an investigation of the effect of Dromoran®

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