

Table 32.—Pig-fattening results on (1) levels of aureomycin, (2) comparative value of dehydrated alfalfa and *Elodea canadensis* meals.
(November 16, 1954, to March 4, 1955—108 days)

	5 mg. aureomycin per pound feed		20 mg. aureomycin per pound feed	
	Alfalfa meal	<i>Elodea</i> <i>canadensis</i>	Alfalfa meal	<i>Elodea</i> <i>canadensis</i>
Lot number	1	2	3	4*
Number pigs per lot	4	4	4	4
Av. initial wt. per pig, lbs.	39	37	37	38
Av. gain per pig, lbs.	155	194	183	171
Av. final wt. per pig, lbs.	194	231	220	209
Av. daily gain per pig, lbs.	1.44	1.80	1.69	1.70
Av. daily feed per pig, lbs.	5.6	6.9	6.4	6.6
Av. feed per 100 lbs. gain, lbs.	389	382	377	386
Av. daily gain all pigs on 5 mg. aureomycin, lbs.		1.62		
Av. daily gain all pigs on 20 mg. aureomycin, lbs.		1.70		
Av. daily gain all pigs on alfalfa meal, lbs.		1.57		
Av. daily gain all pigs on <i>Elodea canadensis</i> , lbs.		1.75		

* 1 pig slaughtered at 180 lbs.

Antibiotics for Growing-Fattening Swine

PROJECT 361*

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Certain antibiotics are generally considered to be desirable and economically practical in growing-fattening rations of swine. In most cases, there has been an increase in rate of gain and some increase in feed efficiency.

This experiment was designed to study, with littermates, the effect of aureomycin and terramycin upon rate of growth feed efficiency, digestibility of feed, and nitrogen balance. This report gives a summary of four feedlot and three metabolism trials. Carcass data on these pigs are reported under Project 217.

Experimental Procedure

Duroc Jersey and Poland China littermates of the same sex were used in each trial; however, males were used in trials 1 and 3, and females in trials 2 and 4. The pigs were selected for uniformity as much as possible and allotted at random into three groups. Group 1 was assigned the basal ration; group 2, basal plus 10 mg. of Aureomycin HCl per pound of feed, and group 3, basal plus 10 mg. of Terramycin HCl per pound of feed. Aureomycin HCl was supplied from Aurofac 2A and Terramycin HCl from Bi-Con TM5. All pigs in trials 1 and 2 were treated with sodium fluoride to remove worms. Pigs in trials 3 and 4 were not treated. A complete ration was used and the pigs were individually self-fed. The ration contained 18 per-

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cent protein until the pigs reached approximately 75 pounds body weight. It was then lowered to 15 percent protein until the pigs reached 125 pounds body weight. The protein was reduced to 12 percent for the remainder of the feeding period. Table 33 shows the composition of the basal ration. The pigs were slaughtered at approximately 225 pounds for carcass studies.

At approximately 100 pounds, each pig was placed in a metabolism crate for seven days to collect urine and feces for digestion and nitrogen balance studies. The pigs were self-fed while in the crates.

Table 33.—Basal ration.

Ingredient	%	%	%
	fed to 75 lbs.	fed from 75 to 125 lbs.	fed from 125 to 225 lbs.
Yellow corn	73.5	80.5	87.5
Soybean oil meal	12.0	8.0	5.0
Tankage	10.0	7.0	4.0
Dehydrated alfalfa meal	3.0	3.0	2.0
Steamed bone meal	0.5	0.5	0.5
Ground limestone	0.5	0.5	0.5
Salt	0.5	0.5	0.5
Total	100.0	100.0	100.0
% protein	18.0	15.0	12.0

Results

Table 34 gives the results of each trial and a summary of all trials on growth rate, feed efficiency, and the number of roundworms found at time of slaughter. Results of the metabolism studies are shown in Table 35. The antibiotics had no significant influence upon the digestibility of the feed or the nitrogen retained.

Table 34.—Average growth and feed efficiency results with aureomycin and terramycin in swine-fattening rations using individually fed littermates.

	Number of pigs	Average initial weight	Average final weight	Average total days	Average daily gain	Feed per cwt. gain	Total roundworms at slaughter
Trial No. 1—Nov. 11, 1952-April 9, 1953							
Basal	4	30.5	224.3	140.5	1.38	383	52
Basal + 10 mg. aureomycin	4	30.3	224.0	121.3	1.60	364	34
Basal + 10 mg. terramycin	4	31.8	222.0	147.8	1.29	391	128
Trial No. 2—May 9-Sept. 26, 1953							
Basal	5	41.0	236.0	127.0	1.54	341	81
Basal + 10 mg. aureomycin	4*	43.0	239.0	106.0	1.85	331	52
Basal + 10 mg. terramycin	4*	43.0	233.0	121.0	1.57	349	58
Trial No. 3—Nov. 14, 1953-March 6, 1954							
Basal	4	43.5	230.0	108.5	1.72	389	11
Basal + 10 mg. aureomycin	4	43.3	226.3	98.0	1.87	362	37
Basal + 10 mg. terramycin	4	44.0	224.8	103.3	1.75	360	87
Trial No. 4—May 15-Oct. 8, 1954							
Basal	5	31.0	228.0	122.2	1.61	320	77
Basal + 10 mg. aureomycin	5	32.4	228.6	117.0	1.68	348	100
Basal + 10 mg. terramycin	5	32.6	228.6	118.2	1.66	335	83
Summary of all trials							
Basal	18	36.4	229.8	124.5	1.55	355.0	221
Basal + 10 mg. aureomycin	17	36.9	229.3	110.9	1.73	350.9	223
Basal + 10 mg. terramycin	17	37.5	227.2	122.3	1.55	357.2	356

* 1 pig died from heat.

Table 35.—Average digestion coefficients, percent total digestible nutrients, and percent nitrogen retention with aureomycin and terramycin in swine-fattening rations using littermates.

	Number of pigs	Av. wt. into crate	Av. gain in crate	Av. percent apparent digestibility				% total dig. nutr.	% nitrogen retention
				Crude protein	Ether extract	Crude fiber	N-free extract		
Trial number 1									
Basal	4	100.0	7.2	84.3	77.8	58.3	92.6	79.8	50.0
Basal + 10 mg. aureomycin ..	4	104.0	6.2	81.8	79.7	50.0	91.4	79.4	38.6
Basal + 10 mg. terramycin ..	4	97.3	6.5	83.9	76.9	51.7	92.1	79.2	46.4
Trial number 3*									
Basal	5	122.8	7.6	77.8	78.8	56.7	90.0	77.8	37.8
Basal + 10 mg. aureomycin ..	5	118.6	7.0	81.6	82.1	52.2	91.2	79.6	38.0
Basal + 10 mg. terramycin ..	5	121.6	8.0	79.8	84.9	51.7	89.9	78.9	34.7
Trial number 4									
Basal	5	102.8	3.0	79.4	75.2	47.5	91.4	79.6	44.8
Basal + 10 mg. aureomycin ..	5	99.2	4.8	79.5	74.1	51.3	90.9	79.2	44.2
Basal + 10 mg. terramycin ..	5	99.8	3.6	78.1	70.3	41.6	90.7	78.0	43.5
Summary of all trials									
Basal	14	109.1	5.9	80.1	77.5	54.4	91.1	78.9	43.3
Basal + 10 mg. aureomycin ..	14	107.5	6.0	81.0	79.0	51.3	91.2	79.4	40.1
Basal + 10 mg. terramycin ..	14	106.9	6.0	80.3	78.4	48.9	90.7	78.7	40.1

* Metabolism studies were not conducted during Trial 2 because of heat.