

The pigs in lot 3 receiving the Vigofac and the terramycin made the next largest gains and likewise made a good showing in total feed consumption, although not quite as efficient as the pigs in lot 2.

In conclusion it may be said that when Vigofac was added to a ration of shelled corn and good mixed protein supplement to pigs on pasture, a good response was achieved. Adding, in addition, terramycin antibiotic did not improve the gains or feed conversion factor. Antibiotic alone in this test of pasture-fed pigs did not improve the gains or feed consumption of the pigs over that where no antibiotic was fed.

**The Value of Furazolidone Nf-180 and Terramycin Bi-Con TM 10 Antibiotic in the Rations of Fattening Pigs on Alfalfa Pasture (Project 110, Test 1).**

C. E. Aubel

One of the most critical problems of the swine industry is disease. Antibiotics have been demonstrated to be effective in keeping some diseases at a low level. The nitrofurans have shown good results for certain specific diseases in poultry. Their effect in swine feeding is little known, for few experiments have been carried on feeding them to swine.

This experiment was initiated to study the effect of Furazolidone Nf-180 in rations for growing and fattening swine.

In this test four lots of fall pigs were self-fed free choice a basal ration of shelled corn and a mixed protein supplement on alfalfa pasture. The mixed protein supplement was made up of 4 parts tankage, 4 parts soybean meal, 1 part linseed meal, and 1 part alfalfa meal.

Lot 1 pigs received no nitrofurans. They were self-fed the basal ration, a mixed protein supplement, and shelled corn.

Lot 2 pigs received shelled corn and a mixed protein supplement to which had been added Nf-180 at the rate of 2 1/4 pounds per ton. This supplied it to the pig at the rate of about 25 gms. per ton of total feed.

Lot 3 pigs received the same feed ration as did those in lot 2 except that they also received Bi-Con TM-10 at the rate of 4 1/2 pounds to a ton.

Lot 4 pigs received shelled corn and a mixed protein supplement to which had been added Bi-Con TM-10 at the rate of 4 1/2 pounds to a ton.

Table 2 gives the results of this experiment.

Acknowledgment is made to Hess & Clark, Inc., Ashland, Ohio, for supplying the Furazolidone Nf-180 for this experiment, and to Chas. Pfizer & Co., Terre Haute, Ind., for the Terramycin Bi<sub>12</sub> supplement, Bi-Con TM-10.

Table 2

**The Value of Furazolidone Nf-180 and Terramycin Bi-Con TM-10 Antibiotic in the Rations of Fattening Pigs on Alfalfa Pasture.**

June 9, 1957, to September 17, 1957—100 days.

Basal ration fed: Shelled corn, mixed protein supplement, on pasture .....	Basal + Nf-180 at 25 gms. per ton level;			
	Basal	Basal + Nf-180 at 25 gms. per ton level	Basal + Nf-180 at 25 gms. per ton level; Bi-Con TM-10, 4 1/2 lbs. per ton	Basal + Bi-Con TM-10 at 4 1/2 lbs. per ton
Lot number .....	1	2	3	4
Number pigs in lot .....	10	10	10	10
Av. initial wt. per pig, lbs. ....	60.20	60.30	60.40	60.30
Av. final wt. per pig, lbs. ....	181.00	188.70	187.20	180.50
Av. total gain per pig, lbs. ....	119.80	128.40	126.80	120.20
Av. daily gain per pig, lbs. ....	1.19	1.28	1.26	1.20
Av. daily ration per pig, lbs.:				
Shelled corn .....	3.85	3.87	4.17	3.87
Protein supplement .....	.37	.38	.35	.30
Lbs. feed per 100 lbs. gain per pig:				
Shelled corn .....	321.70	311.79	345.54	322.79
Protein supplement .....	30.96	30.17	28.22	24.45

Observations

In this experiment the pigs that received the Furazolidone Nf-180 supplement made faster gains than the pigs receiving no drug or those receiving Terramycin Bi<sub>12</sub> antibiotic. The lot receiving the drug, and in addition receiving Terramycin as in lot 3, made for practical purposes about the same gain as the pigs that received the drug alone. In feed consumption, the pigs in lot 2 that received the drug alone utilized less corn per 100 pounds gain than the pigs in any of the other lots, but the pigs in lot 3 receiving the drug and the antibiotic for some reason or other utilized more corn per 100 pounds gain, although not quite so much protein supplement. The pigs in lot 4 receiving the antibiotic utilized about the same gain per 100 pounds gain as the pigs in the lot receiving no drug or antibiotic.

In conclusion it may be said that the pigs in lot 2, receiving the Nf-180, made the best showing of all the lots in this test with larger daily gains and less total feed consumption. The pigs in lot 3 receiving the drug and antibiotic required more feed than any of the other pigs in the experiment but made comparable daily gains with lot 2. The reason for this has not been determined, but two pigs in lot 3 did not do well and were scarcely up to the average of the rest in the lot. This may be the reason.

**The Comparative Value of Corn, Open-pollinated Grain Sorghum, and Hybrid Grain Sorghum as Fattening Feeds to Fall Pigs in the Dry-Lot (Project 110-4).**

C. E. Aubel

In many parts of Kansas sorghum grains are grown extensively. In previous feeding tests with hogs at this station, some sorghum grains gave excellent results compared with corn. In 1950 Westland milo and Midland milo gave 12 percent greater daily gains than did corn. The economy in feed per 100 pounds gain was about 5 percent better from sorghum grain than from corn. Because corn has been more difficult to produce in Kansas, while sorghum grains, especially hybrids, have increased in popularity, it was thought advisable to get results from a 1958 experiment that compared corn with both open-pollinated and hybrid sorghum grain, with the sorghum grains prepared for feeding in different ways.

Five lots of pigs were self-fed free-choice in dry-lot. All lots received a mixed animal and plant protein supplement of 4 parts tankage, 4 parts soybean meal, 1 part linseed meal, and 1 part alfalfa meal. The open-pollinated sorghum was the Plainsman variety, of excellent quality, being especially high in protein. The hybrid sorghum was Farmer's Union 222 and was somewhat high in moisture.

Table 3 gives the chemical analysis of the feeds used in this experiment.

Table 3

	Protein (Nx6.25)	Ether extract	Crude fiber	Mois- ture	Ash	N-free extract	Carbo- hydrates
Sorghums:							
F.U. 222 .....	6.63	2.43	1.63	15.68	1.24	72.39	74.02
Open- pollinated ..	13.81	2.89	1.52	12.45	1.50	67.83	69.35
Corn (yellow) ....	9.75	3.51	1.98	14.78	1.35	68.63	70.61
Protein supplement, 4-4-1-1 .....	45.88	4.04	6.33	7.84	11.34	24.57	30.90

In this experiment lot 1 received, with the protein supplement, whole hybrid sorghum grain. Lot 2 received rolled hybrid sorghum grain, lot 3 whole open-pollinated sorghum grain, lot 4 rolled open-pollinated sorghum grain, and lot 5 shelled corn.

Table 4 gives the results of this experiment.

**Table 4**  
**The Comparative Value of Corn, Open-pollinated Sorghum, and Hybrid Sorghum as Swine-fattening Feeds.**

December 2, 1957, to March 20, 1958—107 days.

Ration fed .....	Whole hybrid sorghum, protein-mixed supplement	Rolled hybrid sorghum, protein-mixed supplement	Whole open-pollinated sorghum, protein-mixed supplement	Rolled open-pollinated sorghum, protein-mixed supplement	Shelled corn, protein-mixed supplement
Lot number .....	1	2	3	4	5
Number of pigs per lot	8	8	8	8	8
Av. initial wt. per pig, lbs. ....	52.40	52.60	52.50	52.40	52.80
Av. final wt. per pig, lbs. ....	176.22	180.41	198.62	199.42	175.43
Av. total gain per pig, lbs. ....	123.82	127.80	146.12	147.02	122.63
Av. daily gain per pig, lbs. ....	1.15	1.19	1.36	1.37	1.14
Av. daily ration per pig, lbs.:					
Grain .....	4.13	4.03	4.71	4.85	4.15
Protein supplement ..	.54	.54	.56	.53	.55
Av. lbs. feed per cwt. gain per pig:					
Grain .....	357.37	337.44	345.60	353.69	362.88
Protein supplement ..	48.05	45.48	41.14	39.19	48.51

**Observations**

Pigs in lots 3 and 4, those that received the open-pollinated sorghum, made the largest daily gains, 1.36 and 1.37 pounds, respectively. They also ate more feed per day. The amount of feed per 100 pounds gain was low. The sorghum fed in these lots was of excellent quality, clean, high protein and good plump grain, which probably accounts for its superiority in this experiment. The hybrid sorghum fed in lots 1 and 2 made gains a little better than the corn fed in lot 5. The hybrid sorghum was not of very good quality, was somewhat wet, and the grain was not too plump or clean.

All factors considered, the sorghums, both open-pollinated and hybrid, showed up well. This is consistent with other experiments where sorghum has been superior to corn for fattening hogs.

**The Value of the Antibiotic B<sub>12</sub> Supplement Terramycin Bi-Con TM-10 Vitamin B<sub>2</sub> Premix (Fortafeed 2-49-C), and Aureomycin B<sub>12</sub> Supplement Aurofac 2A in the Protein Supplement for Fattening Spring Pigs in the Dry-Lot in Summer (Project 110, Test 3).**

**C. E. Abel**

In 1956-57 experiments with swine were designed to secure information on the maximum use of alfalfa meal in protein supplemental mixtures as a dry-lot substitute for pasture, since pastures for swine in Kansas are often poor, inadequate, or unavailable. The pigs in these tests received, with their grain, mixed protein supplements which contained varying quantities of alfalfa meal. The mixed protein supplement that gave best results for the two years tested was one of 4 parts tankage, 4 parts soybean meal, and 3 parts alfalfa meal.

From time to time there come on the market new substances, chemical

Acknowledgment is made to Chas. Pfizer & Co., Inc., Terre Haute, Ind., for supplying the Terramycin B<sub>12</sub> Supplement, Bi-Con TM-10, for this experiment; and to the American Cyanamid Co., Lederle Laboratories Division, New York, for the Fortafeed 2-49-C and the Aurofac 2A.

and otherwise, that, added to a ration, increase gains and feed efficiency. To the efficient protein supplement of the two years preceding, antibiotics and a vitamin B<sub>2</sub> premix were added to see if the 4 parts tankage, 4 parts soybean meal, and 3 parts alfalfa meal protein mixture would then produce more efficient gains.

In this test four lots of pigs were self-fed shelled corn and a mixed protein supplement. Each lot contained 10 pigs.

Lot 1 pigs were placed on alfalfa pasture and self-fed a protein supplement made up of 4 parts tankage, 4 parts soybean meal, 1 part cottonseed meal, and 1 part alfalfa meal.

Lot 2 pigs were treated exactly as those in lot 1, except that 4 ½ pounds of the antibiotic Terramycin Bi-Con TM-10 was added to each ton of the supplement.

Lot 3 pigs were fed in the dry-lot and received a mixed protein supplement of 4 parts tankage, 4 parts soybean meal, and 3 parts alfalfa meal.

Lot 4 was fed in the dry-lot and received the same protein supplement as lot 3 with 15 pounds of aureomycin B<sub>12</sub> (Aurofac 2A) and 15 pounds of Fortafeed 2-49-C, a vitamin premix added per ton of protein mixture.

Table 5 gives the results of this experiment.

**Table 5**

**The Value of Antibiotic Terramycin (Bi-Con TM-10), Vitamin B<sub>2</sub> Premix (Fortafeed 2-49-C) and Aureomycin B<sub>12</sub> Supplement (Aurofac 2A) in the Protein Supplement for Fattening Spring Pigs in the Dry-Lot in Summer.**

June 9, 1957, to September 17, 1957—100 days.

Lot number .....	Shelled corn, mixed protein supplement: 4 parts tankage, 4 parts soybean, 1 part cottonseed meal, 1 part alfalfa meal —alfalfa pasture		Shelled corn, mixed protein supplement: 4 parts tankage, 4 parts soybean meal, 3 parts alfalfa meal —in dry-lot	
	1	2	3	4
Number pigs in lot .....	10	10	8	10
Av. initial wt. per pig, lbs. ....	60.20	60.30	59.60	59.10
Av. final wt. per pig, lbs. ....	181.00	180.50	214.80	209.00
Av. total gain per pig, lbs. ....	119.80	120.20	155.20	149.90
Av. daily gain per pig, lbs. ....	1.19	1.20	1.55	1.49
Av. daily ration per pig, lbs:				
Shelled corn .....	3.85	3.87	4.51	4.56
Protein supplement .....	.37	.30	.54	.59
Lbs. feed per cwt. gain per pig:				
Shelled corn .....	321.70	322.79	290.35	304.20
Protein supplement .....	30.96	24.45	44.10	39.75

**Observations**

In this experiment the pigs in lots 1 and 2 fed on alfalfa pasture made almost exactly the same daily gains, 1.19 and 1.20 pounds each, respectively. The pigs in lot 3 and lot 4 fed in the dry-lot made larger gains and used less feed per 100 pounds gain than the pasture-fed pigs. In lot 3 the pigs were fed only the protein supplement, 4 parts tankage, 4 parts soybean meal, and 3 parts alfalfa meal, yet produced the largest gain of the lots. When supplements of Fortafeed 2-49-C and vitamin B<sub>2</sub> premix and an antibiotic aureomycin were fed in lot 4, the gains were not quite so good and neither was the feed conversion so efficient, yet it was satisfactory.

The pasture for the pigs in this experiment was not too good, which probably explains to some extent the poor showing of the pasture-fed lots 1 and 2.