

Swine

The Comparative Value of Hand-watering Versus Self-watering Fattening Pigs on Sudangrass Pasture (Project 110, Test 1).

C. E. Aubel

This experiment to compare two methods of watering pigs was conducted in the summer of 1956 with spring pigs on pasture.

Two lots of 10 pigs each were fed shelled corn and a mixed animal and plant protein supplement of 4 parts tankage, 4 parts soybean meal, 1 part linseed meal, and 1 part alfalfa meal. Both lots were self-fed, free-choice, on sudangrass pasture.

The lots were on low ground; the sudangrass was of fairly good quality and sufficiently abundant for about 60 days. After that, because of the continued hot, dry weather, the pasture was scarcely more than would be ordinarily found in dry-lot feeding.

The hand-watered pigs were supplied water in a large, deep V-shaped trough. It was cleaned each day and fresh water put into it each morning, and as often through the day as was necessary to keep water before the pigs all the time. The trough had wooden strips placed over the top at about one-foot intervals to prevent the pigs from lying in the water.

The self-watered pigs got water from a well-filled barrel to which was attached a one-cup, self-watering device. Water was released into the cup by pressure of a pig's nose.

Table 2 gives the results of this experiment.

Observations

There was little difference in the performance and behavior of the pigs watered by the two methods. The daily gains were only slightly greater in the self-watered group. The hand-watered group produced gains a little more efficiently than the self-watered pigs. The differences were small, about 3.5 percent.

It may be concluded from this experiment that if fattening pigs have free access to water, it will make little difference what method is used to supply it.

Table 1

Hand-watering versus Self-watering Fattening Pigs on Sudangrass Pasture. June 13, 1956, to September 11, 1956—98 days.

Ration fed	Hand-watered	Self-watered
Lot number	1	2
Number of pigs in lot	10	10
Av. initial wt. per pig	56.90	57.40
Av. final wt. per pig	201.70	206.30
Av. total gain per pig	144.80	148.90
Av. daily gain per pig	1.47	1.51
Av. daily gain per pig, lbs.:		
Shelled corn	4.36	4.60
Protein supplement	.69	.69
Feed per 100 lbs. gain per pig, lbs.:		
Shelled corn	295.37	302.95
Protein supplement	46.96	45.60

(2)

Free-choice Feeding of Shelled Corn and a Mixed Protein Supplement Compared with Feeding Completely Mixed Rations in Pelleted and Non-pelleted Forms to Pigs on Sudangrass Pasture (Project 110, Test 2).

C. E. Aubel

In 1956 results of tests were presented to show what happened in winter dry-lot feeding of fattening pigs when fed free-choice and when fed a completely mixed ration. To follow this study on the best way to feed corn to growing-fattening pigs (shelled and fed free-choice with a good mixed protein supplement or fed in completely mixed rations as meal or in pellet form), three lots of pigs each were fed on sudangrass in the summer of 1956.

The lot 1 pigs were fed, free-choice, shelled corn and a mixed protein supplement of 4 parts tankage, 4 parts soybean meal, 1 part linseed meal, and 1 part alfalfa meal. The supplement's crude protein percentage was 46. Lot 2 pigs were fed pellets of corn ground with the same protein supplement mixed 6 parts corn to 1 part supplement. This mixture had a protein percentage of 15 1/2 percent. It was fed from 57 pounds, the pigs' starting weight, to 125 pounds. At 125 pounds the ratio of corn to protein was changed to 9 to 1, and fed pelleted to 225 pounds finish weight. The 9 to 1 pellets had a protein percentage of 14.69.

Lot 3 pigs were fed the same feeds and to the same weights as the lot 2 pigs, except that they got complete feed mixtures instead of pellets.

No antibiotic was fed in any of the lots.

Table 2 gives the results.

Table 2

Free-choice Feeding of Shelled Corn and a Mixed Protein Supplement Compared with Feeding Completely Mixed Rations in Pelleted and Non-pelleted Forms to Pigs on Sudangrass Pasture.

June 13, 1956, to September 19, 1956—98 days.

Ration fed on sudangrass pasture	Shelled corn, protein supplement	Pellets (complete mixture corn and protein supplements)	Nonpellets (complete mixture corn and protein supplements)
Lot number	1	2	3
Number pigs in lot	10	10	10
Av. initial wt. per pig, lbs.	57.40	57.40	57.30
Av. final wt. per pig, lbs.	206.30	224.00	224.10
Av. total gain per pig, lbs.	148.90	166.60	166.80
Avv. daily gain per pig, lbs.	1.51	1.70	1.70
Av. daily ration per pig, lbs.:			
Shelled corn	4.60	.....	.....
Protein supplement	.69	.....	.....
Pellets	.....	5.60	5.88
Lbs. feed per 100 lbs. gain per pig:			
Shelled corn	302.95	.....	.....
Protein supplement	45.60	.....	.....
Complete mixture	.....	.....	345.68
Pellets	.....	329.53	.....

Observations

1. The daily feed consumption of the pigs fed free-choice was .31 pound less than that of those fed pellets and .59 pound less than that of those fed the mixture.

2. The pigs fed the pellets and the complete mixture gained .19 of a pound more each day than the free-choice fed pigs.

3. The free-choice fed pigs required 19 pounds more total feed than the pigs fed pellets and 2.9 pounds more than the pigs fed the complete mixture.

4. In this experiment complete mixtures of corn and protein supplement

(3)

both pelleted and unpelleted increased the daily rate of gain and reduced the feed consumed per 100 pounds gain.

5. Grinding, mixing, and pelleting costs were not computed but should be considered when applying these results.

The Value of Antibiotics, Aureomycin B₁₂ Supplement (Aurofac 2A) and Vitamin B₁₂ Premix (Fortafeed 2-49-C) in the Protein Supplement for Fattening Spring Pigs in the Dry Lot in Summer (Project 110, Test 3).

C. E. Aubel

In 1955-56 experiments were designed with swine to secure information on the maximum use of alfalfa meal in protein supplemental mixtures as a substitute for pasture in the dry lot, 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 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 B₁₂ 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 sudangrass 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 was fed in dry lot and received a mixed protein supplement of 4 parts tankage, 4 parts soybean meal, and 3 parts alfalfa meal.

Lot 3 was fed in dry lot and received the same protein supplement as lot 2 except that 15 pounds of Fortafeed 2-49-C, a vitamin B₁₂ premix, was added per ton to the protein mixture.

Lot 4 was fed in dry lot, received the same protein supplement as lot 3, with 15 pounds of Aureomycin B₁₂ (Aurofac 2A) added per ton of protein mixture.

Table 1 gives the results of this experiment.

Observations

In this experiment pigs in lots 1, 2, and 3 made almost exactly the same daily gains: 1.47, 1.48, and 1.49 pounds each, respectively. Lot 4 (receiving both vitamin B₁₂ premix and Aureomycin B₁₂) gained 1.58 pounds each daily.

Somewhat less total feed was consumed by dry lot fed pigs that got increased alfalfa meal than by pigs allowed pasture (See Table 3).

The results of this experiment confirm that increased alfalfa meal in the protein supplement increases efficiency in dry-lot feeding, and the addition of an antibiotic and vitamin B₁₂ increases efficiency still further.

Table 3

The Effect of Antibiotics, Aureomycin in B₁₂ Supplement (Aurofac 2A) and Vitamin B₁₂ Premix (Fortafeed 2-49-C) in the Protein Supplement for Fattening Swine in Dry Lot in Summer and Compared with Sudangrass Pasture Feeding.

June 13, 1956, to September 19, 1956—98 days.

Lot number	Shelled corn, sudangrass pasture Mixed protein supplement: 4 parts tankage 4 parts soybean meal 1 part cottonseed meal 1 part alfalfa meal	Shelled corn, mixed protein supplement consisting of 4 parts tankage, 4 parts soybean meal, 3 parts alfalfa meal		15 lbs. 2-49-C and 15 lbs. Aurofac 2A added per ton	
		In dry lot			
		1	2	3	4
Number pigs in lot	10	10	10	10	10
Av. initial wt. per pigs, lbs.	56.90	57.20	57.10	57.20	57.20
Av. final wt. per pig, lbs.	201.70	192.00	193.20	212.50	212.50
Av. total gain per pig, lbs.	144.80	145.80	146.10	155.30	155.30
Av. daily gain per pig, lbs.	1.47	1.48	1.49	1.58	1.58
Av. daily ration per pig, lbs.:					
Shelled corn	4.36	4.21	4.13	4.62	4.62
Protein supplement	.69	.67	.66	.60	.60
Lbs. feed per 100 lbs. gain per pig:					
Shelled corn	295.37	283.33	277.27	292.07	292.07
Protein supplement	46.96	45.06	44.81	38.24	38.24

The Value of Furazolidone nf-180 and Terramycin Antibiotic in the Rations of Fattening Pigs in the Dry Lot (Project 110, Test 4).

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 in dry lot in winter. 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 4 1/2 pounds per ton. This supplied it to the pig at the rate of about 50 gms. per ton of total feed.

Lot 3 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 pigs at the rate of about 25 gms. each per total feed.

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

(Table 4 gives the results of this experiment.)

Acknowledgement is made to Hess & Clark, Inc., Ashland, Ohio, for supplying the furazolidone nf-180 for this experiment, and to Chas. Pfizer and Co., Terre Haute, Ind., for the Terramycin-B₁₂ supplement, BI-Con TM-10.