

**Table 26**  
Summary: pellets vs. meal for growing-finishing pigs.

Preparation .....	Pellet	Meal
Rations <sup>1</sup> .....	30, 33, 36, 37, 39	31, 32, 34, 35, 40
Pens .....	1, 4, 7, 8, 12	2, 3, 5, 6, 13
No. pigs .....	67	68
Av. on-test wt., lbs. ....	72	70
Av. off-test wt., lbs. ....	228	228
Av. days on test .....	77	83
Av. daily gain, lbs. ....	2.04	1.90
Av. feed efficiency, lbs. ....	314	348

1. See Table 24.

nozzles were used to cool the pigs in hot weather. No hedding was used. Floors were scraped clean daily but not washed.

All rations were prepared in the Department of Flour and Feed Milling Industries as needed. Rations were handled in 50-pound paper bags. Basic formulae of rations fed are listed in Table 24.

Individual animals were removed from test lots as they reached approximately 230 pounds.

**Table 27**  
Summary: corn grain vs. sorghum grain for growing-finishing pigs.

Grain .....	Corn	Sorghum
Rations <sup>1</sup> .....	30, 31, 34, 36	32, 33, 35, 37
Pens .....	1, 2, 5, 7	3, 4, 6, 8
No. pigs .....	53	55
Av. on-test wt., lbs. ....	71	77
Av. off-test wt., lbs. ....	231	229
Av. days on test .....	79	78
Av. daily gain, lbs. ....	2.00	1.97
Av. feed efficiency, lbs. ....	330	333

1. See Table 24.

#### Observations

Table 25 summarizes the average performance of pigs in each experimental lot. Per ton feed costs include \$3.60 for paper bags.

Pelleted rations are compared with meal rations in Table 26. Pigs eating completely pelleted rations gained somewhat faster than those eating similar rations in meal form. Average feed efficiency also favored the completely pelleted rations. Part of the difference in feed efficiency was due to an observable but unmeasurable difference in feed wastage. Pigs eating pelleted rations wasted very little, while those eating meal rations consistently wasted an unmeasurable amount. Design and adjustment features of the feeders did not entirely prevent feed waste when meal rations were fed.

**Table 28**

Summary: mixed proteins vs. soybean oil meal protein as supplemental protein sources for growing-finishing pigs.

Preparation .....	Mixed protein	Soybean oil meal
Rations <sup>1</sup> .....	30, 31, 32, 33	34, 35, 36, 37
Pens .....	1, 2, 3, 4	5, 6, 7, 8
No. pigs .....	55	53
Av. on-test wt., lbs. ....	72	76
Av. off-test wt., lbs. ....	228	232
Av. days on test .....	80	76
Av. daily gain, lbs. ....	1.94	2.03
Av. feed efficiency, lbs. ....	342	321

1. See Table 24.

Rations built around corn grain or sorghum grain are compared in Table 27. Under conditions of this study pigs eating either corn or sorghum grain made similar average daily gains and feed efficiencies during the growing-finishing period.

Table 28 summarizes results obtained when supplemental protein came either from soybean oil meal or from a combination of soybean oil meal and animal protein sources. Differences in average daily gain and average feed efficiency are small and not significant.

#### Kansas Swine Improvement Association Testing Station

B. A. Koch and W. A. Moyer<sup>1</sup>

The seventh group of pigs tested in the Kansas Swine Testing Station completed their test during the 1961-62 winter. The Animal Husbandry Department and the Extension Service cooperate in managing and supervising the station. All expenses incurred in testing are paid by breeders or producers who have pigs tested.

Production data on boars and barrows are collected while the animals are growing from 60 to 200 pounds bodyweight. All animals receive the same pelleted ration during the growing period. Boars meeting station requirements are sold at public auction. Barrows are slaughtered in the Animal Husbandry Department's meats laboratory where carcass information is collected.

Table 29 summarizes data collected during the 1961 summer test and the 1961-62 winter test. Table 30, taken from the M.S. thesis of Mr. Ju Tung Yu, animal husbandry department graduate student, summarizes results from three years of testing. Table 31 lists the basic ration being fed to pigs during the testing period.

A serious problem during the 1961-62 winter test was stomach ulcers in a number of pigs. Stomach ulcers are a problem throughout the Midwest swine-producing area. A number of experiment stations have formal projects to study stomach ulcers of swine. The Kansas State Veterinary School is studying the problem, with Dr. Embert Coles in charge.

For further information about the swine-testing program, contact your county agent, the Kansas Swine Improvement Association, The Extension Service, or the Department of Animal Husbandry. The last three are at K-State in Manhattan.

1. Extension swine specialist.

**Table 29**  
Swine testing results (1961-62).

	BOARS	
	Summer 1961	Winter 1961-62
No. completing test .....	71 (29 herds)	49 (23 herds)
Av. daily gain, lbs. ....	1.84 (2.29-1.52)	1.77 (2.44-1.50)
Av. backfat, in. ....	1.06 (1.48-0.64)	0.99 (1.14-0.70)
Av. efficiency, lbs. ....	2.72 (3.06-2.48)	2.96 (3.24-2.41)
Av. age at 200 lbs., days .....	146 (175-120)	154 (179-122)
Cost to breeder .....	\$50.00	\$58.00
Av. sale price .....	\$189.48 (\$440-\$40)	\$199.32 (\$330-\$60)
	BARROWS	
	Summer 1961	Winter 1961-62
No. slaughtered .....	43 (29 herds)	25 (23 herds)
Av. slaughter wt., lbs. ....	196 (208-188)	191 (208-178)
Av. age at 200 lbs., days .....	165 (194-145)	174 (208-150)
Av. carcass backfat, in. ....	1.47 (1.83-1.11)	1.38 (1.70-1.05)
Av. loin eye, sq. in. ....	3.66 (5.05-2.68)	3.92 (5.12-3.25)
Av. lean cuts, % .....	50.02 (55.5-46.2)	52.2 (55.4-46.5)
U.S.D.A. No. 1 .....	34 head	23
U.S.D.A. No. 2 .....	8 head	2
U.S.D.A. No. 3 .....	1 head	0

Table 30  
Test station results (3 year summary).<sup>1</sup>

BOARS					
Breed	No.	Average daily gain, lbs.	Feed efficiency, lbs.	Age at 200 lbs.	Backfat, in.
D	56	1.92	273	149	1.19
H	68	1.79	282	152	1.08
Y	57	1.82	274	150	1.07
P	23	1.74	288	157	1.11
L	15	1.78	288	146	1.10
B	11	1.79	286	146	1.05
S	19	1.73	288	160	1.03
	249	1.82	280	151	1.10

  

BARROWS				
Breed	No.	Average carcass length, in.	Average loin cuts, %	Average loin eye area, sq. in.
D	36	28.8	47.4	3.38
H	42	29.1	49.3	3.77
Y	32	29.8	48.0	3.62
P	14	28.1	48.2	3.95
L	8	30.9	49.6	3.82
B	5	29.2	46.6	3.85
S	9	28.6	48.6	4.15
	146	29.2	48.3	3.69

<sup>1</sup> Taken from Master's thesis of Mr. Ju Tung Yu, Taipei, Taiwan, Republic of China.

Table 31  
Kansas swine testing ration (Prepared in University feed mill).

Sorghum grain	1544 lbs.
50% meat scraps	60 lbs.
44% soybean oil meal	200 lbs.
60% fishmeal	40 lbs.
17% dehydrated alfalfa meal	60 lbs.
Cane molasses	50 lbs.
Iodized salt	10 lbs.
Dicalcium phosphate	15 lbs.
Calcium carbonate	10 lbs.
Trace minerals (5% zinc)	1 lb.
B-complex vitamins (Merck 58-A)	2 lbs.
Vitamin A (10,000 I.U. per gram)	300 grams
Vitamin D (15,000 I.U. per gram)	20 grams
Vitamin E (20,000 I.U. per lb.)	1 lb.
Aurofac 1.8-1.8	6 lbs.
Arsanilic acid (Pro-gen)	1 lb.
DL-methionine	2 lbs.
Lyamine (20% lysine)	2 lbs.

Approximate analysis: 15% crude protein; 0.75% calcium; 0.62% phosphorus.

This ration is fed to boars and barrows until they weigh approximately 200 pounds. The boars are taken off test at 200 pounds and carried on a higher fiber ration (15% alfalfa) until sale time.

The barrows are taken off test at approximately 210 pounds body-weight, shrunk over night and slaughtered. Arsanilic acid is removed from the barrow ration prior to slaughter as per F.D.A. regulations.

The ration is pelleted and self-fed at all times.

# Sheep

Garden City Lamb Feeding Experiments, 1961-1962 (Project G.C. 111).

Myron Hillman, A. B. Erhart and Carl Menzies

## Lambs

The 638 white-face feeder lambs used in these tests were received October 18, 1961, at the Zuni Indian Reservation south of Gallup, N.M. Average purchase weight was 71.2 lbs. per head. They arrived in Garden City, October 20, and weighed 64.1 lbs. per head off the cars.

## General Procedure

Beginning October 21, half the lambs were given Aureomycin<sup>1</sup> in their drinking water at 35 mgs. per head daily and compared with the other half that received no antibiotic until November 14, when both groups went on experimental feeds.

During the pre-test period the lambs were fed dry sudan hay and chopped forage sorghums the first 10 days and sudan hay plus sorghum silage the next 14 days. The lambs gained approximately what they had shrunk during shipment.

Lambs in lot 1 were self-fed a complete pelleted ration of 35% sorghum grain and 65% alfalfa hay. A mixed self-fed ration consisting of a whole sorghum grain and dehydrated alfalfa pellets was fed to lot 7. A ratio of 25% grain and 75% alfalfa pellets was fed at the start of the test. The grain was gradually increased over 50 days until a ratio of 45% grain and 55% alfalfa pellets was reached. Alfalfa straw was supplied free choice to lots 1 and 7.

Comparisons of whole sorghum grain, whole barley, ground pelleted sorghum grain, ground pelleted barley, a mixture of ½ whole sorghum grain and ½ whole barley and a mixture of ground pelleted ½ barley and ½ sorghum grain were made among lots 2, 3, 4, 5, 6 and 8. All these lambs were fed forage sorghum silage (all they would clean up), approximately ¾ lb. of alfalfa hay per head per day, and 1/10 lb. cottonseed meal.

Lot 9 was fed whole sorghum grain and alfalfa hay with no additional supplement.

Lambs in lot 10 were fed the standard ration minus the cottonseed meal; lot 11 was fed the standard ration minus the alfalfa hay. An additional 1/10 pound of protein supplement plus ground limestone was given to lot 11.

Lambs in lot 12 were grazed on volunteer wheat pasture. All lambs were implanted with 3 mgs. stilbestrol<sup>2</sup> at the start of the test.

## Feed Prices

Complete pellet (35% grain, 65% hay)	\$36.25 per ton
Dehydrated alfalfa pellets	40.00 per ton
Alfalfa hay	20.00 per ton
Alfalfa straw	5.00 per ton
Sorghum silage	7.00 per ton
Cottonseed meal	74.00 per ton
Sorghum grain	1.75 per cwt.
Barley grain	1.75 per cwt.
Pelleting grain	8.00 per ton
Mixing grain	.10 per cwt.
Grinding grain	.15 per cwt.
Pelleting	.30 per cwt.
Salt	1.50 per cwt.
Wheat pasture	.01 per head per day

<sup>1</sup> Water-soluble Aureomycin powder furnished by American Cyanamid Co.  
<sup>2</sup> Furnished by Chas. Pfizer & Co., Inc., Terre Haute, Ind.