

AGRICULTURAL EXPERIMENT STATION

KANSAS STATE AGRICULTURAL COLLEGE
MANHATTAN, KANSAS

DEPARTMENT OF ANIMAL HUSBANDRY



HOGGING DOWN KAFIR

SWINE FEEDING INVESTIGATIONS, 1923-'24¹

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The swine feeding problems studied by the Kansas Agricultural Experiment Station during the year 1923-'24 are discussed in this circular under three heads: (1) The amount of concentrated feed required to produce a 100-pound feeder pig from a weanling on alfalfa pasture. (II) Fattening feeder pigs for market by different methods of feeding—(1) Hogging down corn and kafir at different stages of maturity, and (2) hogging down corn compared with feeding the pigs new corn in a dry lot. (III) The value of exercise for brood sows.

In all the tests individual weights were used in order that a defi-

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nite check could be made on the thrift and gain of each pig in each test. The pigs were weighed on three successive days at the beginning and end of the test. The average of these three weights at the beginning and at the end of the test were used as the initial and final weights, respectively.

I. THE AMOUNT OF CONCENTRATED FEED REQUIRED TO PRODUCE A 100-POUND FEEDER PIG FROM A WEANLING ON ALFALFA PASTURE

This test was started June 15, 1923, when 45 weanling pigs, some from early litters, others from later litters, varying in weight from 41.59 pounds to 53.11 pounds per pig, were put on alfalfa pasture and fed a grain ration consisting of one pound of shelled corn per pig per day in addition to alfalfa pasture. The pigs were handled in this way until the first of August, when the ration was increased to one and one-half pounds of shelled corn to which was added one-quarter of a pound of tankage per head per day. The results secured are given in detail in Table I.

TABLE I.—Results of a feeding test showing the amount of concentrated feed that is required to produce a 100-pound feeder pig from a weanling on alfalfa pasture

Lot No.	3	4	5	6	7
Number of days on test.....	90	90	120	120	120
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Av. weight per pig at weaning time when test started.....	53.11	51.45	43.11	41.59	44.26
Av. final weight per pig.....	105.89	105.89	102.33	102.33	102.45
Av. daily gain per pig.....	.59	.61	.49	.51	.48
Av. daily ration per pig:					
Corn.....	1.40	1.40	1.43	1.43	1.43
Tankage.....	.11	.11	.15	.15	.15
Concentrates fed after weaning to produce a 100-pound feeder pig on alfalfa pasture:					
Corn.....	126.00	126.00	171.00	171.00	171.00
Tankage.....	9.9	9.9	18.00	18.00	18.00

OBSRVATIONS

It was possible by handling the alfalfa pasture as a forage crop, supplemented by a small allowance of grain, to get full value from the alfalfa, reduce labor to a minimum, and get an average daily gain of from 0.48 to 0.61 of a pound, the larger pigs making the largest daily gain.

In the case of the heavier pigs, 126 pounds of shelled corn and 9.9 pounds of tankage and in the case of the younger pigs, 171 pounds of shelled corn and 18 pounds of tankage were required to produce a 100-pound feeder pig from a weanling.

II. FATTENING FEEDER PIGS FOR MARKET BY DIFFERENT METHODS OF FEEDING

1. Hogging Down Corn and Kafir at Different Stages of Maturity

After having grown 100-pound feeder pigs, hog raisers are interested in the most economical way of finishing them for market. Two different methods were used in finishing these hogs. At the end of 90 days lots 3 and 4 (Table I) were each placed in an acre of corn and kafir, respectively, to determine the comparative value of corn and kafir for hogging down purposes. A quarter of a pound of tankage per head was hand-fed daily. Thirty days later lots 5 and 6 (Table I) were each put into a lot of an acre of corn and kafir, respectively, and fed the same amount of protein supplement. The results are given in Table II.

TABLE II.—Results of hogging-down corn and kafir at different stages of maturity

Lot No.	GROUP I. Sept. 13 to Oct. 23.		GROUP II. Oct. 13 to Nov. 23.	
	3	4	5	6
Kind of feed	Corn.	Kafir.	Corn.	Kafir.
Average initial weight per pig	<i>Pounds.</i> 105.89	<i>Pounds.</i> 105.89	<i>Pounds.</i> 102.33	<i>Pounds.</i> 102.33
Average final weight per pig	170.90	161.89	165.11	150.22
Average total gain per pig	65.01	56.00	62.78	47.89
Average daily gain per pig	1.63	1.40	1.53	1.17
Calculated daily consumption and waste per pig:				
Kafir		8.46		8.30
Corn	7.59		7.45	
Tankage28	.28	.27	.27
Feed consumed or wasted per 100 pounds gain:				
Kafir		604.56		710.67
Corn	467.18		488.50	
Tankage	17.09	19.84	17.70	23.20

OBSERVATIONS

Group I, the pigs hogging down corn or kafir from September 13 to October 23, made a larger average daily gain than the pigs in Group II, hogging down corn or kafir from October 13 to November 23. The pigs in Group I required less corn or kafir to produce 100 pounds gain than did those in Group II.

Corn was superior to kafir for hogging down purposes in both groups. It required 2.28 bushels more kafir in Group I and 3.7 bushels more kafir in Group II to produce 100 pounds gain than in the corn lots of each group.

2. Hogging Down Versus Dry-lot Feeding

In order to make a comparison of dry-lot feeding and hogging down, another group was self-fed corn and hand-fed tankage. A comparison of a 30- and a 60-day period self-fed in a dry lot to a 40-day period hogging down is shown in Table III.

TABLE III.—Results of hogging down versus dry-lot feeding

Lot No.	5	7	7
Number of days on feed.....	40	30	60
Method of feeding.....	Hogging down.	Self-fed, dry lot.	Self-fed, dry lot.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Average initial weight per pig.....	102.33	102.45	102.45
Average final weight per pig.....	165.11	170.33	230.87
Average total gain per pig.....	62.78	67.88	128.22
Average daily gain per pig.....	1.53	2.226	2.14
Calculated daily consumption and waste:			
Corn.....	7.48	6.24	7.93
Tankage.....	.27	.28	.28
Feed consumed and wasted per 100 pounds gain:			
Corn.....	488.50	275.78	371.06
Tankage.....	17.70	12.28	13.00

OBSERVATIONS

Dry-lot feeding produced larger daily gains on less feed and in less time. It required 212.72 pounds (3.78 bushels) less corn and 5.42 pounds less tankage to produce 100 pounds of gain where self-fed in dry lot for 30 days than where hogged down for 40 days; and 117.44 pounds (2.09 bushels) less corn and 4.70 pounds less tankage where self-fed for 60 days than where hogged down 40 days.

These results are not in keeping with results secured at other agricultural experiment stations, but fall weather conditions in this locality are undoubtedly responsible for the differences. During the period when the pigs were in the corn and kafir lots there was a total rainfall of 4.17 inches, 1.61 inches of which came within the first four days of the second period with practically no freezing; the lowest maximum temperature for this period being 43 degrees and the lowest minimum temperature 26 degrees. These results indicate that when the fall season is wet and open, as it often is in this section of the country, hogging down of either corn or kafir is a wasteful practice and is really an expensive way of feeding hogs.

III. THE VALUE OF EXERCISE FOR BROOD SOWS

During the winter of 1922-'23 a test was carried on with spring gilts to determine the effect of exercise upon reproduction.

FEEDING PLAN

Lot 1 was given a large yard in which to exercise and was fed corn alone. Lot 2 was given a large yard and had the same chance to exercise as Lot 1 but was fed tankage in addition to the corn. Lots 3 and 4 were confined to small pens eight feet long by six feet, wide and were kept in these pens at all times except once a month when they were driven to the scales to be weighed. Lot 3 was fed corn alone and lot 4 was fed corn and tankage. Liberal quantities of earth taken from lots 1 and 2 were put in lots 3 and 4, respectively, so that the sows in lots 3 and 4 would have a chance to obtain from the soil anything that the sows having access to an outside lot would get. No vegetation was allowed to grow in the yards of lots 1 and 2. There were two sows in each lot. These sows were about 8 months old at the time the experiment was started, and up to that time had been running on alfalfa pasture and receiving an optimum ration. They were all bred December, 1922, to the same boar which was not in the experiment. All sows were fed the same quantity of corn from the start of the test until farrowing time.

OBSERVATIONS

From breeding until farrowing time very little differences developed among the sows except that those receiving tankage made greater gains than those receiving corn alone, and those sows that had an opportunity to exercise were smoother in hair coats than those not getting exercise. The appetite in all lots remained good and no difficulties resulted from any sows going off feed. The average birth weight of pigs from the various lots is shown in Table IV.

TABLE IV.—Average birth weight of pigs from the various lots

Lot No.	Ration.	Exercise.	Average weight per pig at birth.
1.....	Corn alone.....	Exercise.....	1.97 pounds
2.....	Corn, tankage.....	Exercise.....	2.07 pounds
3.....	Corn alone.....	No exercise.....	1.97 pounds
4.....	Corn, tankage.....	No exercise.....	1.90 pounds

All pigs farrowed, both, dead and alive, were weighed and included in the average weight. These weights might indicate that there was little difference in the lots with the exception of lot 2 in

which the pigs were heavier than in any other lot. This was not the case, however. The sows in lot 3, getting no exercise, farrowed pigs that were listless and inactive. Several pigs were born dead in this lot and some of these pigs were underdeveloped and had little hair. The sows receiving tankage, on the other hand, farrowed pigs that were strong and active in both the exercise and nonexercise lots.

The average weights of the pigs at one month of age when it became necessary to close the experiment officially are shown in Table V.

TABLE V.—Average weight of the pigs in the various lots at one month of age

Lot No.	Ration.	Exercise.	Average weight of pig at 1 month of age.
1	Corn alone	Exercise	11.75 pounds
2	Corn, tankage	Exercise	14.08 pounds
3	Corn alone	No exercise	7.67 pounds
4	Corn, tankage	No exercise	11.84 pounds

These weights show that the pigs in lot 1 developed more rapidly than those in lot 3 yet the dams of each group were fed the same ration, corn alone, the only difference being that the dams in lot 1 had exercise before and after farrowing while those in lot 3 did not.

The pigs in lot 2 whose dams received corn and tankage with exercise developed more rapidly than the pigs in lot 4 whose dams also received corn and tankage but no exercise.

The fact is significant that in each case where the rations were the same the pigs whose dams had exercise gained more rapidly and showed decidedly more thrift than the pigs whose dams did not have exercise.

The fact that pigs out of sows maintained on corn alone, a ration deficient in protein, with exercise, developed nearly as rapidly as the pigs from sows receiving corn and tankage but no exercise, is also a striking indication of the value of exercise for brood sows.

While no definite conclusions can be made from this one test, the results indicate that exercise and a protein supplement are very important essentials in brood sow rations and management during pregnancy. Brood sows can be required to take exercise by feeding some distance away from the sleeping quarters and this fact should not be overlooked in caring for the breeding herd during the winter if good strong litters are to be expected at farrowing time.