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KANSAS STATE AGRICULTURAL COLLEGE
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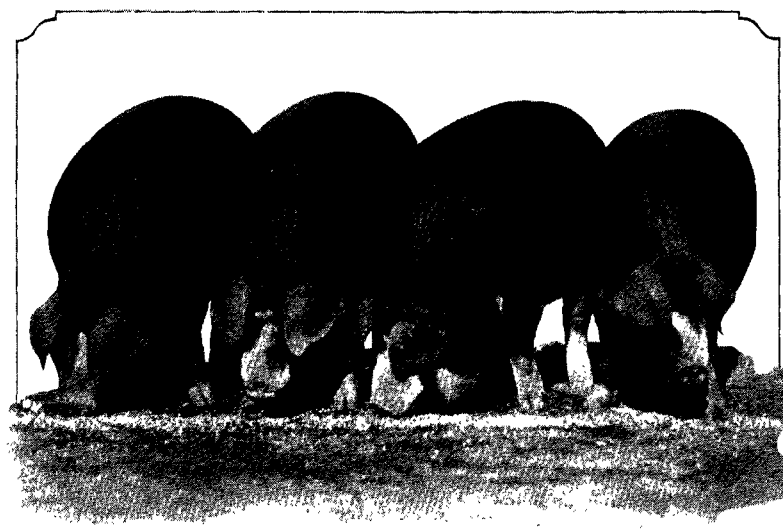
DEPARTMENT OF ANIMAL HUSBANDRY



KANSAS FUTURITY WINNERS, 1922

SWINE FEEDING INVESTIGATIONS, 1922-'23[1]

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Three pig-feeding problems studied by the Kansas Agricultural Experiment Station during the year 1922-'23 are discussed in this circular: (I) The value of adding tankage to a full feed of corn fed to spring pigs on alfalfa pasture. (II) The relative value of alfalfa and Sudan grass pastures for spring pigs on a full feed of grain. (III) The value of a concrete feeding floor for summer feeding of pigs on pasture.

In all the tests individual weights were used in order that a definite check could be made on the thrift and gain of each pig in each test. In no case was there an unusually large or an unusually small

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gain made by an individual pig. There was also very little variation in individual gains in the different groups, indicating that the differences noted among the different groups were due to different feeds or methods of feeding.

The pigs were weighed at the same hour on three successive days at the beginning and end of the test. The average of the three weights at the beginning was used as the initial weight in each case, and the average of the three weights at the end as the final weight. The pigs used were sorted carefully in order that each lot should be as uniform as possible in type, weight, quality, age, and breeding. Each of the three tests was started July 6,1922, and ended November 3, 1922, running for a period of 120 days.

I. THE VALUE OF ADDING TANKAGE TO A FULL FEED OF CORN FED TO SPRING PIGS ON ALFALFA PASTURE

One lot of pigs was full-fed by hand on shelled corn and allowed to run on good alfalfa pasture. A second lot was full-fed by hand on shelled corn, allowed to run on good alfalfa pasture, and also given one-fourth of a pound of tankage per head per day. Both lots were fed the shelled corn on a concrete feeding floor. The tankage was fed dry in an ordinary V-shaped trough. The results secured are given in detail in Table I.

TABLE I.—Results of a 120-day feeding test showing the value of adding tankage to a full feed of corn fed to spring pigs on alfalfa pasture.

RATION (a).	Corn and alfalfa pasture.	Corn, tankage, and alfalfa pasture.
Lot No.	1	2
Number of pigs in lot	9	10
	Pounds.	*Pounds.*
Average initial weight per pig	71.30	72.33
Average final weight per pig	159.96	222.10
Average total gain per pig	88.66	149.77
Average daily gain per pig	.74	1.25
Average daily ration per pig:		
Corn	3.29	4.19
Tankage		.25
Feed required for 100 pounds gain:		
Corn	444.86	335.32
Tankage		20.03

(a) The corn was fed on a concrete feeding floor.

OBSERVATIONS AND CONCLUSIONS

1. The pigs in lot 2, fed one-fourth of a pound of tankage per head per day in addition to a full feed of shelled corn, made an average gain of 0.51 of a pound per head per day more than the pigs in lot 1 receiving no tankage.

2. The pigs in lot 2, fed one-fourth of a pound of tankage per head per day in addition to a full feed of shelled corn, ate 0.9 of a pound more shelled corn per head per day than did the pigs in lot 1 receiving no tankage, indicating the stimulating effect of tankage upon the appetite.

3. The pigs in lot 2, fed one-fourth of a pound of tankage per head per day, required only 335.32 pounds of shelled corn and 20.03 pounds of tankage in addition to alfalfa pasture to produce 100 pounds of gain; whereas the pigs in lot 1 receiving no tankage required 444.86 pounds of corn to produce 100 pounds of gain. In other words, 20.03 pounds of tankage replaced 109.54 pounds of corn in producing 100 pounds of gain, or 1 pound of tankage replaced 5.47 pounds of corn, showing very strikingly the value of adding a small amount of tankage to a full feed of corn for pigs on alfalfa pasture.

4. The pigs in lot 2, fed one-fourth of a pound of tankage per head per day in addition to a full feed of shelled corn on alfalfa pasture, were fat, finished, and ready for the market at the end of the test (fig. 1); whereas the pigs in lot 1, receiving no tankage, were not fat enough for market. In fact it required another 45 days feeding to make the pigs in lot 1 as fat as the pigs in lot 2 were at the close of the 120-day test.

5. The pigs in lot 1, receiving no tankage, virtually destroyed by rooting the alfalfa pasture over which they grazed. The pigs in lot 2 receiving one-fourth of a pound of tankage per head per day did not injure their alfalfa pasture by rooting. (Fig. 2.)

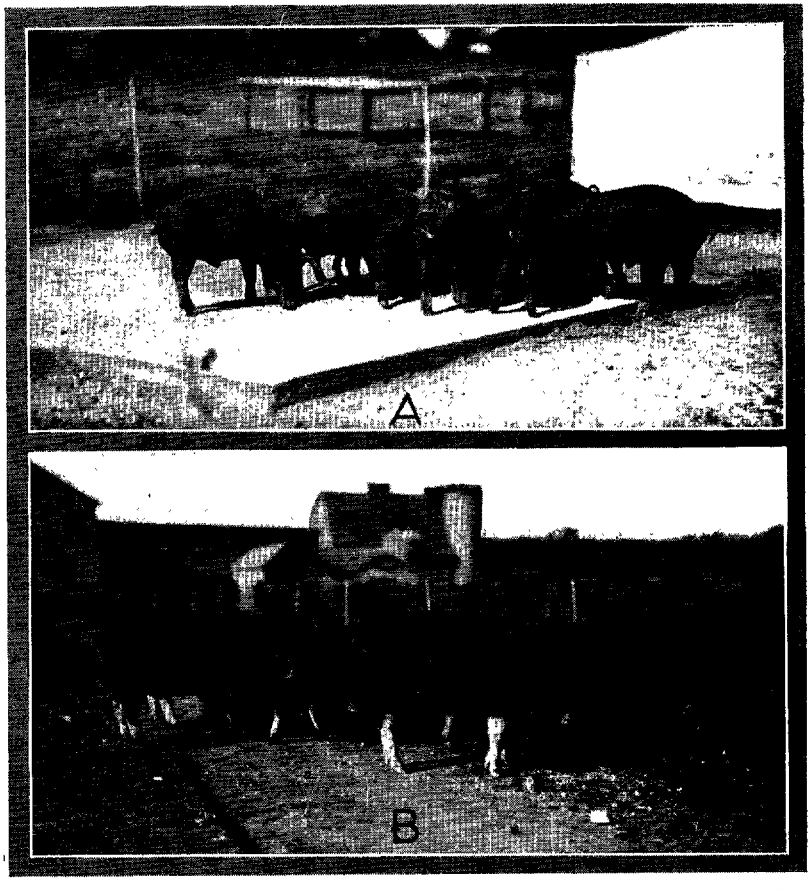

FIG. 1.—The pigs in lot 2 at the beginning of the test (A) and at its close (B).

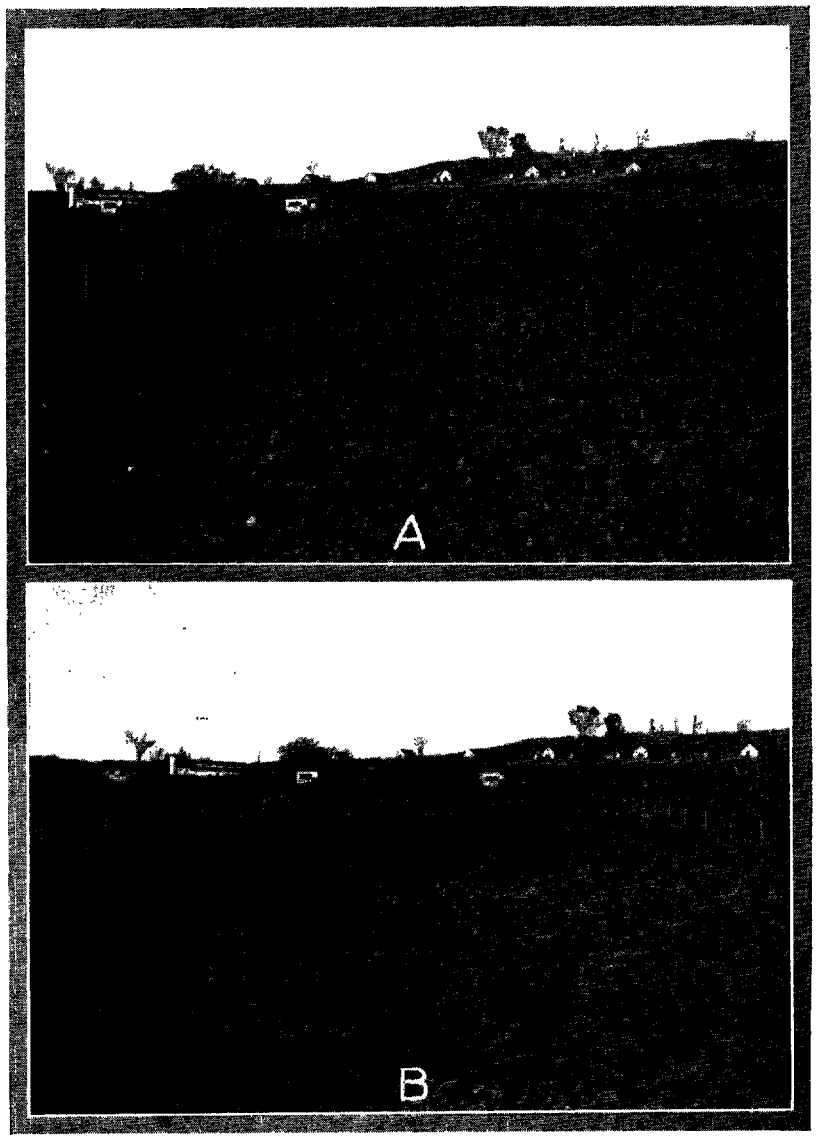

FIG. 2.—(A) The alfalfa pasture used by the pigs in lot 1, showing the uprooted condition of the field at the end of the test where no tankage was fed. (B) The alfalfa pasture used by the pigs in lot 2, fed corn and tankage. Note the smooth appearance and uninjured condition of the field.

II. THE RELATIVE VALUE OF ALFALFA AND SUDAN GRASS PASTURES FOR SPRING PIGS ON A FULL FEED OF GRAIN

The pigs in this test were full-fed by hand shelled corn and one-fourth of a pound of tankage per head per day. Lot 3, consisting of 10 pigs, were pastured on one-half acre of alfalfa, and lot 4, consisting of 10 pigs, were pastured on one-half acre of Sudan grass. The pigs in both lots were fed exactly the same amount of shelled corn and tankage. The corn was fed on the ground, on as dry and clean a spot as could be reached conveniently. The tankage was fed in a trough. Detailed results are given in Table II.

TABLE II.—Results of a 120-day feeding test showing the relative value of alfalfa and Sudan grass pastures for spring pigs.

RATION (a).	Corn, tankage, and alfalfa pasture.	Corn, tankage, and Sudan grass pasture.
Lot No.	3	4
Number of pigs in lot	10	10
	Pounds.	*Pounds.*
Average initial weight per pig	72.27	72.87
Average final weight per pig	219.63	215.83
Average total gain per pig	147.36	142.96
Average daily gain per pig	1.23	1.19
Average daily ration per pig:		
Corn	4.19	4.19
Tankage	.25	.25
Feed required for 100 pounds gain:		
Corn	340.78	351.27
Tankage	20.36	20.98

(a) The corn was fed on the ground.

OBSERVATIONSAND CONCLUSIONS

1. The pigs pastured on Sudan grass (lot 4) made almost as large daily gains as the pigs pastured on alfalfa, the gains on Sudan grass being 1.19 pounds per head per day and those on alfalfa, 1.23 pounds per head per day. It required only 10.41 pounds more corn and 0.95 of a pound more tankage to produce 100 pounds of gain on Sudan grass than on alfalfa pasture.

2. The 10 pigs on one-half acre of alfalfa pasture had plenty of pasture but not a sufficient surplus to require cutting. On the other hand, the 10 pigs on one-half acre of Sudan grass could not keep it pastured down to a reasonable length. It was necessary to cut the

Sudan grass twice between July 3 and November 3. The lower parts of the Sudan grass stalks kept green and succulent from frost until November 3 and the pigs seemed to relish them. The pigs on Sudan grass did as well during the last 30 days as those on alfalfa pasture.

3. These results indicate that for all practical purposes Sudan grass is just as efficient a pasture crop as alfalfa for fattening pigs during the summer and fall months.

III. THE VALUE OF A CONCRETE FEEDING FLOOR FOR SUMMER FEEDING OF PIGS ON PASTURE

In the two tests (I and II) previously discussed, two lots of pigs (lots 2 and 3) were each run on alfalfa pasture and fed one-fourth of a pound of tankage per head per day in addition to a full feed of shelled corn. The only difference in the management of these two lots of pigs was that lot 3 were fed corn on the ground on as dry and clean a spot as could be reached by throwing the shelled corn from the roadway along the end of the pasture, while lot 2 were fed their corn on a concrete feeding floor. The pigs in each lot were fed exactly the same amount of corn and tankage. Therefore, the comparison of the results obtained in these two lots shows the value of a concrete feeding floor under the conditions of the test. This comparison is made in Table III.

TABLE III.—Results of a 120-day feeding test showing the value of a concrete feeding floor for summer feeding of pigs on alfalfa pasture.

RATION: Corn, tankage and alfalfa pasture.	Corn fed on the ground.	Corn fed on a concrete floor.
Lot No.	3	2
Number of pigs in lot	10	10
	Pounds.	*Pounds.*
Average initial weight per pig	72.27	72.33
Average final weight per pig	219.63	222.10
Average total gain per pig	147.36	149.77
Average daily gain per pig	1.23	1.25
Average daily ration per pig:		
Corn	4.19	4.19
Tankage	.25	.25
Feed required for 100 pounds gain:		
Corn	340.78	335.32
Tankage	20.36	20.03

OBSERVATIONS AND CONCLUSIONS

The thrift, daily gains, and feed required to make 100 pounds of gain were practically the same when pigs were fed on the ground as when they were fed on a concrete feeding floor, indicating that if a bit of caution is exercised in scattering the corn a concrete feeding floor is not necessary for summer feeding of pigs under average Kansas conditions.

SUMMARY OF RESULTS

The results of the entire test are shown graphically in figure 3.

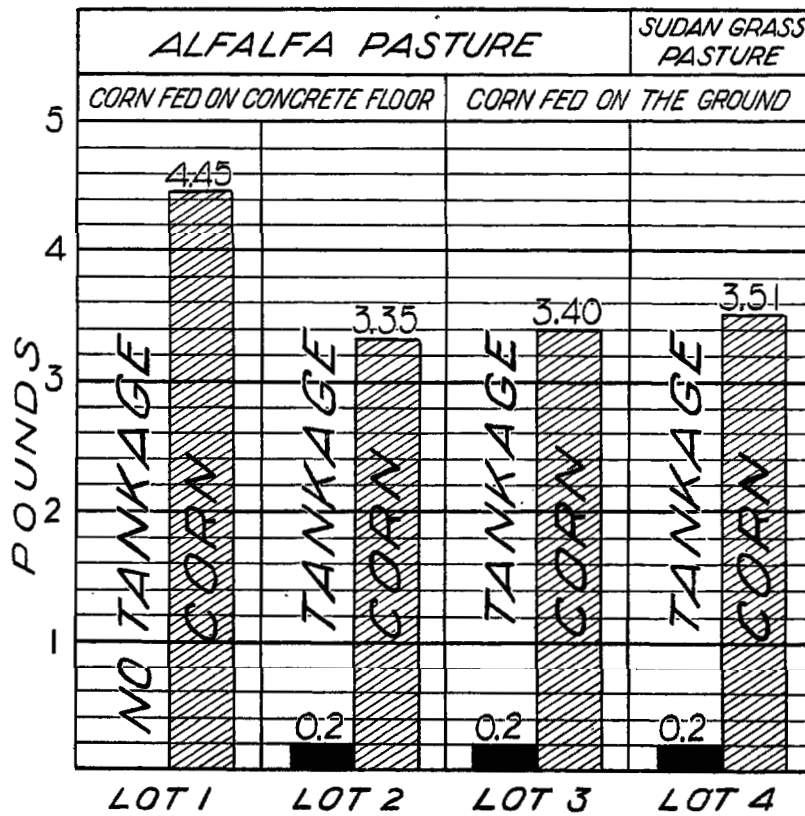

FIG. 3.—Pounds of feed required for one pound of gain when spring pigs are given a full feed of corn, a limited feed of tankage (or no tankage), and run on alfalfa or Sudan grass pasture. One pound of tankage replaced five pounds of corn in producing gain.

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