

# Kansas Agricultural Experiment Station Research Reports

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Volume 0  
Issue 10 *Swine Day (1968-2014)*

Article 70

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1971

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### Recommended Citation

Allee, G L. and Hines, Robert H. (1971) "Effect of feeding frequency on performance of growing pigs," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 10. <https://doi.org/10.4148/2378-5977.3490>

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## Effect of Feeding Frequency on Performance of Growing Pigs

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### Summary

The influence of frequency of feeding on weight gain, feed efficiency, and carcass measurements was investigated, using 48 pigs averaging 40 pounds. Differences in daily gain among pigs fed ad libitum, twice a day or once a day were not significant. However, pigs fed only once/48 hours gained significantly ( $P < .05$ ) slower than pigs on the other treatments. Pigs allowed access to feed once/24 hrs. or once/48 hrs. were more efficient ( $P < .05$ ) in feed utilization than pigs fed twice/24 hrs. or those fed ad libitum. Carcass measurements did not differ significantly among pigs fed ad libitum, twice/24 hrs., or once/24 hrs. Pigs allowed access to feed only once/48 hrs. had significantly ( $P < .05$ ) less backfat and smaller loin eye areas than pigs fed more frequently.

### Procedures

Forty-eight crossbred pigs averaging 40 pounds were allotted to the following four feeding sequences:

1. Fed ad libitum (self-feeder)
2. Allowed access to feed twice a day (8-9 AM and 4-5 PM).
3. Allowed access to feed once a day (8-10 AM).
4. Allowed access to feed once a day until they reached 100 pounds, then only once every other day (8-10 AM every other day).

From 40 to 100 pounds, pigs were fed an 18% crude protein, corn-soybean meal diet. From 100 pounds until individually removed for slaughter at 205 pounds, a 16% crude protein corn-soybean diet was fed.

### Results and Discussion

The influence of feeding frequency on performance and carcass characteristics is shown in table 17. There were no significant differences among pigs fed ad libitum, once a day, or twice a day. Pigs allowed access to feed only once every other day could not consume enough feed to gain as fast as pigs fed more frequently. Pigs allowed access to feed only once/24 hrs. or once/48 hrs. were more efficient ( $P < .05$ ) in feed utilization than those fed ad libitum or twice/24 hrs.

We previously observed that pigs fed only once a day (8-10 AM) gained at the same rate as pigs fed ad libitum while consuming only 85-90% as much feed. The mechanism responsible for the increased efficiency observed in pigs consuming a single daily meal remains to be determined.

There were no significant differences in any of the carcass measurements among pigs fed ad libitum, twice a day, or once a day. However, those fed ad libitum tended to have larger loin eye areas and a higher percentage of the carcass in lean cuts than pigs fed only once or twice per day. Pigs fed once/48 hrs. had less backfat and smaller loin eye areas than pigs fed more frequently. The smaller loin eye area in pigs fed once/48 hrs. may result from decreased nitrogen retention, which would provide less protein for lean-tissue synthesis.

Table 17. Effect of Frequency of Feeding on Performance of Growing Pigs

Feeding frequency	Ad. lib.	Twice/ 24 hrs.	Once/ 24 hrs.	Once/ 48 hrs.
Number of pigs	12	12	12	12
Avg. initial wt., lb.	40	40	40	41
Avg. final wt., lb.	209	206	207	204
Avg. daily gain, lb.	1.61 <sup>a</sup>	1.61 <sup>a</sup>	1.55 <sup>a</sup>	1.10 <sup>b</sup>
Feed/lb. gain	2.89 <sup>a</sup>	2.91 <sup>a</sup>	2.55 <sup>b</sup>	2.58 <sup>b</sup>
Backfat thickness, in.	1.06 <sup>a</sup>	1.18 <sup>a</sup>	1.07 <sup>a</sup>	0.90 <sup>b</sup>
Length, in.	30.6	30.4	30.6	30.6
Loin eye area, in. <sup>2</sup>	5.74 <sup>a</sup>	5.16	5.03 <sup>a</sup>	4.89 <sup>b</sup>
Ham & loin, %	45.44	43.13	43.80	45.34
Lean cuts, %	63.69	60.89	62.02	65.16
Specific gravity	1.0512	1.0440	1.0530	1.0481

<sup>ab</sup> Means on the same line with different superscripts differ significantly ( $P < .05$ ).