

**EFFECT OF SIRE ON FEED EFFICIENCY  
AND RATE OF GAIN OF OFFSPRING**

Feed efficiency and rate of gain are two performance traits that are very important to a swine producer. They directly affect the profitability of a swine operation, and are traits that can be improved rather rapidly by selection. Both traits have a heritability of about 30 percent and are closely correlated. That means, if the rate of gain is improved, it is likely that feed efficiency will also improve.

In any effort to improve the quality and efficiency of a herd of swine, emphasis should fall heavily on the boar because he contributes one-half of the genetic make-up of every pig he sires.

This sire selection study was undertaken to improve the overall quality of the station hog herd and to demonstrate the importance of sire selection to hog producers in western North Dakota.

In this trial three boars were selected for their overall type, meatiness, growing ability and feed efficiency. A uniform set of pigs sired by each of the chosen sires was allotted to three lots. Each lot was fed a basic barley-oats ration averaging 16 percent protein. Each lot of pigs was weighed on a 28 day interval, and the amount of feed used per lot was recorded.

Table 11 summarizes the composition and cost of the ration used. Table 12 shows the data recorded on weights, and gains and Table 13 summarizes feed used and cost per hundredweight of gain.

**Table 11. Ration Composition and Feed Cost.**

<b>Ration</b>	<b>Pounds per ton</b>	<b>Cost per pound</b>	<b>Cost per ton</b>
Oats	570	.0171	\$ 9.75
Barley	1130	.0177	20.00
Soybean oilmeal	240	.0535	12.84
Di-calcium phosphate	24	.06	1.44
Limestone	24	.025	0.60
Trace mineral salt	10	.025	.25
Fortafeed	2	.28	.56
Vitamin A	60 gms.	.0011	.06
Vitamin D	28 gms.	.0053	.15
Zinc sulfate	360 gms.	.0052	1.87
Grinding	-	-	2.00
Total			\$49.52

**Table 12. Data on Weights and Gains in the Sire Evaluation Study.**

<b>Data on:</b>	<b>Lot One</b> <b>Sire Rebel #195</b>	<b>Lot Two</b> <b>Sire Oklahoma #1</b>	<b>Lot 3</b> <b>Sire Mr. Clean</b>
Number of pigs per lot	11	11	10*
Initial weight – lbs.			
Total per lot	438	439	390
Average per pig	39.8	39.9	39.0
Final weight – lbs.			
Total per lot	2360	2412	2161
Average per pig	214.5	219.3	216.1
Gain per lot – lbs.	1922	1973	1771
Average daily gain per pig – lbs.	1.47	1.51	1.49
* One pig removed from this lot.			

**Table 13. Feed Used and Cost Per Hundredweight of Gain in the Sire Evaluation Study.**

<b>Data on:</b>	<b>Lot One</b> <b>Sire Rebel #195</b>	<b>Lot Two</b> <b>Sire Oklahoma #1</b>	<b>Lot 3</b> <b>Sire Mr. Clean</b>
Total pounds of feed	7435	7250	6800
Pounds of feed per hundredweight gain	386.8	367.5	384.0
Cost per hundredweight of gain	\$9.59	\$9.11	\$9.52

### **Summary**

There was only a small difference between sire groups based on average daily gain. The pigs sired by Oklahoma #1 in lot 2 were the most efficient and therefore the most economical to feed. Their cost of gain was 48 cents per hundredweight cheaper than the pigs in lot 1 sire by Rebel #195.

This trial shows that although a producer may make a real effort to select good boars, and may be well satisfied with the appearance of the sires he selects, appearance is not enough. Only a well used scale and a complete set of records of pig weights and feed used will reveal differences in the important economic aspects of rate of gain and feed efficiency.