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An Analysis of the Cost of Producing Pork in Hoop Structures and Confinement during the Winter

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Abstract
This research is aimed at comparing two types of facilities for pork production--hoops and confinement systems. This report provides results from a group of pigs finished during the winter season. Hogs were on test from December to April. Results are evaluated by using the actual production efficiency values and the average or typical costs for feeder pigs, feed, etc., along with average market hog prices. This allows for comparison of expected costs and returns for normal input costs and hog price conditions.

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Introduction

This research is aimed at comparing two types of facilities for pork production—hoops and confinement systems. This report provides results from a group of pigs finished during the winter season.

Hogs were on test from December to April. Results are evaluated by using the actual production efficiency values and the average or typical costs for feeder pigs, feed, etc., along with average market hog prices. This allows for comparison of expected costs and returns for normal input costs and hog price conditions.

Results

Feed efficiency was better for the confinement system: 2.85 vs. 3.05 pounds of feed per pound of pork sold. Pigs fed in hoops had an average daily gain greater than confinement pigs by six hundredths of a pound per day. The hoop pigs started, on average, 8.05 pounds heavier, and averaged 10.05 fewer days on feed, with a 10.5 day difference in facility days. The confinement hogs weighed 2.72 pounds more at the slaughter plant with a 1.2% improvement in carcass yield. Due to the yield differential the difference in carcass weight was 5.05 more (192.41 vs. 187.36 pounds) for the confinement pigs.

The distribution of average daily gain shows that there was a slightly wider distribution of gain in the hoop system. Hoop pigs were marketed during three time periods, whereas confinement pigs were marketed in two groups.

Facility costs are budgeted at $180 per pig space for a confinement operation and $55 per pig space for the hoop system. Fixed costs were calculated at 13.2% of the investment for confinement and 16.5% for hoops. The confinement facilities are depreciated over 15 years, whereas hoops are depreciated over 10 years. Insurance and taxes represent 1.5% of the fixed investment, whereas interest is calculated at 10% interest for both confinement and hoops.

The revenue for the confinement hogs reflects the yield and lean premium received at market. The yield premium for the confinement was 1.32%, and the lean premium was $.88 per carcass hundred weight. It should be noted that the lean premium difference could be different if sales were made to a different packer.

The result of the trial is that, for this winter group, there is a net revenue difference of $3.46 per pig in favor of the confinement system. This occurs despite a cost advantage of $1.25 per pig marketed for the hoop operation. This occurs in part due to the hoop hogs being on feed for fewer days and gaining less weight during the trial. The hoop hogs had a $5.48 decrease in fixed costs and $.11 in cull pig revenue offsetting $4.64 per pig higher operating costs. The confinement system received an additional $4.71 per pig in revenue.

Summary

Results of this study showed profit to be $3.46 per pig greater with confinement than with hoop structures. However, there were tradeoffs between the systems. As with previous group comparisons, confinement pigs had better feed efficiency, whereas the hoop pigs had lower fixed costs. The hoop pigs gained more weight per day but consumed more feed per pound of gain. A confounding factor in this study is that the confinement pigs were on feed for

approximately 10 days longer than the hoop pigs.

The advantage of the hoop system is the low fixed costs, which were $5.78 lower than the confinement system. The results of this trial also suggest that the length of the trial may influence the results due to the difference in fixed costs.

Swine grow-finish production budget – a winter group.

Item	Hoop	Confinement	Difference
Facility Investment			
Building (per pig space)	$55.00	$180.00	($125.00)
Feed & manure handling	$36.00	$36.00	
Total initial investment	$91.00	$216.00	($125.00)
Turns/Year, Final Day out + 7 days	2.91	2.68	$0.23
Total initial investment per turn	$31.29	$80.48	($49.19)
% Interest, taxes, depreciation, insurance	16.5%	13.2%	3.3%
Fixed Costs			
Facility cost per hog marketed	$5.27	$11.05	($5.78)
Fixed cost/cwt marketed	$2.12	$4.41	($2.28)
Operating Costs			
Feeder pigs	$38.00	$38.00	
Feeder pig death loss	$0.77	$1.52	($0.75)
Interest on feeder pig	$1.31	$1.32	($0.02)
Fuel, repairs, utilities	$1.04	$1.57	($0.54)
Bedding	$4.55		$4.55
Feed ($.06/LB)	$37.95	$37.23	$0.72
Vet/medical	$1.53	$1.56	($0.03)
Interest on mixed costs	$0.77	$0.70	$0.07
Marketing costs	$1.53	$1.56	($0.03)
Labor	$2.75	$2.08	$0.67
Total operating cost	$90.17	$85.53	$4.64
Operating costs/cwt marketed	$36.35	$34.10	$2.24
Total cost (per pig marketed)	$95.43	$96.58	($1.14)
Total cost/cwt*	$38.47	$38.51	($0.04)
Revenue from cull pigs per head	$0.11	$0.00	$0.11
Net cost (per pig marketed)	$95.32	$96.58	(1.25)
Net cost per cwt*	$38.42	$38.51	(0.08)
Revenue from $60 carcass weight**	$112.42	$117.14	($4.71)
Net revenue per hog marketed	$17.10	$20.56	($3.46)

* Uses plant sale weight.

**Confinement revenue includes the $.88 per carcass hundred weight lean premium and the yield premium.