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Swine - Cost of production

Interim Report

**UNIVERSITY OF NOTTINGHAM
SCHOOL OF AGRICULTURE**



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PIG COST INVESTIGATION. 1957 to 1959.

Interim Report Upon Results For The First Year

April 1957 - March 1958.

November, 1958.

**DEPARTMENT OF AGRICULTURAL ECONOMICS
SUTTON BONINGTON
LOUGHBOROUGH**

Price 2s. 6d.

Interim Report

PIG COST INVESTIGATION. 1957 to 1959.

Interim Report Upon Results For The First Year

April 1957 - March 1958.

R.O. WOOD, B.Sc.

November, 1958.

Department of Agricultural Economics,
Sutton Bonington,
Loughborough.

Price 2s. 6d.

This report covers the first year's results of a two-year investigation into the costs of pig production. At the end of the next year a full report covering both years will be issued.

K. RASMUSSEN.

PIG COST INVESTIGATION. 1957 to 1959.

Interim Report Upon Results For The First Year

April 1957 - March 1958.

Records have been obtained for 45 pig herds in the East Midlands for the year 1st April, 1957 to 31st March, 1958.

With the single exception of a herd fed on whey and meal throughout the year, these herds were fed mainly upon purchased and home grown meals.

Method.

Home grown foods have been valued as follows :-

Cereals at market price plus an allowance for grinding.
Potatoes at market price.
Grazing at actual cost of production for each herd.
Roots at standard costs of production :-
 Fodder beet £3. 10s. per ton.
 Mangolds £2. 0s. per ton.
 Kale £15. 0s. per acre.

No allowance has been made for residual manurial values and no charge made for litter.

The labour of full time pigmen has been charged at actual cost and all other labour including the farmer's own labour at 4s. Od. per hour.

Miscellaneous costs include transport, veterinary expenses, medicines, repairs to equipment, small equipment replacements, herd book and recording fees, electricity and water.

Output of livestock is the sum of sales and valuation at the end of the period less the sum of purchases and valuation at the start of the period.

Margin is the difference between output of livestock and the sum of feed, labour and miscellaneous costs. It is the amount to cover equipment depreciation, overhead and housing costs, interest on capital and profit.

Total meal consumption, whether of breeding or feeding pigs, has been calculated by adding to the weight of purchased and home grown meals the estimated meal equivalent of other foods. See Appendix Table 7.

The conversion rate is the total consumption of meal in lbs. per lb. live weight increase of pigs fattened from eight weeks old. Allowance has been made for breeding stock being reared with fattening pigs.

Summary of Results.

For the purpose of this interim report, the 45 herds have been divided into three groups :-

Breed only: 5 herds breeding stores for sale at 8 to 12 weeks old.

Feed only: 7 herds purchasing stores for fattening.

Breed and Feed: 33 herds breeding their own pigs for fattening as porkers, cutters, baconers or heavy pork.

In the Summary tables - see Appendix - the averages have been calculated from the total figures for each group. Particularly in the group of 33 herds breeding and feeding, there is considerable variation in breed, housing and fattening methods, as well as four end products, porkers, cutters, baconers and heavy pork. Therefore, average results from such groups as these must be considered with care.

Group 1. Breed Only.

The results from five herds show a margin of £12. per £100. output and this is below the general average of the other two groups. The negative margin for the winter period is noticeable and is associated with a reduction in the number of pigs produced per sow and a fall in the prices of weaners.

As a group the breeding herds produced more pigs per sow than the breed and feed herds. They had more litters per sow, 1.75 compared with 1.51, and weaned 8.6 pigs per litter, one more than the breed and feed herds.

Group 2. Feed Only.

The results from seven herds show a margin of £21. 7s. per £100. output.

As a group these herds tend to rely upon purchased meals and the cost per cwt. of feed is higher than the breed and feed group. The conversion rate is lower, 3.91 as against 4.23, but the quality of the final product is not so good with fewer baconers in the higher price grades.

Group 3. Breed and Feed.

The 33 herds in this group made an average margin of £17. 8s. per £100. output of livestock. The margin can be calculated in other ways. Thus the margin on the joint enterprise is £32. 3s. per sow or £3. 4s. per "baconer". The average number of "baconers" produced has been calculated as the liveweight increase after weaning at eight weeks divided by 166 lbs., the average increase in weight from eight weeks old of the baconers sold during the year.

The margin for the winter period, (October to March) was lower than that for the summer period (April to September). It is difficult to point to a particular factor responsible. Thus average feed consumption does not show much change but the price per cwt. in the winter period was about 1s. 6d. per cwt. lower (1s. 4d. per cwt. for breeding meal and 1s. 10d. per cwt. for feeding meal). The average price of baconers was 4s. 2d. per score lower in the winter but porkers and heavy pork pigs did not show so much fall in price.

The 33 herds averaged 7.6 pigs weaned from 1.51 litters per sow during the year. The average meal consumption per sow was 27.8 cwts. and the average conversion rate was 4.23 lbs. There was considerable variation in the quantity and quality of the foods used and this was associated with different systems of management and different end products, pork, bacon and heavy pigs. In individual cases, the quantities fed must be considered in conjunction with the economic results from the enterprise. Thus in some cases the margin may be considered adequate when it includes the effective use of home grown crops.

Estimated Cost of Production of a Weaner at Eight Weeks Old.

From the average data the cost of production of a weaner at eight weeks old can be estimated.

	<u>Per Sow.</u>	<u>Per Pig Weaned.</u>
	£. s.	£. s.
Food Costs: 27.8 cwts. meal at 3ls. 3d. per cwt.	43. 9.	3. 16.
Labour and miscellaneous costs: One fifth of food costs.	8. 14.	15.
	<u>£52. 3.</u>	<u>4. 11.</u>
Total number of pigs weaned per sow per annum.	11.4 pigs.	

The breeding herd, sows and boars, appreciated during the year and it might be agreed that this amount, 6s. 6d. per pig weaned, would cover overhead and housing costs. On this basis the average cost of a weaner at eight weeks old is about £4. 10s. The average price of weaners sold was £5. 9s. Weaners transferred at eight weeks old to the feeding herd were valued arbitrarily for each herd and they averaged £4. 18s.

APPENDIX - TABLES

Costs and Returns per £100. Output of Pigs.

Table 1.

£.

Number of herds	Breed only			Feed only			Breed and Feed		
	5			7			33		
Period	Summer	Winter	Year	Summer	Winter	Year	Summer	Winter	Year
Feed	57.2	79.5	67.4	66.9	69.8	68.2	67.3	69.6	68.4
Labour	13.8	21.6	17.4	6.8	7.4	7.1	9.6	10.2	9.9
Miscellaneous	2.0	4.6	3.2	2.7	3.3	3.0	3.7	4.1	3.9
Total costs	73.0	105.7	88.0	76.4	80.5	78.3	80.6	83.9	82.2
Margin	27.0	(-)5.7	12.0	23.6	19.5	21.7	19.4	16.1	17.8
Output of Live-stock	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Costs per £100. Total Costs.

Table 2.

£.

Number of herds	Breed only			Feed only			Breed and Feed		
	5			7			33		
Period	Summer	Winter	Year	Summer	Winter	Year	Summer	Winter	Year
Feed	78.4	75.2	76.6	87.6	86.7	87.1	83.5	82.9	83.2
Labour	18.9	20.4	19.8	8.9	9.2	9.1	11.9	12.2	12.0
Miscellaneous	2.7	4.4	3.6	3.5	4.1	3.8	4.6	4.9	4.8
Total costs	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: In these tables no allowance has been made for housing costs, equipment depreciation and overheads.

Breeding Efficiency Factors.

Calculated on the basis that pigs were weaned at eight weeks.

Table 3.

Period	Breed only			Breed and Feed		
	Summer	Winter	Year	Summer	Winter	Year
Pigs born per litter	10.8	11.6	11.3	9.9	9.6	9.7
Pigs weaned per litter	9.4	8.1	8.6	7.8	7.5	7.6
Average No. of sows per herd	6.7	8.4	7.5	24.1	27.4	25.8
Litters per sow	0.83	0.90	1.75	0.77	0.75	1.51
Cwts. meal per sow	16.6	17.1	34.0	13.3	14.5	27.8
Cost of meal per cwt.	34s. 8d.	34s. 11d.	34s. 9d.	32s. 0d.	30s. 8d.	31s. 3d.

Feeding Efficiency Factors.

Table 4.

Period	Feed only			Breed and Feed		
	Summer	Winter	Year	Summer	Winter	Year
Conversion rate	3.64	4.23	3.91	4.29	4.17	4.23
Cost of meal per cwt.	32s. 7d.	30s. 1d.	31s. 4d.	29s. 3d.	27s. 5d.	28s. 4d.

Notes: Cwts. meal per sow and conversion rates include foods other than meals at their estimated meal equivalent.

Cost of meal per cwt.: This is the average cost of purchased plus home grown meals and excludes other foods.

Feeding: Prices, Weights and Grading.

Table 5.

Period	Feed only			Breed and Feed		
	Summer	Winter	Year	Summer	Winter	Year
<u>Porkers up to 150 lbs. D.W.</u>						
Number sold	76	135	211	738	1,541	2,279
Deadweight per pig	102 lbs.	130 lbs.	120 lbs.	110 lbs.	110 lbs.	110 lbs.
Liveweight per pig	139 lbs.	176 lbs.	162 lbs.	153 lbs.	151 lbs.	152 lbs.
Price per score						
Deadweight	47s. 8d.	47s. 6d.	47s. 7d.	48s. 11d.	48s. 5d.	48s. 7d.
Liveweight	34s. 10d.	35s. 3d.	35s. 1d.	35s. 4d.	35s. 2d.	35s. 2d.
<u>Baconers.</u>						
Number sold	409	391	800	2,565	2,282	4,847
Deadweight per pig	157 lbs.	155 lbs.	156 lbs.	154 lbs.	152 lbs.	153 lbs.
Liveweight per pig	210 lbs.	206 lbs.	208 lbs.	205 lbs.	203 lbs.	204 lbs.
Price per score						
Deadweight	48s. 11d.	45s. 2d.	47s. 2d.	49s. 4d.	45s. 2d.	47s. 10d.
Liveweight	36s. 8d.	33s. 11d.	36s. 5d.	37s. 0d.	34s. 9d.	36s. 0d.
<u>Heavy Pork over 160 lbs. D.W.</u>						
Number sold	273	255	528	228	561	789
Deadweight per pig	161 lbs.	167 lbs.	164 lbs.	169 lbs.	180 lbs.	177 lbs.
Liveweight per pig	218 lbs.	220 lbs.	219 lbs.	223 lbs.	232 lbs.	229 lbs.
Price per score						
Deadweight	50s. 7d.	52s. 6d.	51s. 6d.	44s. 11d.	43s. 1d.	43s. 7d.
Liveweight	37s. 5d.	39s. 9d.	38s. 6d.	34s. 1d.	33s. 6d.	33s. 8d.
<u>Bacon Grading.</u>						
Payment Grade	%	%	%	%	%	%
1	28.6	21.0	24.9	40.1	32.4	36.5
2	19.3	18.4	18.9	16.4	23.2	19.3
3	6.6	5.9	6.2	7.7	5.1	6.5
4	15.6	6.1	11.0	11.4	8.5	10.1
5	2.0	20.0	10.8	4.6	15.4	9.7
6	16.4	11.0	13.7	13.1	5.4	9.5
7	5.4	8.4	6.9	4.7	5.4	5.0
8	0.7	1.0	0.8	0.5	0.6	0.5
9	1.5	1.0	1.2	0.4	0.4	0.4
10	3.9	7.2	5.5	1.1	3.6	2.3
	100.0	100.0	100.0	100.0	100.0	100.0

Value of Weaners.

Table 6.

Age	Breed only			Breed and Feed		
	8 to 12 weeks			Approx. 8 weeks		
Period	Summer	Winter	Year	Summer	Winter	Year
Sales	£5. 9s.	£5. 4s.	£5. 6s.	£5. 18s.	£4. 19s.	£5. 9s.
Estimated value at 8 weeks old	-	-	-	£4. 19s.	£4. 17s.	£4. 18s.

Meal Equivalents.

Table 7.

1 lb. Meal equals :-

- 4 lbs. Potatoes.
- 5 lbs. Fodder beet.
- 10 lbs. Mangolds.
- $3\frac{1}{2}$ lbs. Swill.
- 2 galls. Whey.
- $\frac{2}{3}$ galls. Skim milk.

AGREED SUPPLEMENT FOR PIG RECORDING SCHEMES.

Breed and Feed herds - Number of herds - 33.

Year 1st April 1957 to 31st March 1958.

Table I. Total Stock Account for Herds in Group.

No.	£.	£.	No.	£.	£.
<u>Opening Valuation</u>			<u>Closing Valuation</u>		
50 Boars	1,404		59 Boars	1,751	
805 Sows and gilts	24,928		914 Sows and gilts	26,776	
1,473 Suckling pigs	3,954		1,835 Suckling pigs	4,850	
3,301 Feeding stock	34,200	64,486	3,274 Feeding stock	33,931	67,308
<u>Purchases</u>			<u>Sales</u>		
29 Boars	1,308		51 Boars	1,305	
77 Sows and gilts	3,012	4,320	504 Sows and gilts	15,320	
103 Weaners	565		729 Weaners	3,958	20,583
159 Stores	1,361	1,926	297 Stores	2,016	
12,539 Pigs born alive		-	2,279 Porkers	30,463	
		70,732	4,847 Baconers	89,001	
			789 Other fat pigs	15,186	
			26 Casualties	232	
			37 Young boars and gilts	969	137,867
Livestock output		155,026	<u>Deaths</u>		
			2,700 Pre-weaning		-
			175 Post-weaning		-
			20 Boars and sows		-
<u>18,536</u>		<u>£225,758</u>	<u>18,536</u>		<u>£225,758</u>

Table II. Costs, Totals and per £100. Livestock Output
(Weighted average)

I T E M	Totals	Per £100. Livestock Output
	£.	£.
<u>Food</u>		
<u>Purchased:</u>		
Concentrates 58,729 cwts.	90,957	58.7
Others: i(a) Roots 117 cwts. ⁽¹⁾	119	0.1
i (b) By-products 810 cwts. ⁽¹⁾	748	0.5
ii -	-	-
<u>Homegrown:</u>		
Concentrates 12,165 cwts.	12,634	8.1
Others: i Roots 2,198 cwts. ⁽¹⁾	1,139	0.7
ii Grazing	485	0.3
<u>Total Cost Of Food</u>	106,082	68.4
<u>Labour</u>	15,394	9.9
<u>Miscellaneous</u>	6,048	3.9
Sub-total	127,524	82.2
Surplus	27,502	17.8
Total	£155,026	£100.0

(1) Cwts. Meal equivalent.

Table III. Breeding Section. 33 herds (weighted average)

I T E M	Total Costs	Cost per Weaner
<u>Food</u>	£.	£.
Concentrates 22,020 cwts.	34,401	3.62
Other Foods:		
Roots 1,305 cwts. (1)	648	0.07
By-products 377 cwts. (1)	222	0.02
Grazing -	485	0.05
<u>Total Cost of Food</u>	35,756	3.76
<u>Labour and Miscellaneous</u>	not allocated	
<u>Herd Appreciation</u>	3,158	0.33
Total No. of weaners	9,477	

(1) Cwts. Meal equivalent.

Table IV. Feeding Section. 33 herds (Weighted average)

Costs per 100 lbs. Liveweight gain.

No. of pigs 11,748
 Total liveweight gain 1,332,367 lbs.
 Cost of food per
 100 lbs. Liveweight gain $\frac{70,326}{13,323.67} = \underline{\underline{£5.28}}$

Table V. Feeding Section. 33 herds (Weighted average)

Conversion rate per lb. liveweight gain, post-weaning period.

No. of pigs sold 8,299
 Total liveweight of pigs sold 1,549,811 lbs.
 Average liveweight of pigs sold 187 lbs.
 Conversion rate 4.23 lbs. meal or meal equivalent per lb. liveweight gain.

