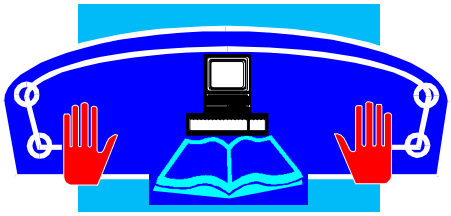

A Consensus Of Costs And Returns; Hog Farrow To Finish Enterprise
Type of Study: Statistics / Economics
Date of Report: 1972
Author: Gov't Of Alberta
Catalogue Number: 1-6-4

A CONSENSUS OF COSTS AND RETURNS

FOR :

A, 40 SOW FARROW TO FINISH ENTERPRISE

B, 40 SOW FARROWING ENTERPRISE

C, 640 HEAD PER YEAR HOG FINISHING ENTERPRISE

IN THE

GRANDE PRAIRIE DISTRICT

BY

PETER VISSER

ASSISTANT REGIONAL ECONOMIST

ALBERTA AGRICULTURE

The author wishes to acknowledge: the hog producers in the Grande Prairie District for their assistance in providing the basic data; David Thompson, District Agriculturist for his assistance in arranging this study and participation in gathering the data; and Harvey Glasier, Regional Economist and Keith Winchell, Regional Livestock Supervisor for their assistance in the preparation of the study.

TABLE OF CONTENTS

THE CONSENSUS RESEARCH DATA (C. R. D.) TECHNIQUE

The C.R. D. approach relies on group participation of interested farmers to arrive at a consensus of opinion on current costs and returns. The consensus relates not to area averages, but rather typical figures for the group of producers who provided the data. This is important since different production practices carried out in small pockets within a larger area are often not truly reflected in the average figures. For these reasons consensus data must be interpreted with caution.

Consensus figures are therefore associated with the current level of investment, management and cultural expertise of the study participants within a particular geographic area. While care should be exercised when applying C.R.D. data to individual cases, the greatest advantage of the technique is that it can be specific, timely, locally oriented, and based on the cumulative experience of farmers operating in that area.

**********A

Additional information on the C.R.D. technique can be obtained from your Regional Economist, District Agriculturist, or the production Economics Branch of the Alberta Department of Agriculture.

INTRODUCTION

Today's farming demands that cost and return information be available for all alternatives which the producer could consider when planning future production.

OBJECTIVES

This report was prepared to provide an estimate of costs of production and the estimated returns for:

A. 40 Sow farrow to finish enterprise
B. 40 Sow farrowing enterprise
C. 640 Head per year finishing enterprise

The information can be an important guide in decision making, but the reader should keep in mind that costs vary between hog producers because of differences in management practices. It is essential that the producers own records and estimates be used in conjunction with the information provided in this study.

This report can be useful for management decisions:

1. in selecting the enterprise yielding the highest returns
2. in determining the amount of cash required to operate during a given period
3. in determining the amount of time expected to be spent on an enterprise
4. for projecting income and expenses when considering new investments
5. in determining how the expenses and receipts should be shared in rental arrangements
6. to compare to the actual costs incurred in your own farming enterprise.

SOURCE AND METHOD OF DATA COLLECTION

The information for this report was gathered from farmers of the Grande Prairie district. A day was spent with them discussing the direct costs involved, the compliment of buildings and equipment, and the investment and management practices necessary to maintain the various hog enterprises on a farm. This information was compiled and costs calculated to determine the total cost of production for the enterprise.

DEFINITIONS

Total Cash Cost includes grain and supplements, veterinary fees and medicine, marketing fees, repairs and operating costs for the buildings and equipment, and the cost of purchasing replacements and interest on operating capital. Feed used has been included as a cash cost at its market value. Payments on land, equipment and livestock are not included. Instead an interest on these items has been charged under non-cash costs.

Gross Cash Margin or return over cash costs is the residual left to pay for the operator's labour, and his equity in buildings and equipment. This gives the operator an indication of the cash he has available to meet repayment and interest obligations on his debts.

Total Non-Cash Costs include depreciation on buildings and equipment, operator labour, interest on capital invested in buildings and equipment. Items are classified in this category because it is not necessary in all cases to pay them directly out of the proceeds. However, for some operators, the non-cash items must be met by cash flow particularly if they have some debts against the enterprise.

Total Costs include all cash and non-cash costs. These mustbe covered in the long run. Returns that do not cover total costs will force the operator to take a lower return for his investment and labour or force him to shift his resources to more profitable activities.

Return to Management is the residual amount left to compensate the owner-operator for his risk and management after all costs have been met. To more accurately compare this figure with that of other enterprises, the operator should bring these returns to a common base such as returns per hour of labour and management.

ASSUMPTIONS SPECIFIC TO 'IHIS STUDY

A. Farrow to Finish Enterprise

1. A 40 sow unit weaning 640 weaner pigs per year i.e. 16 weaned pigs per sow
2. Sow death loss - 1 sow per year
3. Feeder death loss - 1.5 percent
4. Cull sows are removed immediately after weaning and replaced with an open breeding age gilts from own stock
5. Land is available for manure disposal at no cost
6. Boars and dry sows are housed outside
7. Farrowing facility contains 14 farrowing pens, and nursery pens to take weaners to 35 lbs.; 35 lb. to 210 lb. hogs are housed in the finishing facility.
8. Feeding Program - Dry Sow Ration-7 lb./day for 275 days = 1925 lb./sow
   - Nursing Sow Ration-14 lb./day for 90 days=1260 lb./sow
   -'18% Starter to 50 lb. weight = 50 lb./head
   - 16% Grower Ration 50 - 124 lb. weight = 200 lb./head
   - 14% Finishing Ration 125 - 210 lb. weight=350 lb./head
9. 135 day feeding period from 35 lb. to 210 lb.
10. Average index of 100.

B. Farrow Wean and Finish enterprise breakdown into separate operations is based on the assumptions in "A."

Weaners were sold at 35 lb. and assumed to have consumed 10 lb. of Starter ration. The balance of the Starter ration is an expense to the finishing enterprise.

It must be noted that all costs are extracted from the farrow-finish data. This data reflects a sharing of many assets between various parts of the operation eg. Vacuum Wagon, Water Supply System etc. This is not possible if a farrow wean or finish operation were run as a separate entity. Costs of such an operation would therefore be higher than indicated in the data.

TABLE 1 - SUMMARY OF 40 SOW FARROW-FINISH ENTERPRISE

	TOTAL	PER SOW	PER HEAD
TOTAL RECEIPTS	$70,931,84	$1,773.30	$114.96
FEED COSTS	29,905 .70	747.64	48.47
OTHER CASH COSTS	9,275,8)	231.89	15.03
TOTAL CASH COSTS	39,181.50	979,53	63,50
RETURN OVER CASH COSTS	31,750,34	793.77	51,46
NON-CASH COSTS	19,442,55	486.06	31,51
RETURN TO OPERATOR'S LABOUR AND MANAGEMENT	20,607,09	515,20	33.40
RETURN TO MANAGEMENT	12,307.79	307,70	19,95

COSTS AND RETURNS-SWINE ENTERPRISE

TABLE 2A

☐ FARROW-WEAN ☐ FINISHING ■ FARROW-FINISH

Asst. Regional Economist peter Visser

District Agriculturist Dave Thompson

C. R. D. No. 156

Date Dec 8, 19 78

Basis 1. 40 sows 4. 16 Weaned Pigs/Sow/Yr.

2. 2 Boars 5. 617 Market Hogs sold

3. Keep 13 Gilts 6. 164 lbs. Dressed/Mkt. Hog

1. _____ Head/Lot 4. 1.5% Death Loss

2. — Lots/Year 5. 135 Day Feeding period

3. _____ lbs. Feed/lb.Gain 6. _____ lbs. Gain/Day

	TOTAL ENTERPRISE	PER SOW	PER HEAD	PER CWT.DR	YOUR ESTIMATE
RECEIPTS:					
617 Mkthogs 164 lbs.Dr. $ 00 /cwt.	$ 68807.84	$ 1720.20	$ 111.52	$ 68.00	$
_____ Gilts Liv.$— /Hal.					
_____ Weaners Liv.$_____ /Hal.					
12 Sows 350 lbs.Dr. $ 48 /cwt.	2016.00	50.40	3.27	1.99	
1 Boars 5 0 lbs.Liv.$ 2 4 /cwt	108.00	2.70	0.18	0.11	
TOTAL RECEIPTS	70931 84	1777 30	114.96	70.10	
CASH COSTS					
Feed:					
_____ Oats — tons @$_____ /ton	$	$	$	$	$
_____ Barley — tons @ $_____ /ton					
16% Nursing Sow Ration 25.2 tons $ 110.00 /ton	4196.50	104.9I	6.80	4.15	
18% _____ Starter 16 tons $202 .00 /ton	2797.20	69.93	4.53	2.76	
16% Grower 64 tons @ $ 111.00 /ton	7104.00	177.60	11.51	7.02	
14% Finisher 112 tons @ $ 108.00 /ton	12096.00	302.40	19.60	11.95	
14% — 38.5 tons @$ 109.00 /ton	3712.00	92.80	6.o2	3.67	
— — — tons @ $— /ton					
_____ Mineral _____ tons @ $— /ton					
Processing — tons @ $— /ton					
TOTAL FEED COSTS	29905.70	747.64	48.47	29.55	
Other Cash Costs					
— Weaners @ $_____ /hd.					
_____ Gilts @ $/hd.					
1 Boars @ $400 400 /hd.	400.00	10.00	0.65	0.40	
Hired Labor _____ hrs @ $/hr.					
Vet, Medicine	240.00	6.oo	.39	.24	
Machinery, Equip. & Bldg. Operating Costs	3120.00	78.00	5.o6	3.08	
Taxes, Utilities, & Insurance	2050.00	51.25	3.32	2.03	
Marketing & Transportation Costs	2119.00	52.97	3.43	2.09	
Interest O. Operating Capital 12.5%	1196.80	29.92	1.94	1.18	
Miscellaneous	150.00	3.75	.24	.15	
OTHER CASH COSTS	9275.80	231.89	15.03	9.17	
TOTAL CASH COSTS	39181.50	979.53	63.5o	38.72	
NON-CASH COSTS					
Operator's Labor 1660 hrs. @ $5.00 /hr.	8300.00	207.50	13.45	8.20	
Family Labor _____ hrs. @ $_____ /hr.					
Depreciation (Buildings & Equipment)	5360.31	134.01	8.6g	5.30	
Interest on Investment	5782.24	144.56	9.37	5.71	
TOTAL NON-CASH COSTS	19442.55	486.o6	31.51	19.21	
TOTAL COSTS	58624.o5	1465,59	95.01	49.93	
RETURN OVER CASH COSTS	31750.34	793.77	51.46	31.39	
RETURN TO OPERATOR'S LAB, MGMT, INV.	26390.03	659.76	42.77	26.80	
RETURN TO UNPAID LAB AND MANAGEMENT	20607.09	515.20	33.40	20.37	
RETURN TO MANAGEMENT	12307.79	307.70	19.95	12.17	

TABLE 2B

INVESTMENT SCHEDULE-SWINE ENTERPRISE

☐ FARROW-WEAN ☐ FINISHING

■ FARROW-FINISH

	New Value	Enterprise Value	Years Life	Average Value	% Use to Enterprise	Costs per Year Oper.	Depr.	Int.
LIVESTOCK:								
40 Sows @ $ 200 /hd	8,000	8,000	3	8,000	100			780
2 Boars @ $ 400 /hd	800	800	2	800	100			78
Gilts @ $ /hd								
TOTAL	8,800	8,800		8,800				858
BUILDINGS:								
Feeder Barn	36,000	36,000	20	18,000	100	720	,620	755
Farrow Barn & Weaner Barn	27,700	27,700	20	13,850	100	Sso	,246.50	3S0.38
Dry Sow Barn	2,000	2,000	5	1,000	100	200	360	97.s0
Weaner Barn								
Manure Pit	5,000	5,000	20	3,12S	100	100	225	304.69
Feed Storage	3,500	3,500	20	1,750	100	7s	157.50	170.63
TOTAL	74,200	74,200		37,72S		, 6 4 S	,609.00	678.19
MACHINERY & EQUIP.:								
Feed Eqpt.	1,000	1,000	5	Soo	100	100	180	48.75
Water System	5,000	4,500	1s	2,2s0	90	22s	270	219.37
Heating								
Loading	200	200	5	100	100	20	36	9.75
Other Eqpt.	6,000	6,000	10	3,000	100	160	S40	292.50
Truck	7,400	3,700	7	1,8S0	50	650	475.71	180.38
Tractor	10,400	4,160	1s	2,080	40	320	249.60	202.80
TOTAL	30,000	19,560		9,780		,475	.,751.31	9s3.s5
LAND:								
10 Acres @ $ 300 /ac.	3,000	3,000	100	3,000	100			292.50
Acres @ $/ac.								
TOTAL	3,000	3,000		3,000				292.50
TOTAL INVESTMENT	.16,000	105,560		59,30s		,120	5,360.31	5782.24

Interest on Buildings 9 3/4 % Interest on Equipment 9 3/4 % Interest on Livestock 9 3/4 %

Prod. Econ. Branch 1975

COSTS AND RETURNS-SWINE ENTERPRISE

TABLE 3A

■ FARROW-WEAN ❑ IFINISHING Asst. Regional Economist Peter Visser

❑ FARROW-FINISH District Agriculturist Dave Thompson

C. R. O. No. 156

Oate Dec. 8, 1978

Basis 1. 40 sows 4. 16 Weaned Pigs/Sow/Yr. 1. _____ Head/Lot 4. — % Death Loss

2. 2 Boars 5. _____ Market Hogs sold 2. _____ Lots/Year 5. _____ Day Feeding Period

3. Keep — Gilts 6. _____ lbs.Dressed/Mkt. Hog 3. _____ lbs. Feed/lb.Gain 6. _____ lbs. Gain/Day

	TOTAL ENTERPRISE	PER.sow	PER HEAD	PER CWT.DR	YOUR ESTIMATE
RECEIPTS:	$	$	$	$	$
Mkthogs ____ lbs.Dr. $ _____/cwt.					
_____ Gilts Liv.$ _____/Hal.					
640 Weaners Liv.$ 35 /Hal.	22,400.00	560.00	35.00		
12 Sows 350 lbs. Dr. $ 48 /cwt.	2,016.00	50.40	3.15		
1 Boars 450 lbs.Liv.$ 24 /cwt	108.00	2.70	.17		
TOTAL RECEIPTS	24,524.00	613.10	38.32		
CASH COSTS					
Feed:	$	$	$	$	$
_____ Oats — tons @ $ _____/ton					
_____ Barley — tons @ $ _____/ton					
16% Nursing Sow Ration 25.2 tons @ $ 111 /ton	4,196.50	104.91	6.56		
18% Starter 3.2 tons @ $ 232 /ton	2,797.20	69.93	4.37		
_____ Grower — tons @ $ _____/ton					
— Finisher — tons @ $— /ton					
14% Dry Sow 38.5 tons @ $ 109 /ton	742.40	18.56	1.16		
— — — tons @ $— /ton					
_____ Mineral .— tons @ $— /ton					
Processing — tons @ $— /ton					
TOTAL FEED COSTS	7,736.10	193.40	12.09		
Other Cash Costs					
— weaners @ _____ $/hd.					
13 Gilts @ $ 150 /hd.	1,950.00	48.75	3.05		
1 Boars @ $ 400 /hd.	400.00	10.00	.63		
Hired Labor _____ hrs @ $/hr.					
Vet, Medicine	160.00	4.00	.25		
Machinery, Equip. & Bldg. Operating Costs	1,450.00	36.25	2.27		
Taxes, Utilities, & Insurance	820.00	20.50	1.28		
Marketing & Transportation Costs	39.00	.97	.06		
Interest on Operating Capital	322.04	8.05	.50		
Miscellaneous	100.00	2.50	.16		
OTHER CASH COSTS	5,241.04	131.02	8.20		
TOTAL CASH COSTS	12,977.14	324.42	20.29		
NON-CASH COSTS					
Operator's Labor 1330 hrs. @ $ 5.00 /hr.	6,650.00	166.25	10.39		
Family Labor _____ hrs. @ $ _____/hr.					
Depreciation (Buildings & Equipment)	2,411.58	60.29	3.77		
Interest on Investment	3,024.21	75.61	4.73		
TOTAL NON-CASH COSTS	12,085.79	302.14	18.88		
TOTAL COSTS	25,062.93	626.56	39.17		
RETURN OVER CASH COSTS	11,546.86	288.68	18.03		
RETURN TO OPERATOR'S LAB, MGMT,INV.	9,135.28	228.39	14.26		
RETURN TO UNPAID LAB AND MANAGEMENT	6,111.07	152.78	9.53		
RETURN TO MANAGEMENT	-538.93	-13.47	-.86		

TABLE 3B

INVESTMENT SCHEDULE-SWINE ENTERPRISE

■ FARROW-WEAN 12 FINISHING

[ ] FARROW-FINISH

	New Value	Enterprise Value	Years Life	Average Value	% Use to Enterprise	Costs per Year Oper.	Depr.	Int.
LIVESTOCK:								
40 Sows @ $ 200 /hd	8,000	8,000	3	8,000	100			780
2 Boars @ $ 400 /hd	800	800	2	800	100			78
Gilts @ $ /hd								
TOTAL	8,800	8,800		8,800				858
BUILDINGS:								
Feeder Barn	36,000							
Farrow Barn & Weaner Barn	27,700	27,700	20	13,850	100	S50	1,246.S0	1350.3
Dry Sow Barn	2,000	2,000	5	1,000	100	200	360.00	97.5(
Weaner Barn								
Manure Pit	5,000	1,250	20	1,250	25	2s	56.25	121.8
Feed Storage	3,s00	875	20	437.50	25	20	39.37	42.6(
TOTAL	74,200	31,825		16,537.50		795	1,702.12	1612.4
MACHINERY & EQUIP.:								
Feed Eqpt.	1,000	500	5	250	50	50	90	24.3
Water System	5,000	2,250	1s	1,125	45	110	135	109.6!
Heating								
Loading	200	100	5	50	50	10	18	4.8
Other Eqpt.	6,000	1,500	10	7s0	25	40	135	73.1
Truck	7,400	1,8S0	7	925	2s	325	237.86	90.1
Tractor	10,400	1,560	1s	780	15	120	93.60	76.0
TOTAL	30,000	7,760		3,880		655	709.46	378.3
LAND:								
10 Acres @ $ 300 /ac.	3,000	1,800	100	1,800	60			175.5
Acres @ $/ac.								
TOTAL	3,000	1,800		1,800				175.s
TOTAL INVESTMENT	116,000	S0,185		31,017.s0		1,450	2,411.58	3024.2

Interest on Buildings 9 3/4 % Interest on Equipment 9 3/4 % Interest on Livestock 9 3/4 %

Prod. Econ. Branch - 1975

COSTS AND RETURNS-SWINE ENTERPRISE

TABLE 4A

☐ FARROW-WEAN ■ FINISHING ☐ FARROW-FINISH

Asst. Regional Economist Peter Visser

District Agriculturist Dave Thompson

C. R. O. No. 156

Oate Dec. 8, 1978

Basis 1. _____ sows
2. _____ Boars
3. Keep < Gilts
4. Weaned Pigs/Sow/Yr.
5. 617 Market Hogs sold
6. lbs.4 Dressed/Mkt. Hog

1. 630 Head/Lot
2. _____ Lots/Year
3. 3.42 lbs.Feed/lb.Gain
4. 1 - 9 Death Loss
5. 135 Day Feedin,Period
6. 1.3 lbs. Gain/Day

RECEIPTS:		TOTAL ENTERPRISE	PER SOW	PER HEAD	PER CWT.DR	YOUR ESTIMATE
Mkthogs	164 lbs.Dr. $ 68 /cwt.	$ 68,807.84	$	$ 111.52	$ 68.00	$
13 Gilts	Liv.$ 150 Hal.	1,950.00		3.16	1.93	
— Weaners	Liv.$ _____ /Hal.					
_____ Sows	_____ lbs.Liv.$ — / cwt.					
_____ Boars	lbs.Liv.$ _____ /cwt					
	TOTAL RECEIPTS	70,757.84		114.68	69.93	
CASH COSTS						
Feed:						
_____ Oats	— tons@ $ _____ /ton					
_____ Barley	— tons @ $ _____ /ton					
— Sow Ration	— tons @ $— / ton					
18 Starter	12.8 tons @ $ 232 / ton	2,969.60		4.81	2.93	
16 Grower	64 tons @ $111 /ton	7.104.00		11.51	7.02	
14 Finisher	112 tons @ $ 108 ton	12.096.00		19.60	11.95	
_____ —	— tons @ $— / ton					
— —	_____ tons @ $— / ton					
_____ Mineral	_____ tons @ $ _____ /ton					
Processing	— tons @ $— / ton					
	TOTAL FEED COSTS	22,169.60		35.93	21.91	
Other Cash Costs						
640 Weaners	@ $ 35 /hd.	22.400.00		36.30	22.14	
_____ Gilts	@ $ _____ /hd.					
_____ Boars	@ $ _____ /hd.					
Hired Labor	_____ hrs @ $ _____ /hr.					
Vet, Medicine		80.00		.13	.08	
Machinery, Equip. & Bldg. Operating Costs		1,670.00		2.71	1.65	
Taxes, Utilities, & Insurance		1,230.00		1.99	1.22	
Marketing & Transportation Costs		2,080.00		3.37	2.06	
Interest on Operating Capital		1,147.62		1.86	1.13	
Miscellaneous		50.00		.08	.05	
	OTHER CASH COSTS	28,657.62		46.44	28.33	
	TOTAL CASH COSTS	S0,827.22		82.37	50.24	
NON-CASH COSTS						
Operator's Labor	330 hrs. @ $ 5.00 /hr.	1,650.00		2.67	1.63	
Family Labor	_____ hrs. @ $ _____ /hr.					
Depreciation (Buildings & Equipment)		2,948.73		4.78	2.91	
Interest on Investment		1,034.26		1.68	1.02	
	TOTAL NON-CASH COSTS	5,632.99		9.13	5.57	
TOTAL COSTS		56,460.21		91.s0	55.81	
RETURN OVER CASH COSTS		19,930.62		32.31	19.69	
RETURN TO OPERATOR'S LAB, MGMT, INV.		16,981.89		27.53	16.78	
RETURN TO UNPAID LAB AND MANAGEMENT		15,947.63		25.8S	15.76	
RETURN TO MANAGEMENT		14,297.63		23.18	14.13	

INVESTMENT SCHEDULE SWINE ENTERPRISE TABLE4B

☐ Farrow-Wean ■ Finishing

☐ Farrow-Finish

	New Value	Enterprise Value	Years Life	Average Value	% Use to Enterprise	Costs per Year per	Depr.	Int.
LIVESTOCK:								
40 Sows @ $200/hd	8,000							
2 Boars @ $400/hd	800							
_ Gilts @ $_ /hd								
TOTAL	8,800							
BUILDINGS:								
Feeder Barn	36,000	36,000	20	18,000	100	720.00	1620.00	755.0
Farrow Barn & Weaner Barn	27,700							
Dry Sow Barn	2,000							
Weaner Barn								
Manure Pit	5,000	3,750	20	1,875	75	75.00	168.75	182.8
Feed Storage	3,500	2,625	20	1,312 .5 I	75	55.00	118.12	127.9
TOTAL	74.200	42,375		21,187.5		850.00	1906.87	065.7
MACHINERY & EQUIPMEN								
Feed Equipment	1,000	500	5	250	50	50.00	90.00	24,2
Water System	5,000	2,250	15	1,125	45	115.00	135.00	109.6
Heating								
Loading	200	100	5	50	50	10.00	18.00	4.8
Other Equipment	6,000	4,500	10	2,250	75	120.00	405.00	219.3
Tmck	7,400	1,850	7	925	25	325.00	237.86	90.1
Tractor	10,400	2,600	1 5	1,300	25	200.00	156.00	126.7
TOTAL	30,000	11,800		5,900		820.00	1041.8(	575.2
LAMI:								
10 Acres @ $300 / acre	3,000	1,200	100	1,200	40			117.(
__ Acres @ $ /acre								
TOTAL	3,000	1,200		1,200				117.(
TOTAL INVESTMENT	116,000	55,375		28,287.5(		1670.00	2948.7:	2758.0

Interest on Buildings 9 3/4% Interest on Equipment 9 3/4% Interest on Livestock 9 3/4%

APPENDIX

APPLICATIONS FOR THE USE OF HOG PRODUCERS

The various cost and return figures shown earlier in tables 1 to 4B apply only when used in conjunction with the assumptions stated on page 3.

Small changes in these physical and dollar assumptions can have large effects on the profitability of the operation.

Several of these variables will be investigated in this section.

TABLE I - Effect of Weaners Produced per Sow per Year on Cost per Weaner

In a breeding operation the number of weaners reaching saleable weight is critical . The number produced results largely from a combination of litter size, breeding, farrowing interval and good management in general.

The cash costs of rearing the newborn pig to weaning age consists of its own consumption of starter feed and its share of the cash and overhead costs of maintaining the sow. The sow maintenance cost per weaner goes down as more weaners are produced per sow.

This effect is shown in the table whereby increasing the number of weaners produced per sow per year from 14 to 16 reduces the cost per weaner by $5.58. Over a production of 640 weaners this would amount to $3 ,S71. per year.

Looked at another way, with sows producing only 14 weaners per year, and other factors being constant, an extra 6 sows would be required to produce 640 weaners (i.e. same gross return). The cost of maintaining these extra sows is 626.56 x 6 = $3759.00.

TABLE I - Effect of Weaners Produced Per Sow Per Year on Cost Per Weaner

		COST PER WEANER				
WEANERS PRODUCED PER SOW PER YEAR -		12	14	16	18	20
Sow Cash Costs/year	PER SOW					
Feed	193.40					
Other Cash	131.02					
Total Cash' Costs	324.42	27.04	23.17	20.29	18.02	16.22
Sow Non-Cash Costs/year	PER SOW					
	302.14					
Total Non-Cash Costs	302.14	25.18	21.58	18.88	16.79	15.11
Weaner Cash Costs	PER HEAD					
Feed	1.16					
Vet & Med.	.12					
Total Weaner Cash Costs	1.28	1.28	1.28	1.28	1.28	1.28
TOTAL COST/WEANER PRODUCED		53.50	46.03	40.45	36.09	32.61

Expected returns per weaner from Table 3A - $38.32,

This table is based on assumptions listed on pages 3 and 12.

TABLE II - Effect of Feed Conversion on Feed Costs

The feed conversion ratio calculated from the basic study is 3.42 pounds of feed per one pound of gain in weight.

Table II illustrates the importance of this factor on the cost of production. If the amount of feed required to produce one pound of pork were to be reduced by .2 lb. (ie. 3.42 to 3.22) the feed cost per hog is reduced by $2.06 - over a production of 630 hogs this would result in a saving of $1309 per year.

If a feed conversion ratio of 3.82 (not uncommon) is compared to the ratio in this study (3.42); then 630 hogs would require approximately an extra 22 tons of feed to reach market weight at an extra cost of $2576. (Extra labour, credit and storage costs not included)

Assumptions Based on Study

Total Feed per hog - 35 pounds to 210 pounds - based on hogs marketed

41 lbs.	- Starter Ration
203 lbs.	- Grower Ration
355 lbs.	- Finisher Ration
599 lbs.	- Total Feed

Feed Conversion - 599 ÷ 175 lbs. of gain = 3.42

Weighted Average price of Rations - $117.42/ton

TABLE II - Effect of Feed Conversion on Feed Costs

Feed Conversion	3.22	3.32	3.42	3.62	3.82
Pounds of feed required per Hog	564	581	599	634	669
Feed Cost per Hog	33.11	34.11	35.17	37.22	39.28
Change in Cost from 3.42 feed conversion ($) per Hog	-2.06	-1.06		+2.05	+4.11
Pounds of feed required for 630 Hogs	355,320	366,030	377,600	399,420	421,470
Total feed cost for 630 Hogs	20,860	21,490	22,169	23,450	24,745
Change in cost from 3.42 feed conversion for 630 Hogs	-1,309	-679	·	+1,281	+2,576

For assumptions, see page 14.

TABLE III - Effect of Index

This table isolates the effect of index on gross receipts per market hog at a market price of $68/cwt. and a dressed weight of 164 pounds.

eg. - Receipts on a 100 index hog at $68/cwt. = $111.52

($68/cwt. X 1.00 X 1.64 cwt. = $111.52)

Receipts on a 103 index hog at $68/cwt. = $114.87

($68/cwt. X 1.03 X 1.64 cwt. = $114. 87)

The higher index results in an increase of $3.35/hog.

Based on the sale of 630 market hogs, an index increase to 103 could increase the operations receipts by $2,110.50.

TABLE III - Effect of Index

INDEX	GROSS RETURN PER HOG	DIFFERENCE FROM 100 INDEX	DIFFERENCE ON 630 HOGS
90	100.37	-11.15	-7025.76
92	102.60	- 8.92	-5619.60
94	104.83	- 6.69	-4214.70
96	107.06	- 4.46	-2809.80
98	109.29	- 2.23	-140s. 15
100	111.52		
102	113.75	+ 2.23	+1405 .15
104	115.98	+ 4.46	+2 809.80
106	118.21	+ 6.69	+4214.70
108	120.44	+ 8.92	+5619.60
110	122.67	+11. 15	+7025.76

Assuming a dressed weight of 164 pounds and a market price of $68.00/cwt. for index 100 hogs.

TABLE IV - Effect of Varying Market Price and Index on the Profitability per Hog in the Farrow - Finish Operation

This table will provide breakeven points for:

1) a constant price and a variable index

2) a constant index and a variable price

3) a variable price and a variable index

All returns in the body of the table to the right of each line will ensure a positive margin over the given costs.

All combinations of price and index presented created enough income to cover feed costs of $48.47/hog.

Line "A" - is the breakeven line to cover all cash costs of $63 .50/hog.

Line "B" - total cash costs and operators labour were $76.95 and is represented by breakeven line B.

Line "C" - all combinations falling to the right of breakeven line C will ensure a return over total costs of $95.01/hog.

To use this table for your own operation first calculate from your records (updated for current costs) the breakeven values or factors A," B and C. Chart a line on the table for each value and you will see what combinations of price and index would cover the various cost levels in your operation.

TABLE IV - Farrow - Finish - Breakeven Points

Price / ndex	40	45	50	55	60	65	70	75	80	85
90	59.04	66.42	73.80	81.18	88.56	95.94	103.32	110.70	118.08	125.46
92	60.35	67.90	75.44	82.98	90.53	98.07	105.62	113.16	120.70	128.25
94	61.66	69.37	77.08	84.79	92.50	100.20	107.91	115.62	123.33	131.04
96	62.98	70.85	78.72	86.59	94.46	102.34	110.21	118.08	125.95	133.82
98	64.29	72.32	80.36	88.40	96.43	104.47	112.50	120.54	128.58	136.61
100	65.60	73.80	82.00	90.20	98.40	106.60	114.80	123.00	131.20	139.40
102	66.91	75.28	83.64	92.00	100.37	108.73	117.10	125.40	133.82	142.19
104	68.22	76.75	85.28	93.81	102.34	110.86	119.39	127.92	136.45	144.98
106	69.54	78.23	86.92	95.61	104.30	113.00	121.69	130.38	139.07	147.76
108	70.85	79.70	88.56	97.42	106.27	115.13	123.93	132.84	141.90	150.55
110	72.16	81.18	90.20	99.22	108.24	117.26	126.28	135.30	144.32	153.34

Line A - Cash Costs $63.50/hog

Line B - Cash Costs and Labour $76.95/hog

Line C - Total Costs $95.01/hog

Assuming a dressed weight of 164 pounds.

TABLE V - Returns Needed at Differing Equity Positions to Meet Cash Flow Requirements - 4(I Sow Farrow-Finish

The cash costs used are those determined in Table 2A - Costs and Returns Farrow-Finish.

The investment is based on Table 2B. - Investment Schedule Farrow-Finish.

All calculations are based on a 40 Sow Farrow to Finish unit with a new cost of $105,560.

60% of this investment is attributed to land and buildings. 40% is attributable to livestock and machinery. Therefore 60% of the financing required at the varying equity levels is assumed to have been amortized over 20 years at 10%. The remaining 40%, is treated as intermediate term financing (5 years at 11% per annum) .

The long term break-even point makes no allowance for a return on equity.

Break-even points determined for your farm may be plotted on Table IV to show which combinations of price and index will meet your cash flow requirements.

TABLE V - Returns Needed at Differing Equity Positions to Meet Cash Flow Requirements - 40 Sow Farrow-Finish

Equity Level	100%	75%	50%	25%	YOUR FARM
Amount Borrowed	0	26,390	52,780	79 170	
Interest and Principal Payments/yr.	0	4,466	8,932	13. 396	
PER HOG					
Cash Costs	63.50	63.50	63.50	63.50	
Operators Living Allowance	13.45	13.45	13.4s	13.45	
Interest and Principal Payments	0	7.09	14.18	21.26	
Short term break-even point	76.95	84.04	91.13	98.21	
+ Depreciation	9.37	9.37	9.37	9.37	
= Long Term Break-even Point	86.32	93.41	100.50	107.58	

For Assumptions see page 20