

Guidelines For Estimating
Swine Farrow-Wean to 5 kg Costs
Based On 3000 Sows, 65595 Pigs Sold

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This publication is intended to provide a format and a guide for determining the production costs of a large scale hog operation; this budget is based on a 3000 sow farrow wean to 5 kg enterprise. This operation is intended to represent the first stage of a three stage pork production system. The figures in the budget are estimates of production costs based on recommended practices and individual producer records. They were not obtained from an actual survey of the hog industry in Manitoba.

Accurate, up-to-date, production and financial records are essential for the effective application of these guidelines to an individual operation. Without such information, accurate cost of production projections cannot be determined.

Adjustments will be necessary when applying these figures to your own enterprise. The assumptions on which the costs are based are outlined in the supporting pages. These assumptions were arrived at using the breeding stock, management practices, and facilities seen in modern, well-managed swine operations of comparable size in Manitoba.

3000 Sow Farrow-Wean to 5 kg Pig Cost of Production

The following farrow wean cost of production budget is based on the assumption that all feed is purchased.

The budget also includes a land investment cost based on the assumption that 800 acres would be required for manure disposal for this size of operation, with 760 acres being rented out. Therefore land costs allocated to the swine operation would be 40 acres @ \$500/acre or \$20,000.

If developing a cost of production budget to include home mixed rations, the following items should be added to the budget:

- additional equipment costs associated with a mix mill;
- additional bins for different ingredients;
- additional labour for feed preparation.

The rations illustrated in this budget are examples only. Producers should consult a nutritionist to ensure that their unique farm and herd factors are taken into account.

The Manitoba pork production industry profile is changing and this budget was specifically designed to address the need of producers who may want to analyze the cost of starting up or switching to a farrow wean 5 kg operation. Several companies are offering contracts with varying levels of guarantees. Producers need to accurately calculate their costs before they can properly make a decision.

3000 Sow Farrow-Wean 5kg Cost of Production Summary

Operating Costs	\$/Pig <u>Sold</u>	\$/Sow <u>Sow</u>	Total <u>Cost</u>	<u>Your Cost</u>
1. Feed Costs:				
1.01 Sow Lactation Ration	2.65	57.96	173,827	_____
1.02 Sow Gestation Ration	6.79	148.44	445,224	_____
1.03 Boar Ration	0.06	1.31	3,936	_____
1.04 Creep Feed	<u>1.13</u>	<u>24.71</u>	<u>74,122</u>	_____
Total Feed Cost	\$10.63	\$232.42	\$697,109	_____
2. Other Operating Costs:				
2.01 Veterinary Medicine & Supplies:	1.33	29.09	87,241	_____
2.02 Maintenance & Repairs	0.30	6.56	19,679	_____
2.03 Hydro & Propane	1.22	26.67	80,000	_____
2.04 Insurance	0.58	12.76	38,277	_____
2.05 Manure Costs	0.75	16.46	49,357	_____
2.06 Office Supplies	0.05	1.09	3,280	_____
2.07 Marketing & Transport.	0.10	2.19	6,560	_____
2.08 Breeding Costs	1.20	26.16	78,462	_____
2.09 Sow Replacement	4.43	96.88	290,586	_____
2.10 Boar Replacement	0.14	3.08	9,236	_____
2.11 Property Tax	<u>0.46</u>	<u>10.00</u>	<u>30,000</u>	_____
Subtotal Operating Costs	21.19	463.36	1,389,787	_____
2.12 Interest on Operating Costs	<u>0.38</u>	<u>8.38</u>	<u>25,136</u>	_____
Total Operating Costs	\$21.57	\$471.74	\$1,414,923	_____
Fixed Costs				
3. Depreciation:				
3.01 Buildings & Manure Storage	1.62	35.43	106,264	_____
3.02 Equipment	<u>1.84</u>	<u>40.24</u>	<u>120,695</u>	_____
Total Depreciation Cost	\$3.46	\$75.67	\$226,959	_____
4. Investment:				
4.01 Land Cost	0.02	0.44	1,312	_____
4.02 Buildings & Manure Storage	0.98	21.43	64,283	_____
4.03 Equipment	0.56	12.25	36,733	_____
4.04 Breeding Herd	<u>0.82</u>	<u>17.93</u>	<u>53,788</u>	_____
Total Investment Cost	\$2.38	\$52.05	\$156,116	_____
Total Fixed Costs	\$5.84	\$127.72	\$383,075	_____
5. Labour				
Wages, benefits and hired manager	3.80	83.11	249,261	_____
Total Cost of Production	\$31.21	\$682.57	\$2,047,259	_____

3000 Farrow to 5 kg Pig Production Costs

1. This input table outlines the production assumptions used.
2. Buildings and equipment are valued at new cost.
3. Manure haulage is contracted out.
4. Gilts are purchased for herd replacement.

Indicators of Productivity

Sows	3,000
Boars	20
Litters/Sow/Year	2.35
Average Weaning Age (days)	18
Average Born Alive per Litter	10.90
Percent Pre-Weaning Mortality	12.0
Percent Post-Weaning Culls	3.0

Herd Profile	Total	/Sow	/Litter	%Mortality
Sows	3,000			
Boars	20			
Litters	7,050	2.35		
Pigs Born Alive	76,845	25.62	10.90	
Pigs Died, Pre-Weaning	9,221	3.07	1.31	12.0
Pigs Weaned	67,624	22.54	9.59	
Pigs Culled	2,029	0.68	0.29	3.0
Weaner Pigs Sold	65,595	21.87	9.30	

Feed Requirements and Costs

		Purchased	Home-Mixed
		\$/tonne	\$/tonne
Dry Sow Ration	2.3 kg/day	\$200.00	\$0.00
Nursing Sow Ration	6.0 kg/day	\$228.00	\$0.00
Boar Ration	2.5 kg/day	\$200.00	\$0.00
Creep Feed	1.0 kg/pig	\$962.00	\$0.00

Labour

Total Hours per 7-day week	400.0 hours/week
Wage (includes benefits & hired manager)	\$12.00 /hour

Sow Barn Capital Investment

Buildings	Sq.Ft. ¹	\$/Sq.Ft.	Total	/Sow	Your Cost
Building Infrastructure	87,000	\$25.00	\$2,175,000	\$725.00	_____
Office & Loading	2,500	\$30.00	75,000	\$25.00	_____
Standby Generator			25,000	\$8.33	_____
Feed Mill (building only)			0.00	\$0.00	_____
Total Building Cost			\$2,275,000	\$758.33	_____
Equipment					
Pen, feeding & water systems		\$15.25	\$1,326,750	\$442.25	_____
Fire Alarm System			\$4,000	\$1.33	_____
Feed Bins (10 bins)			\$10,000	\$3.33	_____
Ingredient Bins			\$0.00	\$0.00	_____
Total Equipment Cost			\$1,340,750	\$446.92	_____
Total Buildings and Equipment Cost			\$3,615,750	\$1,205.25	_____
Breeding Stock					
Value of Replacement Sow	\$350	/sow	\$1,050,000	\$350.00	_____
Value of Replacement Boar	\$1,000	/boar	\$20,000	\$6.67	_____
Total Breeding Stock Cost			\$1,070,000	\$356.67	_____
Land Value					
Land Investment	800	acres @	\$500	\$20,000	\$6.67
Less: Rent out	760	acres			_____
Other Costs					
Site Preparation (included in building costs)			\$0	\$0.00	_____
Manure Storage			\$72,000	\$24.00	_____
Total Other Costs			\$72,000	\$24.00	_____
Total Capital Investment			\$4,777,750	\$1,592.58	_____

¹ FOOTNOTE: The number of square feet allocated for buildings and equipment are approximations.

Cost per sow for buildings and equipment will vary around the province.

FOOTNOTE: 1 sq.ft. = 0.0929 sq.m; 1 sq.m.= 10.764 sq.ft.; 1 ft.= 0.3048 m

Ration Ingredients & Costs (Home-Mixed)

Ingredients	Price/tonne	Your Cost
Barley	\$108	
Corn	\$120	
Soybean Meal - 47 %	\$315	
Canola Meal - 37%	\$183	
Creep Premix	\$700	
Sow Micro Premix	\$2,550	
Canola Oil	\$550	
Whey Powder	\$720	
Herring Meal	\$1,400	
Limestone	\$65	
Phosphorous (16-21)	\$465	
Salt - 96%	\$120	
L-Lysine HCL	\$2,550	
Oats - Steam rolled	\$250	
Blood Plasma	\$6,500	
Processing Cost		
(Hydro,repairs/maintenance & insurance)	\$3.25	
Percent Weight loss due to processing	1.25 %	
Labour Cost	\$4.00	

Ration Formulas	Dry Sow (kg)	Nursing Sow (kg)	Boar Ration (kg)	Creep Ration (kg)
Barley	810.20	530.70	810.20	0.00
Corn	0.00	199.00	0.00	114.00
Field Peas	0.00	0.00	0.00	0.00
Soybean Meal - 47 %	0.00	117.00	0.00	121.00
Canola Meal - 37%	138.00	80.00	138.00	0.00
Creep Premix	0.00	0.00	0.00	5.00
Sow Micro Premix	5.00	5.00	5.00	0.00
Canola Oil	10.00	30.00	10.00	25.00
Whey Powder	0.00	0.00	0.00	100.00
Herring Meal	0.00	0.00	0.00	60.00
Limestone	16.50	15.00	16.50	28.40
Phosphorous (16-21)	14.90	16.50	14.90	9.60
Salt - 96%	3.50	4.90	3.50	3.50
L-Lysine HCL	1.90	1.90	1.90	0.50
Oats - Steam rolled	0.00	0.00	0.00	475.00
Blood Plasma	0.00	0.00	0.00	58.00
TOTAL (kg)	1,000.00	1,000.00	1,000.00	1,000.00

Feed Requirement and Cost Summary (Home-Mixed)

	Amount <u>(kg)</u>	Ingredient Price <u>(\$ /tonne)</u>	Ration Cost <u>(\$ /tonne)</u>	<u>Your Cost</u>
Dry Sow & Boar:				
Barley	810.2	\$108.00	\$87.50	_____
Canola Meal - 34%	138.0	\$183.00	\$25.25	_____
Sow Micro Premix	5.0	\$2,550.00	\$12.75	_____
Canola Oil	10.0	\$550.00	\$5.50	_____
Limestone	16.5	\$65.00	\$1.07	_____
Phosphorous (16-21)	14.9	\$465.00	\$6.93	_____
Salt - 96%	3.5	\$120.00	\$0.42	_____
L-Lysine HCL	1.9	<u>\$2,550.00</u>	<u>\$4.85</u>	_____
Total Dry Sow	1,000.0 kg		\$144.27	_____
Adjusted For Weight Loss		1.25 %	\$146.07	_____
Plus Processing Cost		\$3.25	\$149.32	_____
Plus Labour Cost		\$4.00	\$153.32	_____
 Nursing Sow:				
Barley	530.7	\$108.00	\$57.32	_____
Corn	199.0	\$120.00	\$23.88	_____
Soybean Meal - 47 %	117.0	\$315.00	\$36.86	_____
Canola Meal - 34%	80.0	\$183.00	\$14.64	_____
Sow Micro Premix	5.0	\$2,550.00	\$12.75	_____
Canola Oil	30.0	\$550.00	\$16.50	_____
Limestone	15.0	\$65.00	\$0.98	_____
Phosphorous (16-21)	16.5	\$465.00	\$7.67	_____
Salt - 96%	4.9	\$120.00	\$0.59	_____
L-Lysine HCL	1.9	<u>\$2,550.00</u>	<u>\$4.85</u>	_____
Total Nursing Sow	1,000.0 kg		\$176.04	_____
Adjusted For Weight Loss		1.25 %	\$178.24	_____
Plus Processing Cost		\$3.25	\$181.49	_____
Plus Labour Cost		\$4.00	\$185.49	_____
 Creep Ration:				
Corn	114.0	\$120.00	\$13.68	_____
Soybean Meal - 47 %	121.0	\$315.00	\$38.12	_____
Creep/Starter Premix	5.0	\$700.00	\$3.50	_____
Canola Oil	25.0	\$550.00	\$13.75	_____
Whey Powder	100.0	\$720.00	\$72.00	_____
Herring Meal	60.0	\$1,400.00	\$84.00	_____
Limestone	28.4	\$65.00	\$1.85	_____
Phosphorous	9.6	\$465.00	\$4.46	_____
Salt	3.5	\$120.00	\$0.42	_____
L-Lysine HCL	0.5	\$2,550.00	\$1.28	_____
Oats - Steam rolled	475.0	\$250.00	\$118.75	_____
Blood Plasma	58.0	<u>\$6,500.00</u>	<u>\$377.00</u>	_____
Total Creep	1,000.0 kg		\$728.81	_____
Adjusted For Weight Loss		1.25 %	\$737.92	_____
Plus Processing Cost		\$3.25	\$741.17	_____
Plus Labour Cost		\$4.00	\$745.17	_____

Production Cost Worksheet

A. Operating Costs

Your Cost

1. Feed Requirements and Costs

1.01 Sow Lactation Ration

	18	days average weaning age	
x	2.35	litters/sow/year	
=	42.3	days lactation	
x	6.0	kg ration/day	
x	\$228.00	/tonne ration	
÷	1,000	kg/tonne	
÷	<u>21.87</u>	<u>pigs/sow</u>	
=	\$2.65	/pig sold	

1.02 Sow Gestation Ration

	365	days /year	
-	42.3	days lactation	
=	323	days gestation	
x	2.3	kg ration /day	
x	\$200.00	/tonne ration	
÷	1,000	kg/tonne	
÷	<u>21.87</u>	<u>pigs/sow</u>	
=	\$6.79	/pig sold	

1.03 Boar Ration

	365	days	
x	2.5	kg ration/day	
x	\$200.00	/tonne ration	
÷	1,000	kg/tonne	
x	20	boars	
÷	3,000	sows	
÷	<u>21.87</u>	<u>pigs/sow</u>	
=	\$0.06	/pig sold	

1.04 Creep Feed

	1.00	kg ration/pig	
x	\$962.00	/tonne of creep feed	
÷	1,000	kg/tonne	
x	25.62	pigs born alive/sow/year	
÷	<u>21.87</u>	<u>pigs/sow</u>	
=	\$1.13	/pig sold	

2. Other Operating Costs

2.01 Veterinary Medicine & Supplies

	\$7.29	/sow professional services	_____
+	\$21.83	/sow medication	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$1.33	/pig sold	_____

2.02 Maintenance & Repairs

	\$1,205.25	/sow building & equipment cost	_____
x	0.55	% repair & maintenance	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$0.30	/pig sold	_____

2.03 Hydro & Propane

	\$50,000.00	hydro	_____
+	\$30,000.00	propane	_____
÷	<u>65,595</u>	pigs marketed	_____
=	\$1.22	/pig sold	_____

2.04 Insurance

	\$3,615,750.00	buildings & equipment	_____
x	\$0.46	/\$100 capital	_____
÷	100		_____
÷	<u>65,595</u>	pigs marketed	_____
=	\$0.25	/pig sold	_____
	\$1,070,000	breeding stock	_____
+	\$2,295,825	weaners	_____
x	\$0.65	/\$100 capital	_____
÷	<u>65,595</u>	pigs marketed	_____
=	\$0.33	/pig sold	_____
=	\$0.58	/pig sold	_____

2.05 Manure Costs

Haulage	18.00	litres/sow/day	_____
x	\$0.002	/litre	_____
x	365	days	_____
÷	<u>21.87</u>	pigs/sow	_____
=	\$0.60	/pig sold	_____

Odour control	\$10,000.00	total costs	_____
÷	<u>65,595</u>	pigs marketed	_____
=	\$0.15	/pig sold	_____

Total	=	\$0.75	/pig sold	_____
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2.06 Office Supplies

	3,000	number of sows	_____
x	\$1.00	fixed rate/sow	_____
+	\$500.00	minimum cost	_____
=	\$3,500.00	total	_____
÷	3,000	sows	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$0.05	/pig sold	_____

2.07 Marketing & Transportation

\$0.10	/pig sold	_____
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2.08 Breeding Costs

	2	services/sow	_____
+	0.18	% rebred	_____
x	\$12.00	seman cost/vial	_____
÷	<u>21.87</u>	<u>pigs marketed</u>	_____
=	\$1.20	/pig sold	_____

2.09 Sow Replacement

	\$180.00	kg/sow (cull weight)	_____
x	\$60.00	/100 kg live	_____
=	\$108.00	/sow value of cull	_____
	\$350.00	/sow value of replacement	_____
-	\$108.00	/sow value of cull	_____
=	\$242.00	net replacement cost	_____
x	40.00	% sow culling rate	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$4.43	/pig sold	_____

2.10 Boar Replacement

	225.0	kg/boar (cull weight)	_____
x	\$34.00	/100 kg live	_____
=	\$76.50	/boar value of cull	_____
	\$1,000.00	/boar value of replacement	_____
-	\$76.50	/boar value of cull	_____
=	\$923.50	net replacement cost	_____
x	50.00	% boar culling rate	_____
x	20	number of boars	_____
÷	3,000	number of sows	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$0.14	/pig sold	_____

2.11 Property Taxes:

	\$30,000.00	total taxes	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$0.46	/pig sold	_____

2.12 Interest on Operating Cost:

Subtotal Operating Cost x Farrow-to-Farrow Period x % Interest
365 2

	365	days per year	_____
÷	2.35	litters/sow	_____
=	155	days farrow-to-farrow	_____
	\$21.19	subtotal operating	_____
x	155	days farrow to farrow	_____
÷	365	days per year	_____
x	8.50	% operating interest rate	_____
÷	<u>2</u>	<u>average</u>	_____
=	\$0.38	/pig sold	_____

B. Fixed Costs

**3. Depreciation: Original Cost - Salvage Value
Useful Life**

3.01 Buildings

	\$2,347,000.00	building cost (including earthen manure storage)	_____
-	\$227,500.00	salvage value (building only)	_____
÷	20	years useful life	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$1.62	/pig sold	_____

3.02 Equipment

	\$1,340,750.00	equipment cost	_____
-	\$134,075.00	salvage value	_____
÷	10	years useful life	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$1.84	/pig sold	_____

4. Investment:

$$\frac{(\text{Original Cost} + \text{Salvage Value}) \times \text{Investment Rate}}{2}$$

4.01 Land Cost

	\$20,000	land investment	_____
x	5.0	% investment rate	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$0.02	/pig sold	_____

4.02 Buildings

	\$2,347,000.00	building cost (including earthen manure storage)	_____
+	\$227,500.00	salvage value (building only)	_____
÷	2	average	_____
x	5.0	% investment rate	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$0.98	/pig sold	_____

4.03 Equipment

	\$1,340,750.00	equipment cost	_____
+	\$134,075.00	salvage value	_____
÷	2	average	_____
x	5.0	% investment rate	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$0.56	/pig sold	_____

4.04 Breeding Stock

	\$1,070,000.00	value of breeding stock	_____
x	5.0	% investment rate	_____
÷	<u>65,595</u>	<u>pigs marketed</u>	_____
=	\$0.82	/pig sold	_____

5. Labour

	400	hours/week	_____
x	52	weeks/year	_____
x	\$12.00	/hour	_____
÷	3,000	sows	_____
÷	<u>21.87</u>	<u>pigs/sow</u>	_____
=	\$3.80	/pig sold	_____

Summary of Purchased Feeds Used

Number of Sows	3,000			
Total Pigs Sold	65,595			
	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Dry Sow	2,226.63	185.55	33.95	74.84
Lactating Sow	761.40	63.45	11.61	25.59
Boar	18.25	1.52	0.28	0.61
Creep	<u>67.62</u>	<u>5.64</u>	<u>1.03</u>	<u>2.27</u>
Total Purchased	3,073.90	256.16	46.86	103.31

Summary of Home-Mixed Feed Ingredients Used

	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Barley	0.00	0.00	0.00	0.00
Corn	0.00	0.00	0.00	0.00
Field Peas	0.00	0.00	0.00	0.00
Soybean Meal - 47 %	0.00	0.00	0.00	0.00
Canola Meal - 37%	0.00	0.00	0.00	0.00
Creep Premix	0.00	0.00	0.00	0.00
Sow Micro Premix	0.00	0.00	0.00	0.00
Canola Oil	0.00	0.00	0.00	0.00
Whey Powder	0.00	0.00	0.00	0.00
Herring Meal	0.00	0.00	0.00	0.00
Limestone	0.00	0.00	0.00	0.00
Phosphorous (16-21)	0.00	0.00	0.00	0.00
Salt - 96%	0.00	0.00	0.00	0.00
L-Lysine HCL	0.00	0.00	0.00	0.00
Oats - Steam rolled	0.00	0.00	0.00	0.00
Blood Plasma	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Total Home Grown	0.00	0.00	0.00	0.00
Total All Feed	3,073.90	256.16	46.86	103.31

For further information contact your local Manitoba Agriculture and Food office.

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Return On Assets (ROA)

Assumptions

Total Assets	\$6,089,650
Total Hogs Sold	65,595
Days to Market	18
Market Weight	5 kg/hog (live)
Market Price	\$40.00 /hog

Return On Assets Calculation	\$/Hog Sold	% of Total
Total Revenue	\$40.00	
Less Expenses		
Feed Costs	\$10.63	\$38.20 %
Other Operating Costs	\$10.56	\$51.70 %
Interest on Operating Costs	\$0.38	\$1.80 %
Total Operating Costs	\$21.57	\$91.70 %
Depreciation	\$3.46	\$3.90 %
Interest on Investment	\$2.38	\$1.90 %
Labour (Family & Hired)	\$3.80	\$2.50 %
Total Expenses (Cost Of Production)	\$31.21	\$100.00 %
Net Income	\$8.79	
Return On Assets (ROA)	12.44 %	

Equation
$$\frac{\text{Net Income} + \text{Operating Interest} + \text{Investment Interest} - \text{Value of Unpaid Family and Operator Labour}}{\text{Total Assets}}$$

Total Assets Definition: Total Assets includes the buildings, equipment, land, manure storage and breeding stock valued at replacement cost, plus the value of market livestock on inventory.