

Guidelines For Estimating
Swine Farrow-Wean to 6 kg Costs
Based On 600 Sows 13,497 Pigs Sold

Date: May-10

This publication is intended to provide a format and a set of guidelines for determining the cost of production for a swine farrow to 6kg enterprise. This operation is intended to represent the first stage of a three stage system. Adjustments will be necessary when applying these figures to your 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. Productivity and performance assumptions are based on information collected by department specialists, feed companies and other organizations. Where individual herd productivity and performance levels differ from those listed, adjustments will be required.

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.

The guideline can be useful for comparison purposes. Comparison of costs at different levels of production can be made with other farms, the farm over a period of time or comparing the plan with the actual results at the end of the planning period.

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user. If you require assistance with developing your individual budget, please contact your local MAFRI office.

Farrow-Wean to 6 kg Pig Cost of Production

The following farrow wean to 6 kg 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 160 acres would be required for this size of operation, with 140 acres being rented out at \$35 per acre.

The rations illustrated in this budget are examples only. Individual farm conditions should be taken into account when formulating the diets. Producers need to know what the feed intakes of their animals are. Please consult with a nutritionist for diet formulation suggestions.

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 6 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.

600 Sow Farrow-Wean to 6kg Cost of Production Summary

\$40,299.00

A. Operating Costs	\$/Pig <u>Sold</u>	\$/Sow	Total <u>Cost</u>	<u>Your Cost</u>
1. Feed Costs:				
1.01 Sow Lactation Ration	\$3.73	\$83.93	\$50,344	_____
1.02 Sow Gestation Ration	\$10.96	\$246.60	\$147,927	_____
1.03 Boar Ration	\$0.07	\$1.58	\$945	_____
1.04 Creep Feed	<u>\$0.83</u>	<u>\$18.68</u>	<u>\$11,203</u>	_____
Total Feed Cost	\$15.59	\$350.79	\$210,419	_____
2. Other Operating Costs:				
2.01 Veterinary Medicine & Supplies:	\$1.00	\$22.50	\$13,497	_____
2.02 Maintenance & Repairs	\$0.38	\$8.55	\$5,129	_____
2.03 Hydro & Propane	\$2.43	\$54.76	\$32,850	_____
2.04 Insurance	\$1.38	\$31.10	\$18,653	_____
2.05 Manure Costs	\$0.97	\$21.88	\$13,123	_____
2.06 Office Supplies	\$0.09	\$2.00	\$1,200	_____
2.07 Marketing & Transport.	\$3.19	\$71.78	\$43,055	_____
2.08 Herd Replacement	\$3.02	\$67.94	\$40,754	_____
2.09 Artificial Insemination	\$1.69	\$37.96	\$22,770	_____
2.10 Property Tax	<u>\$0.35</u>	<u>\$7.88</u>	<u>\$4,725</u>	_____
Subtotal Operating Costs	\$30.09	\$677.14	\$406,175	_____
2.11 Interest on Operating Costs	<u>\$0.43</u>	<u>\$9.57</u>	<u>\$5,739</u>	_____
Total Operating Costs	\$30.52	\$686.71	\$411,914	_____
B. Fixed Costs				
3. Depreciation:				
3.01 Buildings & Manure Storage	\$2.13	\$47.93	\$28,749	_____
3.02 Equipment	<u>\$2.98</u>	<u>\$67.05</u>	<u>\$40,221</u>	_____
Total Depreciation Cost	\$5.11	\$114.98	\$68,970	_____
4. Investment:				
4.01 Land Cost	\$0.10	\$2.33	\$1,400	_____
4.02 Buildings & Manure Storage	\$0.88	\$19.70	\$11,818	_____
4.03 Equipment	\$0.64	\$14.35	\$8,606	_____
4.04 Breeding Herd	<u>\$0.47</u>	<u>\$10.55</u>	<u>\$6,331</u>	_____
Total Investment Cost	\$2.09	\$46.93	\$28,155	_____
Total Fixed Costs	\$7.20	\$161.91	\$97,125	_____
C. Labour				
Wages, benefits and hired manager	\$7.86	\$176.85	\$106,086	_____
Total Cost of Production	\$45.57	\$1,025.47	\$615,125	_____
<hr/>				
Break-Even Price	\$/Pig			
Operating Cost	\$30.52			_____
Operating & Labour Cost	\$38.38			_____
Operating, Labour & Fixed Cost	\$45.57			_____

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user.

Farrow to 6kg 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	600
Boars	3
Litters/Sow/Year	2.30
Average Weaning Age (days)	20
Average Born Alive per Litter	11.50
Percent Pre-Weaning Mortality	12.5
Percent Post-Weaning Culls	2.8

Herd Profile	<u>Total</u>	<u>/Sow</u>	<u>/Litter</u>	<u>%Mortality</u>
Sows	600			
Boars	3			
Litters	1,380	2.30		
Pigs Born Alive	15,870	26.45	11.50	
Pigs Died, Pre-Weaning	1,984	3.31	1.44	12.5
Pigs Weaned	13,886	23.14	10.06	
Pigs Culled	389	0.65	0.28	2.8
Weaner Pigs Sold	13,497	22.50	9.78	

Feed Requirements and Costs

		<u>Purchased</u>	<u>Home-Mixed</u>
Sow Gestation Ration	2.8 kg/day	\$276.00	\$0.00
Sow Lactation Ration	6.4 kg/day	\$285.00	\$0.00
Boar Ration	3.0 kg/day	\$276.00	\$0.00
Creep Feed	0.5 kg/pig	\$1,409.00	\$0.00

Labour

Total Hours per 7-day week	120.0 hours/week
Wage (includes benefits & hired manager)	\$17.00 /hour

Sow Barn Capital Investment

	<u>Sq.Ft. ¹</u>	<u>\$/Sq.Ft.</u>	<u>Total</u>	<u>/Sow</u>	<u>Your Cost</u>
Buildings					
Gestation	16,200	\$19.74	\$319,788	\$532.98	_____
Farrowing	6,460	\$22.47	\$145,156	\$241.93	_____
Office & Loading	200	\$28.87	\$5,774	\$9.62	_____
Standby Generator			\$25,000	\$41.67	_____
Feed Mill (building only)			\$0	\$0.00	_____
Total Building Cost			\$495,718	\$826.20	_____
Equipment ¹					
Gestation		\$17.58	\$284,796	\$474.66	_____
Farrowing		\$23.10	\$149,226	\$248.71	_____
Fire Alarm System			\$3,000	\$5.00	_____
Feed Bins (4 bins)			\$10,000	\$16.67	_____
Feed Mill (equipment only)			\$0	\$0.00	_____
Total Equipment Cost			\$447,022	\$745.04	_____
Total Buildings and Equipment Cost			\$942,741	\$1,571.23	_____
Breeding Stock					
Value of Replacement Sow	\$300 /sow		\$180,000	\$300.00	_____
Value of Replacement Boar	\$300 /boar		<u>\$900</u>	<u>\$1.50</u>	_____
Total Breeding Stock Cost			\$180,900	\$301.50	_____
Land Value					
Land Investment	20 acres @	\$500	\$10,000	\$16.67	_____
Other Costs					
Site Preparation			\$30,000	\$50.00	_____
Manure Storage			\$100,000	\$166.67	_____
Total Other Costs			\$130,000	\$216.67	_____
Total Capital Investment			\$1,263,641	\$2,106.07	_____

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

Feed Ingredient Costs

Ingredients	Price/tonne	Your Cost
Wheat	\$159	_____
Barley	\$135	_____
Corn	\$145	_____
Soybean Meal	\$340	_____
Canola Meal	\$170	_____
Peas	\$200	_____
Sow Micro	\$4,000	_____
Grower Micro	\$3,000	_____
Canola Oil	\$975	_____
Whey Powder	\$995	_____
Fish Meal	\$1,380	_____
Plasma	\$5,450	_____
Limestone	\$81	_____
Dical (16% Ca-21% P)	\$700	_____
Salt - 96%	\$85	_____
Phytase	\$7,175	_____
L-Lysine HCL	\$2,315	_____
L-Threonine	\$3,500	_____
DL-Methionine	\$5,500	_____
Oats - groats	\$270	_____
Processing Cost		_____
(Hydro,repairs/maintenance & insurance)	\$5.00	_____
Percent Weight loss due to processing	1.25 %	_____
Labour Cost	\$7.00	_____

Ration Formulas	Dry Sow (kg)	Nursing Sow (kg)	Boar Ration (kg)	Creep Ration (kg)
Wheat	259.00	568.70	233.64	0.00
Barley	539.00	200.00	539.00	0.00
Corn	0.00	0.00	0.00	139.75
Soybean Meal	0.00	196.00	0.00	116.59
Canola Meal	80.00	0.00	102.00	0.00
Peas	91.00	0.00	91.00	0.00
Sow Micro	5.00	5.00	5.00	5.00
Canola Oil	0.00	0.00	0.00	20.00
Whey Powder	0.00	0.00	0.00	100.00
Fish Meal	0.00	0.00	0.00	60.00
Plasma	0.00	0.00	0.00	58.00
Limestone	10.00	12.00	12.00	12.23
Dical (16% Ca-21% P)	11.00	12.00	12.00	9.43
Salt - 96%	3.50	5.00	3.50	3.50
Phytase	0.50	0.50	0.50	0.00
L-Lysine HCL	1.00	0.80	1.36	0.50
L-Threonine	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00
Oats - groats	0.00	0.00	0.00	475.00
TOTAL (kg)	1,000.00	1,000.00	1,000.00	1,000.00

Feed Requirement and Cost Summary

	Amount	Ingredient Price	Ration Cost	Your Cost
Sow Gestation & Boar Ration:	(kg)	(\$ /tonne)	(\$ /tonne)	
Wheat	259.0	\$159.00	\$41.18	
Barley	539.0	\$135.00	\$72.77	
Canola Meal	80.0	\$170.00	\$13.60	
Peas	91.0	\$200.00	\$18.20	
Grower Micro	5.0	\$3,000.00	\$15.00	
Limestone	10.0	\$81.00	\$0.81	
Dical (16% Ca-21% P)	11.0	\$700.00	\$7.70	
Salt - 96%	3.5	\$85.00	\$0.30	
Phytase	0.5	\$7,175.00	\$3.59	
L-Lysine HCL	1.0	\$2,315.00	\$2.32	
Total Dry Sow	1,000.0 kg		\$175.47	
Adjusted For Weight Loss		1.25 %	\$177.66	
Plus Processing Cost		\$5.00	\$182.66	
Plus Labour Cost		\$7.00	\$189.66	
Sow Lactation:				
Wheat	568.7	\$159.00	\$90.42	
Barley	200.0	\$135.00	\$27.00	
Soybean Meal	196.0	\$340.00	\$66.64	
Grower Micro	5.0	\$3,000.00	\$15.00	
Limestone	12.0	\$81.00	\$0.97	
Dical (16% Ca-21% P)	12.0	\$700.00	\$8.40	
Salt - 96%	5.0	\$85.00	\$0.43	
Phytase	0.5	\$7,175.00	\$3.59	
L-Lysine HCL	0.8	\$2,315.00	\$1.85	
Total Nursing Sow	1,000.0 kg		\$214.30	
Adjusted For Weight Loss		1.25 %	\$216.98	
Plus Processing Cost		\$5.00	\$221.98	
Plus Labour Cost		\$7.00	\$228.98	

Creep Ration:

Corn	139.8	\$145.00	\$20.26
Soybean Meal	116.6	\$340.00	\$39.64
Sow Micro	5.0	\$4,000.00	\$20.00
Canola Oil	20.0	\$975.00	\$19.50
Whey Powder	100.0	\$995.00	\$99.50
Fish Meal	60.0	\$1,380.00	\$82.80
Plasma	58.0	\$5,450.00	\$316.10
Limestone	12.2	\$81.00	\$0.99
Dical (16% Ca-21% P)	9.4	\$700.00	\$6.60
Salt - 96%	3.5	\$85.00	\$0.30
L-Lysine HCL	0.5	\$2,315.00	\$1.16
Oats - groats	<u>475.0</u>	\$270.00	<u>\$128.25</u>
Total Creep	1,000.0 kg		\$735.10
Adjusted For Weight Loss		1.25 %	\$735.34
Plus Processing Cost		\$5.00	<u>\$740.34</u>
Plus Labour Cost		\$7.00	\$747.34

Production Cost Worksheet

A. Operating Costs

Your Cost

1. Feed Requirements and Costs

1.01 Sow Lactation Ration

	20	days average weaning age	
x	2.30	litters/sow/year	
=	46.0	days lactation	
x	6.4	kg ration/day	
x	\$285.00	/tonne ration	
÷	1,000	kg/tonne	
÷	<u>22.50</u>	<u>pigs/sow</u>	
=	\$3.73	/pig sold	

1.02 Sow Gestation Ration

	365	days/year	
-	46.0	days lactation	
=	319.0	days gestation	
x	2.8	kg ration/day	
x	\$276.00	/tonne ration	
÷	1,000	kg/tonne	
÷	<u>22.50</u>	<u>pigs/sow</u>	
=	\$10.96	/pig sold	

1.03 Boar Ration

	365	days	
x	3.0	kg ration/day	
x	\$276.00	/tonne ration	
÷	1,000	kg/tonne	
x	3	boars	
÷	600	sows	
÷	<u>22.50</u>	<u>pigs/sow</u>	
=	\$0.07	/pig sold	

1.04 Creep Feed

	0.5	kg ration/pig	
x	\$1,409.00	/tonne of creep feed	
÷	1,000	kg/tonne	
x	26.45	pigs born alive/sow/year	
÷	<u>22.50</u>	<u>pigs/sow</u>	
=	\$0.83	/pig sold	

2. Other Operating Costs

2.01 Veterinary Medicine & Supplies

	\$5.50	/sow professional services	_____
+	\$17.00	/sow medication	_____
÷	<u>22.50</u>	pigs/sow	_____
=	\$1.00	/pig sold	_____

2.02 Maintenance & Repairs

	\$1,571.23	/sow building & equipment cost	_____
x	0.55	% repair & maintenance	_____
÷	<u>22.50</u>	pigs/sow	_____
=	\$0.38	/pig sold	_____

2.03 Hydro & Propane

	\$13,350	hydro	_____
+	\$19,500	propane	_____
÷	<u>13,497</u>	pigs marketed	_____
=	\$2.43	/pig sold	_____

2.04 Insurance

	\$942,741	buildings & equipment	_____
x	\$0.78	/\$100 capital	_____
÷	100		_____
÷	<u>13,497</u>	pigs marketed	_____
=	\$0.54	/pig sold	_____

	\$180,900	breeding stock	_____
+	\$472,395	weaners	_____
x	\$0.88	/\$100 capital	_____
÷	<u>13,497</u>	pigs marketed	_____
=	\$0.43	/pig sold	_____

	\$1,200	business interruption coverage/sow	_____
x	600	sows	_____
x	\$0.78	/\$100 capital invested	_____
÷	<u>13,497</u>	pigs sold	_____
=	\$0.42	/pig sold	_____

=	\$1.38	/pig sold	_____
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2.05 Manure Costs

Haulage	21.0	litres/sow/day	_____
x	\$0.002	/litre	_____
x	365	days	_____
÷	<u>22.50</u>	pigs/sow	_____
=	\$0.75	/pig sold	_____

Odour control & Mgmt Fees				
		\$3,000	total costs	_____
	÷	<u>13,497</u>	<u>pigs marketed</u>	_____
	=	\$0.22	/pig sold	_____
Total	=	\$0.97	/pig sold	_____
2.06 Office Supplies				
	x	\$2.00	\$/sow	_____
	÷	<u>22.50</u>	<u>pigs/sow</u>	_____
	=	\$0.09	/pig sold	_____
2.07 Marketing & Transportation & Board Levy				
		\$3.00	marketing & transportation	_____
	±	<u>\$0.19</u>	<u>board levy</u>	_____
	=	\$3.19	/pig sold	_____
2.08 Herd Replacement				
Sow		180.0	kg/sow (cull weight)	_____
	x	\$77.28	/100 kg live	_____
	=	\$139.10	/sow value of cull	_____
		\$300.00	/sow value of replacement	_____
	-	\$139.10	/sow value of cull	_____
	=	\$160.90	net replacement cost	_____
	x	42.00	% sow culling rate	_____
	÷	<u>22.50</u>	<u>pigs/sow</u>	_____
	=	\$3.00	/pig sold	_____
Boar		225.0	kg/boar (cull weight)	_____
	x	\$55.18	/100 kg live	_____
	=	\$124.15	/boar value of cull	_____
		\$300.00	/boar value of replacement	_____
	-	\$124.15	/boar value of cull	_____
	=	\$175.85	net replacement cost	_____
	x	50.00	% boar culling rate	_____
	x	3	number of boars	_____
	÷	600	number of sows	_____
	÷	<u>22.50</u>	<u>pigs/sow</u>	_____
	=	\$0.02	/pig sold	_____
Total		\$3.02	/pig sold	_____
2.09 Artificial Insemination				
		2.2	Number of services	_____
	x	\$7.50	Cost/dose (Semen)	_____
	x	600	Sows	_____
	x	2.3	Litters/sow	_____
	÷	<u>13,497</u>	<u>Pigs sold</u>	_____
	=	\$1.69	/pig sold	_____

2.10 Property Taxes:

	\$4,725	total taxes	_____
÷	<u>13,497</u>	<u>pigs marketed</u>	_____
=	\$0.35	/pig sold	_____

2.11 Interest on Operating Cost:

	<u>Subtotal Operating Cost x Farrow-to-Farrow Period x</u>	<u>% Interest</u>	
	365	2	
	365	days per year	_____
÷	2.30	litters/sow	_____
=	159	days farrow-to-farrow	_____
	\$30.09	subtotal operating	_____
x	159	days farrow to farrow	_____
÷	365	days per year	_____
x	6.5	% operating interest rate	_____
÷	<u>2</u>	<u>average</u>	_____
=	\$0.43	/pig sold	_____

4.03 Equipment

	\$447,022	equipment cost	_____
+	\$44,702	salvage value	_____
÷	2	average	_____
x	3.5	% investment rate	_____
÷	<u>13,497</u>	<u>pigs marketed</u>	_____
=	\$0.64	/pig sold	_____

4.04 Breeding Stock

	\$180,900	value of breeding stock	_____
x	3.5	% investment rate	_____
÷	<u>13,497</u>	<u>pigs marketed</u>	_____
=	\$0.47	/pig sold	_____

C. Labour

	120.0	hours/week	_____
x	52	weeks/year	_____
x	\$17.00	/hour	_____
÷	600	sows	_____
÷	<u>22.50</u>	<u>pigs/sow</u>	_____
=	\$7.86	/pig sold	_____

Summary of Purchased Feeds Used

Number of Sows	600			
Total Pigs Fed	13,886			
	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Dry Sow	535.92	44.66	38.59	85.08
Lactating Sow	176.64	14.72	12.72	28.04
Boar	3.29	0.27	0.24	0.52
Creep	<u>6.94</u>	<u>0.58</u>	<u>0.50</u>	<u>1.10</u>
Total	722.79	60.23	52.05	114.75

Summary of Home Feed Ingredients Used

	Total	Total	Total	Total
	per Year	per Month	per Pig	per Pig
	(tonnes)	(tonnes)	(kgs)	(lbs)
Wheat	0.00	0.00	0.00	0.00
Barley	0.00	0.00	0.00	0.00
Corn	0.00	0.00	0.00	0.00
Soybean Meal	0.00	0.00	0.00	0.00
Canola Meal	0.00	0.00	0.00	0.00
Peas	0.00	0.00	0.00	0.00
Sow Micro	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
Fish Meal	0.00	0.00	0.00	0.00
Plasma	0.00	0.00	0.00	0.00
Limestone	0.00	0.00	0.00	0.00
Dical (16% Ca-21%)	0.00	0.00	0.00	0.00
Salt - 96%	0.00	0.00	0.00	0.00
Phytase	0.00	0.00	0.00	0.00
L-Lysine HCL	0.00	0.00	0.00	0.00
L-Threonine	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00
Oats - groats	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00
Total	722.79	60.23	52.05	114.75

For further information contact your local MAFRI office.

Prepared by:

Robyn Harte
Business Development Specialist - Swine

Return On Assets (ROA)

Assumptions

Total Assets	\$1,499,838
Total Hogs Sold	13,497
Days to Market	20
Market Weight	6 kg/hog (live)
Market Price	\$35.00 /hog

	<u>\$/Hog Sold</u>	<u>% of Total</u>
Return On Assets Calculation		
Total Revenue	\$35.00	
Less Expenses		
Feed Costs	\$15.59	34.2%
Other Operating Costs	\$14.50	31.8%
Interest on Operating Costs	<u>\$0.43</u>	<u>0.9%</u>
Total Operating Costs	\$30.52	67.0%
Depreciation	\$5.11	11.2%
Interest on Investment	\$2.09	4.6%
Labour (Family & Hired)	<u>\$7.86</u>	<u>17.2%</u>
Total Expenses (Cost Of Production)	\$45.57	100.0%
Net Income	(\$10.57)	
Return on Assets (ROA)		-7.3%

Return On Assets (ROA) =	$\frac{\text{Net Income} + \text{Operating Interest} + \text{Investment Interest} - \text{Value of Unpaid}}{\text{Total Assets}}$
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Total Assets = Total Assets includes the buildings, equipment, land, manure storage and breeding stock valued at replacement cost.

Cash Flow Calculation

Income

Rate per market pig	\$35.00
Number of pigs marketed	<u>13,497</u>
Total Income	\$472,395

Operating Expenses

Feed Cost	\$210,419
Veterinary Medicine & Supplies	\$13,497
Maintenance & Repairs	\$5,129
Hydro & Propane	\$32,850
Insurance	\$18,653
Manure Costs	\$13,123
Office Supplies	\$1,200
Levy, Marketing & Transportation	\$43,055
Replacement & Insemination Costs	\$63,524
Property Taxes	\$4,725
Interest on Operating Cost	\$5,739
Total Operating Costs	\$411,914
Manure Value	\$0
Total Operating Costs	\$411,914

Labour Costs **\$106,086**

Loan Payment

Total Capital Investment	\$1,263,641
Portion financed %	60.0%
Loan Amount	\$758,184
Term in years	20.0
Interest Rate	6.0%
Annual Payment	\$66,102

Returns to Enterprise

Cash over operating costs	\$60,481
Cash over operating & loan payments	-\$5,621
Cash over total (includes labour)	-\$111,707

Breakeven Calculations \$/market pig

Breakeven operating	\$30.52
Breakeven operating & loan payments	\$35.42
Breakeven total (includes labour)	\$43.28