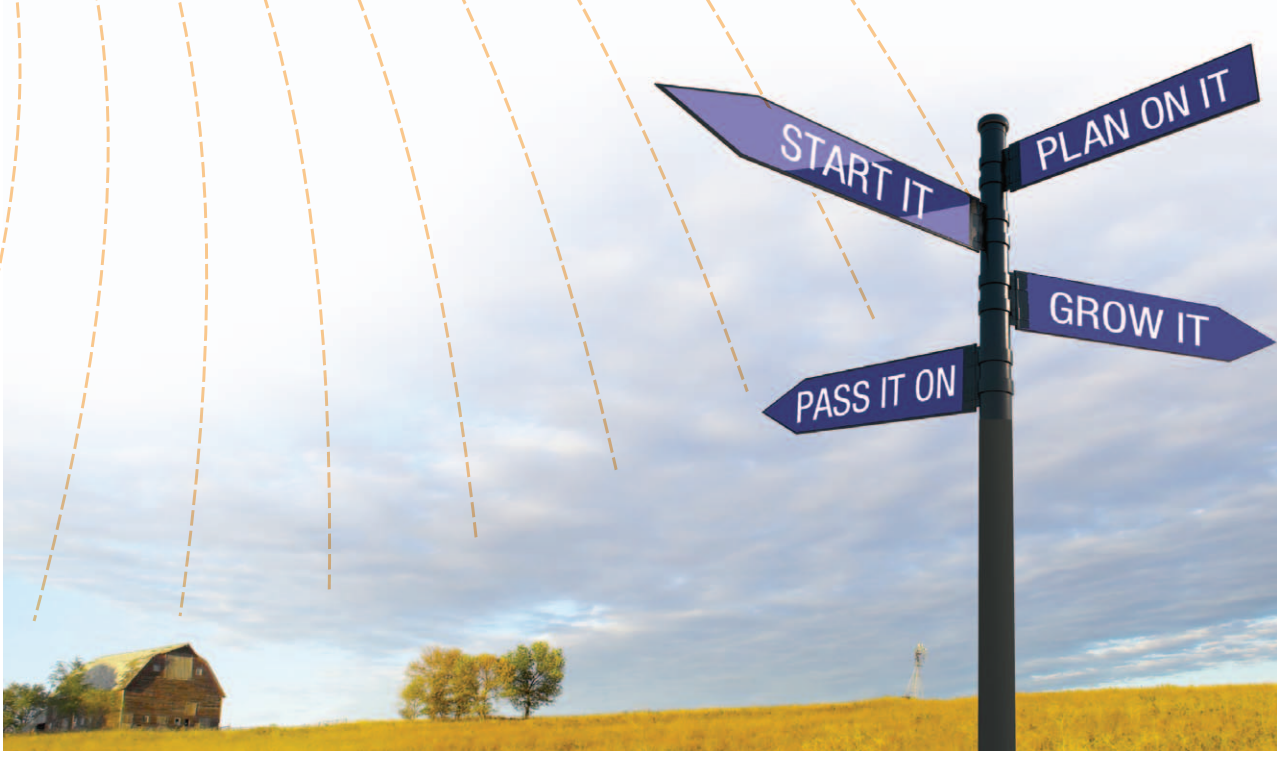
Guidelines for Estimating Swine Farrow-Wean to 6 kg Costs 2019/2020 in Manitoba



Manitoba

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Guidelines For Estimating

Swine Farrow-Wean to 6 kg Costs

Based On 600 Sows 16,422 Pigs Sold

Date: September, 2018

This guide is designed to provide you with planning information and a format for calculating costs of production of a swine farrow to 6kg enterprise in Manitoba. This operation is intended to represent the first stage of a three stage system. General Manitoba Agriculture recommendations are assumed in using feed and veterinary inputs. These figures provide an economic evaluation of the livestock and estimated prices required to cover all costs. Costs include labour, investment and depreciation, but do not include management costs, nor do they necessarily represent the average cost of production in Manitoba.

These budgets may be adjusted by putting in your own figures. As a producer you are encouraged to calculate your own costs of production. 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.

This tool is available as an Excel worksheet at: www.manitoba.ca/agriculture or at your local Manitoba Agriculture office.

The Farm Machinery Custom and Rental Rate is also available to help determine machinery costs.

Note: 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 use of this information is the responsibility of the user. If you need help with a budget, contact your local Manitoba Agriculture 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 or home-mixed.

The budget includes a land investment cost for 40 acres, with 0 acres rented out at $60 per acre, of the estimated 84 to 130 acres of total landbase that would be required for this size of livestock operation. This land base falls within the 2XP2O5 application rate, soil phosphorus levels permitting.

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

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 - September, 2018

	Purchased Feed			Home-Mixed Feed			
A. Operating Costs	**$/Pig Sold**	**$/Sow**	**Total Cost**	**$/Pig Sold**	**$/Sow**	**Total Cost**	**Your Cost**
1. Feed Costs:							
1.01 Sow Lactation Ration	$4.75	$130.01	$78,005	$4.03	$110.30	$66,181	
1.02 Sow Gestation Ration	$11.26	$308.19	$184,912	$9.93	$271.78	$163,070	
1.03 Boar Ration	$0.07	$1.92	$1,150	$0.06	$1.64	$985	
1.04 Creep Feed	$1.12	$30.65	$18,393	$0.54	$14.78	$8,868	
Total Feed Cost	**$17.20**	**$470.77**	**$282,460**	**$14.56**	**$398.50**	**$239,104**	
2. Other Operating Costs:							
2.01 Veterinary Medicine & Supplies:	$1.21	$33.12	$19,871	$1.21	$33.12	$19,871	
2.02 Maintenance & Repairs	$1.24	$33.94	$20,363	$1.24	$33.94	$20,363	
2.03 Hydro & Propane	$2.97	$81.28	$48,767	$2.97	$81.28	$48,767	
2.04 Insurance	$1.53	$41.80	$25,082	$1.53	$41.80	$25,082	
2.05 Manure Costs	$0.78	$21.29	$12,775	$0.78	$21.29	$12,775	
2.06 Office Supplies	$0.07	$2.00	$1,200	$0.07	$2.00	$1,200	
2.07 Marketing & Transport.	$3.19	$87.31	$52,386	$3.19	$87.31	$52,386	
2.08 Herd Replacement	$3.55	$97.12	$58,272	$3.55	$97.12	$58,272	
2.09 Artificial Insemination	$2.10	$57.48	$34,485	$2.10	$57.48	$34,485	
2.10 Property Tax	$0.29	$7.87	$4,725	$0.29	$7.87	$4,725	
Subtotal Operating Costs	$34.12	$933.98	$560,386	$31.48	$861.71	$517,030	
2.11 Interest on Operating Costs	$0.41	$11.28	$6,769	0.38	$10.41	$6,245	
Total Operating Costs	**$34.54**	**$945.26**	**$567,155**	**$31.86**	**$872.12**	**$523,275**	
B. Fixed Costs							
3. Depreciation:							
3.01 Buildings & Manure Storage	$2.02	$55.29	$33,172	$2.08	$56.93	$34,158	
3.02 Equipment	$3.20	$87.58	$52,550	$3.47	$94.97	$56,984	
Total Depreciation Cost	**$5.22**	**$142.87**	**$85,722**	**$5.55**	**$151.90**	**$91,142**	
4. Investment:							
4.01 Land Cost	$0.15	$4.13	$2,475	$0.15	$4.13	$2,475	
4.02 Buildings & Manure Storage	$0.83	$22.62	$13,573	$0.85	$23.25	$13,950	
4.03 Equipment	$0.54	$14.72	$8,830	$0.58	$15.98	$9,587	
4.04 Breeding Herd	$0.37	$10.11	$6,063	$0.37	$10.11	$6,063	
Total Investment Cost	**$1.88**	**$51.58**	**$30,941**	**$1.95**	**$53.47**	**$32,075**	
Total Fixed Costs	**$7.10**	**$194.45**	**$116,663**	**$7.50**	**$205.37**	**$123,217**	
C. Labour							
Wages, benefits and hired manager	**$8.36**	**$228.81**	**$137,288**	**$8.36**	**$228.81**	**$137,288**	
Total Cost of Production	**$50.00**	**$1,368.52**	**$821,106**	**$47.73**	**$1,306.30**	**$783,780**	

Profitability and Breakeven Analysis

Estimated Farmgate	**$/Pig**	**$/Sow**	**Total**	**$/Pig**	**$/Sow**	**Total**	
Market Price per weanling	$44.00	$1,204.28	$722,568	$44.00	$1,204.28	$722,568	
Land rental per head sold	$0.00	$0.00	$0	$0.00	$0.00	$0	
Gross Revenue / hog	**$44.00**	**$1,204.28**	**$722,568**	**$44.00**	**$1,204.28**	**$722,568**	
Marginal Returns							
Over Operating Costs	$9.46	$259.02	$155,413	$12.14	$332.16	$199,293	
Over Operating & Labour Costs	$1.10	$30.21	$18,125	$3.78	$103.35	$62,005	
Over Total Costs (Net Profit)	**($6.00)**	**($164.24)**	**($98,538)**	**($3.73)**	**($102.02)**	**($61,212)**	
Operating Expense Ratio	**78.5%**			**72.4%**			
Breakeven Selling Price	**$/Pig**			**$/Pig**			
Operating Costs	$34.54			$31.86			
Operating & Labour Costs	$42.90			$40.22			
Total Costs	**$50.00**			**$47.73**			
Return On Assets (ROA)	**(3.39%)**			**(1.22%)**			

Note: 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.

Risk & Sensitivity Analysis

	Purchased Feed Per Pig	Home-Mixed Feed Per Pig
A. Operating Costs		
Feed cost	$17.20	$14.56
Other Operating Costs	$17.34	$17.30
Subtotal	$34.54	$31.86
B. Fixed Costs	$7.10	$7.50
C. Labour	$8.36	$8.36
Total Costs	$50.00	$47.73
Estimated Farmgate		
Price ($ per weanling)	$44.00	$44.00
Weanlings sold per sow	27.37	27.37

	Up	Down
Percent Market Price Variation	**10.0%**	**10.0%**
Percent Feed Cost Variation	**10.0%**	**5.0%**
Weanlings Sold Per Sow	**0.50**	**2.50**

Higher Price ($ per weanling)	$48.40	$48.40
Lower Price ($ per weanling)	$39.60	$39.60
Higher Feed Cost	$18.92	$16.02
Lower Feed Cost	$16.34	$13.83
Higher Weanlings Sold Per Sow	27.87	27.87
Lower Weanlings Sold Per Sow	24.87	24.87

Higher Margin Scenario - Price Up 10%, Feed Price Down 5% and Weanlings Sold Per Sow Up 0.5

Operating Costs	$33.38	$30.89
Total Costs	$48.85	$46.75
Gross Revenue / hog	$48.40	$48.40
Marginal Returns		
Over Operating Costs	$15.02	$17.51
Over Operating & Labour Costs	$6.66	$9.15
Over Total Costs (Net Profit)	($0.45)	$1.65
Operating Expense Ratio	69.0%	63.8%
Return on Asset (ROA)	**1.69%**	**3.47%**

Lower Margin Scenario - Price Down 10%, Feed Price Up 10% and Weanlings Sold Per Sow Down 2.5

Operating Costs	$38.16	$34.93
Total Costs	$53.62	$50.79
Gross Revenue / hog	$39.60	$39.60
Marginal Returns		
Over Operating Costs	$1.44	$4.67
Over Operating & Labour Costs	($6.92)	($3.69)
Over Total Costs (Net Profit)	($14.02)	($11.19)
Operating Expense Ratio	96.4%	88.2%
Return on Asset (ROA)	**(10.73%)**	**(7.82%)**

Note: 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.

Weanling market price / head **$44.00**

Indicators of Productivity

Sows	**600**
Boars	**3**
Litters/Sow/Year	**2.38**
Average Weaning Age (days)	**21**
Average Born Alive per Litter	**13.50**
Percent Pre-Weaning Mortality	**12.5**
Percent Post-Weaning Culls	**2.4**

Herd Profile	**Total**	**/Sow**	**/Litter**	**%Mortality**
Sows	600			
Boars	3			
Litters	1,425	2.38		
Pigs Born Alive	19,238	32.06	13.50	
Pigs Died, Pre-Weaning	2,405	4.01	1.69	12.5
Pigs Weaned	16,833	28.06	11.81	
Pigs Culled	411	0.69	0.29	2.4
Weaner Pigs Sold	16,422	27.37	11.52	

Feed Requirements and Costs			**Purchased**	**Home-Mixed**
Sow Gestation Ration	**3.0**	kg/day	**$325.85**	$287.44
Sow Lactation Ration	**6.5**	kg/day	**$401.16**	$340.29
Boar Ration	**3.0**	kg/day	**$325.85**	$287.44
Creep Feed	**0.5**	kg/pig	**$1,917.38**	$922.29

Labour

Total Hours per 7-day week	**120.0**	hours/week
Wage (includes benefits & hired manager)	**$22.00**	/hour

Sow Barn Capital Investment

Buildings	**Sq.Ft. [1]**	**$/Sq.Ft.**	**Total**	**/Sow**	**Your Cost**
Gestation	16,200	**$35.00**	$567,000	$945.00	
Farrowing	7,584	**$23.59**	$178,900	$298.17	
Office & Loading	300	**$27.50**	$8,250	$13.75	
Standby Generator			$25,000	$41.67	
Feed Mill (building only)			**$25,000**	$41.67	
Total Building Cost			**$804,150**	**$1,298.58**	

Equipment [1]

Gestation				**$24.00**	$388,800	$648.00
Farrowing				**$24.00**	$182,009	$303.35
Fire Alarm System					**$3,000**	$5.00
Feed Bins (4 bins)					**$10,000**	$16.67
Feed Mill (equipment only)					**$50,000**	$83.33
Total Equipment Cost					**$633,809**	**$973.02**
Total Buildings and Equipment Cost					**$1,437,959**	**$2,271.60**
Breeding Stock						
Value of Replacement Sow		$350	/sow		$210,000	$350.00
Value of Replacement Boar		$3,500	/boar		$10,500	$17.50
Total Breeding Stock Cost					**$220,500**	**$367.50**
Land Value						
Land Investment	**40** acres @	**$1,500**			**$60,000**	**$100.00**
Land Investment	**0** acres @	**$1,500**			**$0**	**$0.00**
Other Costs						
Site Preparation					**$30,000**	$50.00
Manure Storage					**$100,000**	$166.67
Total Other Costs					**$130,000**	**$216.67**
Total Capital Investment					**$1,848,459**	**$3,080.76**

[1] FOOTNOTE: The number of sqare 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

Depreciation (straight line):

Useful Life:		
Buildings	**25**	years
Equipment	**10**	years
Salvage Value (% of original cost):		
Buildings	**10.00**	%
Equipment	**10.00**	%

Investment Interest Rate **2.75** %

Veterinary Costs: Professional Services **$9.00** /sow
Medication **$24.00** /sow

Maintenance & Repair **1.50** % of Total Capital Investment

Hydro & Propane	Hydro rate	**$0.08527**	per kwhr
	Hydro usage	**267,000**	kwhr
	Propane rate	**$0.52**	total propane
	Propane usage	**50,000**	litres

Insurance

Buildings & equipment	**$0.78**	/$100 Capital Invested
Breeding Stock & weaners	**$0.88**	/$100 Capital Invested
Business Interruption	**$0.78**	/$100 Capital Invested
Business Interruption based on	**$1,200**	/Sow

Weaner Value		**$44.00**	/Weaner
Manure Costs:	Storage volume	**22.7**	litres/sow/day [3]
	Haulage Cost	**$0.0022**	/litre
		$0.010	/gallon
	Odour control (barley straw)	**$0**	total cost
	Manure Management Fee	**$3,000**	total cost

Manure nutrient content	nutrient kg/1000 litres	fertilizer value $/lb	% nutrient value cost recovery / sale
Total Nitrogen	**2.09**	**0.434**	**60**
Phosphate (P2O5)	**0.56**	**0.461**	**0**
Potassium	**0.89**	**0.314**	**0**

* kg/1000 L x 10 = lbs/1000 imp. Gallons

Office Supplies	Estimated rate per sow	**$2.00**	$/sow
Marketing & Transportation		**$3.00**	/weaner pig sold
Board Levy		**$0.19**	/weaner pig sold
Breeding Herd Replacement:		**42.00**	% of sows replaced per year
Cull Sow Weight		**180.0**	kg
Cull Sow Price (live weight)		**$77.3**	/100kg
Cull Sow Price (dress weight)		$96.60	/100kg
Value of Replacement Sow		**$350**	/sow
Boar Replacement Rate:		**50.00**	% of boars replaced per year
Cull Boar Weight		**225.0**	kg
Cull Boar Price (live weight)		$55.18	/100kg
Cull Boar Price (dress weight)		$68.97	/100kg
Value of Replacement Boar		**$3,500**	/boar

Breeding Costs

Number of services/sow	**2.2**
Cost/dose (semen)	**$11.00**

Property Tax:

Farrow-weanling barn & land	**$4,725**	/year
Land	**$4.35**	/acre

Land Value

Number of acres	**40**
Number of acres rented out	**0**
Rental rate (income)	**$60**
Land value per acre	**$1,500**

Operating Loan Interest Rate **5.75** %

[3] FOOTNOTE: 1 cubic metre = 1000 litres
1 cubic metre = 35.314 cubic feet
1 cubic metre = 219.97 imperial gallons

Feed Ingredient Costs

Ingredients	Price/tonne		Your Cost
Wheat	$216		
Barley	$197		
Corn	$175		
Soybean Meal	$525		
Canola Meal	$350		
Peas	$260		
Sow Micro	$8,000		
Canola Oil	$1,023		
Whey Powder	$537		
Fish Meal	$3,030		
Plasma	$5,720		
Limestone	$121		
Dical (16% Ca-21% P)	$723		
Salt - 96%	$178		
Phytase	$12,941		
L-Lysine HCL	$2,014		
L-Threonine	$2,351		
DL-Methionine	$3,569		
Oats - groats	$392		
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**

Total Feed per Sow	Dry Sow Ration (tonnes)	Nursing Sow Ration (kg/sow)	Boar Ration (kg)	Creep Ration (kg)	Total (kg)
Wheat	146.91	110.62	0.77	0.00	258.30
Barley	305.73	38.90	1.77	0.00	346.41
Corn	0.00	0.00	0.00	1.18	1.18
Soybean Meal	0.00	38.12	0.00	0.98	39.11
Canola Meal	45.38	0.00	0.34	0.00	45.71
Peas	51.62	0.00	0.30	0.00	51.92
Sow Micro	2.84	0.97	0.02	0.04	3.87
Canola Oil	0.00	0.00	0.00	0.17	0.17
Whey Powder	0.00	0.00	0.00	0.84	0.84
Fish Meal	0.00	0.00	0.00	0.50	0.50
Plasma	0.00	0.00	0.00	0.49	0.49
Limestone	5.67	2.33	0.04	0.10	8.15
Dical (16% Ca-21% P)	6.24	2.33	0.04	0.08	8.69
Salt - 96%	1.99	0.97	0.01	0.03	3.00
Phytase	0.28	0.10	0.00	0.00	0.38
L-Lysine HCL	0.57	0.16	0.00	0.00	0.73
L-Threonine	0.00	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00	0.00
Oats - groats	0.00	0.00	0.00	4.00	4.00
Total Ration (kg/sow/year)	**567.23**	**194.51**	**3.29**	**8.42**	**773.44**

Feed Requirement and Cost Summary

Sow Gestation & Boar Ration:	Amount (kg)		Ingredient Price ($ /tonne)	Ration Cost ($ /tonne)	Your Cost
Wheat	259.0		$216.00	$55.94	
Barley	539.0		$197.00	$106.18	
Corn					
Soybean Meal					
Canola Meal	80.0		$350.00	$28.00	
Peas	91.0		$260.00	$23.66	
Sow Micro	5.0		$8,000.00	$40.00	
Canola Oil					
Whey Powder					
Fish Meal					
Plasma					
Limestone	10.0		$121.00	$1.21	
Dical (16% Ca-21% P)	11.0		$723.00	$7.95	
Salt - 96%	3.5		$178.00	$0.62	
Phytase	0.5		$12,941.00	$6.47	
L-Lysine HCL	1.0		$2,014.00	$2.01	
L-Threonine					
DL-Methionine					
Oats - groats					
Total Dry Sow	**1,000.0**	**kg**		**$272.04**	
Adjusted For Weight Loss			1.25 %	$275.44	
Plus Processing Cost			$5.00	$280.44	
Plus Labour Cost			$7.00	**$287.44**	
Sow Lactation:					
Wheat	568.7		$216.00	$122.84	
Barley	200.0		$197.00	$39.40	
Corn					
Soybean Meal	196.0		$525.00	$102.90	
Canola Meal					
Peas					
Sow Micro	5.0		$8,000.00	$40.00	
Canola Oil					
Whey Powder					
Fish Meal					
Plasma					
Limestone	12.0		$121.00	$1.45	
Dical (16% Ca-21% P)	12.0		$723.00	$8.68	
Salt - 96%	5.0		$178.00	$0.89	
Phytase	0.5		$12,941.00	$6.47	
L-Lysine HCL	0.8		$2,014.00	$1.61	
L-Threonine					
DL-Methionine					
Oats - groats					
Total Nursing Sow	**1,000.0**	**kg**		**$324.24**	
Adjusted For Weight Loss			1.25 %	$328.29	
Plus Processing Cost			$5.00	$333.29	
Plus Labour Cost			$7.00	**$340.29**	

Creep Ration:					
Wheat					
Barley					
Corn	139.8		$175.00	$24.46	
Soybean Meal	116.6		$525.00	$61.21	
Canola Meal					
Peas					
Sow Micro	5.0		$8,000.00	$40.00	
Canola Oil	20.0		$1,023.00	$20.46	
Whey Powder	100.0		$537.00	$53.70	
Fish Meal	60.0		$3,030.00	$181.80	
Plasma	58.0		$5,720.00	$331.76	
Limestone	12.2		$121.00	$1.48	
Dical (16% Ca-21% P)	9.4		$723.00	$6.82	
Salt - 96%	3.5		$178.00	$0.62	
Phytase					
L-Lysine HCL	0.5		$2,014.00	$1.01	
L-Threonine					
DL-Methionine					
Oats - groats	475.0		$392.00	$186.20	
Total Creep	**1,000.0**	**kg**		**$909.52**	
Adjusted For Weight Loss			1.25 %	$910.29	
Plus Processing Cost			$5.00	$915.29	
Plus Labour Cost			$7.00	**$922.29**	

Production Cost Worksheet

A. Operating Costs **Your Cost**

1. Feed Requirements and Costs

1.01 Sow Lactation Ration - Purchased Feeds

	21	days average weaning age
x	2.38	litters/sow/year
=	49.9	days lactation
x	6.5	kg ration/day
x	$401.16	/tonne ration
÷	1,000	kg/tonne
÷	27.37	pigs/sow
=	**$4.75**	**/pig sold**

1.02 Sow Gestation Ration - Purchased Feeds

	365	days/year
-	49.9	days lactation
=	315.1	days gestation
x	3.0	kg ration/day
x	$325.85	/tonne ration
÷	1,000	kg/tonne
÷	27.37	pigs/sow
=	**$11.26**	**/pig sold**

1.03 Boar Ration - Purchased Feeds

	365	days
x	3.0	kg ration/day
x	$325.85	/tonne ration
÷	1,000	kg/tonne
x	3	boars
÷	600	sows
÷	27.37	pigs/sow
=	**$0.07**	**/pig sold**

1.04 Creep Feed - Purchased Feeds

	0.5	kg ration/pig
x	$1,917.38	/tonne of creep feed
÷	1,000	kg/tonne
x	32.06	pigs born alive/sow/year
÷	27.37	pigs/sow
=	**$1.12**	**/pig sold**

1.05 Sow Lactation Ration - Home Mixed Feeds

	21	days average weaning age
x	2.38	litters/sow/year
=	49.9	days lactation
x	6.5	kg ration/day
x	$340.29	/tonne ration
÷	1,000	kg/tonne
÷	27.37	pigs/sow
=	**$4.03**	**/pig sold**

1.06 Sow Gestation Ration - Home Mixed Feeds

	365	days/year
-	49.9	days lactation
=	315.1	days gestation
x	3.0	kg ration/day
x	$287.44	/tonne ration

÷	1,000	kg/tonne	
÷	27.37	pigs/sow	
=	**$9.93**	**/pig sold**	

1.07 Boar Ration - Home Mixed Feeds

	365	days	
x	3.0	kg ration/day	
x	$287.44	/tonne ration	
÷	1,000	kg/tonne	
x	3	boars	
÷	600	sows	
÷	27.37	pigs/sow	
=	**$0.06**	**/pig sold**	

1.08 Creep Feed - Home Mixed Feeds

	0.5	kg ration/pig	
x	$922.29	/tonne of creep feed	
÷	1,000	kg/tonne	
x	32.06	pigs born alive/sow/year	
÷	27.37	pigs/sow	
=	**$0.54**	**/pig sold**	

2. Other Operating Costs

2.01 Veterinary Medicine & Supplies

	$9.00	/sow professional services	
+	$24.00	/sow medication	
÷	27.37	pigs/sow	
=	**$1.21**	**/pig sold**	

2.02 Maintenance & Repairs

	$2,271.60	/sow building & equipment cost	
x	1.50	% repair & maintenance	
÷	27.37	pigs/sow	
=	**$1.24**	**/pig sold**	

2.03 Hydro & Propane

	$22,767	hydro	
+	$26,000	propane	
÷	16,422	pigs marketed	
=	**$2.97**	**/pig sold**	

2.04 Insurance

	$1,437,959	buildings & equipment	
x	$0.78	/$100 capital	
÷	100		
÷	16,422	pigs marketed	
=	$0.68	/pig sold	
	$220,500	breeding stock	
+	$722,568	weaners	
x	$0.88	/$100 capital	
÷	16,422	pigs marketed	
=	$0.51	/pig sold	
	$1,200	business interruption coverage/sow	
x	600	sows	
x	$0.78	/$100 capital invested	
÷	16,422	pigs sold	
=	$0.34	/pig sold	
=	**$1.53**	**/pig sold**	

2.05 Manure Costs

Haulage	22.7	litres/sow/day
x	$0.002	/litre
x	365	days
÷	27.37	pigs/sow
=	$0.67	/pig sold
Estimated Nutrient Value		
	22.7	litres/sow/day
x	365	days/year
x	600	average inventory of sows
÷	1,000	
=	4,971	# of 1000 litres of manure
Nitrogen		
	2.09	kg per 1000 litres
x	4,971	# of 1000 litres of manure
x	60	% nutrient value recovery
÷	2.2046	lbs per kg
x	$0.43	fertilizer value per lb.
÷	16,422	pigs sold
=	$0.07	estimated nutrient value / pig sold
Phosphate		
	0.56	kg per 1000 litres
x	4,971	# of 1000 litres of manure
x	0	% nutrient value recovery
÷	2.2046	lbs per kg
x	$0.46	fertilizer value per lb.
÷	16,422	pigs sold
=	$0.00	estimated nutrient value / pig sold
Potassium		
	0.89	kg per 1000 litres
x	4,971	# of 1000 litres of manure
x	0	% nutrient value recovery
÷	2.2046	lbs per kg
x	$0.31	fertilizer value per lb.
÷	16,422	pigs sold
=	$0.00	estimated nutrient value / pig sold
Odour control & Mgmt Fees		
	$3,000	total costs
÷	16,422	pigs marketed
=	$0.18	/pig sold
Total =	**$0.78**	**/pig sold**

2.06 Office Supplies

x	$2.00	$/sow
÷	27.37	pigs/sow
=	**$0.07**	**/pig sold**

2.07 Marketing & Transportation & Board Levy

	$3.00	marketing & transportation
+	$0.19	board levy
=	**$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
	$350.00	/sow value of replacement

-	$139.10	/sow value of cull	
=	$210.90	net replacement cost	
x	42.00	% sow culling rate	
÷	27.37	pigs/sow	
=	**$3.24**	**/pig sold**	

Boar		225.0	kg/boar (cull weight)
	x	$55.18	/100 kg live
	=	$124.15	/boar value of cull
		$3,500.00	/boar value of replacement
	-	$124.15	/boar value of cull
	=	$3,375.85	net replacement cost
	x	50.00	% boar culling rate
	x	3	number of boars
	÷	600	number of sows
	÷	27.37	pigs/sow
	=	**$0.31**	**/pig sold**
Total		**$3.55**	**/pig sold**

2.09 Artificial Insemination

	2.2	Number of services
x	$11.00	Cost/dose (Semen)
x	600	Sows
x	2.4	Litters/sow
÷	16,422	Pigs sold
=	$2.10	**/pig sold**

2.10 Property Taxes:

	$4,725	total taxes
÷	16,422	pigs marketed
=	$0.29	/pig sold
	$4.35	taxes on land
x	0	acres
÷	16,422	pigs sold
=	$0.00	/pig sold
Total	**$0.29**	**/pig sold**

2.11 Interest on Operating Cost:

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

Purchased Feeds

	365	days per year
÷	2.38	litters/sow
=	153	days farrow-to-farrow
	$34.12	subtotal operating
x	153	days farrow to farrow
÷	365	days per year
x	5.8	% operating interest rate
÷	2	average
=	**$0.41**	**/pig sold**

Purchased Feeds

	365	days per year
÷	2.38	litters/sow
=	153	days farrow-to-farrow

	$31.48	subtotal operating	
x	153	days farrow to farrow	
÷	365	days per year	
x	5.8	% operating interest rate	
÷	2	average	
=	**$0.38**	**/pig sold**	

B. Fixed Costs

3. Depreciation: $\frac{\text{Original Cost - Salvage Value}}{\text{Useful Life}}$

3.01 Buildings - not including feedmill

	$909,150	building cost (including earthen manure storage)	
-	$77,915	salvage value (building only)	
÷	25	years useful life	
÷	16,422	pigs marketed	
=	**$2.02**	**/pig sold**	

3.011 Buildings - including feedmill

	$934,150	building cost (including earthen manure storage)	
-	$80,415	salvage value (building only)	
÷	25	years useful life	
÷	16,422	pigs marketed	
=	**$2.08**	**/pig sold**	

3.02 Equipment - not including feedmill

	$583,809	equipment cost	
-	$58,381	salvage value	
÷	10	years useful life	
÷	16,422	pigs marketed	
=	**$3.20**	**/pig sold**	

3.021 Equipment - inlcuding feedmill

	$633,809	equipment cost	
-	$63,381	salvage value	
÷	10	years useful life	
÷	16,422	pigs marketed	
=	**$3.47**	**/pig sold**	

4. Investment:

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

4.01 Land for Barn site

	$60,000	land investment	
+	$30,000	site preparation	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	$0.15	/pig sold	
Land for manure application			
	$0	land investment	
x	2.8	% investment rate	
÷	16,422	pigs sold	
=	$0.00	/pig sold	
Total	**$0.15**	**/pig sold**	

4.02 Buildings - not including feedmill

	$909,150	building cost (including earthen manure storage)	
+	$77,915	salvage value (building only)	
÷	2	average	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	**$0.83**	**/pig sold**	

4.021 Buildings - including feedmill

	$934,150	building cost (including earthen manure storage)	
+	$80,415	salvage value (building only)	
÷	2	average	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	**$0.85**	**/pig sold**	

4.03 Equipment - not including feedmill

	$583,809	equipment cost	
+	$58,381	salvage value	
÷	2	average	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	**$0.54**	**/pig sold**	

4.031 Equipment - including feedmill

	$633,809	equipment cost	
+	$63,381	salvage value	
÷	2	average	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	**$0.58**	**/pig sold**	

4.04 Breeding Stock

	$220,500	value of breeding stock	
x	2.8	% investment rate	
÷	16,422	pigs marketed	
=	**$0.37**	**/pig sold**	

C. Labour

	120.0	hours/week	
x	52	weeks/year	
x	$22.00	/hour	
÷	600	sows	
÷	27.37	pigs/sow	
=	**$8.36**	**/pig sold**	

$$\text{Return On Assets (ROA)} = \frac{\text{Net Income + Operating Interest + Investment Interest - Value of Unpaid Family Labour}}{\text{Total Assets}}$$

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

Summary of Purchased Feeds Used

Number of Sows	**600**
Total Pigs Fed	**16,833**

	Total per Year (tonnes)	Total per Month (tonnes)	Total per Pig (kgs)	Total per Pig (lbs)
Dry Sow	567.23	47.27	33.70	74.29
Lactating Sow	194.51	16.21	11.56	25.48
Boar	3.29	0.27	0.20	0.43
Creep	8.42	0.70	0.50	1.10
Total	**773.44**	**64.45**	**45.95**	**101.30**

Summary of Home Feed Ingredients Used

	Total per Year (tonnes)	Total per Month (tonnes)	Total per Pig (kgs)	Total per Pig (lbs)
Wheat	258.30	21.52	15.34	33.83
Barley	346.41	28.87	20.58	45.37
Corn	1.18	0.10	0.07	0.15
Soybean Meal	39.11	3.26	2.32	5.12
Canola Meal	45.71	3.81	2.72	5.99
Peas	51.92	4.33	3.08	6.80
Sow Micro	3.87	0.32	0.23	0.51
Canola Oil	0.17	0.01	0.01	0.02
Whey Powder	0.84	0.07	0.05	0.11
Fish Meal	0.50	0.04	0.03	0.07
Plasma	0.49	0.04	0.03	0.06
Limestone	8.15	0.68	0.48	1.07
Dical (16% Ca-21% I	8.69	0.72	0.52	1.14
Salt - 96%	3.00	0.25	0.18	0.39
Phytase	0.38	0.03	0.02	0.05
L-Lysine HCL	0.73	0.06	0.04	0.10
L-Threonine	0.00	0.00	0.00	0.00
DL-Methionine	0.00	0.00	0.00	0.00
Oats - groats	4.00	0.33	0.24	0.52
Total	**773.44**	**64.45**	**45.95**	**101.30**

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For more information, contact your local Manitoba Agriculture Office **or:**

Robyn Harte
Business Development Specialist - Swine

Roy Arnott
Farm Management Specialist

For more information

- Go to **manitoba.ca/agriculture**.
- Toll free at 1-844-769-6224
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