



# Guidelines for Estimating Lamb Production Costs 2018

## in Manitoba





## Guidelines for Estimating Lamb Production Costs Based on a 500-Ewe Flock

May, 2018

This guide is designed to provide you with planning information and a format for calculating costs of production of a ewe lamb enterprise in Manitoba. 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. Good management is assumed in that a balanced ration is being fed, and livestock are on a flock health program.

This tool is available as an Excel worksheet at: [www.manitoba.ca/agriculture](http://www.manitoba.ca/agriculture)  
or at your local [Manitoba Agriculture Office](#).  
[The Farm Machinery Custom and Rental Rate Guide](#) 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.

**Lamb Production Cost Summary - May, 2018**  
**Based on 500 Ewes - Marketing 931 Lambs**

	<u>\$/Ewe</u>	<u>\$/Lamb</u> <u>Marketed</u>	<u>\$/lb</u>	<u>Total Cost</u>	<u>Your Cost</u>
<b>A. Operating Costs</b>					
<b>1. Feed Costs</b>					
1.01 Ewe Ration	\$54.75	\$29.40	\$0.28	\$27,375	
1.02 Ram Ration	\$1.64	\$0.88	\$0.01	\$820	
1.03 Lamb Ration	\$77.32	\$41.53	\$0.39	\$38,660	
1.04 Salt-Mineral Mix	<u>\$25.33</u>	<u>\$13.60</u>	<u>\$0.13</u>	<u>\$12,665</u>	
<b>Total Feed Cost</b>	<b>\$159.04</b>	<b>\$85.41</b>	<b>\$0.81</b>	<b>\$79,520</b>	
<b>2. Other Operating Costs</b>					
2.01 Straw	\$15.71	\$8.44	\$0.08	\$7,855	
2.02 Vet Medicine and Supplies	\$14.72	\$7.91	\$0.07	\$7,360	
2.03 Fuel, Maintenance & Repairs	\$9.39	\$5.04	\$0.05	\$4,694	
2.04 Hydro, Water and Telephone	\$2.43	\$1.31	\$0.01	\$1,215	
2.05 Death Loss	\$7.14	\$3.84	\$0.04	\$3,572	
2.06 Insurance	\$2.95	\$1.58	\$0.01	\$1,475	
2.07 Flock Replacement	\$12.72	\$6.83	\$0.06	\$6,360	
2.08 Marketing & Transportation	\$23.72	\$12.74	\$0.12	\$11,860	
2.09 Shearing Costs	\$5.26	\$2.82	\$0.03	\$2,630	
2.10 Predator Control	\$1.73	\$0.93	\$0.01	\$863	
2.11 Professional Fees	\$0.70	\$0.38	\$0.00	\$350	
2.12 Manure Removal	\$5.62	\$3.02	\$0.03	\$2,809	
2.13 Miscellaneous	<u>\$1.00</u>	<u>\$0.54</u>	<u>\$0.01</u>	<u>\$500</u>	
<b>Subtotal Operating Costs</b>	<b>\$262.13</b>	<b>\$140.79</b>	<b>\$1.33</b>	<b>\$131,063</b>	
2.14 Operating Interest	<u>\$7.54</u>	<u>\$4.05</u>	<u>\$0.04</u>	<u>\$3,770</u>	
<b>Total Operating Costs</b>	<b>\$269.67</b>	<b>\$144.84</b>	<b>\$1.37</b>	<b>\$134,833</b>	
<b>B. Fixed Costs</b>					
<b>3. Depreciation</b>					
3.01 Buildings	\$9.91	\$5.32	\$0.05	\$4,955	
3.02 Equipment & Improvements	\$9.80	\$5.26	\$0.05	\$4,900	
<b>4. Investment</b>					
4.01 Buildings	\$4.91	\$2.64	\$0.02	\$2,455	
4.02 Equipment & Improvements	\$1.90	\$1.02	\$0.01	\$950	
4.03 Breeding Flock	\$6.55	\$3.52	\$0.03	\$3,273	
<b>5. Pasture Costs</b>	<u>\$5.29</u>	<u>\$2.84</u>	<u>\$0.03</u>	<u>\$2,643</u>	
<b>Total Fixed Costs</b>	<b>\$38.35</b>	<b>\$20.60</b>	<b>\$0.19</b>	<b>\$19,176</b>	
<b>Total Operating and Fixed Costs</b>	<b>\$308.02</b>	<b>\$165.44</b>	<b>\$1.56</b>	<b>\$154,009</b>	
<b>C. Labour</b>	<b>\$49.50</b>	<b>\$26.58</b>	<b>\$0.25</b>	<b>\$24,750</b>	
<b>Total Cost of Production</b>	<b>\$357.52</b>	<b>\$192.02</b>	<b>\$1.81</b>	<b>\$178,759</b>	

**Profitability and Breakeven Analysis**

	<u>\$/Ewe</u>	<u>\$/Lamb</u>	<u>Total</u>
<b>Estimated Farmgate</b>			
Price (\$ per cwt)		\$220	
Market Weight (shrunk lbs.)		107	\$218,543
Wool Value	<u>\$3.85</u>	<u>\$2.07</u>	<u>\$1,924</u>
Gross Revenue	<u>\$440.93</u>	<u>\$236.81</u>	<u>\$220,467</u>
<b>Marginal Returns</b>			
Over Operating Costs	<b>\$171.27</b>	<b>\$91.97</b>	<b>\$85,634</b>
Over Operating & Labour Costs	<b>\$121.77</b>	<b>\$65.39</b>	<b>\$60,884</b>
Over Operating & Fixed Costs	<b>\$132.92</b>	<b>\$71.37</b>	<b>\$66,458</b>
Over Total Costs (Net Profit)	<b>\$83.42</b>	<b>\$44.79</b>	<b>\$41,708</b>
<b>Operating Expense Ratio</b>	<b>61.2%</b>	<b>61.2%</b>	
<b>Return on Investment (ROI)</b>		<b>23.3%</b>	
<b>Return on Asset (ROA)</b>		<b>12.4%</b>	
<b>Breakeven Selling Price</b>		<u>\$/cwt</u>	
Operating Costs		<b>\$133.81</b>	
Operating & Labour Costs		<b>\$158.72</b>	
Operating & Fixed Costs		<b>\$153.11</b>	
Operating, Fixed & Labour Costs		<b>\$178.03</b>	

**Note:** This budget is only a guide and is not intended to be an in-depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user. No liability for decisions based on this publication is assumed.

### Risk & Sensitivity Analysis

	<u>Per Ewe</u>	<u>Per Lamb</u>
<b>A. Operating Costs</b>	\$269.67	\$144.84
<b>B. Fixed Costs</b>	\$38.35	\$20.60
<b>C. Labour</b>	\$49.50	\$26.58
<b>Total Costs</b>	\$357.52	\$192.02

**Estimated Farmgate**

Lamb Price (\$ per cwt)	\$220
Lamb Crop %	200
Lamb Market Weight (shrunk lbs)	107

	Up	Down
<b>Percent Lamb Price Variation</b>	5%	15%
<b>Percent Lamb Crop Variation</b>	20%	20%
<b>Percent Lamb Weight Variation</b>	5%	0%

<b>Higher Price (\$ per cwt)</b>	\$231.00		
<b>Lower Price (\$ per cwt)</b>	\$187.00		
<b>Higher Lamb Crop %</b>	220	=	1024 Lambs Marketed
<b>Lower Lamb Crop %</b>	180	=	838 Lambs Marketed
<b>Higher Lamb Weight</b>	112.0		
<b>Lower Lamb Weight</b>	106.7		

**Higher Margin Scenario - Price Up 5%, Lamb Crop Up 20% and Lamb Weight Up 5%**

	<u>Per Ewe</u>	<u>Per Lamb</u>
<b>Gross Revenue</b>	\$533.71	\$260.60
<b>Marginal Returns</b>		
Over Operating Costs	\$264.04	\$128.93
Over Operating & Labour Costs	\$214.54	\$104.76
Over Operating & Fixed Costs	\$225.69	\$110.20
Over Total Costs (Net Profit)	\$176.19	\$86.03
<b>Operating Expense Ratio</b>	50.5%	

**Lower Margin Scenario - Price Down 15%, Lamb Crop Down 20% and Lamb Weight Down 0%**

	<u>Per Ewe</u>	<u>Per Lamb</u>
<b>Gross Revenue</b>	\$338.26	\$201.82
<b>Marginal Returns</b>		
Over Operating Costs	\$68.59	\$40.93
Over Operating & Labour Costs	\$19.09	\$11.39
Over Operating & Fixed Costs	\$30.24	\$18.04
Over Total Costs (Net Profit)	(\$19.26)	(\$11.49)
<b>Operating Expense Ratio</b>	79.7%	

**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.

## Lamb Production Costs - Input

1. This budget outlines the cost of production for a sheep enterprise.
2. Buildings and equipment are valued at new cost.
3. All feed is valued at fair market value.
4. Replacements are purchased at fair market value.

<b>Flock Profile</b>	<b><u>Total</u></b>
Number of Ewes (Avg 170 lbs)	<b>500</b>
Number of Rams (Avg 200 lbs)	<b>13</b>
Lamb Crop (born alive) %	<b>200</b>
Ewe and Ram Mortality Rate (%)	<b>3</b>
Ewe Cull Rate (%)	<b>15</b>
Lamb Mortality Rate - Pre-Weaning %	<b>5</b>
Lamb Mortality Rate - Post-Weaning %	<b>2</b>
Lambs Marketed	<b>931</b>
Lambs per Ewe to Market	<b>1.86</b>
Average Lamb Market Weight (lbs)	<b>110</b>
Shrink	<b>3%</b>
Shrunk Weight (lbs)	<b>106.70</b>
Average Lamb Market Price (\$ per cwt)	<b>\$220</b>
Average Wool Production per animal (lbs)	<b>5</b>
Average Value of Wool (\$/lb)	<b>\$0.75</b>

### Feed Requirements and Costs

<u>Ewe Feeding Period</u>	<u>Feed type</u>	<u>Amount</u> <u>lbs/day</u>	<u>Cost</u> <u>\$/tonne</u>
<b>October 1-November 1 (off pasture and flushed for breeding)</b>			
Days	30	Grass hay	2.8    \$85.00
	30	Barley	0.6    \$195.00
<b>November 1-March 1 (early to mid gestation)</b>			
Days	115	Grass hay	4.1    \$85.00
	115	Barley	0    \$195.00
<b>March 1-April 1 (late gestation)</b>			
Days	30	Grass/alfalfa hay	3.6    \$110.00
	30	Barley	1    \$195.00
	30	Canola Meal	0.2    \$325.00
<b>April 1-June 1 (lactation)</b>			
Days	60	Alfalfa	4.2    \$130.00
	60	Barley	1.5    \$195.00
<u>Ram Feeding Period</u>	<u>Feed type</u>	<u>Amount</u> <u>lbs/day</u>	<u>Cost</u> <u>\$/tonne</u>
<b>October 1- June 1</b>			
Days	240	Barley	0.75    \$195.00
	240	Grass hay	5.1    \$85.00

			<b>Amount</b>	<b>Cost</b>
			<b>lbs/day</b>	<b>\$/tonne</b>
<b><u>Lamb</u></b>				
<b>Pre-weaning</b>				
Days	<b>50</b>	Creep	<b>0.5</b>	<b>\$290.00</b>
	<b>50</b>	Alfalfa	<b>0.5</b>	<b>\$130.00</b>
<b>Weaning</b>				
Days	<b>30</b>	Creep/grower	<b>1</b>	<b>\$240.00</b>
	<b>30</b>	Alfalfa	<b>1</b>	<b>\$130.00</b>
<b>Finishing</b>				
Days	<b>100</b>	Finisher	<b>2.5</b>	<b>\$200.00</b>
	<b>100</b>	Alfalfa	<b>1.5</b>	<b>\$130.00</b>

			<b>Amount</b>	<b>Price</b>
			<b>Fed (lbs)</b>	<b>\$/lb</b>
<b><u>Salt-Mineral- vitamin Mix</u></b>				
Ewes (365 days @ 0.06lb/hd/day)			<b>22</b>	<b>\$0.85</b>
Rams (365 days @ 0.06lb/hd/day)			<b>22</b>	<b>\$0.85</b>
Lambs (included in pre-mixed rations)			<b>6</b>	<b>\$0.55</b>

**Other Operating Costs**

<b>Straw Bedding</b>		
tonnes/ ewe		<b>0.20</b>
tonnes/lamb		<b>0.10</b>
tonnes/ ram		<b>0.25</b>
cost/tonne		<b>\$40.00</b>

**Veterinary Medicine & Supplies**

<b>Medication</b>		
<b>Lamb</b>		
clostridial (initial plus booster)		<b>\$0.58</b>
internal parasiticide (1x)		<b>\$0.53</b>
injectable vitamins		<b>\$0.30</b>
RFID tag		<b>\$4.50</b>
miscellaneous		<b>\$0.50</b>
<b>Ewe</b>		
clostridial (annually \$/shot)		<b>\$0.29</b>
Caseous Lymphadenitis (annually @ \$/shot)		<b>\$0.26</b>
internal parasiticide (3x)		<b>\$1.06</b>
injected vitamins		<b>\$0.60</b>
miscellaneous		<b>\$0.50</b>
<b>Ram</b>		
clostridial (annually @ \$/shot)		<b>\$0.29</b>
Caseous Lymphadenitis (annually @ \$/shot)		<b>\$0.26</b>
internal parasiticide (2x)		<b>\$1.06</b>
injected vitamins		<b>\$0.60</b>
miscellaneous		<b>\$0.50</b>

<b>Professional Services</b>			
Total Yearly Hours			2
Charge per Hour			\$141.00
Total Kilometers (round trip)			80
Charge per km			\$0.85
Number of yearly visits			1
<b>Fuel, Maintenance &amp; Repairs</b>			
Diesel Fuel Cost			\$1.10 /litre
a) Machinery Fuel Costs - Feeding			
Tractor with Loader PTO hp			120
Tractor Hours Per Day (average)			1.0 hours
b) Machinery Repair (% of investment cost)			1.5 %
c) Building maintenance (% of investment cost)			1.0 %
<b>Utilities</b>			
Hydro	15 kWh per ewe @		\$0.08196 / kWh
Water			\$0
Telephone			\$600
<b>Marketing &amp; Transportation</b>			
Custom Trucking		per lamb	\$6.25
Marketing Charges			
Commission	\$ 6.00		
Insurance - Manitoba	\$ 0.50		
Feed on arrival/day	\$ -		
		per lamb	\$6.50
<b>Replacement Costs</b>			
		<u>\$/cwt</u>	
Ewe replacement rate			15.0%
Ewe replacement cost			\$225.00
Ewe cull value	170 lbs	\$90	\$153.00
Ram replacement rate			25.0%
Ram replacement cost			\$500.00
Ram cull value	200 lbs	\$90	\$180.00
<b>Predator Control</b>			
Stock dog			\$750.00 / each
Guard dogs (2 required)			\$350.00 / each
Years			4
Annual maintenance costs (feed, vet, etc.)			\$500.00
<b>Manure Removal</b>			
Manure volume produced			0.00171 m <sup>3</sup> /ewe/day
Manure volume produced			0.060 ft <sup>3</sup> /ewe/day
Manure & bedding volume shrinkage			80 %
Cost for manure removal & application			\$12.00 /cubic yard
<b>Insurance</b>			
Cost per \$100 Capital Invested in			
a). Livestock			\$0.45
b). Building & Equipment			\$0.40
Add'l Coverage for liability (\$/year)			\$49.00



**Shearing Costs**

Ewe shearing cost (\$/head)	\$5.00
Ram shearing cost (\$/head)	\$10.00

**Miscellaneous**

Total yearly office expenses	\$500.00
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**Interest**

Investment Rate (%)	2.75%
Operating Loan (%)	5.75%

**CAPITAL INVESTMENT**

	<u>Value</u>	<u>Useful Life</u>	<u>Salvage Value</u>
<b>Buildings</b>			
Pole Barn (36' x 144') with Lambing/Shearing room (24' x 36')	\$150,000	30	10.0%
Wintering Lots	\$5,700	30	0.0%
Well	\$8,000	30	0.0%
<b>Total Building Cost</b>	<b>\$163,700</b>		
<b>Equipment &amp; Improvements</b>			
Water System (2 waterers & installation)	\$3,000	10	10.0%
Miscellaneous Machinery & Equipment:	\$5,000	10	20.0%
Tractor & Loader -allocated to sheep	\$36,000	10	20.0%
Truck - allocated to sheep	\$15,000	10	10.0%
<b>Total Equipment &amp; Improvements</b>	<b>\$59,000</b>		
<b>Total Buildings &amp; Equipment Investment</b>	<b>\$222,700</b>		
<b>Breeding Flock</b>			
Value of Ewes	\$112,500		
Value of Rams	\$6,500		
<b>Total Breeding Flock Investment</b>	<b>\$119,000</b>		
<b>Land Investment</b>			
Acres required	80		
Value per acre (Marginal pasture land)	\$750		
Total Land Investment	\$60,000		
Land Taxes (per acre)	\$4.00		
Fence 7 strand electric (miles)	2	20	0.0%
Fence cost (per mile)	\$5,280		
Total Fence Cost	\$10,560		
<b>Total Land &amp; Fence Investment</b>	<b>\$70,560</b>		
<b>Total Capital Investment</b>	<b>\$412,260</b>		
<b>Labour</b>			
Hours per ewe	2.25		
Rate per hour	\$22.00		

**Assumptions**

1. This budget outlines the cost of production for a sheep enterprise.
2. Buildings and equipment are valued at new cost.
3. All feed is valued at fair market value.
4. Replacements are purchased at fair market value.

**Lamb Production Costs Worksheet**

**Flock Profile**

Number of Ewes	500
Number of Rams	13
Lamb Crop (born alive) %	200
Ewe Mortality Rate (%)	3
Lamb Mortality Rate - Pre-Weaning %	5
Lamb Mortality Rate - Post-Weaning %	2
Lambs Marketed	931
Average Lamb Market Weight (lb)	106.7
Average Wool Production per animal (lb)	5
Average Value of Wool (\$/lb)	\$0.75

**Feed Requirements and Costs**

<u>Ewe Feeding Period</u>		<u>Feed type</u>	<u>Amount lbs/day</u>	<u>Cost \$/tonne</u>
<b>October 1-November 1 (off pasture and flushed for breeding)</b>				
Days	30	Grass hay	2.8	\$85.00
		Barley	0.6	\$195.00
<b>November 1-March 1 (early to mid gestation)</b>				
Days	115	Grass hay	4.1	\$85.00
	115	Barley	0.0	\$195.00
<b>March 1-April 1 (late gestation)</b>				
Days	30	Grass/alfalfa hay	3.6	\$110.00
	30	Barley	1.0	\$195.00
	30	Canola Meal	0.2	\$325.00
<b>April 1-June 1 (lactation)</b>				
Days	60	Alfalfa	4.2	\$130.00
	60	Barley	1.5	\$195.00
<u>Ram Feeding Period</u>		<u>Feed type</u>	<u>Amount lbs/day</u>	<u>Cost \$/tonne</u>
<b>October 1- June 1</b>				
Days	240	Barley	0.75	\$195.00
	240	Grass hay	5.1	\$85.00
<b><u>Lamb</u></b>				
<b><u>Pre-weaning</u></b>				
Days	50	Creep	0.5	\$290.00
	50	Alfalfa	0.5	\$130.00
<b><u>Weaning</u></b>				
Days	30	Creep/grower	1	\$240.00
	30	Alfalfa	1	\$130.00
<b><u>Finishing</u></b>				
Days	100	Finisher	2.5	\$200.00
	100	Alfalfa	1.5	\$130.00

<u>Salt-Mineral Mix</u>	<u>Amount Fed (lbs)</u>	<u>Price \$/lb</u>
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Ewes	22	\$0.85
Rams	22	\$0.85
Lambs (included in ration)	6	\$0.55

**A. OPERATING COSTS**

**Your Cost**

**1. Feed Costs**

**1.01 Ewe Flushing Ration**

**Barley**

	30	days per year	_____
x	0.6	lbs barley/day	_____
x	\$195.00	/tonne barley	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$1.59	/ewe	_____

**Grass hay**

	30	days/year	_____
x	2.8	lbs grass hay/day	_____
x	\$85.00	/tonne grass hay	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$3.24	/ewe	_____

**1.02 Ewe Early to Mid Gestation Ration**

**Barley**

	115	days/year	_____
x	0	lbs barley/day	_____
x	\$195.00	/tonne barley	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$0.00	/ewe	_____

**Grass hay**

	115	days/year	_____
x	4.1	lbs grass hay/day	_____
x	\$85.00	/tonne of grass hay	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$18.18	/ewe	_____

**1.03 Ewe Late Gestation Ration**

**Barley**

	30	days/year	_____
x	1	lbs barley/day	_____
x	\$195.00	/tonne barley	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$2.65	/ewe	_____

**Grass/alfalfa hay**

	30	days/year	_____
x	3.6	lbs grass/alfalfa hay/day	_____
x	\$110.00	/tonne of grass/alfalfa hay	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$5.39	/ewe	_____

**Canola Meal**

	30	days/year	_____
x	0.2	lbs canola meal/day	_____
x	\$325.00	/tonne of alfalfa hay	_____
÷	<u>2205</u>	<u>lbs/tonne</u>	_____
=	\$0.88	/ewe	_____

**1.04 Ewe Lactation Ration**

**Barley**

	60	days/year	_____
x	1.5	lbs barley/day	_____
x	\$195.00	/tonne barley	_____

	÷	<u>2205</u>	lbs/tonne	_____
	=	\$7.96	/ewe	_____
<b>Alfalfa</b>		60	days/year	_____
	x	4.2	lbs alfalfa hay/day	_____
	x	\$130.00	/tonne of alfalfa hay	_____
	÷	<u>2205</u>	lbs/tonne	_____
	=	\$14.86	/ewe	_____
<b>Total</b>	=	<b>\$54.75</b>	<b>/ewe</b>	_____

**1.05 Ram Ration  
Barley**

		240	days/year	_____
	x	0.75	lbs barley/ram/day	_____
	x	\$195.00	/tonne barley	_____
	÷	<u>2205</u>	lbs/tonne	_____
	=	\$15.92	/ram	_____
	x	13	rams	_____
	÷	<u>500</u>	ewes	_____
	=	\$0.41	/ewe	_____

**Grass hay**

		240	days/year	_____
	x	5.1	lbs alfalfa brome/ram/day	_____
	x	\$85.00	/tonne alfalfa brome	_____
	÷	<u>2205</u>	lbs/tonne	_____
	=	\$47.19	/ram	_____
	x	13	rams	_____
	÷	<u>500</u>	ewes	_____
	=	\$1.23	/ewe	_____

**Total = \$1.64 /ewe**

**1.06 Lamb Ration**

Pre Weaning Ration		50	days/year	_____
		0.5	lbs creep feed/lamb/day	_____
	x	950	lambs weaned	_____
	x	\$290.00	/ tonne commercial feed cost	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$6.25	/ewe	_____

Pre Weaning Forage		50	days/year	_____
		0.5	lbs hay/day	_____
	x	950	lambs weaned	_____
	x	\$130.00	/tonne of hay	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$2.80	/ewe	_____

Weaning Ration		30	days/year	_____
		1	lbs creep feed/lamb/day	_____
	x	950	lambs weaned	_____
	x	\$240.00	/ tonne commercial feed cost	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$6.21	/ewe	_____

Weaning Forage		30	days/year	_____
		1	lbs hay/day	_____
	x	950	lambs weaned	_____
	x	\$130.00	/tonne of hay	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$3.36	/ewe	_____

Finishing Ration		100	days/year	_____
		2.5	lbs creep feed/lamb/day	_____
	x	931	lambs weaned	_____
	x	\$200.00	/ tonne commercial feed cost	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$42.23	/ewe	_____

Finishing Forage		100	days/year	_____
		1.5	lbs alfalfa hay/day	_____
	x	931	lambs weaned	_____
	x	\$130.00	/tonne of alfalfa hay	_____
	÷	<u>2205</u>	lbs/tonne	_____
	÷	<u>500</u>	ewes	_____
	=	\$16.47	/ewe	_____

<b>Total</b>	<b>=</b>	<b>\$77.32</b>	<b>/ewe</b>	_____
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**1.07 Salt-Mineral Mix**

Ewes		22	lbs salt-mineral/ewe/year	_____
	x	<u>\$0.85</u>	/lb	_____
	=	\$18.70	/ewe	_____

Lambs (incl. in ration)		6	lbs salt-mineral/lamb/year	_____
	x	\$0.55	/lb	_____
	x	931	lambs marketed	_____
	÷	<u>500</u>	ewes	_____
	=	\$6.14	/ewe	_____

Rams		22	lbs salt-mineral/ram/year	_____
	x	\$0.85	/lb	_____
	x	13	rams	_____
	÷	<u>500</u>	ewes	_____
	=	\$0.49	/ewe	_____

<b>Total</b>	<b>=</b>	<b>\$25.33</b>	<b>/ewe</b>	_____
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**2. Other Operating Costs:**

**2.01 Straw**

Ewes		0.20	tonnes/ewe/year	_____
	x	<u>\$40.00</u>	/tonne	_____
	=	\$8.00	/ewe	_____

Lambs		0.10	tonnes/lamb/year	_____
	x	\$40.00	/tonne	_____
	x	931	lambs	_____
	÷	<u>500</u>	ewes	_____
	=	\$7.45	/ewe	_____

Rams				_____
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		0.25	tonnes/ram/year	_____
x		\$40.00	/tonne	_____
x		13	rams	_____
±		<u>500</u>	<u>ewes</u>	_____
=		\$0.26	/ewe	_____
<b>Total</b>	<b>=</b>	<b>\$15.71</b>	<b>/ewe</b>	_____

**2.02 Veterinary Medicine & Supplies**

Lamb Medication

		\$0.58	/lamb clostridial vaccine	_____
+		\$0.53	/lamb internal parasiticide	_____
+		\$0.30	/lamb injected vitamins	_____
+		\$4.50	/RFID tag	_____
±		<u>\$0.50</u>	<u>/lamb miscellaneous medicine</u>	_____
=		\$6.41	/lamb	_____
x		931	lambs	_____
±		<u>500</u>	<u>ewes</u>	_____
=		\$11.94	/ewe	_____

Ewe Medication

		\$0.29	clostridial. vaccine	_____
+		\$0.26	caseous lymphadenitis	_____
+		\$1.06	internal parasiticide	_____
+		\$0.60	injected vitamins	_____
±		<u>\$0.50</u>	<u>miscellaneous medicine</u>	_____
=		\$2.71	/ewe	_____

Ram Medication

		\$0.29	clostridial. vaccine	_____
+		\$0.26	caseous lymphadenitis	_____
+		\$1.06	internal parasiticide	_____
+		\$0.60	injected vitamins	_____
±		<u>\$0.50</u>	<u>miscellaneous medicine</u>	_____
=		\$2.71	/ram	_____
x		<u>13</u>	<u>rams</u>	_____
=		\$35.23	total medication	_____
±		<u>500</u>	<u>ewes</u>	_____
=		\$0.07	/ewe	_____

**Total = \$14.72 /ewe**

**2.03 Fuel, Maintenance & Repairs**

Machinery fuel cost - Tractor with Loader

		120	PTO hp	_____
÷		2.5	avg HP required	_____
x		0.1665576	litres fuel/hour/hp	_____
x		1.0	hours per day	_____
x		\$1.10	diesel / litre	_____
x		<u>235</u>	<u>days on feed</u>	_____
		\$2,066.65	annual fuel cost	_____
±		<u>500.00</u>	<u>ewes</u>	_____
=		\$4.13	/ewe	_____

Machinery repair & maintenance

		\$59,000	machinery capital cost	_____
x		<u>1.50</u>	<u>% repair rate</u>	_____
=		\$885.00	oil, repairs & maintenance	_____
±		<u>500.00</u>	<u>ewes</u>	_____

	=	\$1.77	/ewe	_____
Building repair & maintenance		\$174,260	building capital cost	_____
	x	<u>1.00</u>	% repair rate	_____
	=	\$1,742.60	repairs & maintenance	_____
	÷	<u>500.00</u>	ewes	_____
	=	\$3.49	/ewe	_____
<b>Total</b>	=	<b>\$9.39</b>	<b>/ewe</b>	_____

**2.04 Hydro, Water and Telephone**

		\$614.70	hydro	_____
	+	\$0	water	_____
	+	\$600	telephone	_____
	=	\$1,215		_____
	÷	<u>500</u>	ewes	_____
	=	<b>\$2.43</b>	<b>/ewe</b>	_____

**2.05 Death Loss**

Ewe		\$225.00	/ewe	_____
	x	<u>3</u>	death loss %	_____
	=	\$6.75	/ewe	_____
Ram		\$500.00	/ram	_____
	x	3	death loss %	_____
	÷	<u>38</u>	ewes/ram	_____
	=	\$0.39	/ewe	_____
<b>Total</b>	=	<b>\$7.14</b>	<b>/ewe</b>	_____

**2.06 Insurance**

Building and Equipment		\$222,700	bldg. & equipment investment	_____
	x	\$0.40	/\$100 capital	_____
	÷	100	100	_____
	÷	<u>500</u>	ewes	_____
	=	\$1.78	/ewe	_____
Breeding Flock		\$119,000	herd investment	_____
	x	\$0.45	/\$100 capital	_____
	÷	100	100	_____
	÷	<u>500</u>	ewes	_____
	=	\$1.07	/ewe	_____
Additional Coverage		\$49.00	additional coverage for liability	_____
	÷	<u>500</u>	ewes	_____
	=	\$0.10	/ewe	_____
<b>Total</b>	=	<b>\$2.95</b>	<b>/ewe</b>	_____

**2.07 Flock Replacement**

Ewe Replacement		500	ewes	_____
	x	<u>0.15</u>	replacement rate	_____
	=	75	number replaced/year	_____
		\$225	/replacement ewe	_____
	-	\$153	/cull ewe	_____
	x	75	number replaced/year	_____

	÷	<u>500</u>	<u>ewes</u>	_____
	=	\$10.80	/ewe	_____
<b>Ram Replacement</b>				
		13	rams	_____
	x	<u>0.25</u>	<u>replacement rate</u>	_____
	=	3	rams replaced/year	_____
		\$500	replacement ram value	_____
	-	\$180	cull ram value	_____
	x	3	rams replaced/year	_____
	÷	<u>500</u>	<u>ewes</u>	_____
	=	\$1.92	/ewe	_____
<b>Total</b>	<b>=</b>	<b>\$12.72</b>	<b>/ewe</b>	_____

**2.08 Marketing & Transportation**

Trucking		\$6.25	trucking per lamb	_____
	x	<u>1.86</u>	lambs marketed/ewe	_____
	=	\$11.63	/ewe	_____
Commission, fees, etc.		\$6.50	cost per lamb	_____
	x	<u>1.86</u>	lambs marketed/ewe	_____
	=	12.09	/ewe	_____
<b>Total</b>	<b>=</b>	<b>\$23.72</b>	<b>/ewe</b>	_____

**2.09 Shearing Costs**

		\$10.00	\$/ram	_____
	÷	38.46	ewes/ram	_____
	+	<u>\$5.00</u>	<u>\$/ewe</u>	_____
	=	<b>\$5.26</b>	<b>/ewe</b>	_____

**2.10 Predator Control**

		\$750	stock dog	_____
	+	\$700	guard dog	_____
	÷	4	years	_____
	+	\$500	annual maintenance	_____
	÷	<u>500</u>	<u>ewes</u>	_____
	=	<b>\$1.73</b>	<b>/ewe</b>	_____

**2.11 Professional Fees**

Herd Veterinarian		\$2	Total Yearly hours	_____
	x	<u>\$141</u>	<u>charge per hour</u>	_____
	=	\$282	Vet Fees	_____
	÷	<u>500</u>	<u>ewes</u>	_____
	=	\$0.56	/ewe	_____
Mileage		80	Total Kilometers (round trip)	_____
	x	\$0.85	Charge per km	_____
	x	<u>1</u>	<u>Number of yearly visits</u>	_____
	=	\$68	Mileage charges	_____
	÷	<u>500</u>	<u>ewes</u>	_____
	=	\$0.14	/ewe	_____
<b>Total</b>	<b>=</b>	<b>\$0.70</b>	<b>/ewe</b>	_____



**2.12 Manure Removal**

	0.00171	manure m <sup>3</sup> /ewe/day	(0.06 ft <sup>3</sup> /ewe/day)
+	0.00590	bedding m <sup>3</sup> /ewe/day	(0.21 ft <sup>3</sup> /ewe/day)
x	<u>235</u>	feeding days	
=	1.79	m <sup>3</sup> manure volume	
x	80	% volume shrink	
x	1.30795	yd <sup>3</sup> per m <sup>3</sup>	
x	<u>\$12.00</u>	<u>yd<sup>3</sup> manure removal cost</u>	
=	<b>\$5.62</b>	<b>/ewe</b>	

**2.13 Miscellaneous**

	\$500.00	total office expenses	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$1.00</b>	<b>/ewe</b>	_____

**2.14 Operating Interest**

	\$262.13	subtotal operating costs	_____
÷	2	average	_____
x	<u>5.8%</u>	<u>operating interest rate</u>	_____
=	<b>\$7.54</b>	<b>/ewe</b>	_____

**B. FIXED COSTS**

**CAPITAL INVESTMENT**

**Buildings**

Pole Barn (36' x 144') with Lambing/Shearing room (24' x 36')	\$150,000	_____
Wintering Lots	\$5,700	_____
Well	\$8,000	_____

**Total Building Cost** **\$163,700** \_\_\_\_\_

**Equipment & Improvements**

Water System (3 waterers & installation)	\$3,000	_____
Miscellaneous Machinery & Equipment:	\$5,000	_____
Tractor & Loader -allocated to sheep	\$36,000	_____
Truck - allocated to sheep	\$15,000	_____

**Total Equipment & Improvements** **\$59,000** \_\_\_\_\_

**Total Buildings & Equipment Investment** **\$222,700** \_\_\_\_\_

**Breeding Flock**

Value of Ewes	\$112,500	_____
Value of Rams	\$6,500	_____

**Total Breeding Flock Investment** **\$119,000** \_\_\_\_\_

**Land Investment**

Acres required	80	_____
Value per acre	750	_____
Total Land Investment	\$60,000	_____
Land Taxes (per acre)	\$4.00	_____
Fence 7 strand electric (miles)	2	_____
Fence cost (per mile)	\$5,280	_____
Total Fence Cost	\$10,560	_____

**Total Land & Fence Investment** **\$70,560** \_\_\_\_\_

**Total Capital Investment** **\$412,260** \_\_\_\_\_

**3. Depreciation:**

Original Value -Salvage Value

**Useful life**

**3.01 Buildings:**

	\$163,700	original value	_____
-	\$15,000	salvage value	_____
÷	30	years useful life	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$9.91</b>	<b>/ewe</b>	_____

**3.02 Equipment & Improvements**

	\$59,000	original value	_____
-	\$10,000	salvage value	_____
÷	10	years useful life	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$9.80</b>	<b>/ewe</b>	_____

**4. Interest on Investment**

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

**4.01 Buildings:**

	\$163,700	original value	_____
+	\$15,000	salvage value	_____
÷	2	average	_____
x	2.8%	investment rate	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$4.91</b>	<b>/ewe</b>	_____

**4.02 Equipment & Improvements**

	\$59,000	original value	_____
+	\$10,000	salvage value	_____
÷	2	average	_____
x	2.8%	investment rate	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$1.90</b>	<b>/ewe</b>	_____

**4.03 Breeding Stock**

	\$119,000	herd investment	_____
x	2.8%	investment rate	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	<b>\$6.55</b>	<b>/ewe</b>	_____

**5. Pasture Costs**

Land Investment

	\$60,000	land value	_____
x	2.8%	investment rate	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	\$3.30	/ewe	_____

Taxes

	\$320	total taxes	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	\$0.64	/ewe	_____

Fence depreciation

	\$10,560	fence value	_____
-	0	salvage value	_____
÷	20	useful life	_____
÷	<u>500</u>	<u>ewes</u>	_____
=	\$1.06	/ewe	_____

Fence investment

	\$10,560	fence value	_____
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	+	0	salvage value	_____
	÷	2	average	_____
	x	2.8%	investment rate	_____
	÷	500	ewes	_____
	=	\$0.29	/ewe	_____
<b>Total</b>	<b>=</b>	<b>\$5.29</b>	<b>/ewe</b>	_____

**C. Labour**

		2.25	hours/ewe	_____
	<b>x</b>	<b>\$22.00</b>	<b>/hour</b>	_____
	<b>=</b>	<b>\$49.50</b>	<b>/ewe</b>	_____

**Wool Value**

		513	total breeding animals	_____
	x	5	average lbs wool production	_____
	x	\$0.75	\$/lb	_____
	÷	500	ewes	_____
	=	\$3.85	/ewe	_____

**Profitability and Breakeven Analysis:**

Gross Revenue per lamb = lamb weight (110lbs) x 3% shrink x \$220/cwt

Operating Expense Ratio = (\$144.84 operating cost / \$236.81 gross revenue) x 100

Breakeven Price \$/cwt = Cost - \$2.07 wool value ÷ shrunk lamb market weight (1.067 cwt)

Return on Investment (ROI) = (Gross Revenue - Total Cost) / Total Cost

(eg. (\$220,467 gross revenue - \$178,759 total cost) / \$178,759 total cost = 23.3%)

Estimated Return on Asset (ROA) = (Margin Over Operating - Labour - Machinery Depreciation - Building Depreciation) / Total Capital Investment (eg. (\$85,634 margin - \$324,750 labour - \$4,900 machinery depreciation \$4,955 building depreciation) / \$412,260 total capital investment = 12.38%)

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