



Ontario Sheep Economic Workbook

Annual Spring Lambing Flock

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OSMA Sheep Economic Workbook

Annual Lambing Flock

Introduction

There continues to be speculation as to why the Ontario sheep industry has not seen expansion over the past number of years when market prices were very strong and demand for lamb is not being met with domestic production. Improvements in production efficiency and financial efficiency are goals most producers aspire to. Progress can be made by first evaluating your current status, and identifying those areas where improvements can be made.

This workbook outlines production and financial data for an annual spring lambing flock and the calculations needed to measure financial progress and is a sister publication to the OSMA Sheep Economic Workbook – Accelerated Lambing Flock. Producers can use the formulas provided to review their own flock's financial situation.

The production costs included in the budget outlined in this workbook are estimates based on group averages of producers participating in the OSMA Financial Benchmarking Project, as well as a number of assumptions clearly outlined in the following pages. These assumptions reflect management practices and facilities commonly recommended for use in this size of annual spring lambing operation. Good management is assumed with respect to feeding, flock health practices and stock management. Adjustments to cost figures will be necessary where individual flock productivity, management skill and financial performance differ from those listed.

A cautionary note – financial results from a single year do not reflect the long-term profitability potential of an enterprise or the industry.

Acknowledgement to the Saskatchewan Ministry of Agriculture and the Saskatchewan Sheep Development Board is hereby given. Their 2001 publication "*Financial and Production Targets for Sheep Producers*" provided the basis for the template used in this workbook.

Assumptions:

1. This sheep enterprise budget is based on a “stand-alone” operation rather than a sub-enterprise of a larger farming business.
2. Breed selection is assumed to focus on those traits important in a spring lambing flock, namely hardiness, mothering ability, medium prolificacy and udder conformation.
3. Ewe flock is lambled once per year in May with pasture providing 100% of the feed needs of lambing and lactating ewes¹ and 90 percent of feed needs of weaned lambs through to 35 kgs (77 pounds).
4. Flock size is maintained at 1,000 ewes.
5. Ewe replacement rate is 18% to cover 15% cull and 3% ewe death loss.
6. Flock must generate enough income to at least cover annual salary of one person².
7. Ewes are grazed from 2 weeks pre-lambing until November 20th.
8. Replacement ewe lambs are grown out on pasture until November 20th.
9. Two percent (2%) of lambs are raised on milk replacer.
10. Lambs are weaned at 12 weeks of age. 10% go directly to feedlot, the rest are grown out on pasture; 40% are marketed directly off pasture; and the remaining market lambs enter feedlot at 35 kgs.
11. Lambs are marketed October through February. Average market weights for those direct off pasture at 31 kgs (68 pounds) and the remainder marketed at 41 kgs (90 pounds).

Methodology:

1. Forage & grains are valued using OMAFRA 2011 transfer values, commercial feeds are 2012 September/October current price.
2. Feed amounts are calculated based on typical feed requirements of 70 kg ewe maintained in good body condition.
3. Pasture – pasture is charged to the sheep at standing hay value (30% of 1st cut hay cost).
4. Farm assets are valued as follows:
 - a. Mature sheep – 2012 price for commercial, open ewes.
 - b. Buildings – size calculated based on Sheep Recommended Code of Practise standards cold housing includes lamb feeding barn – self feeding hoppers; industry average construction price and depreciated over 20 years;
 - c. Machinery and equipment – for equipment used only for the sheep enterprise. Charges include annual depreciation, interest on investment and repairs.
 - d. Interest charged on investment. Interest on the average investment in sheep, buildings, and sheep equipment is assessed at 2.1 percent (current five-year GIC interest rate).
 - e. General –with the exception of costs related to animal health & breeding, flock identification & management, predation. All other variable expenses and fixed costs apportioned to the sheep enterprise using 2009 and 2010 annual lambing data from the OSMA Benchmark Study.

¹ Conception rates typical of medium prolificacy breeds (see Flock Profile table).

² Annual salary (\$36,000) is calculated at 40 hours per week for 50 weeks at \$18 per hour.

Annual Flock Profile

	Example Flock	Your Farm
Number of Mature Ewes	800	
Number of Replacement Ewe Lambs	200	
Number of Rams	20	
Breeding Period (December 10 – January 4 th)	25 days	
Lambs born per 100 ewes exposed ³		
– Mature Ewes	181 %	
– Ewe Lambs	102 %	
Ewe Mortality Rate	4%	
Ewe Cull Rate	16%	
Ram Cull Rate	20%	
Ram Mortality Rate	10%	
Lamb Mortality pre-weaning ⁴	8%	
Lamb mortality post-weaning	2%	
Lambs weaned per 100 mature ewes exposed	167%	
Lambs weaned per 100 ewe lambs exposed	94%	
Lambs Marketed per year ⁵	1289	
Lambs Marketed per 100 ewes exposed	129%	
Average Market Lamb Shipping Weight (pounds) ⁶	81.5	
Livestock Guardian Dogs (1 per 125 ewes)	8	
LGD Mortality Rate	12.5%	

³ Based on conception rates of 98% for mature ewes & 85% for ewe lambs and prolificacy of 185% and 120% respectively. These are typical of levels currently being achieved in annual spring lambing flocks

⁴ Mortality rates are based on data from OSMA Benchmark study for annual flocks ranked in the top third for net income.

⁵ Table 1 in Appendix provides detailed calculations. Replacement ewe lambs are not included in this figure

⁶ Based on market weights of 68 lbs. for lambs marketed direct from pasture (40%) and 90 lbs. for the remainder.

Prices used in Workbook

	Price	Your Farm
Market Price (\$ /100 pounds)⁷		
80 – 94 lb lambs – 5 year average price ⁸	\$179.27	
2012 average price ⁸	\$175.51	
< 79 lb lambs – 5 year average price ⁸	\$205.81	
2012 average price ⁸	\$202.82	
Cull ewes – 5 year average price ⁸	\$88.74	
2012 average price ⁸	\$89.46	
Wool - 5 year average price ⁹ (\$ /lb)	\$0.57	
2012 average price	\$0.54	
Feed Prices (\$/tonne unless noted)¹⁰		
1 st cut mixed hay ¹¹	\$78.00	
2 nd cut alfalfa hay ¹¹	\$115.00	
Straw ¹¹	\$95.00	
Corn (grown or purchased off field) ¹¹	\$228.00	
Soybean meal 48% ¹²	\$640.00	
Sheep Supplement 34% ¹²	\$705.00	
Lamb Milk Replacer (20 kgs) ¹²	\$75.00	
14:10 Mineral (25 kgs) ¹²	\$29.00	
Cobalt iodized Salt (25 kgs) ¹²	\$10.00	

⁷ Market prices have dropped considerably during 2012 and are below the 5-year average price.

⁸ Weighted average price for the market season (October through February).

⁹ Sheep Statistics 2012. Statistics Canada

¹⁰ Forage prices have increased significantly in 2012.

¹¹ Source: 5 year average prices OMAF website.

¹² Typical feed mill prices during September 2012.

Sheep Enterprise Income

		<i># head</i>	<i>Average weight (lbs)</i>	<i>Price (\$/ lb)</i>	<i>Price (\$/head)</i>	<i>Total Income</i>
1. Wool	<i>Example</i>	1020	6.5	\$0.57	\$3.71	\$3,779.10¹³ (k1)
	<i>Your Farm</i>					
2. Market Lambs¹⁴	<i>Example</i>	1289	81.2	\$1.90 ¹⁵	\$154.19	\$198,741.43 (k2)
	<i>Your Farm</i>					
3. Cull Ewe Sales¹⁴	<i>Example</i>	160	130	\$0.887	\$115.36	\$18,457.92 (k3)
	<i>Your Farm</i>					
4. Cull Ram Sales¹⁴	<i>Example</i>	4	200	\$0.887	\$177.48	\$709.92 (k4)
	<i>Your Farm</i>					
5. Breeding Stock Sales	<i>Example</i>	0	--	--	--	--(k5)
	<i>Your Farm</i>					
6. Other Livestock Sales	<i>Example</i>	0	--	--	--	--(k6)
	<i>Your Farm</i>					
Total Sheep Enterprise Income	<i>Example</i>	K1 + k2 + k3 + k4 + k5 + k6				\$221,688.37
	<i>Your Farm</i>					
7. Livestock Purchases (Rams)	<i>Example</i>	6	--	--	\$600	(\$3,600.00)
	<i>Your Farm</i>					

¹³ Transfer income to corresponding lines in the Summary of Income & Expenses on page 18.

¹⁴ See Appendix 1 for detailed flock number calculations.

¹⁵ (40% x 5 yr average price for lambs < 79 pounds) + (60% x 5 yr. average price for lambs 80 -94 pounds)

Operating (Variable) Costs

1.1 Mature Ewe Feed Cost¹⁶								
Production Stage¹⁷		Amount Fed (lb /day)	Feed	Price (\$ /lb)¹⁸	Cost / day (\$)	# days	Amount Used²⁷ (lbs /ewe)	Total Cost (\$ /ewe)
Breeding	Example	0.5	Corn ¹⁹	\$0.096	\$0.048	45	22.5	\$2.15 (g1)
		4.87	1 st cut hay ²⁰	\$0.042	\$0.209	45	218.3	\$9.20 (f1)
	Your Farm							
Early and Mid-Gestation	Example	5.45	1 st cut hay	\$0.042	\$0.228	85	463.3	\$19.42(f2)
	Your Farm							
Late Gestation²¹	Example	0.7	Corn	\$0.096	\$0.067	30	21.0	\$2.01 (g2)
		4.64	1 st cut hay	\$0.042	\$0.204	30	139.2	\$5.84 (f3)
	Your Farm							
Lambing & Lactation²²	Example	5.45 ²³	Pasture	\$0.013 ²⁴	\$0.069	100	544.7	\$6.85 (f4)
	Your Farm							
Maintenance	Example	5.45 ²³	Pasture	\$0.013 ²⁴	\$0.069	105	572.3	\$7.20 (f5)
	Your Farm							
1.1 Ewe Feed Cost	Example	Grain = 22.5+ 21.0 = 43.5 lbs Hay=218.3+463.3+139.2=820.7lbs Pasture= 544.7+572.3 =1117 lbs ²³			Feed Cost Grain = g1 + g2 = \$4.16 Forage (f1 thru f5)= \$48.52			\$45.43 X 800 hd \$42,141.62
	Your Farm							

¹⁶ Transfer operating expenses to corresponding line in Summary of Income & Expense table on page 18.

¹⁷ Flock is on stored feed from November 21th through April 30th (breeding and gestation).

¹⁸ Price per Tonne is converted to price per pound by dividing by 2204.

¹⁹ Grain is fed for 10 days pre breeding and for 35 days after ram turnout. No grain is fed during early mid gestation.

²⁰ Hay requirement is calculated for 155 lb. ewe, 3% dry matter intake (DMI) with an additional 15% waste factor.

²¹ Grain is fed for 30 days prior to pasture turnout.

²² Ewes are pastured during the last 14 days of pregnancy, lambing / lactation, and maintenance, from May 1st through November 20th.

²³ Pasture intake is expressed as "hay equivalent" for ease of price calculation. Moisture content of hay is 15% while that of young growing pasture is closer to 80%.

²⁴ Pasture cost is assumed to be equivalent to the price of standing hay (30% of baled hay price is used here).

1.2 Replacement Ewe Lamb Feed Cost¹⁶

<i>Production Stage</i>		<i>Amount Fed (lb /day)</i>	<i>Feed</i>	<i>Price (\$ /lb)</i>	<i>Cost / day (\$)</i>	<i># days</i>	<i>Amount Used²⁷ (lbs /hd)</i>	<i>Total Cost (\$ /hd)</i>
Breeding	Example	1	corn	\$0.096	\$0.096	45	45	\$4.32 (g4)
		3.3	2 nd cut hay	\$0.060	\$0.20	45	148.5	\$8.91 (f9)
	Your Farm							
Early and Mid-Gestation	Example	1	corn	\$0.096	\$0.096	85	85	\$8.16 (g5)
		1.65	2 nd cut hay	\$0.060	\$0.099	85	140.25	\$8.42 (f10)
		1.65	1 st cut hay	\$0.042	\$0.069	85	140.25	\$5.87 (f11)
	Your Farm							
Late Gestation	Example	1	Corn	\$0.096	\$0.096	30	30	\$2.88 (g6)
		1.65	2 nd cut hay	\$0.060	\$0.099	30	49.5	\$2.96 (f12)
		1.65	1 st cut hay	\$0.042	\$0.069	30	49.5	\$2.07 (f13)
	Your Farm							
Lambing and Lactation	Example	4.3 ²³	Pasture	\$0.013 ²⁴	\$0.046	100	430	\$5.39 (f14)
	Your Farm							
Maintenance	Example	4.3 ²³	Pasture	\$0.013 ²⁴	\$0.046	105	451.5	\$5.45 (f15)
	Your Farm							
1.2 Replacement Feed Cost	Example	Grain Used = 45+ 85 +30 = 160 lbs Hay Used = 148.5 + 140.25*2 +49.5*2 = 528 lbs Pasture = 430 + 451.5 =881.5 lbs			Grain = g4 +g5 +g6 = \$15.32 Hay = f9 thru f13= \$28.47 Pasture = f14 + f15 =\$11.04			\$54.82 X 200 hd \$10,964.72
	Your Farm							

1.3 Ram Feed Cost²⁵								
Production Stage		Amount Fed (lb /day)	Feed	Price (\$ /lb)	Cost /day (\$)	# days	Amount Used²⁷ (lbs /hd)	Total Cost (\$ /hd)
Breeding	Example	0.5	Corn	\$0.096	\$0.048	45	22.5	\$2.15 (g3)
		7.8	1 st cut hay	\$0.042	\$0.326	45	351	\$14.69 (f6)
	Your Farm							
Balance of Winter	Example	7.8	1 st cut hay	\$0.042	\$0.326	115	897	\$37.54 (f7)
	Your Farm							
Grazing	Example	7.8 ²³	Pasture	\$0.0126 ²⁴	\$0.098	205	1599 ²³	\$20.07 (f8)
	Your Farm							
1.3 Ram Feed Cost	Example	Grain used = 22.5 lbs Hay used = 351 + 897 = 1248 lbs Pasture used = 1599 lbs			Grain cost (g3) = \$2.15 Hay Cost (f6 + f7) = \$52.23 Pasture Cost (f8) = \$20.07			\$74.46 X 20 rams \$1,489.11
	Your Farm							

²⁵ Transfer to corresponding operating expense line in Summary of Income and Expense table on page 18.

1.4 Lamb Feed Cost²⁵							
Feed		Amount Used (lbs /day)	Price²⁶ (\$ /lb)	# head	# days	Cost per Head²⁷ (\$)	Total Cost (\$ /year)
Lamb Milk Replacer²⁸	Example	0.94	\$1.71	31	21	\$33.82	\$1,046.25 (c1)
	Your Farm						
Lamb Creep²⁹	Example	0.69	\$0.193	31	64	\$ 8.50	\$264.37 (c2)
	Your Farm						
Lamb Grower³⁰	Example	1.94	\$0.152	183	50	\$14.72	\$2,697.92 (c3)
	Your Farm						
Lamb Finishing Ration³¹	Example	3.25	\$0.141	806	40	\$18.12	\$14,615.79 (c4)
	Your Farm						
Lamb Bedding Cost³²	Example	0.25	\$0.043	1,012	41	\$0.48	\$401.19 (c5)
	Your Farm						
Replacement Ewe Lamb Grower³³	Example	1.0	\$0.151	200	30	\$4.52	\$903.15 (c6)
	Your Farm						
Replacement Ewe Lamb Pasture	Example	2.3	\$0.013	200	45	\$1.31	\$261.29 (c7)
	Your Farm						
Replacement Ewe Lamb Pasture	Example	2.72	\$0.013	1,339	56	\$1.92	\$2,568.80 (c8)
	Your Farm						
1.4 Lamb Feed Cost	Example	(c1) + (c2) + (c3) + (c4) + (c5) + (c6) + (c7) + (c8)					\$22,748.64
	Your Farm	Lamb feed cost / ewe					\$22.75

²⁶ Price is converted from unit prices (found on page7) to pounds by multiplying kilograms by 2.2046.

²⁷ Calculations may differ due to rounding.

²⁸ 2% (33) of lambs born (1654) raised on milk replacer.

²⁹ Only lambs raised on milk replacer receive lamb creep.

³⁰ Only lambs raised on milk replacer and 10% of weaned lambs (small lambs) receive grower.

³¹ Only market lambs not shipped off of pasture received finishing ration.

³² Assumed hay waste provides adequate bedding for the out-wintered ewe flock. Example uses straw for lambs in feedlot only.

³³ Feed from 35 kgs to November 20th. Their winter feed calculations are included in the Ewe Feed Cost calculations.

1.5 Salt and Mineral Cost²⁵								
Feed		Amount Fed (g/day)	Price³⁴ (\$/kg)³⁵	# head	# days	Cost per Head³⁶ (\$)	Total Cost (\$/year)	
Mineral	Mature Ewes	<i>Example</i>	15	\$1.16	1000	365	\$6.35	\$6351.00 (d1)
		<i>Your Farm</i>						
	Rams	<i>Example</i>	20	\$1.16	20	365	\$8.47	\$169.36 (d2)
		<i>Your Farm</i>						
	Ewe Lambs	<i>Example</i>	10	\$1.16	200	45 ³⁷	\$0.52	\$104.40 (d3)
		<i>Your Farm</i>						
Lambs	<i>Example</i>	5	\$1.16	1522 ³⁸	78 ³⁹	\$0.45	\$688.57 (d4)	
	<i>Your Farm</i>							
Salt	Mature Ewes	<i>Example</i>	10	\$0.40	1000	365	\$1.46	\$1,450.80 (d5)
		<i>Your Farm</i>						
	Rams	<i>Example</i>	10	\$0.40	20	365	\$1.46	\$29.20 (d6)
		<i>Your Farm</i>						
	Ewe Lambs	<i>Example</i>	8	\$0.40	180	45	\$0.14	\$28.80 (d7)
		<i>Your Farm</i>						
Lambs	<i>Example</i>	5	\$0.40	1522 ³⁸	78 ³⁹	\$0.16	\$237.44 (d8)	
	<i>Your Farm</i>							
1.5 Salt & Mineral Cost	<i>Example</i>	Mineral cost [(d1) + (d2) + (d3) + (d4)] Mineral cost / ewe Salt cost [(d5) + (d6) + (d7) + (d8)] Salt cost / ewe					\$7,313.33 \$7.31 \$1,746.24 \$1.75	
	<i>Your Farm</i>							

³⁴ Price is converted from unit prices found on page 7 to pounds by multiplying kilograms by 2.2046.

³⁵ One (1) kilogram = 1000 grams

³⁶ Calculations differ somewhat due to rounding.

³⁷ Ewe lamb mineral & salt intake is included in lamb calculations from weaning to 35 kg (77 lbs) at which time they are managed as a separate group.

³⁸ Mineral & salt are only fed to lambs on pasture. Those in feedlot are assumed to meet requirements through protein supplement

³⁹ 40% of lambs are marketed by 60 days post-weaning. The balance is assumed to go to market 90 days post-weaning.

4. Animal Health & Breeding²⁵								
			# treatments / year	Amount Used (ml /hd)	Cost⁴⁰ (\$ /ml)⁴¹	Cost / Head⁴² (\$)	# head⁴³	Total Cost (\$ /year)
Dewormer	Mature Ewes	<i>Example</i>	2	17.5	\$0.060	\$1.05	800	\$1,680.00 (e1)
		<i>Your Farm</i>						
	Rams	<i>Example</i>	1	25.0	\$0.060	\$1.50	16	\$24.00 (e2)
		<i>Your Farm</i>						
	Lambs	<i>Example</i>	1	7.5	\$0.060	\$0.45	1,218	\$547.94(e3)
		<i>Your Farm</i>						
Vaccine⁴⁴	Mature Ewes	<i>Example</i>	1	2	\$0.109	\$0.22	1,000	\$217.97(e4)
		<i>Your Farm</i>						
	Rams	<i>Example</i>	1	2	\$0.109	\$0.22	20	\$4.40(e5)
		<i>Your Farm</i>						
	Lambs⁴⁵	<i>Example</i>	2	4 / 2	\$0.109	\$0.65	1522	\$597.25(e6)
		<i>Your Farm</i>						
Vaccine⁴⁶	M. Ewes	<i>Your Farm</i>						
	Rams	<i>Your Farm</i>						
	Lambs	<i>Your Farm</i>						
Coccidiostat⁴⁷	<i>Your Farm</i>							
Miscellaneous Animal Health Products⁴⁸	<i>Example</i>							\$41.05(e7)
	<i>Your Farm</i>							
4. Animal Health Cost	<i>Example</i>	(e1) + (e2) + (e3) + (e4) + (e5) + (e6) + (e7)						\$3,112.60
	<i>Your Farm</i>	Animal Health Costs / Ewe						\$3.11

⁴⁰ Price is converted from unit prices found on page 7 to pounds by multiplying kilograms by 2.2046.

⁴¹ One (1) kilogram = 1000 grams; 1 litre = 1000 millilitres.

⁴² Calculations differ somewhat due to rounding.

⁴³ 20 % of animals are not wormed (refugia to minimize development or anthelmintic resistance)

⁴⁴ Only clostridial vaccine cost is calculated.

⁴⁵ 60% of lambs vaccinated against clostridial diseases.

⁴⁶ Calculate cost of other vaccines used to manage other diseases (eg. Caseous, abortion) using the same steps as those shown for clostridial vaccine.

⁴⁷ This calculation only required if Coccidiostat cost is not already included in other feed costs.

⁴⁸ This calculation is to cover cost of antibiotics, injectable vitamins etc. Example assumes 0.5% lambs and 3% of ewes treated with antibiotics for various ailments.

5. Flock Identification and Management⁴⁹							
		# lambs tagged	# ewes retagged⁵⁰	Price / tag⁵¹	Cost / Ewe	Total Cost (\$ /year)	
Annual Tag Cost⁵²	<i>Example</i>	1,555	20	\$1.65	\$2.60	\$2,598.97 (f1)	
	<i>Your Farm</i>						
Flock Management Program⁵³	<i>Example</i>				\$0.30	\$300 (f2)	
	<i>Your Farm</i>						
	<i>Example</i>				\$2.90	\$2,898.97	
	<i>Your Farm</i>						
6. Predation Control Cost – Livestock Guardian Dogs⁴⁹							
		# dogs⁵⁴	Mortality & cull rate	# replaced /year	Price /head	Total Cost (\$ /year)	
Annual Dog Replacement	<i>Example</i>	8	12.5 %	1	\$400	\$400.00 (g1)	
	<i>Your Farm</i>						
Dog Feed Cost		# dogs	Daily Feed Intake (lbs)	Price (\$ /lb)	Cost /head	Total Cost (\$ /year)	
	<i>Example</i>	8	1.5	\$0.90	\$494.10	\$3,952.81 (g2)	
	<i>Your Farm</i>						
Dog Vet & Health Cost			# treatments /year	Cost (\$ /trmt)	Cost /head	Total Cost (\$ /year)	
	Rabies & parvo vaccine	<i>Example</i>	1		\$30.00	\$30.00	\$240.00 (g3)
		<i>Your Farm</i>					
	Dewormer	<i>Example</i>	3		\$25.00	\$75.00	\$600.00 (g4)
		<i>Your Farm</i>					
	Miscellaneous vet costs	<i>Example</i>			\$50.00	\$50.00	\$400.00 (g5)
<i>Your Farm</i>							
	<i>Example</i>	(g1) + (g2) + (g3) + (g4) + (g5)				\$5,592.81	
		Dog Cost /ewe				\$55.93	
	<i>Your Farm</i>						

⁴⁹ Transfer to corresponding operating expense line in Summary of Income and Expense table on page 18.

⁵⁰ Assumed 2% tag loss in ewe flock.

⁵¹ mandatory RFID tagging is anticipated to be required under the Canadian Sheep Identification Program (CSIP) at some point in 2013.

⁵² Tags applied to each year's lamb crop, ewe flock assumed tagged.

⁵³ Annual service fee for participation in genetic improvement program such as Genovis and flock management program.

⁵⁴ Assumed one dog per 130 ewes

Additional Variable Expenses⁴⁹				
Item #	Description	Example Cost / ewe⁵⁵	Your Flock Cost	Your Cost /ewe
7	Other (Stabilization, barn supplies)	\$6.39		
8	Marketing, Transportation	\$13.16		
9	Custom Work, Equipment Rent	\$1.20		
10	Hired Labour	\$12.55		
11	Machinery & Equipment - fuel & oil	\$4.02		
12	Machinery & Equipment - repairs	\$5.10		
13	Motor Vehicle Expenses	\$4.27		
14	Building & Fence repairs	\$4.58		
15	Heating Fuel	\$0.26		
16	Electricity & Telephone	\$4.61		
17	Accounting, Office Expenses	\$2.47		
18	Interest -operating	\$1.35		
19	Other Cash Variable expenses	\$3.62		
Fixed Expenses				
20	Property Taxes, Fire & Liab. Ins	\$4.63		
21	Lease & Rent Payments	\$2.17		
22	Interest - Term	\$4.31		
23	Depreciation	\$17.61		
Capital Assets⁵⁶				
	Buildings & Facilities	\$330		
	Field Machinery	\$143		
	Livestock Equipment	\$22		
	Breeding Stock	\$317		
	Land	\$510		
	Other Capital Assets	\$26		

⁵⁵ Two-year average per ewe cost for annual lambing flocks participating in Ontario Sheep Benchmarking Project.

⁵⁶ Source: two-year averages from top annual lambing flocks participating in Ontario Sheep Benchmarking Project.

Summary of Income and Expenses for an Annual Spring Lambing Flock

Income		\$ / Year	\$ /Ewe /Year	Your Farm
1	Wool	\$ 3,779.10	\$ 3.78	
2	Market lamb sale	\$ 198,741.43	\$ 198.74	
3	cull ewe sale	\$ 18,457.92	\$ 18.46	
4	cull ram sales	\$ 709.92	\$ 0.71	
6	- Livestock Purchased	(\$ 3,600.00)	(\$ 3.60)	
Total Income		\$ 218,088.37	\$ 218.09	
Operating (Variable) Costs				
1.1	Ewe Feed Cost	\$ 53,106.34	\$ 53.11	
1.2	Ram Feed Cost	\$ 1,489.11	\$ 1.49	
1.3	Lamb Feed Cost	\$ 22,748.64	\$ 22.75	
1.4	Salt & Mineral cost	\$ 9,059.57	\$ 9.06	
Total Feed Costs		\$ 86,401.66	\$ 86.40	
3	Straw ⁵⁷	--	\$ --	
4	Animal Health & Breeding	\$ 3,112.60	\$ 3.11	
5	Flock Identification & Management	\$ 2,898.97	\$ 2.90	
6	Predation	\$ 5,592.81	\$ 5.59	
7	Other (Stabilization, barn supplies) ⁵⁸	\$ 6,390.00	\$ 6.39	
8	Marketing, Transportation	\$ 13,160.00	\$ 13.16	
9	Custom Work, Equipment Rent	\$ 1,200.00	\$ 1.20	
10	Hired Labour	\$ 12,550.00	\$ 12.55	
11	Machinery & Equipment - fuel & oil	\$ 4,020.00	\$ 4.02	
12	Machinery & Equipment - repairs	\$ 5,100.00	\$ 5.10	
13	Motor Vehicle Expenses	\$ 4,270.00	\$ 4.27	
14	Building & Fence repairs	\$ 4,580.00	\$ 4.58	
15	Heating Fuel	\$ 260.00	\$ 0.26	
16	Electricity & Telephone	\$ 4,610.00	\$ 4.61	
17	Accounting, Office Expenses	\$ 2,470.00	\$ 2.47	
18	Interest -operating	\$ 1,350.00	\$ 1.35	
19	Other Cash Variable expenses	\$ 3,620.00	\$ 3.62	
Total Variable Expenses		\$ 161,588.05	\$ 161.59	
Contribution Margin		\$ 56,500.32	\$ 56.50	
Fixed Costs				
20	Property Taxes, Fire & Liab. Ins	\$ 4,630.00	\$ 4.63	
21	Lease & Rent Payments	\$ 2,170.00	\$ 2.17	
22	Interest - Term	\$ 4,310.00	\$ 4.31	
23	Depreciation	\$ 17,610.00	\$ 17.61	
Total Fixed Expenses		\$ 28,720.00	\$ 28.72	
Total Enterprise Expenses		\$ 190,308.05	\$ 190.31	
Net Enterprise Income		\$ 27,780.32	\$ 27.78	

⁵⁷ Bedding cost is included in Lamb feed costs since the only bedding used is for lambs entering the feedlot.

⁵⁸ Two year average of top annual flocks from OSMA Sheep Benchmark Program.

Concluding Remarks

As with most agriculture enterprises, profitability hinges on many factors, with management ability playing a significant role. Within this budget there are areas where efficiencies can be found. These include:

- Feed cost savings through feeding management that improves forage utilization.
- Consider options to reduce days on stored feed.
- Increasing number of lambs marketed by improving ewe reproductive performance (including replacement ewe lamb reproductive performance) through feeding and management.
- Increasing number of lambs marketed by lowering lamb mortality.
- Consider option to enable marketing more lambs direct from pasture.
- Achieving above average prices for market lambs and cull animals.
- At least a portion of grain purchases at below average prices.
- Increase number of ewes to fully realise economies of scale.

Appendices

Appendix 1. Flock Production Calculations

	Number of Lambs Produced	Example Farm	Your Farm
	# mature ewes exposed (1)	800 (1)	
	# mature ewes lambing (2)	784 (2)	
	Mature ewe conception rate = (2) ÷ (1)	98%	
	# lambs born to mature ewes (3)	1452 (3)	
	Lambs born per mature ewe exposed = (3) ÷ (1)	1.815	
	# ewe lambs exposed (4)	200 (4)	
	# ewe lambs lambing (5)	170 (5)	
	Ewe lamb conception rate = (5) ÷ (4)	85%	
	# lambs born to ewe lambs (6)	204 (6)	
	Lambs born per ewe lamb exposed = (6) ÷ (5)	1.02	
	Total Lambs Born (3) +(6)	1654 (7)	
	-lambs dead birth to 10 days (8)	99 (8)	
	-lambs dead 10 days to weaning (9)	33 (9)	
	Lamb Mortality pre- weaning = [(8) + (9)] ÷ (7) 132 ÷ 1654	8%	
	Lambs Weaned (7) – (8) – (9)	1522 (10)	
	Lambs weaned per ewe exposed = (10) ÷ [(1) + (4)]	1.54	
	-lambs dead post weaning (11)	33 (11)	
	Post weaning mortality = (11) ÷ (7)	2%	
	Marketable Lambs per Year (10) – (11)	1489 (12)	
	Replacement Ewe Lambs Needed =	200 (13)	
	Number of ewes in flock (1000)	1000	
	X ewe death loss (4%) + cull rate (16%)	X 20/100	
	Market Lambs Sold (15)	1324 (15)	
	Market lambs sold per ewe exposed = (15) ÷ [(1) + (4)]	1.32	

Appendix 2. 5-year (2008 - 2012) average prices, lambs and cull ewes

	Avg volume	(\$ /cwt)	Price Range (\$ /cwt)	
		Avg Price	Low Price	High Price
Lambs < 79 lbs	70,532	\$205.70	\$101.12	\$406.13
Lambs 80 – 95 lbs	32,063	\$176.20	\$113.57	\$264.55
Lambs 95 – 109 lbs	22,864	\$163.36	\$ 116.44	\$249.70
Lambs > 110 lbs	8,536	\$155.25	\$ 54.62	\$221.70
Ewes	35,372	\$84.70	\$ 37.63	\$162.87

Appendix 3. Market Prices for Cull Ewes, Ontario, by year, by month (\$ /100 lbs)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	62.09	56.32	52.55	45.61	51.84	52.23	51.89	59.50	51.77	43.60	49.10	53.36
2004	55.71	54.82	51.80	56.68	47.17	42.65	45.78	43.03	45.12	40.27	45.98	54.30
2005	64.81	59.95	60.56	55.96	55.84	52.52	60.05	56.70	58.77	70.84	71.62	79.71
2006	87.66	84.37	93.25	82.67	71.61	71.22	87.56	85.88	85.97	83.74	87.20	95.80
2007	83.44	82.56	81.02	76.57	69.49	64.36	70.97	78.70	72.27	81.65	73.34	82.62
2008	74.62	74.72	69.30	58.72	61.34	59.83	61.57	70.42	70.17	65.47	67.35	73.32
2009	74.79	68.47	68.28	69.44	68.80	65.29	71.53	69.30	68.24	70.20	78.08	89.41
2010	95.27	95.39	85.40	75.88	78.39	79.19	95.77	105.77	87.84	90.84	102.92	118.19
2011	122.49	103.95	99.53	79.94	80.81	85.37	102.08	101.14	97.76	105.51	127.05	112.87
2012	125.12	106.20	93.72	88.36	84.18	85.15	94.32	84.67	88.06	96.00	87.12	90.86
5 yr avg	98.46	89.75	83.24	74.47	74.70	74.96	85.06	86.26	82.41	85.60	92.50	96.92

Appendix 4. Lamb Prices (< 79 pounds), Ontario, by year, by month (\$ /100 lbs)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	174.20	165.78	167.40	176.23	171.23	140.60	124.10	115.22	114.79	119.98	121.61	135.38
2004	145.51	136.68	138.29	165.29	133.00	122.70	113.83	112.48	114.63	112.75	124.01	149.67
2005	161.77	159.24	185.36	161.72	161.71	153.54	151.76	146.55	154.90	162.80	169.85	204.93
2006	206.35	203.20	201.00	224.35	185.07	168.12	164.62	160.36	175.25	167.89	182.17	209.08
2007	191.72	193.77	232.27	213.74	192.92	163.48	163.70	166.62	164.79	164.57	169.44	194.06
2008	190.21	189.08	215.53	192.73	191.45	176.52	165.34	165.97	167.61	166.45	169.74	193.32
2009	196.98	198.03	210.17	245.34	202.50	171.25	177.94	163.31	170.65	174.65	185.58	208.43
2010	220.21	215.55	252.13	242.77	213.43	178.98	174.90	170.96	177.49	191.06	201.66	242.57
2011	240.07	239.35	248.80	257.83	234.32	192.32	199.98	206.78	200.26	221.57	232.98	253.62
2012	251.25	243.96	266.85	308.49	242.59	206.71	173.86	172.64	160.67	178.75	164.03	176.11
5 yr avg	219.74	217.19	238.70	249.43	216.86	185.16	178.40	179.93	175.33	186.50	190.80	214.81

Appendix 5. Lamb Prices (80 - 94 pounds), Ontario, by year, by month (\$ /100 lbs)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	152.28	153.76	150.73	163.46	166.74	140.70	119.96	100.09	91.21	100.21	102.45	93.49
2004	117.18	103.25	82.30	133.31	129.84	119.19	109.91	104.85	98.27	94.70	104.24	120.20
2005	144.08	142.21	144.32	147.44	153.79	145.10	143.60	140.66	151.92	152.16	151.97	160.06
2006	179.55	174.05	168.45	179.14	177.09	160.95	147.60	146.58	156.43	146.64	157.95	165.67
2007	155.02	165.03	164.45	179.75	183.27	154.92	153.89	150.23	152.90	146.58	147.64	154.47
2008	150.86	162.97	159.55	161.90	182.61	175.06	155.07	149.73	154.03	148.97	147.41	158.07
2009	170.65	167.62	174.79	197.02	195.30	167.50	166.51	157.34	159.86	159.54	172.00	163.03
2010	182.35	185.45	186.74	213.39	206.89	173.77	163.59	154.16	160.39	172.19	191.33	210.10
2011	208.89	215.94	215.64	236.51	228.25	187.75	188.20	191.59	187.14	200.64	220.78	214.46
2012	222.79	213.35	212.88	234.68	227.86	183.28	150.02	143.42	135.03	162.16	142.65	126.91
5 yr avg	187.11	189.07	189.92	208.70	208.18	177.47	164.68	159.25	159.29	169.97	174.31	175.47

Appendix 6. Lamb Prices (95 -109 pounds), Ontario, by year, by month (\$ /100 lbs)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2003	141.27	144.29	131.50	154.01	150.54	139.51	116.48	94.11	85.95	94.40	97.24	88.02
2004	105.20	91.49	75.15	120.45	123.71	99.93	106.17	96.41	90.96	94.36	99.47	114.60
2005	133.43	134.54	136.59	140.15	143.28	131.56	140.27	136.67	145.43	149.85	145.35	154.79
2006	168.29	164.40	159.10	153.38	164.50	161.71	143.21	142.24	149.91	142.58	151.49	161.00
2007	141.63	144.81	152.92	169.02	168.43	150.02	146.79	145.67	150.73	143.98	144.01	147.77
2008	140.04	154.84	154.60	148.82	170.58	173.28	154.55	149.97	150.95	142.57	142.21	151.87
2009	160.32	159.27	167.50	177.56	180.09	163.86	161.40	156.80	158.15	155.95	158.26	156.45
2010	164.27	174.91	169.06	194.09	195.70	174.55	163.84	147.34	156.20	161.64	177.22	201.88
2011	200.26	202.89	210.34	229.63	229.71	190.55	187.04	188.84	186.76	198.32	211.23	212.79
2012	215.18	203.27	201.54	219.98	226.55	181.88	147.47	146.52	131.89	162.16	142.65	126.91
5 yr avg	176.01	179.04	180.61	194.02	200.53	176.82	162.86	157.89	156.79	164.13	166.31	169.98

Appendix 7. Adjustment to Expenses and Income for Change in Number of Lambs Marketed⁵⁹

	Dollars per lamb (\$ /lamb)	Your Farm
Marketing (8)	\$10.21	
Lamb Feed cost (1.4) ÷ # lambs weaned	\$14.95	
Salt (d8)	\$0.14	
Bedding (c5)	\$0.48	
Vaccine (e6)	\$0.65	
Miscellaneous Health (e7)	\$0.36	
Tag cost (f1)	\$1.65	
Total per lamb adjustment	\$28.45	
X # additional (or fewer) lambs	129	
Adjustment to Variable expenses	\$1,963.24	
Average Price received per lamb	\$154.17	
X # additional (or fewer) lambs	129	
Adjustment to Income	\$10,638.93	

⁵⁹ multiply by the difference in the number of lambs and either add to, or subtract from total variable expenses and income.

Appendix 8. Adjustment to Income for Change in Lamb Market Price⁶⁰

		Your Farm
2012 average price 80 to 94 lb lambs (\$ /100 lbs) ⁶¹	\$ 175.51	
Average Market Lamb weight (lbs)	81.2	
Average Market Lamb Price	\$ 154.12	
Price change of \$0.10 /lb	\$8.12	
New Market Lamb Price	\$ 146.00	
Number of lambs marketed	1289	
Adjustment to Income for each \$0.10 /lb price change	\$ 10,466.68	

Appendix 9. Adjustment to Budget if Ewe Lambs sold as Breeding Stock

	Dollars per lamb (\$ /lamb)	Your Farm
Marketing cost (8) ÷ # lambs marketed	\$10.21	
Finishing Ration (c4)	\$18.12	
Salt (d8) 45 days	\$0.16	
Bedding (c5) 45 days	\$0.48	
Total per lamb adjustment	\$33.15	
X # ewe lambs sold for breeding ⁶²	257	
Adjustment to Variable expenses	(\$7,432.07)	
breeding price minus market price	\$225 - \$154.12	
Price difference	\$70.81	
X # additional (or fewer) lambs	257	
Adjustment to Income	\$18,171.52	

⁶⁰ For every \$0.10 change in per pound price, lamb price will change by \$0.10 × average weight.

⁶¹ Average price for the 5 market months (October through February) rather than the year average price.

⁶² Selected from top 60 % of ewe lambs.