

tips & tools

BUSINESS MANAGEMENT



Calculating cost of production for your lamb enterprise

For producers wanting to improve the performance of their lamb enterprise, a good understanding of the current health of the business is essential.

Cost of production is a key factor affecting the profitability of lamb-producing businesses. Calculating your cost of production is an important step in assessing flock performance and a first step to making change.

Cost of production

Cost of production (CoP), measured in cents per kilogram, is an indication of the outlay required to produce each kg of lamb. However, as there is more than one way to calculate CoP, and people can confuse it with other indicators, CoP may not always provide a meaningful comparison between businesses.

The MLA cost of production calculator has been developed to standardise this very common performance indicator, so you can easily compare the performance of your enterprise with others in the lamb industry. A quick comparison of your CoP will indicate whether you have great scope for improvement, or are already performing reasonably well.

CoP, is simple to calculate. It is not complicated by how you have financed the business, how much of it you own or how you acquire your land, and it only deals with one enterprise at a time. CoP does not automatically reveal what aspects of production you are in a position to improve, but it will provide a very useful start. You can use it to compare the health of your business year on year, and then compare it against other lamb producers with similar resources to your own.

In developing a standard approach to calculating CoP, care has been taken to ensure that while the easiest method has been applied at every step, the usefulness of the measure has not been compromised.

Designed as a 'do-it-yourself' tool, we hope that every lamb producer will use the MLA cost of production calculator to figure out their CoP and compare their performance annually.

Finally, knowing your CoP is just the first step. Once you have a rough idea of how you are performing, we strongly urge you to measure the performance of your business in more detail and for all enterprises. There are a number of benchmarking groups already established, run by state departments or private farm management consultants.

Key benefits

- Learn to use the MLA cost of production calculator to measure the performance of your lamb enterprise year on year
- Compare the health of your business annually with other lamb producers and find out if there is scope for improvement, or if your enterprise is already performing well

How to use the MLA cost of production calculator

The calculator is intended to be used for only one enterprise at a time, for example a specialist prime lamb flock. If you have a Merino wool flock and you join a percentage of the ewes to a terminal sire and the rest to Merino sires, then you would break that flock into two enterprises: 1) a dual purpose lamb flock that includes the ewes joined to a terminal sire, and 2) a wool flock that includes those ewes joined to Merino sires and all Merino wethers. The income and costs should be apportioned accordingly throughout the calculator. Use the most appropriate 12-month period for your situation and keep the same period for each enterprise, if you have more than one.

The CoP calculator is split into the following seven sections:

1. Total lamb production
2. Lamb enterprise income
3. Total labour costs for all enterprises
4. Lamb enterprise costs
5. Overhead costs for whole farm business
6. Calculation for allocating overheads to lamb enterprise
7. Final CoP calculation

Each section has a number of questions to be answered from your own records, with a number next to the question referring to a comment in the explanatory notes box where required.

There is a box at the end of each section with a letter beside it that refers to the figures used in the final CoP calculation.

Once you have calculated your CoP, the next section of this *Tips & Tools* gives you an idea of how your performance ranks against other lamb enterprises.

Please heed the WARNING section about the accuracy of CoP for different enterprise mixes.

The MLA cost of production calculator for lamb

Total lamb production

Day/month/year	Opening number / /	Closing number / /
Ewes*	<input type="text" value="(a)"/>	<input type="text" value="(b)"/>
Lambs#	<input type="text" value="(c)"/>	<input type="text" value="(d)"/>
Rams	<input type="text" value="(e)"/>	<input type="text" value="(f)"/>

Lamb production

	kgs/head lwt	Total kgs lwt	
Lamb opening liveweight	<input type="text" value="(g)"/>	<input type="text" value="(c) x (g)"/>	1
Lamb closing liveweight	<input type="text" value="(h)"/>	<input type="text" value="(d) x (j)"/>	2
Total liveweight of lamb purchased		<input type="text" value="kg"/>	3
Total liveweight of lamb sold		<input type="text" value="kg"/>	4
TOTAL KG OF LAMB PRODUCED (4+2-3-1)		<input type="text" value="kg"/>	A

Explanatory notes

- * Include replacement ewes
- # These are lambs carried over from previous lambing
- Note:** All figures are GST exclusive
- 1-4** Liveweights (lwt) - from transaction records or weighing a sample; if not available, use an estimate
- 7-8, 15-18** From transaction records
- (i), (j), (k), (l) (m), (n)** These are the standard values used in Holmes Sackett & Associates Benchmarking and it is assumed that the opening and closing values are the same
- 8** Value of lamb sales includes skins
- 15** Include any ewes transferred from the Merino flock at a standard value (eg \$60/head)
- 18** Include only wool sold from this enterprise

Lamb enterprise income

Lamb trading income			
	\$/head	Total value (\$)	
Lamb opening value	\$ 60 (i)	<input type="text" value="(c) x (i)"/>	5
Lamb closing value	\$ 60 (j)	<input type="text" value="(d) x (h)"/>	6
Total value of lamb purchased		<input type="text" value="\$"/>	7
Total value of lamb sold (including skins)		<input type="text" value="\$"/>	8
NET LAMB TRADING INCOME (8+6-7-5)		<input type="text" value="\$"/>	B
Sheep and wool trading income			
Lamb enterprise opening values			
	\$/head	Total value (\$)	
Ewe opening value	\$ 80 (k)	<input type="text" value="(a) x (k)"/>	9
Ram opening value	\$ 300 (l)	<input type="text" value="(e) x (l)"/>	10
Wool opening value		<input type="text" value="\$"/>	11
Total opening value (9+10+11)		<input type="text" value="\$"/>	C
Lamb enterprise closing values			
Ewe closing value	\$ 80 (m)	<input type="text" value="(b) x (m)"/>	12
Ram closing value	\$ 300 (n)	<input type="text" value="(f) x (n)"/>	13
Wool closing value		<input type="text" value="\$"/>	14
Total closing value (12+13+14)		<input type="text" value="\$"/>	D
Lamb enterprise purchases/transfers			
Total ewe purchases/transfers (\$)		<input type="text" value="\$"/>	15
Total ram purchases (\$)		<input type="text" value="\$"/>	16
Total purchase value (15+16)		<input type="text" value="\$"/>	E
Lamb enterprise sales			
Total ewe and ram sales		<input type="text" value="\$"/>	17
Total wool sold		<input type="text" value="\$"/>	18
Total sale value (17+18)		<input type="text" value="\$"/>	F
NET SHEEP AND WOOL INCOME (D+F-C-E)		<input type="text" value="\$"/>	G

Total labour costs for full year for all enterprises

Cost of permanent employees	\$	19
Owner/operator allowance Number _____ x \$50,000 pa =	\$	20
Cost of additional family labour (not already included in above) Number _____ x \$28,000 pa =	\$	21
Total cost labour (19+20+21)	\$	22
Percentage time on lamb enterprise work	%	23
TOTAL LABOUR COST OF LAMB ENTERPRISE (22x23)	\$	H

Lamb enterprise costs

Total flock health costs	\$	24
Contractors and casual labour for lamb work	\$	25
Total quantity of home grown feed fed out: _____ t x value/tonne \$ _____ = \$ _____		26
Total quantity of purchased feed fed out: _____ t x value/tonne \$ _____ = \$ _____		27
Transport and cartage	\$	28
Selling costs (lambs, sheep and wool)	\$	29
Shearing and crutching	\$	30
TOTAL LAMB ENTERPRISE COSTS (add 24 through 30)	\$	I

Explanatory notes (cont.)

- 19** Include any permanent paid labour (casual labour goes in 25) and not owner/operator or family members; include all on-costs, eg workers compensation, superannuation, etc.
- 20** This is an allowance for the 'manager' of the business; if 'manager' is less than full time, pro rata the \$50,000 annual allowance, ie 50% = \$25,000 pa; exclude off-farm labour
- 21** Only include if not already included in 19, eg 1 full time and 1 part time = 1.5
- 23** Estimate if time records not available
- 24** Includes drenches, dips, vaccines and vet costs

Overhead costs for whole farm business

Repairs and maintenance: shed, yards, fences, land	\$	31
Repairs and maintenance: plant and equipment	\$	32
General insurance	\$	33
Administration	\$	34
Rates, agistment	\$	35
Fuel and oil	\$	36
Electricity and gas	\$	37
Depreciation	\$	38
Pasture costs	\$	39
Other	\$	40
TOTAL OVERHEADS (add 31 through 40)	\$	J

- 25** Includes marking, classing, mustering and casual labour used for the lamb enterprise (excluding shearing and crutching)
- 26-27** Feed should be valued at market price, not cost of production because if it wasn't fed to stock it could have been sold on the market
- 28** Include cost of all lamb, ewe and ram transport (not involved in selling costs)
- 29** For all sheep and wool sold; include freight, commissions, fees, taxes and levies
- 30** Include cost of shearing, crutching, mulesing, wool packs, emery paper, combs, cutters, and any other associated expenses
- 32** Includes vehicles, motor bikes, tractors, etc; do not include labour if already accounted for previously
- 33** Includes public liability, sickness and accident insurance
- 34** Telephone, fax, postage, general office expenses; do not include labour if already accounted for previously
- 35** Rates include shire, RLP Board and council
- 36** Includes petrol, distillate, fuel oils and lubricants exclude personal use
- 37** Exclude personal use
- 38** Use the depreciation figures from your most recent; tax return
- 39** Include chemicals, fertiliser, irrigation, seed
- 40** Include items not already accounted for

Calculating the percentage of overhead costs allocated to lamb enterprise

(Your most recent tax return may be useful. If not able to separate gross incomes, only **LAMB ENTERPRISE GROSS INCOME** and **TOTAL GROSS INCOME** are necessary)

Year _____	GROSS INCOME
LAMB ENTERPRISE (B+G)	\$ <input type="text"/>
	+
OTHER SHEEP ENTERPRISE(S)	\$ <input type="text"/>
	+
CATTLE ENTERPRISE	\$ <input type="text"/>
	+
CROPPING ENTERPRISE	\$ <input type="text"/>
	+
OTHER*	\$ <input type="text"/>
	=
TOTAL GROSS INCOME	\$ <input type="text"/>

Percentage of income from lamb = % **K**

$$\left(\frac{\text{GROSS LAMB INCOME} \times 100}{\text{TOTAL GROSS INCOME}} \right)$$

Explanatory notes (cont.)

K Overhead costs are allocated according to the income produced from the lamb enterprise

***Other** Do not include off-farm contracting or labour or off-farm investment income

Calculating cost of production per kg lamb dressed weight

Overhead costs (from J)	\$ <input type="text"/>	L
Overheads attributed to lamb enterprise (KxJ)	\$ <input type="text"/>	M
Total cost of lamb production (H+I+M)	\$ <input type="text"/>	N
Proportion income lamb of total lamb enterprise (B ÷ (B+G))	<input type="text"/>	O
Total cost of lamb production (NxO)	<input type="text"/>	P
Total kg lamb produced (liveweight) (from A)	<input type="text"/> kg	Q
Total kg lamb produced (dressed weight – Qx0.46)	<input type="text"/> kg	R

COST OF PRODUCTION PER KG LAMB DRESSED WEIGHT (P÷R)

Note: This figure is inclusive of skin values and therefore is not directly comparable to over-the-hook prices. If the price you are offered is not inclusive of skins then you can compare as follows:

- 1) Multiply your cost of production by the dressed weight of lambs for which you have been offered the price. This will give you the total cost of producing the lamb with its skin.
- 2) Deduct the current skin value from the total cost to give the net cost of producing the lamb without its skin.
- 3) Divide the cost of producing the lamb without its skin by the dressed weight to give the price required per kilogram of lamb dressed weight to ensure you meet the cost of producing the lamb with its skin on.

WARNING

CALCULATE CoP FOR A NUMBER OF YEARS TO GET AN IDEA OF YOUR AVERAGE

CoP can vary a lot between years due to a range of circumstances. These include but are not limited to:

- Unusual rainfall
- Changes to flock management or structure, such as lambing date
- Greater than normal expenses, such as capital fertiliser applications or pasture establishment

As a general rule, the more variable the rainfall for your location, the more years you should calculate to determine your average CoP.

THIS CoP CALCULATOR IS MOST ACCURATE FOR A BUSINESS THAT RUNS PRIME LAMB ONLY

For businesses that run both cattle and wool sheep, the calculator is reasonably accurate because costs can be split reliably by using the percentage of gross income each contributes.

For cattle, sheep and cropping businesses, calculating CoP for individual enterprises requires estimating how much of some costs should be allocated to each. This is difficult and can lead to significant inaccuracies. While this calculator attempts to address this with guidelines about how to proportion costs, a full benchmarking program across all enterprises is advised.

In any case, the results will be a useful starting point for further discussion with your farm management advisor or benchmarking group.

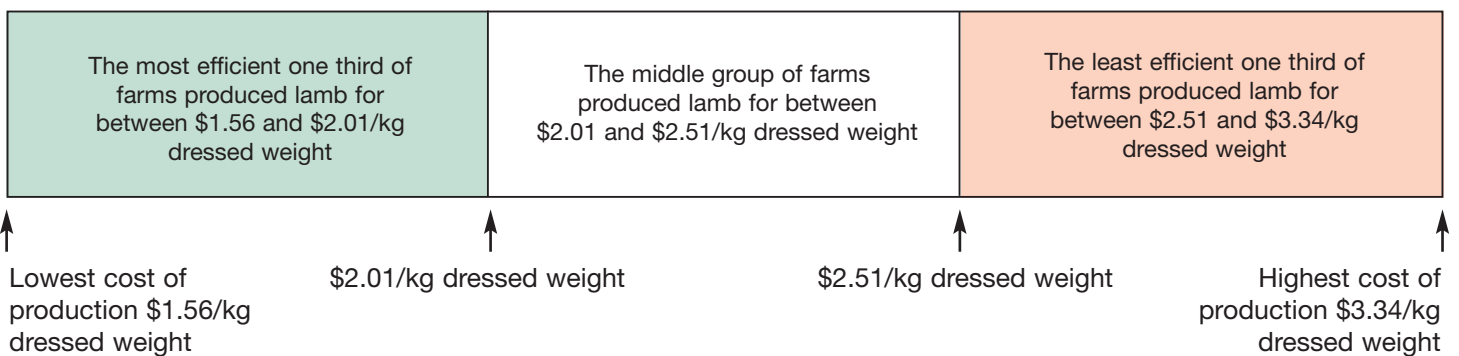
How does your CoP compare with others?

Prime lamb enterprise

By industry standards, if you have a cost of production of less than \$2.01/kg dressed weight, you are performing better than the average prime lamb producer. As shown in the diagram below, the most efficient third of producers have a regular cost of production of around \$1.50/kg dressed weight – a good goal for any producer interested in wealth creation.

A cost of production of between \$2.01 and \$2.51 per kgDW would suggest significant room for improvement.

If your cost of production is greater than \$2.51/kgDW, the future of your business may be at risk. Based on lamb prices less than \$3.00/kgDW, you will generally not be earning sufficient income to service debt. If you own all your assets your return on equity will be poor in comparison with other investment opportunities unless your land value is appreciating considerably.



Optional extras

Using the figures you have drawn on to measure CoP, there are a couple of extra indicators you can calculate. In many cases their accuracy may be limited because they require you to estimate the figures. However, should you choose to fill these extras out, the results will be a useful starting point for further discussion with your farm management advisor.

Kilograms of lamb produced per hectare (kgDW/ha)

You can calculate kgDW/ha by simply dividing the number of kilograms of lamb produced (Box **R** on the calculator) by the number of winter grazing hectares used for lamb production. If lamb is your only enterprise, this is easy to determine accurately. However, where you have a number of different enterprises, deciding on the number of hectares you allocate to the lamb enterprise as opposed to the others may be difficult, so don't rely too much on the result.

Average sale price

You should be able to get an idea of your average sale price per kilogram dressed weight from your sales records, especially if you sell over the hooks.

Margin

Subtracting your CoP from your average sale price (cents/kgDW) will give you an idea of the margin you are making from your lamb enterprise. If this figure is less than or close to 0, your business may be at risk.

Where to from here?

Congratulations! You have taken the first step. Benchmarking your CoP has given you an idea of the scope you have for improving the profitability of your lamb enterprise.

The next step is to very clearly decide the lifestyle and financial goals your business has to support, and then determine the enterprise strategy, flock structure and markets that will best achieve these goals.

Access to capital, attitude to risk, land class and rainfall are some of the factors that make your situation different to others and will govern the enterprise choices available to you.

However, all options you might take will influence either of two things – your feed supply or your feed demand.

Feed demand is influenced by the flock structure and target markets you choose. The tactical options you may choose from to change feed demand include: classes of stock, breed, time of lambing, age at weaning, target growth rates and turn-off weights. All of these factors influence the feed demand in terms of quality and quantity required at different times of the year.

On the other side of the equation, options for providing the feed required include: the pasture species grown on different land classes; the grazing rotation, which includes fencing, grazing and rest times; the use of irrigation, supplementary feeding, and fodder conservation.

Acknowledgement

The method for calculating cost of production was developed by Holmes, Sackett and Associates for Meat & Livestock Australia.

Further information

For more information from MLA for your lamb enterprise, such as a free copy of *The lamb guide* or any of the regional and finishing supplements, call the MLA producer hotline on 1800 675 717

Based on your current enterprise structure, you need to determine how well your feed supply matches your feed demand. There are a number of programs provided by MLA to help you do this, such as Prograze, as well as various tools and information in *The lamb guide* and its regional and finishing supplements. Alternatively, you can contact your local state department or farm management consultant for assistance.

If the match between your feed supply and demand is poor, look for options to change either or both. Other producers, often from regions quite different to yours, can be a great source of new options for you to consider. Keep an open mind, listen to others and read widely.

When you have chosen a few possible options, you should do an economic analysis of each of those options to ensure they will meet the profit goals you have set.

Once you have decided on the flock structure, target markets and feed supply options you want to implement, you need to develop a transition plan to get from the current enterprise strategy to the new one. This plan needs to account for access to capital, and have defined limits for cash flow and liquidity against which you can monitor progress. If these limits are breached, action can be taken in advance to get the business back on track. This is critical to managing risk.

Developing an enterprise strategy is a complex task requiring many repetitive calculations. Most farm management consultants have a range of computer tools to automate this process, and they are aware of most of the pitfalls that may confront you. It is strongly advised that you seek professional support.



Level 1, 165 Walker Street
North Sydney NSW 2060
Ph: 02 9463 9333
Fax: 02 9463 9393
www.mla.com.au

Reprinted July 2007
ISBN: 1 74036 627 1
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ABN: 39 081 678 364