

The value of pregnancy scanning

Pregnancy scanning is an essential tool for improved ewe and lamb survival. The information collected during pregnancy scanning can be used to differentially manage pregnant ewes, providing optimal nutrition and conditions for survival.

Scanning has a high return on investment when the information from scanning is used to make selection decisions and optimise nutrition. A benefit-cost analysis (BCA) has demonstrated that **scanning for multiples returns an average profit of \$5.55/ewe.**

Scanning for only pregnancy status was about half as profitable, at \$2.65/ewe on average.

Breed type	The value of scanning for multiples (\$/ewe)			The value of scanning for pregnancy status (\$/ewe)		
	Time of lambing			Time of lambing		
	Autumn	Winter	Spring	Autumn	Winter	Spring
Winter rainfall regions						
Hamilton, VIC region						
Merino	\$7.20	\$10.60	\$3.80	\$6.30	\$5.70	\$1.30
Merino-Terminal	\$6.40	\$8.80	\$6.00	\$5.20	\$4.10	\$0.00
Maternal	\$7.50	\$8.80	\$5.40	\$7.10	\$7.70	\$2.90
Darkan, WA region						
Merino	\$7.80	\$2.80	\$5.50	\$4.10	-\$1.50	\$1.50
Merino-Terminal	\$9.80	\$5.20	\$3.70	\$4.60	\$0.90	-\$1.50
Maternal	\$5.80	\$4.00	\$4.20	\$4.80	\$3.00	\$0.90
Cunderdin, WA region						
Merino	\$4.60	\$4.60	\$1.20	\$2.50	\$1.20	-\$0.30
Merino-Terminal	\$5.20	\$4.70	\$1.90	\$2.00	\$1.00	-\$0.90
Maternal	\$8.40	\$3.50	\$6.50	\$7.50	\$3.30	\$3.00
Summer rainfall region						
	Time of lambing			Time of lambing		
Armidale, NSW region	1-Aug	1-Sep	20-Sep	1-Aug	1-Sep	20-Sep
Merino			\$3.85			\$1.16
Merino-Terminal		\$7.52	\$7.06		\$1.86	\$1.78
Maternal	\$2.01	\$1.74		\$1.64	\$1.57	
	Total average value of scanning for multiples		\$5.55	Total average value of scanning for pregnancy status		\$2.65

Scanning for multiples is most valuable

Scanning for multiples and implementing best practice management was profitable across all regions, breeds and times of lambing in the analysis. The average profit was \$5.55/head.

In winter rainfall regions, the value of scanning was higher for flocks that were lambing in autumn and slightly less for flocks lambing in spring. This is because the early lambing flocks are scanning and identifying the empty ewes prior to the main feed shortage, which increases the value of adjusting their nutritional management or from selling at scanning.

Scanning was similarly profitable in the summer rainfall region.

The lower value of scanning associated with later lambing does not equate to lower profit overall. Often the later lambing flocks are the most profitable due to the more appropriate allocation of feed to match nutritional requirements.

The value of scanning for pregnancy status

Scanning for pregnancy status was about half as profitable as scanning for multiples. The average return on scanning for pregnancy status was \$2.65/head.

Scanning for pregnancy status was not profitable in some regions and flocks where it occurred after the main feed deficit. In these cases, the reproduction and feed benefits achieved were less than the cost outlay for scanning and the reduction in the wool production potential of the flock.

These results suggest that scanning for pregnancy status is a good starting point for farmers who are gaining experience with scanning, but that it should be used as a stepping-stone to scanning for multiples.

Management changes

To capture the benefits of pregnancy scanning, management changes that utilise the information obtained from scanning need to be implemented. Management options include:

- Removing the “passengers” that are scanned empty from your replacement breeding flock to improve future reproductive outcomes
- Optimising the sale time of empty ewes differs between enterprises but options include selling at scanning or after the following shearing
- Reducing nutrition to empty ewes and diverting that feed to pregnant ewes
- Increasing nutrition to multiple-bearing ewes
- Allocating multiple-bearing ewes to better lambing paddocks
- Including birth type when selecting your replacement breeding ewes.

The value of each management option to your enterprise

Management options	Scanning for multiples	Scanning for pregnancy status	\$/ewe
Sell the passengers	✓	✓	\$1.85
Feed allocation:			
✓ to pregnant ewes	✓	✓	\$0.80
✓ to multiples	✓	X	\$1.00
Paddock allocation	✓	X	\$0.95
Replacement selection	✓	X	\$0.95
Total value per ewe	\$5.55	\$2.65	

The biggest contributor to the profitability of scanning (for pregnancy status and multiples) is the removal of passenger ewes to increase the subsequent reproductive performance of the flock. In this BCA, it was optimal to sell once-empty ewes for the flocks that are scanning just prior to the main feed deficit, provided that the weaning percentage is sufficient for the flock to be self-replacing. Selling twice-empty ewes was best for flocks that are not self-replacing or are scanning after the feed deficit.

How this BCA was calculated

The cost of scanning includes both the cost of the contractor and the labour cost associated with mustering and pushing the ewes through the scanning crate.

A variety of regions were analysed to be illustrative of different Australian sheep production zones, lambing times, breed types, average annual rainfall and growing season lengths. These are: Hamilton, VIC region (600–650mm winter rainfall zone) with a nine-month growing season; Darkan, WA region (500–600mm winter rainfall zone) with a six-month growing season; Cunderdin, WA region (350–380mm winter rainfall zone) with a four-and-a-half-month growing season; and Armidale, NSW region (750–800mm summer rainfall zone) and a six-month growing season.

Breed type	Description
Merino	Self-replacing Merino flock with emphasis on wool production. Wethers sold as store lambs (six months) or shippers (18 months).
Merino-Terminal	Self-replacing Merino flock, surplus ewes (cast for age or surplus ewe hoggets) for first-cross lamb production sold as suckers (four-and-a-half months). Merino wethers sold as Merino prime lamb or shippers.
Maternal	Composite ewes joined to composite rams to produce composite lambs. Wethers sold as prime lambs (four to five months).

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