

# Improving reproduction efficiency through pregnancy scanning

Connecting people in the business of sheep

## SNAPSHOT

Name:	Matt Clarke
Location	Pine Grove Station, Hawker
Average rainfall	300 mm
Enterprises	Self-replacing merino and terminal sire over merino
Farm size	30,350 hectares

### Summary

Through the use of pregnancy scanning and improved ewe nutrition, livestock productivity and flexibility has increased. This system takes advantage of average to above average season feed availability, while reducing risk in poor seasons.

### Background

The Clarke's (Figure 1) own and operate Pine Grove, situated 40 km southeast of Hawker. They manage 6,000 merino ewes with approximately 45% being a self-replacing merino flock with the other 55% mated to terminal sires (White Suffolk) for prime lamb production. All maiden ewes are mated to merino rams. Young ewes are then classed and culls retained and mated to White Suffolk rams, with other ages mated to a mix of merino and White Suffolk rams. Ewes are sold at 6 years of age. Shearing is undertaken in April with ewes lambing in June/July.



Figure 1. Matt and Chas Clarke, Pine Grove

The Clarkes had a new set of Pro-way sheep yards constructed in 2017, which has been a significant investment. Despite the high cost of the yards they have provided significant labour efficiency making it quicker and less stressful to undertake sheep handling operations.

The efficiency of the design has reduced the stress on both the livestock and the operators with contractors keen to return, due to the ease of operation. This is a major advantage, particularly in pastoral areas as good quality labour can be hard to source.

### Motivation to change practices

Matt felt that there was an opportunity to improve the productivity of his sheep flock by increasing the lambing percentage of his ewes.

### Alternative management options, and the advantages and disadvantages

What were the alternative options that he considered?

**Option 1:** Keep all ewes, only selling cast for age ewes in October after weaning (Old system)

- ✓ Easier system with low inputs required.
- ✗ Dry ewes reducing the productivity of the flock and only receive skin value of wool, when sold.

**Option 2:** Pregnancy scan 6 year old ewes and sell dry ewes in April, after shearing.

- ✓ Old dry ewes sold early reducing grazing pressure, allowing additional feed for remaining livestock.
- ✓ Sheep prices tend to be higher in April compared to October.
- ✓ Improved gross margin in comparison to 'Old system' - Option 1 (see Table 1)
- ✓ Only receive skin value of wool for old ewes sold in October.

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**Option 3:** Pregnancy scan all ewes and sell old dry ewes in April and re-mate young dry ewes to terminal sires in September (New system).

- ✓ Old dry ewes sold early reducing grazing pressure, allowing additional feed for remaining livestock. Sheep prices tend to be higher in April compared to October.
- ✓ Option to sell all dry ewes in poor seasons, rather than mating them to White Suffolk rams.
- ✓ On average an additional 200 prime lambs have been marked each year.
- ✓ Improved gross margin in comparison to 'Old system' - Option 1 and Option 2 (see Table 1)
- ✓ Only receive skin value of wool for old ewes sold in October.

In 2018, ewes were provided with supplementary feed (hay) in the last 8 weeks of pregnancy to increase ewe and lamb survival. This was undertaken for the first time, due to the poor seasonal conditions and high livestock returns.

## Business Case

Comparison of the benefits and costs considered before deciding what 'best' option for improved productivity. This information may assist in demonstrating the potential benefit or cost that the change or innovation can have on your business.

### What are the Benefits and Costs?

Table 1: Description of benefits and costs relative to Option 1 (No change)

	Option 2 - Old ewes scanned		Option 3 - All ewes scanned	
<b>Benefits - Additional income/other benefits</b>				
Cull ewes	300 sold April @ extra \$15/hd	\$4,500	300 sold April @ extra \$15/hd	\$4,500
Prime lambs			200 @ \$100/head	\$20,000
Pasture feed	Additional pasture feed available		Additional pasture feed available	
<b>Total benefits</b>		<b>\$4,500</b>		<b>\$24,500</b>
<b>Costs - New variable costs</b>				
Pregnancy scanning	1,400 old ewes @ \$0.50/hd plus travel	\$870	6,000 ewes @ \$0.50/hd plus 2 time travel	\$3,350
Mustering	3 days for 2 people @ \$200/day	\$1,200	7 days for 2 people @ \$220/day	\$2,800
New overhead costs	None		None	
<b>Total Costs</b>		<b>\$2,070</b>		<b>\$6,150</b>
<b>GROSS MARGIN</b>		<b>\$2,430</b>		<b>\$18,350</b>

### Which option was chosen and why?

Matt had used Option 3 in 2015 and 2016, as it increased his livestock productivity (lambing percentages: Maiden ewes 80% and Mature ewes 85%), and reduced costs, while increasing flexibility. However, due to a shortage of labour in 2017, he was forced to revert to Option 2.

### What information/advice did you seek?

The Clarke's initially started pregnancy scanning old ewes and this worked very well and then decided to scan all the ewes to remove barren ewes from the flock.

### Key findings

- A very low percentage (<1%) of dry ewes.
- There was a large difference in conception rates between the ewes mated to Merino's (85%) and those mated to White Suffolk's (120%).
- The benefits of pregnancy scanning are likely to be greater in poor seasons as there is the option of selling all dry ewes rather than mating back to White Suffolk rams.

### What are the likely risks?

When considering making a change to the management practices in a business, it is important to consider the risks of doing so and how they may be mitigated. Table 2 outlines some of the key risks considered and addressed before changing.

Table 2: The risks associated with changing management

What are the risks?	How is this risk managed?
Stock stressed during mustering and scanning	The Clarke's have built a set of new highly efficient sheep handling yards, making handling easier for both sheep and operators
	Scanning is conducted in two lots of 3,000 ewes per day, several days apart to allow time for mustering
Poor seasonal conditions	Sell all dry ewes after pregnancy scanning

### Other Considerations

When making a decision the cost of implementation isn't the only thing to consider. The other areas on top of costs and risks are the implications to Workplace Health and Safety (WHS), labour, time requirements, and how easy the innovation will be to implement.

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