

# Improving reproduction efficiency through pregnancy scanning



## CASE STUDY

Connecting people in the business of sheep

### SNAPSHOT

Name:	AJ and PA McBride Pty Ltd Warren Breeding (Manager)
Location	Teetulpa Station, Yunta
Average rainfall	208 mm
Enterprises	Self-replacing merino
Farm size	86,000 ha

#### Summary

Through the use of pregnancy scanning, livestock productivity has been increased with minimal impact on production costs and risk.

#### Background

The property is part of the AJ and PA McBride PTY Ltd company and is situated just north of Yunta, with a range of flat open country and steep hills. Warren Breeding has managed the property for the McBride family for 37 years and operates a self-replacing merino flock. The main shearing occurs in April and lambing in June/July.

Ewe hoggets are kept as replacements (after classing), with wether lambs shorn and sold at 5 months (December). The rising five-year-old ewes are pregnancy scanned at shearing time with the top line of pregnant ewes kept for one further lambing, then shorn (5 months wool) and sold in December. The remainder of the pregnant ewes are marketed at a premium price with the non-pregnant ones being sold separately.

Rams are provided with extra feed 6 to 8 weeks before mating to boost their fertility, while ewes are not provided with any supplementary feed.

#### Motivation to change practices

Warren felt that the productivity of the business could be improved by keeping additional sheep in seasons with sufficient feed. However, the strategy needed to be flexible, low cost and low risk.



Figure 1. Warren Breeding, Teetulpa Station

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

What were the alternative options that he considered?

**Option 1:** Sell all 5-year-old ewes after shearing (Old system)

- ✓ low risk
- ✗ unable to take advantage of additional feed in average to above average seasons.

**Option 2:** Pregnancy scan 5-year-old ewes and sell dry ewes and/or some pregnant ewes depending on seasonal conditions.

- ✓ able to use additional feed when available and ensure the ewes kept, are as productive as possible.

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**Option 3:** Pregnancy scan 5-year-old ewes retain a top line of pregnant ewes (for 6 months) and sell the remaining pregnant ewes (2nds) and dry ewes into separate markets. Scan maiden ewes and manage pregnant and non-pregnant ewes separately (Current system).

- ✓ able to use additional feed when available and ensure the ewes kept, are as productive as possible
- ✓ able to ensure pregnant ewes are grazed on the most productive areas of the property.

#### Which option was chosen and why?

Warren started with Option 2 several years ago and as this proved successful, he has now moved to Option 3. Option 2 has enabled him to produce another lamb and additional wool from the older ewes, while only needing to hold them for an additional 6 months.

In 2017, the dry older ewes were culled and the pregnant ewes split in two groups with the best ones kept and the rest sold as in-lamb with a pregnancy scanning certificate, which ensured a significant premium of \$50/head above dry ewes. However, in 2018 there will be no premium for pregnant ewes, therefore a premium can only be budgeted for in 80% of years.

The ewe lambs are kept as replacements with the wether lambs sold as weaners.

With “Option 3” the pregnant maiden ewes are placed in paddocks with better quality feed, while the dry ewes are either placed with the weaner ewes or run in less productive paddocks. These young dry ewes are kept and mated again the following year. If they were culled this is seen as a missed opportunity for future production as sometimes ewes miss mating, due to large paddocks and multiple watering points meaning they may not have contact with rams (also a little shy!).

Currently pregnancy scanning occurs at shearing. With approximately 1,100 sheep shorn per day and over 5,000 ewes to be scanned for “Option 3”, this can mean a large number of sheep need to be kept in holding paddocks for several days (extra stress on

pregnant ewes). An experienced operator can scan 500-600 per hour with good yards. Warren has spread the scanning out over two days, 3 or 4 days apart to reduce the time stock are held to minimise stress.



Figure 2. Pregnancy scanning at Teetulpa

In the future Warren’s aim is to scan all breeding ewes (8,000-9,000) but the logistics to undertake this need to be determined. Sheep are transported straight back to their paddocks, straight after shearing to help reduce any off-shear stress. To determine if ewes are pregnant, scanning needs to be undertaken approximately 40 days after the rams have been removed. In pastoral areas this often means that some ewes are at late pregnancy, which makes it difficult to determine multiple births. Currently this is not an issue as Warren is only scanning for pregnancy and not multiple births.

#### What information/advice did you seek?

They have developed this strategy themselves to improve productivity, over a number of years.

#### Key findings

- Pregnancy scanning has worked extremely well as a tool to improve management decisions.
- Change has improved productivity with on average additional 900 lambs produced and an additional 15 bales of wool cut.
- They have been able to manage the nutrition of pregnant ewes better by ensuring they have access to the best quality feed.

## 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 - Scan old ewes		Option 3 - Scan old and maiden ewes	
<b>Benefits - Additional income/other benefits</b>				
Pregnant ewes	400 @ average \$40/hd premium (\$50 premium in 80% years)	\$16,000	400 @ average \$40/hd premium	\$16,000
Extra lambs 90 to 110% weaning	450 wether lambs @ \$95/hd <sup>1</sup>	\$42,750	450 wether lambs @ \$95/hd	\$42,750
	450 ewe lambs @ \$165/hd <sup>1</sup>	\$74,250	450 ewe lambs @ \$165/hd <sup>1</sup>	\$74,250
Extra wool	1,000 ewes with 6 months wool 3 kg/hd greasy @ 21um (assume \$0.40/kg greasy discount for short wool)	\$31,300	1,000 ewes with 6 months wool 3 kg/hd @ 21um	\$31,300
Pasture feed			Better paddocks used for pregnant ewes with dry maiden ewes run with weaners or in less productive paddocks (1.5% better productivity)	20,000
<b>Total benefits</b>		<b>\$164,300</b>		<b>\$184,300</b>
<b>Costs - New variable costs</b>				
Shearing	1,000 ewes @ \$6.80/hd	\$6,800	1,000 ewes @ \$6.80/hd	\$6,800
Lice control	1,000 ewes @ \$1.52/hd	\$1,520	1,000 ewes @ \$1.52/hd	\$1,520
Pregnancy scan	1,800 ewes @ 0.50/hd plus travel	\$1,100	5,300 ewes @ \$0.50/hd plus 2 times travel	\$3,050
Lamb marking	900 @ \$2.50 (mark, pain relief, tag & vaccinate)	\$2,250	900 @ \$2.50 (mark, pain relief, tag & vaccinate)	\$2,250
<b>Costs - New overhead costs</b>				
Opportunity cost of old ewes	1,000 @ \$80/hd @ 5%/annum <sup>2</sup>	\$2,000	1,000 @ \$80/hd @ 5%/annum <sup>2</sup>	\$2,000
<b>Total Costs</b>		<b>\$13,670</b>	<b>\$</b>	<b>\$15,620</b>
<b>GROSS MARGIN</b>		<b>\$150,630</b>	<b>\$</b>	<b>\$168,680</b>

Variables used in calculation of benefits and costs: 1- PIRSA 2018 Farm gross margin and enterprise planning guide less levies, commission and freight; 2 - Interest foregone from not selling the old ewes after shearing.

### 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?
Pastures over grazed in poor seasons	Additional ewes are only kept when there is sufficient pasture feed available.
Additional cost of scanning	Cost of scanning is minimised by undertaking it at shearing, reducing the need for separate mustering.
Stress to pregnant ewes	As scanning is undertaken at shearing there is minimal additional stress.

### 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.

### Other Options

For "Option 3", where maiden ewes are not in lamb due to missed opportunity, there could be an option to put rams back out with the dry ewes for another 2 weeks and then rescan in 40 days.

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### SA Sheep Industry Fund

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