

AN INITIATIVE OF

Making More From Sheep



MANAGING EWES IN DRY TIMES

Megan Rogers

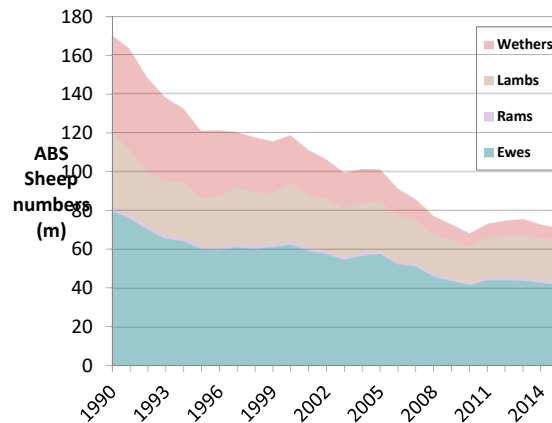


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INTRODUCTION

- Breeding ewes and their lambs make up around 90% of the national sheep flock
- Dry times requiring more astute management – to maintain productivity and ROI
- High levels of production can be maintained in all seasonal conditions



Source: AWI Realising Performance Potential

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Australian Wool
Innovation Limited



MEAT & LIVESTOCK AUSTRALIA

42 million ewes nationally – flock is still declining.

Costs are climbing – as is income

As an industry we need to produce more with less.

This can be done with a large degree of success through varying seasonal conditions.

Ewes are still exiting the system

The value of breeding ewes is a good news story, and investment in maintaining productivity in terms of wool and lambs is worth the investment. However not all breeding ewes are doing their job for you – and we need to manage these animals to ensure efficient use of resources – feed, water, labour, etc

NOT ALL EWES ARE THE SAME - productivity

- In a typical self replacing merino flock:
 - 90% of the shorn wool comes from ewes
 - 75% comes from joined ewes
 - 37% comes from older ewes
- Shorn 5 or 6 times
- Joined 4 times
- Rears 3.5 lambs
- CFA at 6 years of age
- 'Performers' vs 'passengers' – double productivity \$\$ wise!



³Source: Merinos: Realising Performance Potential - AWI



In a typical self replacing merino flock, breeding ewes are underpinning the performance of the flock.

But they are often performing to different levels of productivity.

Before I go into a level of detail about managing your breeding ewes in dry times – I think we should ponder the various levels of performance that we are seeing in an average self replacing ewe flock.

NOT ALL EWES ARE THE SAME – passengers vs performers

PERFORMERS

- Rear 5.6 lambs from 4 attempts
- Cuts 0.15 kg LESS CLEAN FLEECE (higher staple strength)
- Eats at 1.57 DSE per year joined
- Looks thinner
- Generates \$965 for you in her lifetime (2016 figures)

PASSENGERS

- Rears 1.2 lambs from 4 attempts
- Cuts 0.15 kg MORE CLEAN FLEECE (of likely lower staple strength)
- Eats at 1.37 DSE per year joined
- Looks fatter
- Generates \$495 for you in her lifetime (2016 figures)
- 70% failure to conceive (scan dry)
- 45% of the total lamb mortality

Source: Merinos: Realising Performance Potential (AWI) – from Lee, GJ et al 2009

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Discuss the Performers vs the passengers – and go through each side of the slide. This information is from the NSW DPI Trangie D Flock – and comes about from the work conducted by Greg Lee and others, whereby they divided the flock into quarters – depending on reproductive performance. But the impacts on other productive traits were looked at as well – and discussed here.

Start with the performers – they are the ewes that are doing their job for you – and performing well for you – (go through the slide)

Then discuss the passengers – these are absorbing resources – and under these present conditions, limited resources – and returning you much less compared to their over achieving sisters...

Dwell on the issue about the 45% total lamb mortality in the flock – imagine if we were able to manage these animals to minimise the mortality in the flock? That sounds like a free kick to me...

MAXIMISING PRODUCTIVE OUTPUT WITH YOUR EWES – MUST DO'S

- ✓ Know the reproductive status (and potential performance) of your breeding ewes
- ✓ Know the nutritional requirements of the different preg status of ewes
- ✓ Manage nutrition according to pregnancy status
- ✓ Effective feeding up to and during lambing
- ✓ High performing ewes
- ✓ Condition score – for optimum performance
- ✓ Lambing density



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Now, we will discuss the actual management aspects that will help you manage effectively the limited resources available to you in such conditions.

1 know the reproductive status of your breeding ewes – scan them, at 90 days pregnancy – and identify those ewes that are carrying singles, twins, or are empty.

Manage the empty ones – depending on when you shear – you can sell them (into a pretty fabulous market) or run them as a ‘wether’ until shearing and then sell them.

Many people may decide to give maidens a second chance to get in lamb on their second joining – if you do this, definitely identify them as fail to conceive so that you can make decisions regarding their future in your flock at subsequent joinings.

Aim for about 5% dry in an autumn joining – less than 10% is good, but 5% is do-able.

2 Once you have your ewes scanned, you can then determine the potential numbers for lambing paddocks, and management up to lambing.

Once the ewes get past 100 days gestation, their requirements will change – with the ewes carrying multiples increasing markedly – I will come to this later

3 manage nutrition according to preg status – in a year with limited feed, and prices increasing, there is little if any argument to not scan and manage differentially – thereby making most efficient use of the feed available.

4 Manage effective feeding up to and during lambing

5 higher performing ewes – identify those that are doing their job for you and your

business – and identify those that aren't. Wet and dry the ewes at marking time to identify those that fail to rear lambs.

6 Condition score your ewes, to ensure that their performance is optimized – ewes that are too poor, will grow you less wool, and their lambs will be born lighter

7 Finally, consider the density of ewes in your lambing paddocks – both in terms of mob size and stocking rate – smaller is better, especially with twins.

WHY KNOW REPRODUCTIVE STATUS OF EWES?

Lets have a look why:



JOINING LENGTH AND EWE NUTRITION

- 5 week joining period is optimal
 - Covers 2 ovulation cycles
 - Smaller range in weaning weight
 - Less range in energy requirements
 - Easier to manage!
- Focus on ewe nutrition in late pregnancy
 - Optimise birthweight
 - Optimise milk production
 - Meet weaning weight targets



A focus on breeding ewe management during late pregnancy and lactation will improve weaner survival. As we will see a little later, a ewe's milk is the best feed source to achieve high rates of growth in young sheep.

Key points:

- 60 to 70% of ewes will conceive on the first cycle
 - the extra 2-5% of lambs conceived in the 3 and 4th cycle of a longer joining period will become the tail-end of the weaner mob
 - these will be the smaller, more difficult to manage weaners (Behrendt 2003)
- The easiest time to achieve high lamb growth rates is between birth and weaning.
- Protein supply via the ewe's milk is the crucial element in providing a good start to lambs
- Lactation is the easiest time to achieve high lamb growth rates and hit the target weaning weight.

Source:

Adapted from www.lifetimewool.com.au

FEED ACCORDING TO PREGNANCY STATUS - dry

TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
Day of pregnancy	small frame (45kg) maintain @ CS 3		medium frame (50kg) maintain @ CS 3		large frame (60kg) maintain @ CS 3		medium frame maintain @ CS 3	
	single	twin	single	twin	single	twin	single	twin
dry	7.4	7.4	8.0	8.0	9.3	9.3	6.7	6.7
50	7.6	7.8	8.4	8.6	9.7	9.9	7.0	7.2
70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
130	11.3	14.1	12.3	15.4	14.4	17.7	10.9	14.1
days lactating	maintain @ CS 3		maintain @ CS 3		maintain @ CS 3		ewes and lambs	
	single	twin	single	twin	single	twin		
10	17.3	21.7	18.7	23.4	21.5	26.9	ask for advice on confinement feeding ewes and lambs	
30	18.7	23.9	20.2	25.8	23.2	29.6		
50	15.5	19.1	16.7	20.6	19.2	23.7		

Source: www.wool.com

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Obviously a dry ewe's requirements do not change.

She costs Approx 30 cents per head per day – at \$400 per tonne grain as fed

FEED ACCORDING TO PREGNANCY STATUS - dry

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70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
130	11.3	14.1	12.3	15.4	14.4	17.7	10.9	14.1
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Source: Wool.com



Approx 30 cents per head per day – at \$400 per tonne grain

FEED ACCORDING TO PREGNANCY STATUS – day 100

TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
Day of pregnancy	small frame (45kg) maintain @ CS 3		medium frame (50kg) maintain @ CS 3		large frame (60kg) maintain @ CS 3		medium frame maintain @ CS 3	
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70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
130	11.3	14.1	12.3	15.4	14.4	17.7	10.9	14.1
days lactating	maintain @ CS 3		maintain @ CS 3		maintain @ CS 3		ewes and lambs	
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50	15.5	19.1	16.7	20.6	19.2	23.7		

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So if we take that ewe to 100 days since the rams were put out – a ewe carrying a single lamb’s requirements increase to 9.9
That is 36 cents per head per day @400 per tonne as fed

FEED ACCORDING TO PREGNANCY STATUS – day 100

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Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
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100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
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							ask for advice on confinement feeding ewes and lambs	

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For those carrying twins in the mob – they require 11.1, and that equates to 40 cents per head per day. 4 c/hd/day sounds like not much – multiply it by 1000 and that is \$40 per day – for a 1000 ewes.

FEED ACCORDING TO PREGNANCY STATUS – day 130

TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
Day of pregnancy	small frame (45kg) maintain @ CS 3		medium frame (50kg) maintain @ CS 3		large frame (60kg) maintain @ CS 3		medium frame maintain @ CS 3	
	single	twin	single	twin	single	twin	single	twin
dry	7.4	7.4	8.0	8.0	9.3	9.3	6.7	6.7
50	7.6	7.8	8.4	8.6	9.7	9.9	7.0	7.2
70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
130	11.3	14.1	12.3	15.4	14.4	17.7	10.9	14.1
days lactating	maintain @ CS 3		maintain @ CS 3		maintain @ CS 3		ewes and lambs	
	single	twin	single	twin	single	twin		
10	17.3	21.7	18.7	23.4	21.5	26.9	ask for advice on confinement feeding ewes and lambs	
30	18.7	23.9	20.2	25.8	23.2	29.6		
50	15.5	19.1	16.7	20.6	19.2	23.7		

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Now, 3 weeks out from lambing the single bearing ewes are costing 45 cents per head per day and requiring 12.3 MJ per day – that’s in round figures, a bit more than 1kg per head per day....

FEED ACCORDING TO PREGNANCY STATUS – day 130

TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

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	single	twin	single	twin	single	twin	single	twin
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70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
130	11.3	14.1	12.3	15.4	14.4	17.7	10.9	14.1
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30	18.7	23.9	20.2	25.8	23.2	29.6		
50	15.5	19.1	16.7	20.6	19.2	23.7		

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And yep, you guessed it – check out what the twin bearers need – nearly one and a quarter kg.... 56 cents per head per day

FEED ACCORDING TO REPRO STATUS – peak lactation

TABLE 1a. Energy Required by Ewes @ Condition Score 3 to maintain weight

Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
Day of pregnancy	small frame (45kg) maintain @ CS 3		medium frame (50kg) maintain @ CS 3		large frame (60kg) maintain @ CS 3		medium frame maintain @ CS 3	
	single	twin	single	twin	single	twin	single	twin
dry	7.4	7.4	8.0	8.0	9.3	9.3	6.7	6.7
50	7.6	7.8	8.4	8.6	9.7	9.9	7.0	7.2
70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
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50	15.5	19.1	16.7	20.6	19.2	23.7		
							ask for advice on confinement feeding ewes and lambs	

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Peak lactation for a ewe with a single lamb - 73 cents per head per day

FEED ACCORDING TO REPRO STATUS – peak lactation

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Maintenance energy (MJ/d) for ewes under drought paddock conditions							Confinement Fed	
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dry	7.4	7.4	8.0	8.0	9.3	9.3	6.7	6.7
50	7.6	7.8	8.4	8.6	9.7	9.9	7.0	7.2
70	8.0	8.4	8.7	9.1	10.1	10.7	7.4	7.9
100	9.0	10.2	9.9	11.1	11.5	12.9	8.6	9.8
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50	15.5	19.1	16.7	20.6	19.2	23.7		
							ask for advice on confinement feeding ewes and lambs	

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Peak Lactation for a ewe with twins 94 cents per head per day

Can you afford to be feeding them all the same?

No – you will be under feeding some, and over feeding others – the over feeding is COSTING YOU MONEY! And the under feeding is also COSTING YOU MONEY!!!

If you haven't scanned – then you are facing some cost blow outs – but there are options if this is your situation – and we can come back to that...

MAINTAIN CONDITION SCORE – don't try to feed CS back on

Maintain Condition Score – CS 3

- ✓ optimise lamb birthweight = higher survival rates
- ✓ More efficient to keep ewes in CS than feed it back on
- ✓ ~1kg 12 ME feed per day (as fed) = \$0.40 per head per day

The screenshot shows the LTEM app interface for a 'sample mob'. It features a blue header with a back arrow and the text 'sample mob'. Below the header are three tabs: 'Now', 'Summary', and 'History'. The 'Summary' tab is selected. The main content area displays four rows of data:

Category	Value	Unit
Ewe SRW & PREG	15/03	joining date
CS Report	3.00	score
Target Score	3.00	score
Energy Requirement	10.60	Mj/day

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Before we get onto the practicalities in the paddocks, I want to briefly discuss the issue of letting ewes slip and feeding condition back onto them – and the message is clear – it can be expensive. In this example, we have used the LTEM app to calculate requirements – if you don't have the app, or haven't done the course then I would highly recommend that you do.

These sheep were 124 days pregnant when the feed budget was compiled
Carrying singles, and cs 3 and maintaining at 3 – their requirement is 10.6

MAINTAIN CONDITION SCORE – don't try to feed CS back on

Maintain Condition Score – CS 2.5 - 3

- ✓ 30 day target to improve the CS
- ✓ More efficient to keep ewes in CS than feed it back on –
- ✓ ~ 1.7 kg of 12 ME feed per head per day as fed ~ \$0.7 per head per day

The screenshot shows a mobile application interface for a 'sample mob'. At the top, there is a blue header with a back arrow and the text 'sample mob'. Below the header are three tabs: 'Now', 'Summary', and 'History'. The 'Now' tab is selected. The main content area displays four rows of data:

Metric	Value
Ewe SRW & PREG	15/03 <small>joining date</small>
CS Report	2.50 <small>score</small>
Target Score	3.00 <small>score</small>
Energy Requirement	18.60 <small>kg/ewe</small>

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I have altered the actual cs of the sheep and kept the target the same – 3. The days to reach target is 30, and look at the difference in energy requirement!!!!

These sheep were 124 days pregnant when the feed budget was compiled
Carrying singles

EFFECTIVE AND EFFICIENT FEEDING

Get into a routine:

- Method of feeding – trail - frequency, feeders – what suits, available, and economical with amount of feed
- Type of feedstuff – hay, grain, ‘funny feeds’ – check cost of feeding – drought feed calculator
- Suitability of feed for the task – dry vs lactating ewes – keep these groups separate to avoid wrong allocation of feed to wrong sheep
- Feed test – MUST DO!



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One of the key things that we discuss when working out how to feed through lambing, is what's been happening up to the point of lambing.

What sort of management are your sheep used to? Do you do lambing rounds? If so, how do you do this?

How are you going to meet their requirements without subjecting the mob to mis-mothering?

Keep revising your feeding budget – I suggest a basic spreadsheet to keep a track of mobs, but also forecasting what you will need in the future – and it can be as simple as using the feed budget table or LTEM app that I have used here – there are a variety of tools available to use, that make feed budgeting simple.

Don't go changing the feeds suddenly – interestingly I have had a few calls in recent times about changing from barley to wheat – and the simple answer is that there are no short cuts, when changing feeds...

IMPACT OF CS ON LAMB SURVIVAL

- Feed to maintain ewes as close to CS 3 as possible to optimise lamb birthweight
- Low birthweight increases susceptibility to effects of cold weather and other adverse events in first days of life
- Ewes in better CS have lambs at heavier birth weight



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Improving Lamb Survival

The first 48 hours of a lamb's life are critical. Around 70% of lamb mortality that occurs between birth and weaning occurs within this period. Lamb survival is related to lamb birth-weight. Lamb birth weight is strongly related to the nutrition of the ewe during pregnancy, particularly late pregnancy.

The optimum birth-weight for maximum lamb survival is between 4.5 and 5.5 kg, but lambing environment and whether they are a single or twin affect the response.

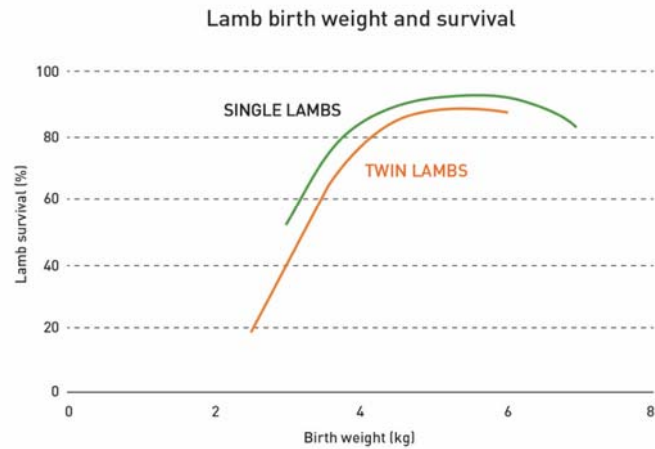
Ewes in better condition at lambing have heavier lambs

Ewes in better condition at lambing produce bigger lambs. A Condition Score (CS) decrease in ewes during pregnancy can reduce lamb birth-weight by 0.4 to 0.5 kg in both single and twin lambs. Birth-weights are most sensitive to changes in ewe condition in late-pregnancy.

Increasing lamb birth weight by 0.5 kg from 3.5 kg to 4.0 kg in twin lambs can mean an increased survival of 15%. In cold climates such as here – this can increase lamb survival by a significant margin.

SURVIVAL OF LAMBS – BIRTHWEIGHT CRITICAL

- Optimum birthweight



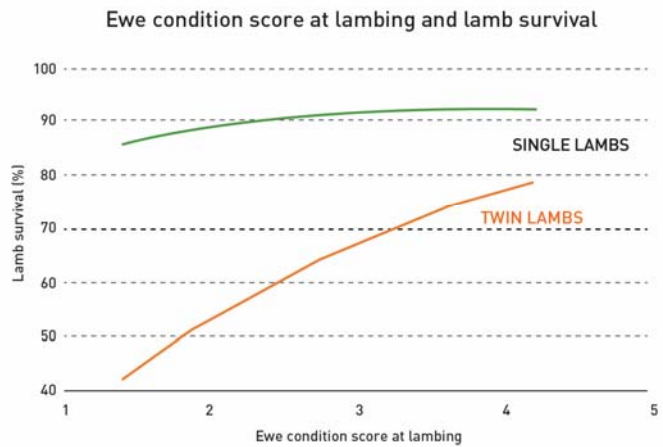
20



Use this graph to demonstrate how susceptible twin lambs are – but also to illustrate how the graph can tip over at higher birthweight – and that this can arise from feeding singles a twin ration.

CS OF EWES AT LAMBING - TWINS VS SINGLE

- Twin lambs particularly susceptible to low ewe CS and survival
- Single lambs far less susceptible to ewe CS for good survival rates
- Therefore – prioritise ewes carrying twins for FOO and ensure they are as close to the target as possible



FEEDING DURING LAMBING

- Fraught with risk – but in some seasons (such as current) unavoidable
- Some strategies that work for some:
 - Feed good quality (lucerne or legume) hay and take to lambing paddocks once a week
 - Trail feeding – best in the early afternoon
 - Feeders – ensure enough feeders, and preferably low risk grain e.g. oats, lupins
 - Start early with routine – so ewes are used to your management when they begin lambing



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When feeding during lambing – there needs to be due consideration given to the lead up processes – and the type of feed that is on offer in the paddock and what you intend to feed!

The conditions in this slide are here to remind us that it will rain again, and similar conditions can sometimes prevail when its v wet – here these ewes were lambed in 15% of the property as the remainder was under water....this was in 2016. They are our sheep at Forbes, and whilst I dont want to see a repeat of those conditions agains soon, lambing our ewes down so close to our home allowed some close observation of what happens in the lambing paddock. Our stockign rates were all over the place, and if we could have put sheep in trees, we would have!

BUT – they were already very quiet and had been selected for reproductive performance for 20 years (ever since we moved to Forbes)

This paddock is the main thoroughfare onto the farm –(and I was doing bus runs each day – so driving through them four times a day (plus any trips that were additional to this, including Davids activity)

these sheep knew that they werent going to be disturbed and were unafraid of the activity – why? How?

With sustained selection of breeding ewes that rear their progeny – the inherent temperament of the whole flock is reflected in the level of mothering ability shown here.

In this example, as I said, I included it to: 1 remind us that it will rain again one day, but also desparate times call for desparate measures – and sometimes the way things happen aren't always ideal – BUT the management of that flock on reproductive performance over the previous 20 years paid dividends on this occasion – the lamb marking and weaning rates for this place were 3% down on the long term average – something that as an advisor, we could perhaps attribute to normal subtle fluctuations from year to year. As for the management around the flock - the wet and drying at lamb marking – this year was the pay day! The key message here is to measure the performance of yoru sheep in good times and bad – as you may well need to look for sheep to remove from your flock due to dry times such as currently.

MAXIMISING LAMB SURVIVAL

- ✓ Birthweight – optimise via ewe nutrition
- ✓ Lambing paddock selection – shelter, FOO, aspect, access to feed if supplementing
- ✓ Small mobs – twins – smaller the better, especially if feeding <100 – or smaller if paddock numbers available
- ✓ Lambing singles – up to 400 ewes possible, smaller the better – especially if feeding



HIGH PERFORMING EWES

- Selecting for reproductive performance can pay
- Consistency of production in **all** seasonal conditions – eliminates some of the environmental influence
- Wet and dry at lamb marking
- Ewes that don't bring lambs to marking are more likely to repeat this behaviour at future lambings



LAMB SURVIVAL

- Ultimate goal of good ewe management is measured in
 - Lambs weaned – absolute numbers
 - Ewe performance
 - Pregnancy rate
 - Marking rates
 - Weaning rate (survival of lambs post marking)
 - Ewe mortality
 - Weaner performance – future breeders
 - The performance of your ewes depends on your ongoing management!



KEY MESSAGES

- There are no silver bullets
- Measure to manage
 - Pregnancy
 - Feed
 - Mothering ability (wet and dry at marking)
- Start early and maintain condition on ewes
 - Optimise birthweight
 - Decrease susceptibility to cold
- Feed in a regular fashion – find a system that works for you – and stick with it
- Small mobs – especially for twinners