NEW SOUTH WALES
LIFETIME WOOL
MAXIMISING THE GENETIC POTENTIAL OF YOUR FLOCK
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INSIDE

HIGHLIGHTS

Planning for 2008

Planning for 2008

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For the first time, many sheep producers throughout NSW are facing the prospect of back-to-back poor springs which is likely to cause significant problems from mid-summer onwards. At this time last year the weather projections for summer and autumn were not good - this year they are either neutral or confused.

The current position

The majority of the state has more pasture feed this year then last, and the quality is generally very high. Stock condition is good and we have had a very good lambing. But debt positions are generally worse and spirits are down.

The following information has been generated using Stockplan®, a decision support tool (DST) to assist drought planning. It is provided to give information regarding the costs and cash positions likely to result from different feeding and stock culling strategies.

Feeding the flock

Grain prices are now at record levels due to failed crops and other world factors such as ethanol production. This year grain will be imported into Australia for processing at port, but at high prices. Crop hay and silage will be available from failed crops with the quality of both expected to be very good. The overall feed bill for the coming summer and autumn will depend on the quality of feed available and the quantity required by various categories of stock.

The following assumptions regarding animal production have been made:

- ewes are let slip to fat score 2.5 and then held
- maiden ewes are held at 40 kg
- weaners are weaned at 23kg, fed to 25kg then held
- feeding is occurring between summer and autumn, so the ewes are either dry or in the early stages of pregnancy.

Recommendation: Under the current scenario it is too risky and expensive to join ewes for an autumn lambing.

Feed quality

The costs set out in Table 1 are on a $/head/month basis for a range of energy levels (ME) and prices for full drought feeding. A $20/t feed out cost is included. Remember it is the energy content of the feed that is important - not the particular name or category. If you have another feed available such as pellets at the same ME simply use the appropriate figure from Table 1.

Table 1. Feeding cost ($/hd/month) for feed of varying energy levels (ME).

	Ewes		
	Adult	Maiden	Weaner
Cereal, 13ME, $400/t landed	6.94	6.25	5.11
Cereal, 13ME, $450/t landed	7.78	7.00	5.72
Cereal, 13ME, $500/t landed	8.60	7.75	6.33
Cereal Hay, 10ME, $300/t	7.41	6.89	5.79
Cereal Hay, 10ME, $350/t	8.57	7.98	6.71
Cereal Hay, 10ME, $400/t	9.74	9.07	7.62
Cereal Hay, 9.5ME, $300/t	7.89	7.34	6.21
Cereal Hay, 9.5ME, $350/t	9.13	8.49	7.19
Cereal Hay, 9.5ME, $400/t	10.37	9.65	8.17
Cereal Hay, 9ME, $300/t	8.42	7.83	6.67
Cereal Hay, 9ME, $350/t	9.74	9.07	7.73
Cereal Hay, 9ME, $400/t	11.07	10.31	8.78

Note: A $20/t feed out cost is included.

Feed quantities

The figures in Table 2 follow-on from those in Table 1, they provide an indication of the tonnes of feed required per month per 1,000 animals. Remember that it is the energy content which drives the amount, so it is the same regardless of the price per tonne.

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The information in Tables 1 and 2 will allow you to work out the best product to feed your stock depending on the price and energy level. The same level of animal production is achieved with all products.

Table 2. Feed quantities required to meet the animal production assumptions (tonnes grain/month/1000 animals).

		Ewes		
		Adult	Maiden	Weaners
Cereal,	13ME, $400/t landed	16.6	15.0	12.2
Cereal Hay,	13ME, $300/t	23.3	21.7	18.3
Cereal Hay,	9.5ME, $300/t	24.8	23.1	19.6
Cereal Hay,	9ME, $300/t	26.5	24.7	21.1

Stock numbers, feeding level and future cash position

The ImPack module of the Stockplan® DST was used to model the impact of various strategies covering culling stock, length of feeding and stock replacement on the future cash position for the next 5 years. The modelling was based on a 1,000 ewe self replacing flock weaning at 85% with 370 ewe hogget replacements assuming:

- there was no debt at the end of 2006
- the feed bill covered all stock classes and was costed at $450/t with $20/t feed out cost
- feeding costs in early 2007 lead to debt levels at the end of that year. The debt has been treated as an overdraft with an interest rate of 11%. Overhead costs were estimated at $20,000/1,000 ewe flock and included living expenses, but no allowance was made for income tax or repayments on loans prior to 2007
- variable and overhead costs were increased by 3% per year
- seasonal conditions are OK from 2009 onwards.

The five strategies considered were:

1. 14 % ewe cull and feed for 5 months, ewe culls sold for $15/hd.
2. 25 % ewe cull and feed for 4 months, sell all wether lambs at $10/hd, ewe culls at $15/hd.
3. 50 % ewe cull and feed for 3 months; sell all wether lambs at $10/hd, ewe culls at $15/hd.
4. 70 % ewe cull and feed for 1 month. Same cull prices. Buy in 150 3 year old ewes in yr 2 at $100/hd.
5. Same as 4 except buy in 250 3 year old ewes in yr 2 at $100/hd.

The strategies with a higher culling percentage and lower feed costs had a better cash position at the end of the 5 year period (Fig 1). The biggest difference between the strategies occurred at the end of 2008 - the gap narrows by 2012.

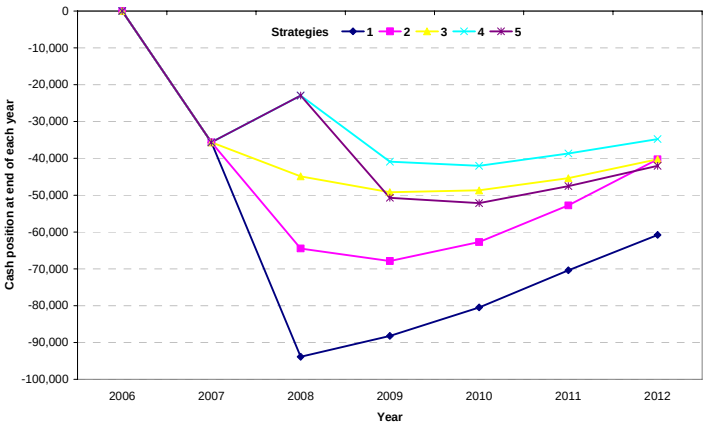

Figure 1: Cash position for each of the five strategies.

Some trading was also done in strategies 2,3,4 & 5 if spare DSE was available at $70 profit/10 DSE. The trading included livestock (wethers, steers, heifers), agistment and backgrounding steers.

Recommendation: Decide the cash position that is best for your business before choosing on a particular strategy to follow.

Clearly the length of time that feeding is required will have a large impact on the cash position (Fig 2). Strategy 1 is shown in Fig. 2 but the trend is the same for all 5 strategies - shorter feeding periods will improve cash flow.

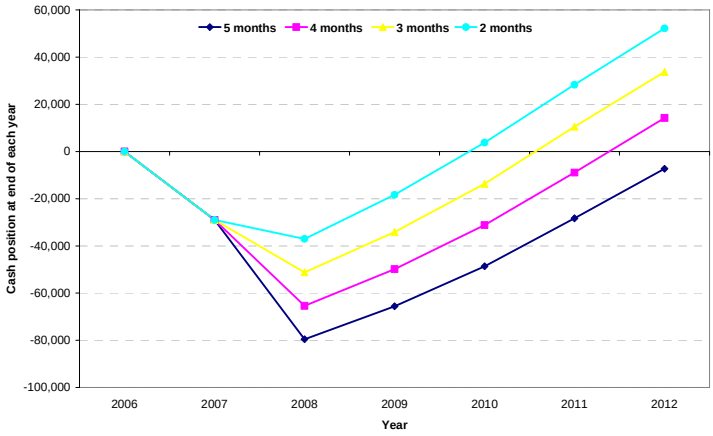

Figure 2: Feeding period and cash position for strategy number 1.

Recommendation: Don't be tempted to base your planning on the shortest feeding period - this would be overly optimistic given the current seasons projections.

The impact of flock quality

A gross margin is a dollar way of expressing the productive capacity of a flock. A highly productive flock will have a higher gross margin as the income from wool sales will be greater. Flocks with lower gross margins will remain in a negative cash position for a longer period of time (Fig 3). Don't just cull an age group - use information at hand (i.e. fleece weight, fibre diameter, reproduction) to cull the least productive sheep from your flock.

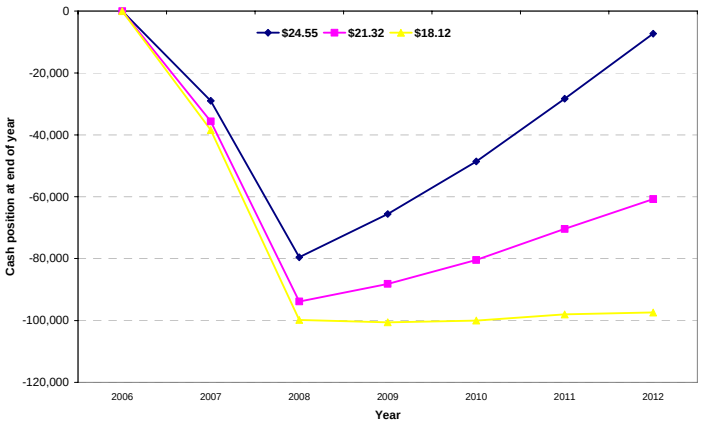

Figure 3: Feeding period and cash position for strategy number 1for three different levels of flock quality.

Recommendation: In tough times there is no substitute for productive sheep. Action now will help with recovery.

Where to from here …

This article contains a lot of information - necessary because of the difficult situation many producers are now facing. The modelling work is based on assumptions and provides a general indication of the size, direction and timing of

impacts from a range of strategies. As such it won't provide a detailed outcome for every business. For instance this information may not apply to those producers feeding off failed crops as no feeding bills will be incurred - but crop costs will need to be recovered. The Stockplan® DST allows individuals to tailor the output more closely to their own business - this can be done as a local workshop facilitated by NSW DPI.

This is a summary of an article written for the southern areas of NSW. For a copy of the full article email phillip.graham@dpi.nsw.gov.au
For more information on a local Stockplan® workshop for your business contact Phil Graham or your local NSW DPI Livestock Officer.

Weaning weight and survival

Dr Sue Hatcher, NSW DPI Senior Research Scientist

Management of young Merino sheep between weaning and hogget age can be exasperating. Mortalities in this class of stock can be high, particularly amongst apparently healthy weaners with no obvious cause. Suboptimal growth of surviving weaners is also a significant issue which has negative implications for both the long-term genetic improvement and short-term management of the flock. High weaner mortality reduces the number of potential replacements available for selection into the breeding flock while the ability of hogget ewes to reach the target liveweight of 40-45 kg at their first joining will directly impact on their lambing potential.

What is the extent of the problem?

The Yass Rural Lands Protection Board surveyed producers in October 2004 and identified an average mortality of 15% among Merino weaners (range 1 - 40 %). This figure is within the 10 to 25 % range in the published literature and recorded in flocks managed under commercial conditions in a wide variety of environments in Western Australia, South Australia, Victoria and Queensland.

In order to develop optimum management strategies for Merino weaners it is necessary to identify risk factors that contribute to high levels of mortality. In conjunction with the Central Tablelands Rural Lands Protection Board, NSW DPI have been monitoring about 200 ewe weaners from 11 commercial Merino flocks located within the board from Ilford to Peelwood. Work conducted by Angus Campbell from the University of Melbourne found that death rates were much lower if weaners grew at 0.5 kg per month after weaning. With this in mind the targets for our monitor flocks were to grow their weaners above 0.5 kg per month and to aim for a mortality rate of less than 5%.

Following the very tough summer and autumn of 2007, only 1 of the producers had sufficient pasture to support the weaners without supplementation. Weaners at the other properties were weaned onto grain. As a result there was significant variation among the 11 flocks in weaning weight - the average being 15.3 kg with a range of 12 to 24 kg.

Despite the difficult season, all of the monitor flocks exceeded our target weight gain (16 grams/head/day) by 3 months post weaning averaging a healthy 71.4 g/hd/day. As a result the mortality rates averaged 6 %, although again there was significant variation between the monitor flocks ranging from 3 to 21 %.

Weaning weight is crucial for survival

There was a clear relationship between weaning weight and survival among the monitored weaners (Fig 4). Even though the lightest weaners were capable of compensatory growth particularly in the first 3 months post weaning (Fig 5) the lightest 25% of the weaners were more than twice as likely to die as the heavier weaners (Fig 6).

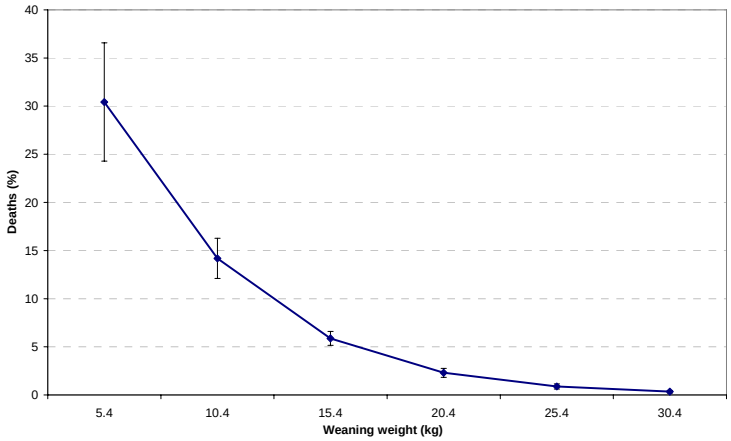

Figure 4: Weaner death rates decrease with increasing weaning weight.

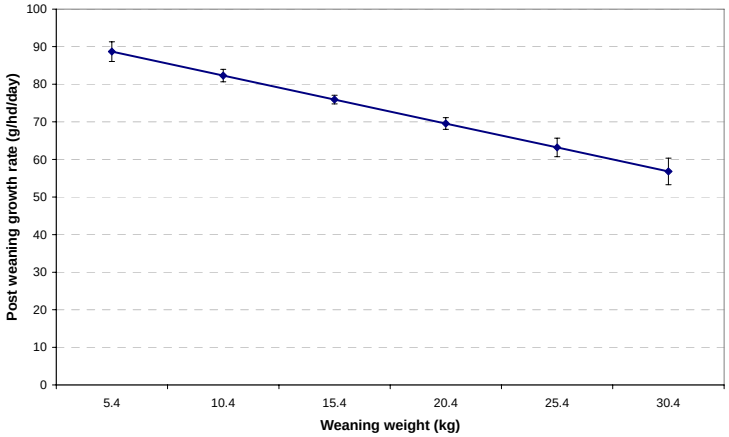

Figure 5: Lighter weaners grew at a faster rate in the first 3 months post-weaning than heavier weaners.

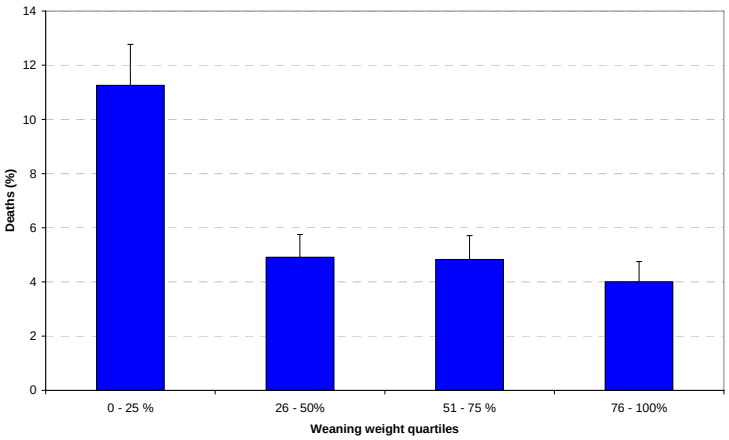

Figure 6: The lightest 25 % of weaners were more than twice as likely to die.

Nutrition is the key issue in weaner management. Young sheep require a higher protein diet than adult sheep and previous work has shown that weaners weighing less than 20 kg have very little body reserves of fat. It is not until weaners weigh more than 20 - 25 kg that they begin to build body reserves of fat which have a high concentration of energy. Weaners therefore need to meet daily energy requirements in order to survive. So increasing weaner liveweight reduces the risk of death for young sheep. Heavier weaners, or ones growing faster, accumulate body fat that can then be mobilised if required without negatively impacting on survival.

The higher death rate among the lighter weaners highlights the importance of drafting off a 'tail' of lightweight animals at weaning for targeted supplementary feeding. Angus Campbell's' work found that targeted feeding of the lightest one fifth of the flock could prevent nearly one third of all mortalities.
The monitoring results from the Central Tablelands RLPB clearly show that lightweight weaners can be successfully weaned onto grain, especially if they are exposed to grain with their mothers prior to weaning and have good access to quality grain and fresh clean water after weaning.

The impact of Lifetime Wool on farm profitability

Dr Sue Hatcher, NSW DPI Senior Research Scientist

The Lifetime Wool project has quantified the biological impacts of ewe nutrition and developed relationships between fat score of ewes at critical times of the year and survival and productivity of their progeny. The project is now focussing on the economic implications of managing breeding ewes to reap the benefits of improved nutrition. This includes the impact on stocking rate, supplementary feeding and wool and sheep trading profit.
MIDAS is being used as the modelling tool as it represents the whole flock and includes a powerful feed budgeting module that optimises animal and pasture management across the whole farm. The modelling is based on a 'typical' farm in each of the major sheep production zones of Australia using flock sizes, production systems, bloodline, stock trading and pasture production scenarios characteristic of each region.
The target fat score profile for breeding ewes' impacts on whole farm profitability through a combination of:

1. Impacts on the future production of the surviving progeny.
2. Variation in the survival rate of the lambs born.
3. Varying production achieved from the ewes including CFW, FD and number of lambs conceived.
4. Varying energy demands of ewes which results in changes in stocking rate and grain feeding.

Economic modelling has been completed for: i) the medium rainfall zone of WA and, ii) the high rainfall zone of southeast South Australia, Victoria and Tasmania. Modelling will soon be done for the sheep cereal zone of WA, SA and Victoria plus the NSW Southern and Northern Tablelands.
The Lifetime Wool economic modelling completed to date has shown that managing breeding flocks to an optimum profile is between $10,000 and $15,000 more profitable than without following the Lifetime Wool guidelines. For instance before Lifetime Wool it was assumed that running ewes thinner and losing more weight over autumn and during pregnancy in the high rainfall zone meant more money through savings in feed costs (Fig. 7). Lifetime wool has shown this to be false as there are substantial economic penalties for not having ewes in good condition by lambing, as the impacts of nutrition in early to mid pregnancy are additive with those of nutrition in late pregnancy.

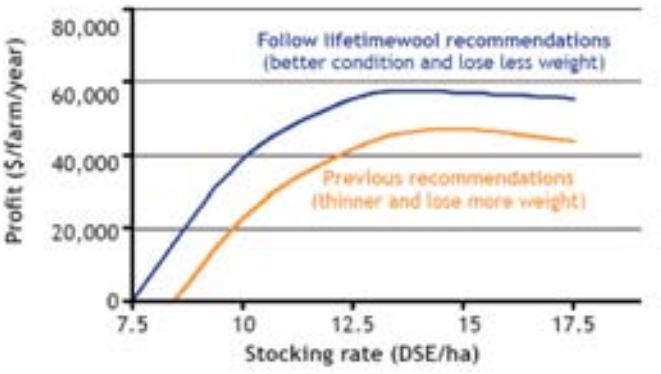

Figure 7: Ewe condition has a significant effect on profitability at any stocking rate (Source: Lifetime Wool)

The variation in the value of Lifetime Wool ewe management system is related to the increase in progeny survival achieved from ewes that are managed at the improved nutrition profile. Importantly, inadequate ewe nutrition can limit profitability at any stocking rate.

For more information on the economic modelling component of Lifetime Wool and to download the completed MIDAS economic modelling reports visit the project's website www.lifetimewool.com.au

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