

Monitor ewes carefully for effective management

Lifetime Wool Project research and on-farm trials have found that careful monitoring of ewe liveweight or condition is the only accurate way of determining their nutrition. This article is part of a series examining findings from the Lifetime Wool Project.

by **Mark Ferguson
and John Young,**
LIFETIME WOOL PROJECT

Understanding the nutritional status of breeding Merino ewes is the key to effective and profitable management.

Only regular monitoring of liveweight, condition score or fat score can give producers this understanding.

The link between ewe nutrition and production and reproduction is well established. Ewes that receive less nutrition produce less wool and wean fewer, smaller lambs that are less productive throughout their lifetime.

But improving pasture use through maintaining high stocking rates is a key profit driver of a Merino production business. The challenge is to achieve the appropriate balance between stocking rate and individual ewe performance.

The 150 wool producers involved nationally in the Lifetime Wool Project are discovering the importance of monitoring breeding ewes to enable timely management.

Pasture assessments and knowledge of the nutritional value of supplements are a guide to ewe nutrition but the only accurate description of ewe nutrition is how the ewes are performing which is assessed with regular



Monitoring ewes from the ute does not provide an accurate measurement of ewe condition. These ewes (score 3.5) were taken to the yards and assessed for condition before being moved to another paddock.

monitoring of liveweight, condition score or fat score.

Economic analyses have shown that there are potential gains from improving ewe nutrition if it is targeted at the correct time and at the correct level.

The Lifetime Wool Project has demonstrated the close link between ewe nutrition leading up to joining and conception rate, and the link between ewe nutrition during pregnancy and the lifetime performance of progeny. These are both times in which improving ewe nutrition can be profitable.

Improving conception rates

Thorough preparation is the key to minimising reproductive wastage. Producers need to select suitable liveweight and condition targets and appropriate methods to achieve these targets well in advance.

Planning for joining needs to start at weaning during the previous year.

Producers need to monitor breeding ewes carefully between weaning and the following joining by weighing, condition scoring or fat scoring at regular intervals. This will enable timely supplementary feeding to maintain ewes at the target level.

If ewes are assessed one month before joining and they are not on target, in most cases it would be uneconomical to lift ewe liveweight

and condition score before joining as the benefits of increases in lambs born will be outweighed by supplementary feeding costs.

Feeding to maintain ewes over the period leading up to joining is always more economical than allowing ewes to lose condition and then attempting to increase their weight just before joining.

Aim to maximise the peak liveweight and condition of ewes during the previous spring. Effective use of the spring flush is the most economical way of increasing lambing percentages.

Implement strategies that keep ewes putting on weight for longer during late spring such as extending the quality of feed available by mechanical topping.

Consider early weaning of lambs to enable the breeding ewe to gain weight before pasture digestibility is reduced.

Also consider separating light ewes and giving them preferential treatment to ensure they have an opportunity to reach target condition at joining.

Ewe nutrition during pregnancy

Monitoring ewes through pregnancy can be used to identify the correct time to introduce supplementary feeding to maintain ewes in target condition rather than letting them lose too much condition. It is acceptable to let ewes lose some condition

At a glance

- Targeted feeding can increase the profitability of breeding Merino ewes.
- Allowing ewes to lose condition during early pregnancy can be expensive unless plans are in place to ensure ewes can gain weight economically during late pregnancy.
- Monitoring ewe liveweight or condition change is the only accurate way of determining ewe nutrition.
- Monitoring and pregnancy scanning allows targeted nutritional management of breeding Merino ewes.

during early pregnancy provided plans are in place to ensure ewes regain condition in time for lambing.

But it is always more energy efficient to maintain ewe condition than to allow them to drop and rebuild condition.

Early pregnancy tends to coincide with late summer in many Merino production systems when paddock feed quality and quantity are often severely restricted.

During the period leading up to the break, consider confining ewes to small paddocks in a feedlot to decrease energy expenditure from walking and protect paddocks from becoming exposed and at risk of erosion.

Ewes can remain in the confined area for three weeks following the break to maximise seedling establishment.

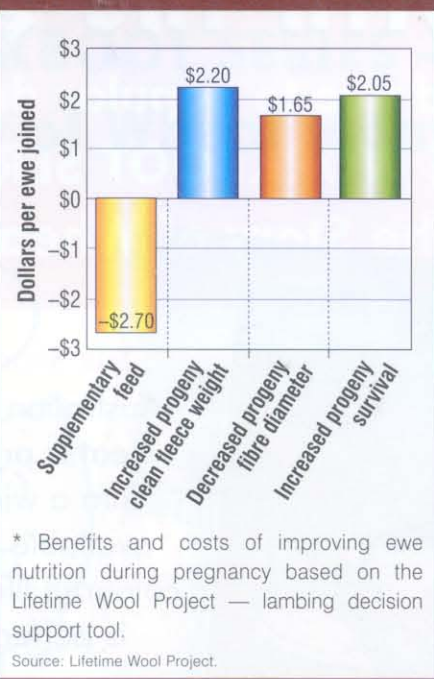
Spelling grazing paddocks after the break and increasing pasture leaf area before grazing will increase pasture growth and build a feed wedge which can be used through the colder winter months when pasture growth has slowed.

Pregnancy scanning ewes is an effective way of ensuring each ewe has her nutritional requirements met.

Pregnancy scanning provides producers with the option of separating ewes and providing extra feed to twin-bearers, especially during late pregnancy and lactation.

Scanning also allows producers to evaluate the methods used to increase lambing rates. Separating twin- and single-bearing ewes increases the ability to meet the nutritional requirements of each ewe.

FIGURE 1 Benefits of improved nutrition*



Setting a moving target

Achieving the appropriate balance between ewe nutrition, stocking rate and supplementary feeding can significantly improve farm profitability.

Setting ewe liveweight, condition score or fat score targets is an important component of accurately managing a Merino production system but these targets are not static. As the season develops and circumstances change, feeding strategies and targets need to be adjusted to improve profitability in that year.

Using the information generated by the Lifetime Wool Project, the project team is developing decision support tools to enable producers to evaluate their management as the season develops.

Table 1 shows how the Lifetime Wool Project lambing tool can be used to evaluate investment in improved nutrition of ewes between joining and lambing.

The extra supplement required is calculated using a detailed feed budget. This is compared with the increase in the value of progeny production, which is calculated using relationships developed from experimental work.

Figure 1 shows the overall increase in value from each ewe. Increased income is achieved through increased progeny survival, increased progeny clean fleece weight and decreased progeny fibre diameter.

There is a benefit of \$3.20/ewe from feeding the ewes to reduce weight loss during mid-pregnancy from 0.9 of a condition score to 0.2 of a condition score.

The improved nutrition would require an increase in supplementary feeding of 16 kilograms per ewe which would cost about \$2.70/ewe. But this extra feeding would result in the progeny of these ewes cutting 100 grams/head more wool which is 0.15 microns finer.

TABLE 1 Value of improving ewe nutrition between joining and lambing*

		Standard	Lifetime Wool Project
Ewe condition score			
- Joining	22 February	3.5	3.5
- Break of season	10 May	2.4	3.3
- Day 90	23 May	2.4	3.3
- Lambing	22 July	2.7	3.4
Supplement required			
- Joining to break	g/head/day	150	446
- Break to day 90 of pregnancy	g/head/day	250	283
- Day 90 of pregnancy to lambing	g/head/day	150	45
Resultant progeny production			
- Clean fleece weight at hogget shearing	kg	2.74	2.84
- Fibre diameter at hogget shearing	µm	17.51	17.35
- Lamb birthweight	kg	3.5	3.7
- Lamb survival	%	78	82
Increased cost of supplement	\$/ewe		\$2.70
Increased value of progeny production	\$/ewe		\$5.90
Cost benefit	\$/ewe		+\$3.20

* Hypothetical example using results from Lifetime Wool Project decision support tool.

Source: Lifetime Wool Project.

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Monitoring the mob does not mean individually assessing each ewe. David White, Wickiepin, Western Australia, counts a random sample of 25 ewes and assesses them to provide an estimate of condition or fatness within 0.2 of the flock average.

During the lifetime of the progeny born to each ewe (assuming the wether progeny are sold as hoggets) the extra wool shorn is worth \$3.85.

The other benefit from improving ewe nutrition is the improved lamb survival from birth to weaning (\$2.05/ewe). The figures do not account for lower ewe mortality rates from running ewes in better condition.

Lifetime Wool Project evidence suggests a difference of 1.5 per cent in ewe mortality between the two management regimes outlined in Table 1, which would equate to an extra \$1.05 per ewe for the better fed option, assuming ewes were worth \$70.

There is no net effect on fleece value of the ewes from better feeding because increases in fleece weight are cancelled out by decreases in wool value because of the associated fibre diameter increase.

The Lifetime Wool Project lambing tool and associated decision support programs are under development and will be made available to producers and advisers within the next 12 months.

How to monitor a mob

Monitoring a mob does not mean carrying out a visual assessment from the ute window but it also does not mean assessing each ewe individually.

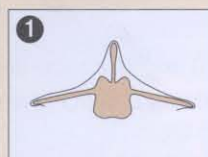
A random sample of 50 ewes will give an estimate within 1.5 kilograms of the flock average. Similarly, a random sample of 25 ewes will provide an estimate of condition or fatness within 0.2 of the flock average score.

Fewer ewes need to be measured for condition or fat score because the variation within a flock in condition or fat score is less than for liveweight.

A proven, quick method of selecting a random sheep is to let about half of the mob run through a race and then draft out every second sheep until the required number to assess is reached.

These ewes can then be run up the race and condition scored or fat scored (whichever the producer is most comfortable with) or run through a set of livestock scales. Record each

FIGURE 1 How to condition score Merino sheep

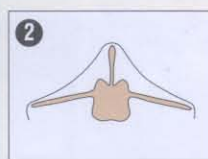


Backbone

The bones form an elevated narrow ridge. Each vertebral process can be felt easily as a bone under the skin. There is only a very small eye muscle. The sheep is strong but quite thin (virtually unsaleable).

Short loin

The ends of the short ribs are very obvious. It is easy to feel the squarish shape of the ends. Using fingers spread one centimetre apart, it feels like the fingernail under the skin with practically no covering.

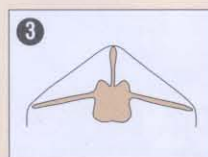


Backbone

The vertebral processes are elevated but the points are rounded with muscle. It is easy to press between each bone. There is a reasonable eye muscle (score condition is ideal for wethers and lean meat).

Short loin

The ends of the short ribs are rounded but it is easy to press between them. Using fingers spread 50mm apart, the ends feel rounded like finger ends. They are covered with flesh but it is easy to press under and between them.

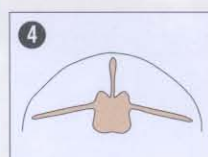


Backbone

The spinal processes are only slightly elevated above a full eye muscle. It is possible to feel each rounded bone but not to press between them. (Forward store condition ideal for most lamb markets. No excess fat).

Short loin

The ends of the short ribs are well rounded and filled in with muscle. Using four fingers pressed tightly together, it is possible to feel the rounded ends but not between them. They are well covered and filled in with muscle.

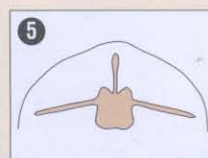


Backbone

It is possible to feel most spinal processes with pressure. The back bone is a smooth slightly raised ridge above full eye muscles and the skin floats over it.

Short loin

It is only possible to feel or sense one or two short ribs and only possible to press under them with difficulty. It feels like the side of the palm, where maybe one end just can be sensed.



Backbone

The spinal column may only be felt (if at all) by pressing down firmly between the fat covered eye muscles. A bustle of fat may appear over the tail (wasteful and uneconomic).

Short loin

It is virtually impossible to feel under the ends as the triangle formed by the long ribs and hip bone is filled with meat and fat. The short rib ends cannot be felt.

Condition scoring is one of the three ways to monitor breeding ewes. A random sample of 25 ewes will give a condition estimate within 0.2 of the flock average score. Monitoring ewes from the ute does not provide an accurate measurement of ewe condition. Randomly drafting 50 ewes and weighing them will provide an estimate within 1.5kg of the flock average weight.

Source: Lifetime Wool Project.


assessment and calculate an average to estimate the average of the mob.

Monitoring ewes makes life easier

Merino producers who have been monitoring flocks in the Lifetime Wool production project have seen the benefits of having better knowledge of the performance of their Merino ewes.

Knowing the current condition of their ewes and their energy requirements, producers can implement feeding strategies that will have their ewes in the correct condition at the right time as cheaply as possible.

In addition, monitoring has proven useful in predicting scenarios and reducing the number of 'surprises' that arise during the production year.

For more information contact Andrew Thompson, Department of Primary Industries, Victoria, via andrew.thompson@dpi.vic.gov.au or phone (03) 5573 0900. Acknowledgement: The Lifetime Wool Project is funded by growers through Australian Wool Innovation. 

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