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.

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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 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 increased lamb birth weight 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 and early summer to extend the quality of feed available by mechanical topping.

Consider early weaning of lambs to make the ewes available for joining. This may require giving them preferential treatment to ensure they have an opportunity to reach target condition at joining.

Ewe nutrition during pregnancy

Ewe nutrition during 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 if it is to be replaced by supplementary feeding.
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.

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* |
|------------------------|------------------|------------------|
| **Ewe condition score** | **Standard** | **Lifetime Wool Project** |
| 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** | g/head/day      | 150              | 446              |
| Joining to break       | g/head/day      | 250              | 283              |
| Break to day 90 of pregnancy | g/head/day | 150              | 45               |
| 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.
Monitoring the mob does not mean individually assessing each ewe. David White, Wickepin, 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 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.

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