

Case study series - No. 4

SELECT TWIN-BEARING EWES FOR MORE LAMBS

BACKGROUND:

Goondiwindi vet Dr Mike Rival sees many Merino wool producers fail to maximise the number of lambs on the ground through a lack of attention to ewe selection and nutrition.

The old adage of breeders to breed 'one good lamb' is faulty, Dr Rival says.

If 10 per cent of ewes in a flock are dry that leaves 90 per cent to lamb, and when you factor in the average loss of 10-15 per cent of ewes failing to rear all lambs, the woolgrower is left with a 70 per cent lambing.

New South Wales producer John Hickson has carried on the work of his father Darvall at 'Eural', Boomi in selecting ewes that bear and rear twins.

In a good year he marks 130 per cent lambs in adult ewes and in an ordinary year, 105 per cent. In his country in northern New South Wales, the easy part is getting ewes to conceive lots of lambs. The hard part is getting them to rear those lambs.

Mr Hickson says with good management it's possible to raise 80 per cent of lambs in a

twin bearing flock, but with poor nutritional management this can easily drop to only 50 per cent survival of twin born lambs. When over 50 per cent of ewes conceive twins in his flock, this is the difference between a good and an average lambing.

And he's found that the family's 40 years of selecting for fertility and rearing ability has had an unexpected spin-off – improved mothering ability in Merino ewes.



John Hickson (left) and Dr Mike Rival (right), conducting ewe pregnancy scanning at 'Eural', NSW in June 2012.

THE CHALLENGE:

According to Dr Rival, the key challenges to lifting lambing percentages are:

- the condition of ewes at joining and lambing
- predators, such as foxes and pigs
- seasonal conditions at lambing time
- labour costs that may prohibit pregnancy testing
- selecting the optimal time for joining, to ensure either maximal lambs born or at the best time, with respect to predicted feed reserves



Dr Mike Rival pregnancy scanning ewes at 'Eural', NSW (above and below)

John Hickson says knowing the pregnancy status of his ewes:

- makes stocking decisions easier - dry ewes are sold and he knows what feed will be needed at lambing
- ensures reasonable birth weights, since twin bearing ewes are split off and fed well
- improves the economics of wool growing, since high culling rates for non-twin bearing sheep means more young sheep for sale, or they can be joined to meat sheep rams for prime lamb production



THE HICKSON'S STORY:

As a child, John Hickson remembers riding through a flock of selected maiden ewes with numbers painted on their sides, and identifying those with twins.

At lamb marking, those ewes would be drafted off into a twin bearing flock, their twin ram lambs identified and the best of these selected to be used as sires throughout the flock.

John's father Darvall started breeding his own rams from a base flock of Uardry and Haddon Rig bloodlines in the 1960s, because he felt not enough emphasis was being placed on the economically important traits such as fleece weight and fertility.

In the 1970s he joined a co-operative breeding scheme, the Triple M group, comprising eight contributing flocks and a central nucleus of ewes.

For ewes to be accepted into the central nucleus they had to rear twins as a maiden ewe and then to remain in the central nucleus, they had to maintain a lamb rearing rate of 160 per cent.

The best rams, chosen using a selection index that included many measured traits (with significant emphasis on reproduction rate in the breeding objective) were then used as sires in the central nucleus. Members were permitted to select from the remaining rams to take home for use in their own flocks.

From the late 1980s, scrotal circumference in rams was measured and used as an indirect selection criteria for reproduction rate, as large scrotal circumferences translated into daughters with a higher reproductive rate.

By the early 1990s the fecundity of ewes – the number of lambs born – was at the point where the Hicksons felt they were getting enough lambs on the ground. The next challenge was to improve survival rates of lambs.

From this point onwards only scrotal circumference has continued to be measured and used to maintain reproduction rates.

The Eural agglomeration now covers 20,000 acres. Up to 70 per cent of the property can be flooded by the Whalan Creek in a big flood. Soil types include some heavy coolibah soils, less heavily flooded belah wilga soils up to some lighter redder sandalwood box country that is interspersed with sand ridges.

About two thirds of the property can be farmed but at present the Hicksons crop about a third of the property and rotate in and out of lucerne and perennial grasses on the balance of the cropping country.

A time control grazing operation based on the sheep and some cattle is run on this and the native pasture country.



Ewes at 'Eural', NSW

RESULTS:

These days the selection for twins begins after joining. In June a contractor runs the Hickson's 2200 ewes through a VE machine to scan for pregnancies.

Maiden ewes are no longer tested as their twinning rate is usually as low as 20 per cent.

John Hickson says the low protein feed in their summer rain environment doesn't allow the young sheep to be in good enough condition at their first joining. He believes targeted supplementation of the maiden ewes prior to joining could be very worthwhile.

Nutrition is also the key to ensuring that pregnancies translate into live lambs, particularly in the final trimester to ensure reasonable birth weights.

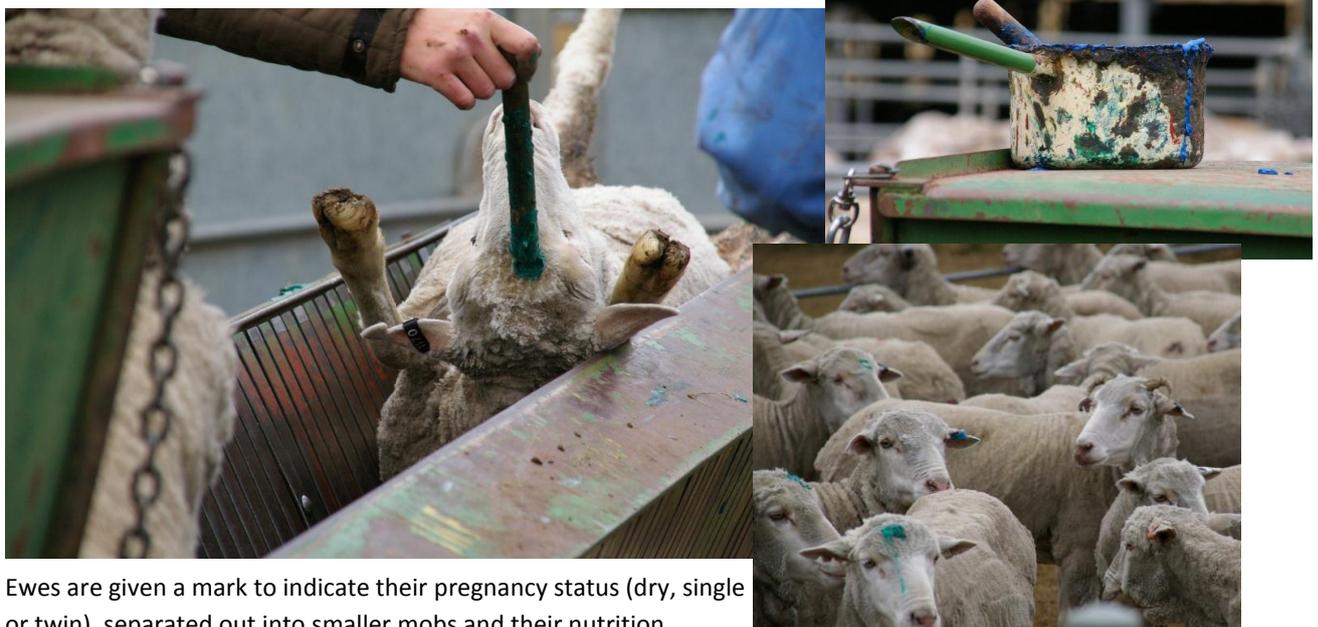
Twin bearing ewes need to be above a condition score of 3.2 to maximize lamb survival. For single bearing ewes 2.5 is probably enough, he says.

However, condition scores at lambing of above 4 for single bearing ewes actually leads to lower lamb survival due to dystocia or birthing difficulties from lambs that are too big.

So while it is very beneficial to put twin lambing ewes on the best feed available and have them in the best condition possible, it can actually be slightly detrimental to have single bearing ewes in too good condition.

After scanning, twin bearing mothers go on to the best feed on the property – native medic, lucerne or grazing oats, depending on what is available that year.

If grass supply is limited, decisions are constantly made to adjust the stocking rate to match carrying capacity, and certain classes of stock are sold. Often the Hicksons find it is not feed quantity that is the problem, but quality.



Ewes are given a mark to indicate their pregnancy status (dry, single or twin), separated out into smaller mobs and their nutrition managed depending on condition scores.

In those years, twin bearing ewes are supplemented with faba beans or grazed on the worst corners of grain crops to provide them with the massive amount of energy required to have and rear twins.

Mr Hickson says being able to anticipate lamb numbers and match stocking rates with feed has been proven to have many benefits.

In the severe drought year of 2007, the Hicksons, who normally run up to 15,000 DSE, had sold all their livestock except for 1700 of their core breeding ewes. These were sent to a nearby irrigator to put on his failed wheat crop.

The result was 2300 lambs on the ground in good condition and a very small supplementary feeding bill. And the core breeding nucleus of Merino sheep was very much intact.

Preferential feeding of twin bearing ewes during gestation can also largely overcome another challenge – the fact that twin born lambs, due to lower secondary follicle density, have lower fleece weights and higher fibre diameters than single born lambs.



Ewes after scanning at 'Eural', NSW

In the past year, following information from the Lifetime Ewe Management program offered by Rural Industries Skill Training (RIST), the Hicksons have begun to concentrate on condition scores at weaning, joining, scanning and just prior to lambing, to ensure that ewes are in optimal condition to conceive and rear a lamb.

Mr Hickson says if twin bearing ewes have a condition score of 3.5 to 4 at lambing, lambs are usually strong enough to withstand the vagaries of weather and predators.

Last year helicopter contractors shot 480 pigs on Eural, with numbers boosted by good rains in the past two years.

Foxes can be a problem and baiting is undertaken at times especially around the areas where twin bearing ewes are due to lamb. However, if the nutrition is right and lamb birth weights are up, foxes are less of a problem as the stronger lambs are more viable.

In pastoral zones where flocks are larger, around 5000 ewes, Mr Hickson suggests scanning ewes on their second lambing and drafting off those with twins, to be given the best feed or supplemented in a hard season.

These could be treated as twinning ewes for the rest of their life, meaning pastoralists only have to scan 20 per cent of their ewes each year.

He cautions that this strategy will only work if the nutrition of the twinning mob is got right, otherwise after a tough year, the ewes will be less likely to conceive twins again as their condition score will be down from raising the previous lambs.

He recommends scanning as the place to start investigating a flock's reproduction rate. By scanning, producers can find out whether getting their ewes in lamb is the problem or whether lamb survival is the problem.

Once that's clear, the producer can investigate ways to overcome the problem. It is no good conceiving more lambs if lamb loss either through predation or ewe nutrition is the problem, he says. Equally, having ewe nutrition and predation spot on can only improve things so much if the ewes are not conceiving enough lambs.

Dr Mike Rival says it's difficult to get hard data on the repeatability of multiple births because it's often skewed by seasonal conditions, but warns that it could be as low as 50 per cent.

He suggests that pastoral producers in South Australia or New South Wales who join in November may experience lower fecundity (number of lambs born) than a similar mob structure joined in Autumn in Queensland.

Dr Rival pregnancy tests up to 50,000 ewes a year in the eastern states and agrees with Mr Hickson that the focus should be on nutrition, scanning and condition score.

He believes the Hickson system is simple and effective:

1. Scan maidens for pregnancy and cull ewes not in lamb – at least during the initial or early years
2. Scan remainder of ewe flock for multiples, cull ewes not in lamb
3. Lamb out twin bearing ewes in small mobs on best available feed
4. Identify ewes born as twins with, say, the low ear tag numbers for each drop. In times when extra sheep need to be sold, these might be retained in preference to single born ewes.

Dr Rival says maintaining ewe condition is essential for successful conception and for the laying down of secondary wool fibres in the skin of the lamb foetus, which occurs 30 to 40 days before lambing.

He says a lack of ready labour and the cost of around \$1.00/head can discourage woolgrowers from pregnancy testing, but current operators are capable of processing more than 2200 sheep in a day.

While it's not easy, a shift in lambing times to ensure ewes drop onto good feed and in warmer conditions makes lamb deaths from predation and/or exposure less likely.

WHAT YOU CAN DO:

1. Ensure your ewes have a condition score 3.5 at joining and try to maintain that weight through pregnancy
2. Scan for multiple births two months after joining and split flocks to enable preferential feeding for twin bearing ewes
3. Reduce predator competition by shooting or selectively baiting for pigs and foxes in sheep paddocks just prior to lambing
4. Consider lambing when seasonal conditions are warmer and there is a greater likelihood of good feed for ewes and new lambs

STATE BY STATE LIST OF SCANNING CONTRACTORS

The Sheep Cooperative Research Centre (CRC) has an online resource listing scanning contractors in each state. To view this, go to the following link and scroll to the bottom of the page:

www.sheepcrc.org.au/management/reproduction/pregnancy-scanning.php

