# Fact sheet

## Identification of triplet-bearing ewes – what's happening, who, when and why?

### What's happening on Australian sheep farms with triplets?

Lamb marking rates in Australia have increased by more than 15% over the last 20 years. As a result, the proportion of triplet-bearing ewes in the national flock has increased.

A survey of Australian producers who pregnancy scan for triplets found that, on average, 6.6% of non-Merino ewes and 2.9% of Merino ewes in the flock were scanned as triplets. However, the proportion of ewes scanned as triplets were about the same when non-Merino and Merino flocks achieved the same scanning rate.

Mortality of triplet-bearing ewes and their lambs can be high, with producers in Australia reporting mortality averaging 6.4% for triplet-bearing ewes regardless of maternal or Merino breed. These producers reported survival of triplet-born lambs of 52.9% for Merinos which was significantly lower than that for maternals at 60.1%.

Scanning rates and lamb mortality can be underestimated if triplets are present but unidentified in the flock. This is a significant challenge given around 25% of the national ewe flock are scanned for twins and less than 5% are scanned for triplets. Accurately identifying triplet-bearing ewes and optimising their management has potential to improve productivity, profitability and welfare outcomes. This fact sheet outlines when, why, how and the economic basis to scan ewes for triplets.

### When to pregnancy scan for triplets?

Triplet-bearing ewes should be identified at pregnancy scanning. The optimum time to scan ewes for triplets is 80–90 days from the start of joining. The earliest and optimum time that ewes can be pregnancy scanned is shown in Table 1. Ewes cannot be scanned before 40 days from the end of joining or beyond 100 days from the start of joining.

**Table 1. Earliest and optimum time that ewes can be pregnancy scanned for triplets for a 35-day or 42-day joining**

| Length of joining | Earliest | Optimum |
|---|---|---|
| 35 days/5 weeks | 40 days after the rams have been removed | 45 days after the rams have been removed |
| 42 days/6 weeks | | 45 days after the rams have been removed |

Tips for preparing for scanning include:

- joining for no more than six weeks,
- withholding feed and water the night before scanning
- ensuring adequate staff are available to keep ewes up to the scanner
- good yard set-up with secure, separate pens for each pregnancy status (dry, single, twin, triplet)
- avoid having wet or daggy ewes
- book your scanner early.

See fact sheet on pregnancy scanning for more information

Currently in Australia around 25% of producers' pregnancy scan ewes for either pregnant or empty, 25% scan for multiples (empty, singles and multiples), less than 5% scan for triplets (empty, singles, twins and triplets). The balance (around 45%) are not scanning at all. Therefore, most producers don't have an accurate picture of the true scanning percentage of their flocks. As the scanning percentage determined from scanning multiples increases, the expected proportion of triplets in the flock increases and the gap between the 'multiples-only' scanning percentage and the true scanning percentage increases (Table 2).

The true scanning percentage can then be used to estimate the proportion of triplet-bearing ewes in the flock. Table 2 below shows the average percentage of triplet-bearing ewes at various scanning rates.

**Table 2. Average percentage of triplet-bearing ewes at various scanning ratesg**

| Multiple scanning rate (not counting triplets) | True scanning rate (counting triplets) | Percentage of triplets (%) |
|---|---|---|
| 120% | 122.8% | 2.8 |
| 130% | 133.7% | 3.7 |
| 140% | 144.9% | 4.9 |
| 150% | 156.6% | 6.6 |
| 160% | 169.2% | 9.2 |
| 170% | 183.1% | 13.1 |
| 175% | 191.0% | 16.0 |
| 180% | 200.1% | 20.1 |
| 185% | 211.0% | 26.0 |
| 190% | 225.6% | 35.6 |

The rule of thumb to do a conversion is to add 2% for every 10% that the 'multiples-only' scanning percentage is above 100%. For example, if the 'multiples-only' scanning percentage is 160% then the true scanning percentage is 172% (160 + 6 * 2). This rule of thumb only works up to a multiple scanning percentage of 175%. Beyond that the rule of thumb is underestimating the true reproductive rate.

***True scanning %=Multiples only %+2* (multiples only %-100)/10***

## How – triplet bearing ewes should be identified at scanning and differentially managed

The national triplet research project has determined the survival of triplet-bearing ewes and/or their lambs can be improved by managing the condition score between pregnancy scanning and lambing, and lambing triplet-bearing ewes in smaller mobs. Each of which are covered in other fact sheet in this series and in the 'triplet best practice guide – Merino' and 'triplet best practice guide – maternal'.

Scanning and identifying triplet-bearing ewes, costing an extra $0.40/ewe scanned, is justified from the benefits of better nutritional management of the triplet-bearing ewes and differential paddock allocation at lambing to reduce mob size, if the proportion of triplet-bearing ewes is 3% or greater in maternals, which occurs at true scanning rate of 123% or 120% if scanning for multiples only. Scanning and identifying triplet-bearing ewes is justified for Merinos if the proportion of triplet-bearing ewes is 5% or greater, which is a true scanning rate of 145% or 140% if scanning for multiples only (Table 2 – green section).

## Economics

A significant driver of the profitability of scanning for litter size is the number of triplet-bearing ewes identified from which to recoup the cost of scanning. The increase in the cost associated with paying the contractor and the cost of staff to muster and yard the ewes was assumed to be $0.40/hd. The ultimate cost per triplet-bearing ewe identified is determined by the proportion of triplets in the flock (Table 3).

**Table 3. The cost per triplet ewe identified at varying triplet % assuming $0.40/hd to scan for triplets.**

| Triplet percentage | Cost/triplet ewe identified |
|---|---|
| 5% | $8 |
| 10% | $4 |
| 20% | $2 |

Profitability can be increased if flocks are scanned for litter size and the information is utilised to optimise the management of triplet-bearing ewes, however it is dependent on the level of reproductive rate. At standard reproduction rates of 123%, which includes 3% triplets, differential management of Merino flocks did not increase profit, whereas it was profitable to scan maternal flocks at that level. For flocks achieving higher reproductive rates such as 170%, with 10% triplet-

bearing ewes, there is an increase in profit of $0.80/ewe scanned or $8/triplet-bearing ewe identified for Merinos and $2.35 per ewe scanned or $23.50/triplet-bearing ewe identified for maternals (Table 4).

**Table 4. Potential increase in profit from scanning for litter size and applying optimum management for Merino and maternal flocks with 10% triplet-bearing ewes (scanning 170%).**

| | Merino | Maternal |
|---|---|---|
| Proportion of triplets | 10% | 10% |
| $/ewe | +0.80 | +2.35 |
| $/triplet ewe | +8.00 | +23.50 |

For a given reproductive rate (or proportion of triplets), there is more value in scanning the autumn-lambing flocks than the spring-lambing flocks. This is driven partly by the slightly higher value of the autumn-born lambs and partly by the value of reallocating the feed in the post-scanning period. Increasing meat price increases the value of scanning for litter size, the overall profit, and the value of an extra ewe or lamb surviving. Higher meat prices also increase the opportunity cost of the feed. Specifically, a $1/kg increase raises the value of a Merino ewe by $20 per ewe and maternal ewe by $45 per ewe, and the value of a triplet lamb by $6.50 per lamb for Merinos and by $13.50 per lamb for maternals. Differentially managing the triplet-bearing ewes and their progeny is done at the expense of single or twin-bearing ewes, or by reducing total stock numbers, both of which have a higher cost when meat price increases.

The value of scanning for litter size is a trade-off between the cost of scanning and the benefits achieved from better mob size at lambing and better allocation of feed to ewes with a different litter size. On average, 70% of the benefit of identifying the Merino triplet-bearing ewes is from differentially allocating to lambing paddocks, with the remainder of the benefit from differential nutrition.

In summary, if there are 10% triplet ewes in the flock (170% scanning) then the net value of scanning for litter size is $0.80/ewe scanned for Merinos and $2.35/ewe scanned for maternals. This is an increment on top of the value of scanning for multiples of $5.75/ewe (Young and Brien 2023) and increases the total value of scanning to $6.55/ewe scanned for Merinos and $8.10 for maternals. The value of scanning maternals is higher than scanning Merinos at a given proportion of triplets in the flock due to the higher value of triplet-bearing ewes and triplet-born lambs for maternals than Merinos.

## What are the best-practice recommendations to scan for triplets?

- Scanning for triplets and managing them separately from pregnancy scanning onwards can increase the survival of triplet-bearing ewes and lambs.
- The improvements in triplet ewe and lamb survival are achieved through both better nutritional management and better paddock allocation for lambing.
- The profitability of scanning flocks for triplets is dependent on the reproductive rate of the flock, in particular the proportion of triplets, breed of ewe and the meat price.
- Scanning and identifying triplet-bearing ewes, costing an extra $0.40/ewe scanned, is justified if the proportion of triplet-bearing ewes is 3% or more in maternals and 5% or more in Merinos.
- At reproduction rates of 170%, which includes 10% triplets, differential management of Merino flocks increased profit by $0.80/ewe scanned or $8/triplet-bearing ewe identified, for maternals flocks increased profit by $2.35 per ewe scanned or $23.50/triplet-bearing ewe identified.
- There are social license, animal welfare and potential market access benefits from improving triplet management and these benefits have not been included in the values outlined.

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