

The keys to maximising non-Merino ewe survival during lambing



Minimising ewe deaths over lambing requires understanding why they die and the possible role of management practices and animal factors, like age or litter size. Lower ewe deaths will decrease lamb deaths, and improve animal welfare and productivity across the sheep industry.

Key messages

- Some ewe deaths are inevitable during the lambing period, but if whole-flock death rates are above 2%, investigation and action may be warranted.
- Dystocia and the associated trauma were leading causes of death.
- Many of the risk factors for dystocia can be managed e.g. ewe body condition score (BCS). Others are more difficult to manage but may be treated with timely intervention.
- Manage ewes to meet BCS targets, while minimising the range in BCS (i.e. reduce the number of outliers).
- Older ewes are at increased risk of some potentially fatal diseases leading up to and during lambing.

About the project

Livestock Logic, in collaboration with The University of Melbourne, Murdoch University and Pinion Advisory, led a two-year Meat & Livestock Australia-funded project, exploring the major causes of death in non-Merino ewes. The project team worked with 51 sheep producers across southern Australia to collect information on lambing ewes during the 2019 and 2020 lambing seasons.

The project aimed to quantify ewe losses during the 'lambing period' — from two weeks before lambing through to marking — and identify the major causes of ewe deaths during this time.



Industry benchmarks

Some ewe deaths are inevitable during the lambing period. The following table offers industry benchmarks that help identify where improvements in ewe survival might be made.

Whole-flock death rate (%)	Recommendations
< 1	Industry best target
1 – 2	Good performance
2.1 – 4	Opportunity for improvement through management
>4	Action is a priority —identify key contributing factors and implement effective management strategies.

Average ewe deaths for the flocks in this project ranged from 2.0% during 2020 to 2.5% during 2019. The highest ‘whole-flock’ ewe death rate across the two years of the project was 5.9%, while the lowest was 0.5%.

Causes of death

The leading causes of ewe death in the flocks studied during this project were: septicaemia (blood poisoning), dystocia, trauma and hypocalcaemia. Other causes of death included dorsal vaginal wall rupture (DVWR), uterine and vaginal prolapse and pneumonia.

Dystocia, septicaemia and trauma were often diagnosed together, sometimes alongside hypocalcaemia. This made it challenging to identify the key factor that led

to the eventual death of the ewe, but as the diagram below illustrates, many of these factors come back to dystocia. Some factors that lead to dystocia are preventable through management. For those that cannot be prevented, timely action and treatment can increase survival rates.

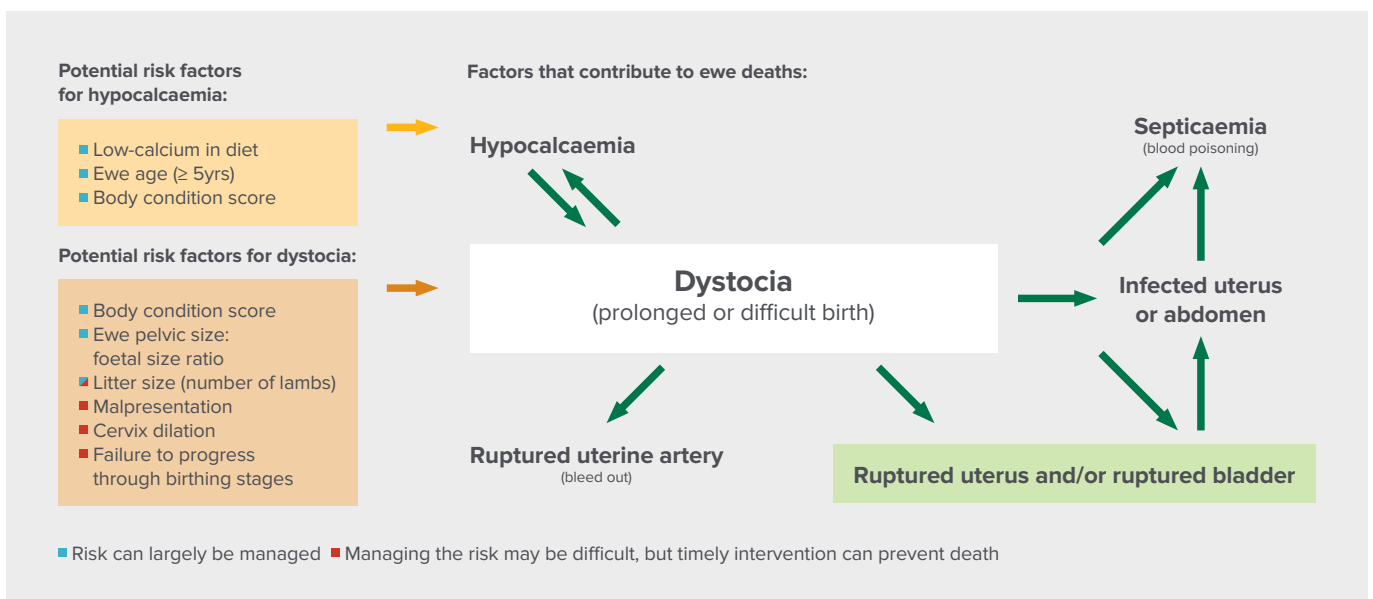
When identifying the most likely cause of death, producers in the project reported 30% of deaths as ‘dystocia’. Vet post-mortem only found 60% of dystocia cases were obvious from the outside of the ewe. The remaining 40% required a post-mortem to diagnose dystocia. This indicates that dystocia may be under-recognised as a cause of death because the signs are not always obvious without post-mortem. For every two cases of dystocia recognised by the producer, there was an additional case undiagnosed.

Common risk factors

Some common risk factors were identified in ewes that died and underwent a post-mortem examination:

- Dystocia was diagnosed more often in dead single-bearing ewes compared to multiple-bearing ewes. Dead ewes in BCS 2.5 were less likely to have a diagnosis of dystocia compared to those in BCS3.
- Hypocalcaemia was more likely to be diagnosed in dead ewes > 5 years old and ewes with a BCS <=2 compared to those in CS 3.
- Dorsal vaginal wall ruptures were more likely to be diagnosed in ewes with BC ≥3.5, multiple-bearing ewes and ewes with a high total foetal weight (more than 10kg).

Figure 1: Key risk factors associated with dystocia and factors that contribute to ewe death.





Managing ewes for survival

The results from the project support existing industry best practice management guidelines for ewes during pregnancy and lambing, and reinforce the importance of:

- Pregnancy scanning to manage single-bearing ewes and multiple-bearing ewes to meet condition score targets (target BCS at lambing: singles 2.8 – 3.0, multiples 3.0 – 3.3)
- Minimising the variation in ewe BCS across each mob (i.e. average BCS 3, range 2–4 may be problematic compared to average BCS 3, range 2.8–3.2). Where practical, draft off light and heavy condition ewes at scanning and manage appropriately.

Additional recommendations to add to the current industry best practice management guidelines include:

- Separate older ewes (> 5 years) for lambing to better manage specific diseases e.g. hypocalcaemia. In conjunction with a livestock advisor, consider calcium management, particularly for older ewes and ewes grazing high-risk feeds (e.g. cereal and brassica crops). Proactively managing at risk groups may reduce overall costs and increase survival.
- When selecting rams, focus on birthweight (BWT) and lambing ease ASBVs (LE DIR, LE DTR*). Avoid outliers in the ram team for birthweight.

*LE DIR – lambing ease direct; LE DTR – lambing ease daughters.

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Monitoring and intervention

In addition to setting ewes up for lambing success prior to lambing, regular monitoring and appropriate intervention strategies can successfully address issues when they occur. The following strategies can help boost ewe survival:

- Familiarise ewes with personnel and vehicles in the four weeks leading up to lambing to minimise mob disturbance during monitoring and when intervention is required.
- Where possible, avoid using the same vehicle to monitor lambing ewes and feed livestock. Consider using a four-wheel or side-by-side solely for monitoring mobs.
- Check ewes regularly during lambing (at least once daily), especially high-risk groups (e.g. older, maiden and triplet-bearing ewes). Don't allow a struggling ewe to labour for too long — stage two labour (when the ewe starts to strain) should take 40 – 60 minutes.
- Use gloves, lubricant and minimal force when helping ewes to lamb.
- Correct lamb position where possible before delivering malpresented lambs.
- Develop a treatment protocol with your veterinarian prior to the start of lambing. This could include antibiotics, non-steroidal anti-inflammatories such as meloxicam, oral rehydration formula and propylene glycol, and 4-in-1 treatment for metabolic diseases if labour is extended, or lambs are dead or rotten.

Please note: Birth products can be a source of human disease, so good hygiene should be practiced.



If concerned about ewe mortality, based on the table (page 2) or your observations, contact a veterinarian to discuss an approach for investigation and future mitigation. Many causes of ewe mortality are not externally obvious.