Fact sheet

Improving twin lamb survival through melatonin implants

Need to increase twin lamb survival

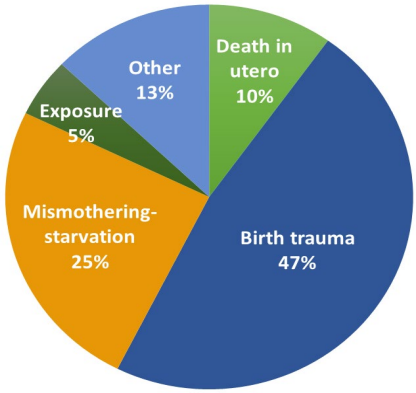

Image 1. Breakdown of lamb mortality causes

High incidences of lamb mortality cost the industry approximately $450 million per year, and oxygen deprivation is associated with up to 70% of these lamb deaths, particularly in twin lambs. With birth trauma related deaths including stillbirth, birth injury and dystocia, accounting for 47% of all lamb deaths.

The objective of this study was to investigate the potential of using melatonin (Regulin®) to increase twin lamb survival under commercial conditions after an MLA funded collaborative project between University of Adelaide and SARDI determined an improvement in twin lamb survival under research conditions at the Turretfield Research centre indoor lambing shed and at the Minnipa Agricultural centre.

The protocol

Across 17 farms ewes were pregnancy scanned with twin-bearing ewes selected for this trial. Half of the twin-bearing ewes received a single melatonin implant at the base of the ear. A Regulin® implant at this stage of pregnancy is off label usage and not currently registered to be administered at this time but was conducted as part of this project for R&D purposes with animal ethics approval. The implant was administered as recommended via the base of the ear using the supplied applicator. The applicator is simple to use, and functions much like other injection guns, simply insert the needle into the skin pocket at the base of the ear, squeeze the trigger to release the small capsule containing melatonin, remove the needle and then release the trigger. After application the ewes can be managed as a single mob until paddock allocation, or separated at this time prior to lambing. Ewes were managed through the remainder of pregnancy and lambing according to each farms management system, with lamb survival recorded at marking and weaning across the properties.

Major findings

Research indicates that ewes in a condition score between 3 and 4 at time of implant, with abundant feed availability from mid gestation together with mild lambing conditions, offset any positive effects associated with the use of Regulin to increase twin lamb survival under commercial conditions.

It is recommended to assess ewe and feed conditions between day 70 and 90 gestation to determine whether Regulin will be of use in your management system. Individual producer case studies can be found to help assess whether Regulin will be of a positive benefit within your farm. Participants in this project had a twin lamb survival ranging between 46% and 96% (average 76%) in control mobs, and 42 and 95% (average 74%) in the Regulin treated mobs. On one trial site, ewes were in poorer than normal condition, due to harsh weather conditions, at the time of implant and the results found that Regulin® treated ewes had a significant increase in twin lamb survival.

In properties where weaning weights could be collected, lambs from Regulin treated ewes were 1kg heavier on average, compared to the control mobs at each location. Ewes and lambs were managed as one mob from marking until weaning to ensure consistency of feed and management.

Key points to consider when using melatonin during pregnancy

- Ewe condition at time of implant; ewes in poor condition (<2.5 BCS) may benefit from Regulin® implant
- If feed availability at time of implant through to lambing is reduced Regulin® implant could be considered
- If harsh weather conditions are predicted to occur throughout lambing

Outcomes

It would be ideal to replicate this trial on the same properties across consecutive years to determine the effects of melatonin in varying conditions. A number of external factors plays a key role in the effectiveness of Regulin, and it is recommended that these are considered before using Regulin in your system. At a cost of approximately $8 per implant, melatonin is an expensive product to invest in and under scenarios where an improvement of at least 10% in twin lamb survival is anticipated it is worth the cost. Interestingly, an increase in weaning weight has been identified in some cases, which may help offset the costs of the implant.

Resources

- Final Report

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