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Livestock

Simple steps to “ewe-turn” your lamb weaning percentage

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RESEARCH



Key messages

- Weaning percentage is a major profit driver in sheep enterprises.
- Improvement requires an integrated approach to changes within sheep enterprises.
- Changes to management practices don't necessarily have to be more time consuming or expensive. Small changes can make a great difference.
- The minimum weaning percent on Eyre Peninsula should be 100%.

Why do the trial?

Lamb wastage in sheep flocks is a major concern for the Australian sheep industry. Overcoming

significant loss of lambs from conception to weaning is considered a key focus for higher rainfall zones, however, it has had less emphasis in lower rainfall regions, including the Eyre Peninsula.

Scanning percentages for summer-joined Merinos are often 120-160% but can result in weaning percentages of only 80-110%. Reduced weaning percentages occur because of a combination of many different factors. Therefore, improving efficiency involves using an integrated approach in order to achieve the best outcome.

How was it done?

The opportunity to improve reproductive efficiency was addressed in a study using the Merino flock at the Minnipa Agricultural Centre by identifying and understanding the timing and causes of lamb losses in 2012, 2013 and 2014 (EPFS Summary 2012, p 120 and EPFS Summary 2013, p 137).

Each year ewes were single-sire joined to rams for six weeks in February/March and subsequently pregnancy scanned for dries, singles and multiples in May. At lambing measurements taken included dam pedigree, date of birth, sex, birth type, birth weight, rectal temperature, lamb vigour and ewe maternal temperament. Deceased lambs were autopsied to determine cause of death. Marking and weaning numbers

were recorded in August and September, respectively.

What happened?

Table 1 presents the three years of reproductive performance on the Minnipa flock with an average scanning of 147%. Note: as a consequence of single-sire joining, there was one group in 2014 that had a low scanning percentage of 16 due to a combination of heat and transport stress on the ram. On average, there was a 26% loss of lambs from scanning to weaning. Average survival at weaning was 83%.

The cause of perinatal deaths in this study have been broken down into eight categories shown in Figure 1: dystocia (difficult birth), exposure (hypothermia), starvation (causes other than mismothering), mismothering (secondary death through starvation), premature or 'dead in utero' (lambs born prematurely or dead), predation (primary predation only), other (including injury, infection and misadventure) and unknown (this diagnosis refers to lambs that have been scavenged and unable to be autopsied).

Table 1 Reproductive performance of the Minnipa flock from 2012-2014

Year	No. Ewes joined	No. Lambs scanned	No. Lambs born	No. Lambs weaned	Survival at birth (%)	Survival at weaning (%)
2012	337	540 (160%)	558 (166%)	439 (130%)	103	81
2013	350	534 (153%)	531 (152%)	446 (127%)	99	84
2014	349	442 (127%)	443 (127%)	366 (105%)	100	83
Average	345	505 (147%)	511 (148%)	417 (121%)	101	83

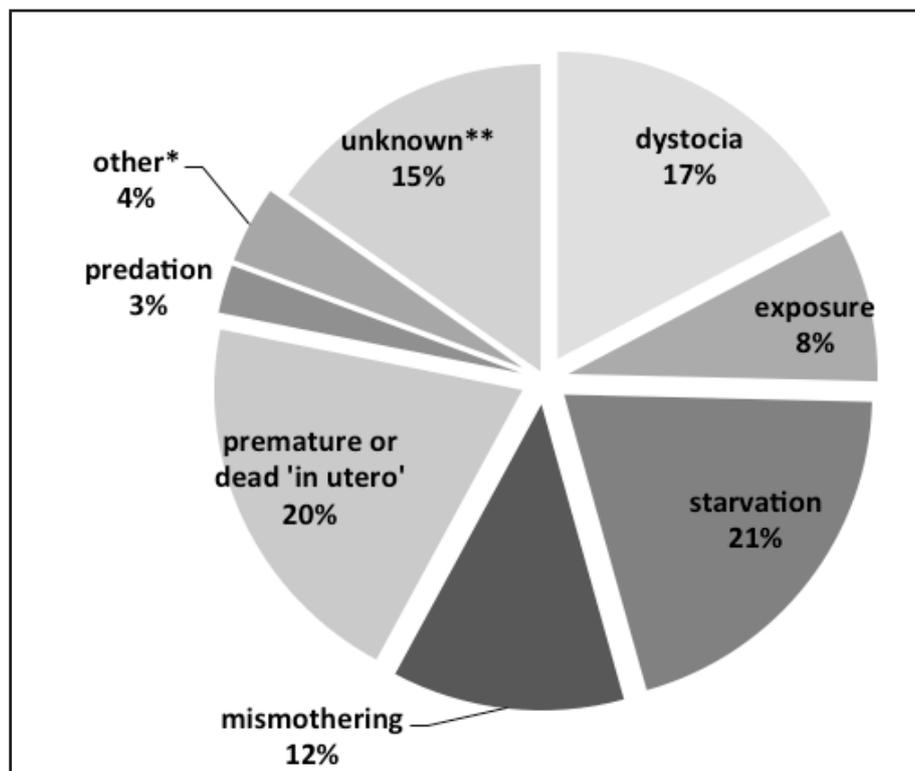


Figure 1 Cause of lamb deaths at the Minnipa Agricultural Centre in 2012-2014

*other includes injury, infection and misadventure

**unknown diagnosis is from lambs that have been scavenged and are unable to be autopsied

NOTE: Figure 1 does not include the 82 lambs (out of the total 279 deceased) missing between tagging and weaning

What does this mean?

The average lamb loss between birth and weaning in Australian Merino sheep has been estimated to be more than 30% (Minnipa flock average was 27%). The majority of these deaths occur in the early post-natal period, with more than half of all pre-weaning deaths occurring within the first 24 hours. By contrast, the number of ewes that fail to get in-lamb is normally quite low. Weaning percentages tend to be ominously lower than pregnancy scanning percentages in low rainfall areas, yet many sheep producers are not scanning and therefore do not know what they are losing, which is a concern. For a summer joining the expectation of 100% at

weaning is not unreasonable on the Eyre Peninsula and should be the minimum target for all sheep enterprises, regardless of breed.

Poor weaning percentages occur because of a combination of many factors starting from pre-joining through to weaning, and the cause of the problem varies significantly from property to property. A collective management package is necessary to obtain the best weaning percentage possible. The outcomes of the lamb survival study at Minnipa show that there are several important aspects to understand about flock management during the reproductive period in sheep enterprises that can be used to improve weaning percentages.

Starvation, mismothering and exposure (SME) are generally referred to as a complex, which typically accounts for approximately 80% of perinatal deaths in the majority of studies conducted in Southern Australia. At Minnipa 41% of lamb deaths were attributed to this complex. In recent research, more dystocia cases have been identified in lamb deaths previously diagnosed as the SME complex; however the initial cause of demise has been credited to brain injury (related to bleeding in the brain caused by difficult birth and lack of oxygen in the birth canal for an extended period of time).

Calcium supplements (stock lime) are essential in late pregnancy and throughout lambing as calcium drives ewe birthing contractions and lack of it can lead to dystocia. Fibre is also important to mobilise calcium reserves. Managing lamb birth weights, ensuring sufficient ewe nutrition and regular flock monitoring throughout lambing are other options to assist an easy birthing process.

The most critical driver of lamb survival is ewe nutrition and pregnancy scanning is the initial process by which nutritional decisions need to be made. Many losses are associated with poor sustenance during pregnancy, particularly in late pregnancy and predominantly with ewes carrying multiple lambs. It is simpler, safer and generally cheaper to maintain ewe condition over joining and early pregnancy than to lose it and build it back up. Nutrition at this stage directly affects lamb birth weight, with approximately 70% of a lamb's likelihood to survive governed by its birth weight. Major issues with nutrition include too much feed for singles resulting in dystocia issues, or not enough for multiples leading to problems associated with the SME complex, hence the importance of pregnancy scanning to adjust feed rations. Whether single or multiple pregnancies, matching condition and nutrition through reallocation of resources as well as supplying the correct balance of energy and protein is important to maximise survival, whilst resulting in additional benefits such as better milk supply, more energy for the ewe for labour and lambs less susceptible to predation.

Maintaining nutrition levels during lambing is critical, as the amount of time a ewe spends at the birth site to bond with her newborn governs the lamb's chance of survival, particularly in the first four to six hours. Provision of shelter and paddock allocation is equally important as managing ewe nutrition. Shelter will not only protect lambs from environmental extremes, but will also provide

sufficient cover to allow the ewe to give birth uninterrupted and to bond with her lamb(s).

Using genetics in ewe and ram selection can assist in controlling aspects such as lamb birth weight, difficult birthing issues and identifying good mothers. It is essential that ewes and rams are in appropriate condition through sound physiology, good health and nutrition and that the joining period is sufficient to allow two cycles for the ewes (minimum of five weeks). Peak fertility when cycling activity increases in sheep generally occurs between March and May and out-of-season joining may require teaser use or for rams to be left in for an extended time, however a lengthy joining period can be inefficient. Ensuring a regular and up-to-date husbandry program will aid a successful reproductive process.

Primary predation of otherwise healthy lambs is uncommon, although sporadic events do occur. It is essential to control pests to minimise ewe stress and to avoid leaving the lamb vulnerable to primary or secondary predation (secondary predation occurs on lambs that are more likely to die in the absence of predation). This is important especially in the first 24 hours, as ewes tend to give birth during the night or early morning when predators are most active. An integrated approach using control options such as baits, traps, hunting, fox lights and/or guardian animals at least a month prior to lambing is necessary.

Substantial profitability gains can be made through improved weaning percentages, especially when the cost of lamb losses, along with their potential future income is calculated; however there is no single solution to improve reproductive rates in sheep enterprises on Eyre Peninsula. Each producer needs to analyse the causes behind the problem within their flock management program and be willing to implement change – small changes can equal long

term investment into the future of a sheep flock. Ignorance and complacency around the issue of lamb wastage are currently major hurdles for the sheep industry, which need be addressed in a timely fashion if considerable productivity and profitability improvements are expected.

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