

Monitoring lambing mortality and disease for management benefits

By Beth Lawrence,
Belmont Farm
and Equine Vets,
Herefordshire



The most important performance indicator of any commercial sheep enterprise is the number of lambs sold per ewe or, more precisely, the kilograms of meat sold per ewe. The target is 1kg of lamb sold per 1kg of ewe mated in lowland flocks. This single factor has a huge impact on the overall profitability of the enterprise.

Historically, sheep farmers have struggled to record data and, too often, the only data obtained easily is number of ewes put to the ram and the number of lambs sold. With the drive for all farming businesses to become more efficient we must be able to accurately monitor how well a farm is performing, demonstrating both strengths and weaknesses, at certain stages in production. Therefore, we must monitor when and how both lamb and ewe disease and mortality occur.

It is vitally important to be able to record data in order to calculate key performance indicators (KPIs) in the lambing period – see panel. This allows precise targeting of areas for improvement and prevention of losses in the future.

Loss of any in-lamb ewe means the loss of her lamb crop too. Ewe mortality rates can be calculated from disposal records; dates should be included so this can be calculated for a specified time period.

Reducing mortality

There are many diseases that contribute to ewe mortality around lambing time. Some causes of **abortion** can also result in sick ewes and sometimes death, including *Salmonella* and *E.coli*. Undiagnosed infectious abortion agents within a flock can have a significant impact on the number of barren ewes, ewe mortality and lambs born alive. There are many forms of abortion and obtaining an accurate diagnosis is hugely cost-effective. Always



Classic hypocalcaemia signs - low head position, recumbency and constipation.

BSC targets

	Tupping	Lambing	Weaning
Lowland	3.5	3	2.5
Upland	3	2.5	2
Hill	2.5	2	2

consult your vet at the first sign of any abortion.

Inadequate nutrition can also cause mortality. At the very least, always body condition score (BCS) ewes at tupping and eight weeks prior to lambing to ensure adequate nutrition and preparation for lambing – see table for target BCS. Ideally, a sample of in-lamb ewes should be blood sampled for energy, protein and calcium status three weeks prior to the start of lambing to ensure the diet given is meeting the demands of the flock. If demands are not being met, two metabolic diseases can cause ewe mortality:-

- **Pregnancy toxaemia (twin lamb disease)** frequently results in death. It is generally seen in ewes of poor body condition and carrying multiple foetuses, but can also be seen in over-fat ewes. Less than 2% is acceptable in many flocks but incidences over this indicate a nutritional problem that needs further investigation. Treatment is frequently unsuccessful unless signs are noticed early.

- **Hypocalcaemia** is commonly seen from up to six weeks pre-lambing; this is another disease with high mortality unless treated with promptly.

Another cause of ewe mortality are **vaginal prolapses**, which are invariably seen annually. Less than 1% is common, however, if incidence is more than 2% please consult your vet. Mark any ewes that have prolapsed to cull after weaning.

Some losses from **dystocia and lambing abnormalities**, including uterine prolapse, can be prevented with a well skilled lambing team. However, evisceration through a vaginal tear invariably necessitates euthanasia.

Toxic **mastitis** is seen within three weeks of lambing and is often fatal unless identified early. Many flocks will experience around 2% annually. Cases often originate from poor milk production, a consequence of inadequate nutrition in late stages of pregnancy.

The risk of **liver fluke** is individual to each farm and should be included in any flock health plan.

When it comes to lamb mortality, approximately 80-90% of the total losses

Data collection and KPIs

- Number of ewes put to the tup(s).
- Scanning percentage (Target varies from 120% in hill systems to 195% on lowland farms).
- Abortion percentage (Target less than 2%).
- Lambing percentage (Number of lambs born alive divided by number of ewes put to the ram).
- Lambs born dead (Target less than 5%).
- Lamb mortality from birth to 48 hours (Target less than 5%).
- Lamb mortality from scanning to turn out (Target less than 10%).
- Ewe mortality from tupping to weaning (Target less than 4%).

occur between the last week of gestation and the first week of life, called the perinatal period. Between two and six million lambs are lost within this period each year. A lamb lost up to the point of lambing, in an indoor lambing system, is estimated to cost £20-25 to the farmer. Extensively managed hill flocks may have higher lamb mortality with climate and predation affecting them more.

Pinpointing losses

Comparing scanning percentage with lambs born alive can indicate the number of lambs lost during the later stages of pregnancy and these losses may be attributed to resorption, abortion or nutritional problems.

Calculating losses between lambs born alive to lambs turned out can indicate if there are any problems related to mis-mothering, colostrum intake/quality,



Blood sampling is an easy and useful tool for analysing nutritional status in ewes.



A 'tucked up' lamb with starvation.

hygiene and neonatal disease such as watery mouth.

Poor pre-lambing ewe nutrition will result in low birthweight lambs and poor colostrum production, leading to hypothermia, starvation and or mis-mothering. Optimal birthweights from 75kg ewes are 4.5-6kg for singles, 3.5-4.5kg for twins and 3.5kg+ for triplets.

Inadequate colostrum not only causes a failure in nutrition for the lamb but also fails to provide immunity essential for protection against disease. This is too-often overlooked and is why body condition scoring ewes is so important; ewes must receive the adequate diet to produce optimal colostrum.

Other losses can result from lambing difficulties (**dystocia**). This is a reflection on both skill of the lambing team and breeding selection. Most **infectious neonatal disease** (joint ill, navel ill, watery mouth (*E.coli*), spinal abscesses and

meningitis) in young lambs arise due to inadequate colostrum intake, along with a heavily contaminated environment. Ensure navels are well dressed with strong iodine. Joint ill can be seen as young as five days old and some farms are increasingly seeing high incidences associated with *S.dysgalacticae*, despite good hygiene practice and colostrum.

Coccidiosis is frequently encountered in young lambs and can have a high mortality rate if not treated quickly. This disease is most often seen with high stocking rates and a heavily contaminated environment. Faecal egg counts can diagnose the problem.

Losses can also be the result of **mineral deficiencies**. Selenium deficiency in ewes can produce white muscle disease in their lambs, which is associated with poor viability. The lambs are often slow



Adequate nutrition before lambing is vital.

Summary

- Record as much data as possible.
- Review data and calculate losses.
- Compare with national statistics.
- Compare with performance the previous year.
- Seek advice from your vet and review your flock health plan.

to stand and suck and, unless promptly supplemented with selenium and vitamin E, many will die due to starvation. Lambs that survive often remain poor.

Copper deficiency in mid to late pregnancy produces swayback lambs, small and weak lambs or stillbirths. This is rarely seen other than with mild winters where ewes may receive less supplementary feeding. A delayed onset form is also seen in older lambs.