

## **Factors affecting lamb survival**

The first phase in the analysis to understand the impacts of present and future climatic influences on lamb survival was to bring four farmer groups together to examine the current issues that the farmers face. This was done through a workshop process where regional issues were first examined and then potential mitigations for that region were identified. The results of these workshops then provided the types of mitigation that were applied to the lamb survival modelling to investigate the relative importance of each mitigation in the face of the variable climate now and in the future.

Four regions volunteered to be part of the project and workshops were held between November 2008 and May 2009. These regions were:

- 1) West Otago,
- 2) Northern Southland,
- 3) South Otago and
- 4) South Canterbury.

The discussions at all workshops were robust and wide ranging. Some groups provided a fuller list of factors than others, but the two primary causes were always listed as the climate and the feeding of the ewe.

Lamb survival continues to be a key to the future of sheep farming in hill country. The concept of lamb survival and its potential impacts on long term profitability in hill country was identified by all groups. Each group wanted to investigate practices that would potentially reduce lamb losses to improve profitability.

### **Feeding**

Most farmers suggested that feeding was the most important priority but had relatively few true measures of how much extra feeding was required. Optimising lamb size and ewe health through feeding were seen as two of the most important factors. The actual practice of getting this right was often an interaction between balancing the winter feed budget and the spring grass production. Managing feed leading up to lambing was a significant area where compromises were often made, and consequences often are not understood by farmers or scientists.

### **Shelter**

Shelter was seen as important in most groups. The trade-offs between shelter and diseases were raised, as was the expense of shelter and poor shelter design. Problems with shelter design included wind chill due to the wind being channelled underneath trees and hedges, and the build-up of diseases in close proximity to shelter that induced stock camping. Farmers also cited experience with sheep moving away from shelter when weather conditions were particularly bad. Conversely others had found that mis-mothering may occur if there is too little shelter and many ewes access the shelter at once.

Natural shelter like tussocks was acknowledged as superior to other types of shelter. The opportunity to re-establish tussock is a technical problem that may need addressing.

Other observations from the farmers indicated that the interactions between shelter and behaviour were evident between shorn and unshorn sheep, making the use of shelter unpredictable.

### **Secondary factors**

Many of the secondary factors that were raised were often related to either of the primary causes, climate or feeding. For example, managing the ewe and her movements was discussed by all groups. During each of the discussions reference was made to the use of shelter and the amount of feed on-offer. Thus the majority of the discussion about managing the ewe was also about managing the ability of the mitigations to influence climate risk or feeding. Discussions around metabolic illnesses like sleepy sickness were also related to the importance of feeding.

Genetics was also cited as significant by all groups, but was particularly stressed by the South Otago and South Canterbury groups. Anecdotal evidence of variations in lamb survival due to different sire and breed types were quoted. Farmers had often made their own decisions on the type of sheep they used on this basis.

Other factors such as abortion and trace elements were seen as identifiable issues that should be managed as a matter of course.

High lambing percentage was seen as one pragmatic way to overcome the problems of lamb losses. This would mean that, though the losses may be higher, the number of lambs would still be greater. As a result, in good years there would be plenty of extra lambs, while in bad years then there would still be more than if lambing percentage was lower. This view was countered by some farmers who already have high lambing percentages and now have practical problems with trying to improve the survival of an increasing number of triplet lambs.