

# Which are your vulnerable groups of sheep with the highest lamb mortality risk?

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## Introduction

Lamb survival is the key to more profitable sheep farming and good animal welfare.

Managing known risks to lamb survival can lead to reduced lamb mortality.

Breeding sheep with inherent ability to survive and withstand harsh rearing conditions leads to more robust farming system.



## Methods

Signet's Sheepbreeder data for the Blackface breed was used for this study.

Survival records from 174,000 lambs were analysed from 70 flocks 1976-2011

'Survival' defined as survival to 8 weeks (as determined by weight record at this age).

Survival analysis (0/1) undertaken using logistic regression in GENSTAT and ASREML statistical software packages.

## Results

Survival odds (or 'relative risk') showed that **at the same lamb birth weight:-**

- Female lambs have 1.3 greater odds of survival compared to male lambs (Figure 1).

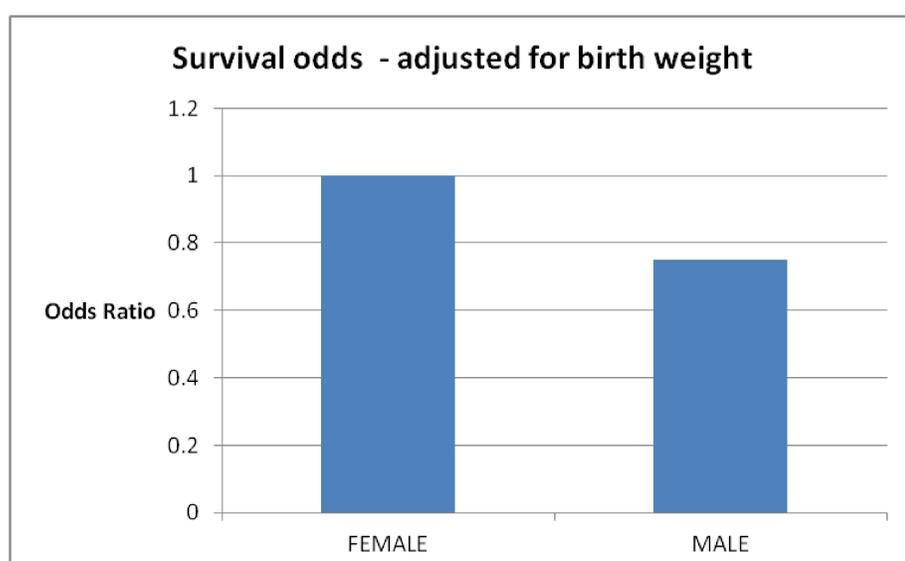


Figure 1: Female lambs have 1.3 greater survival odds compared to males

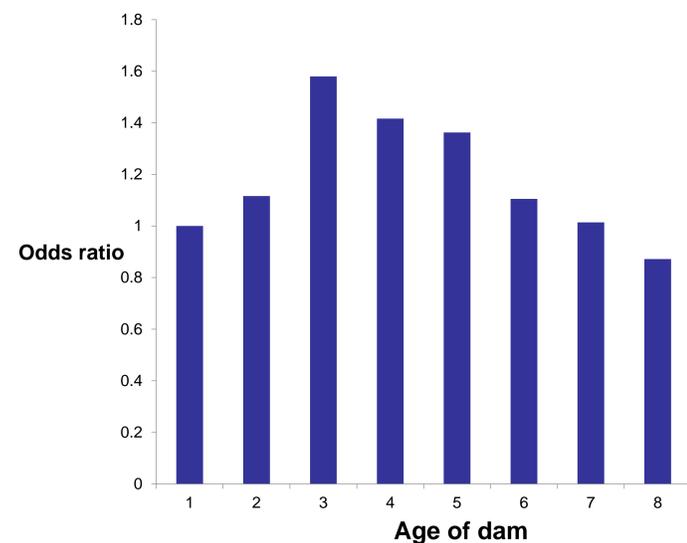


Figure 2: Survival odds of lambs acc. dam age (e.g. lambs from 3 year old ewes have 1.4 times (1.58/1.11) higher survival odds vs from 2 year old ewes).

- Lamb survival decreases with older ewe age (Figure 2)
- Lamb survival odds for twins is higher vs singles but for triplets it is still lower despite being compared at same birth weight (Figure 3)

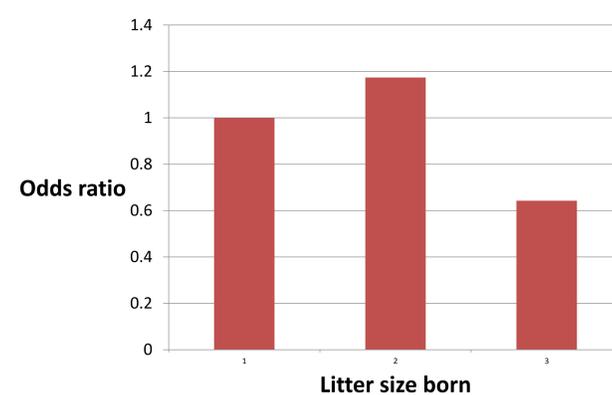


Figure 3: Survival odds of lambs acc. litter size born, compared at same birth weight

Lamb survival to 8 weeks of age has a total heritability of 9% which is in line with other estimates of lamb survival world-wide.

## Conclusions

- Including lamb survival as a breeding goal in extensive sheep breeding programmes will help to reduce lamb mortality levels.
- Preferential treatment for male lambs after birth may help to improve their chances of survival.
- Preferential treatment of twin lambs in hill flocks has helped to reduce their higher mortality but not for triplet-born lambs.
- Keeping older ewes in the flock leads to higher lamb mortality - is this a trade-off with reducing farm carbon emissions by improving ewe longevity ?

## Acknowledgements

This project was funded by EBLEX and the Scottish Government