

ASSESSING EWE EFFICIENCY & WELFARE

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Overview

Regularly weighing ewes with EID-linked technologies has the potential to improve on-farm sheep management and welfare monitoring. Work carried out at SRUC Hill & Mountain Research showed that ewe survival was strongly linked to ewe weight at weaning (August) and stockdraw (October). Regularly weighing ewes at those points should allow farmers to enhance animal performance and welfare of their flock.

Main Findings

Dataset 2012 – 2016

- 2730 ewes (Scottish Blackface and Lleyn) in similar grazing systems were weighed regularly (Nov., Feb., June, August) over 4 years using an EID weighcrate
- Weaning weight (in August) of the ewes was a good predictor of their subsequent fate.

Dataset 2017-2020

- 2532 ewes (Scottish Blackface and Lleyn) in 2 different grazing systems were weighed regularly (Nov., Feb., June, August, Oct.) over 4 years using an EID weighcrate
- Stockdraw weight (in October) of the ewes, as well as their age, was a good predictor of their subsequent fate.



Conclusions

- Weighing ewes regularly can help predict their subsequent fate.
- Monitoring individual ewe weight at weaning and stockdraw (August and October) is useful to assess future performance.
- EID weighcrate is a useful on-farm technology tool that can help farmers monitoring animal performance, efficiency and welfare.

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Introduction

The use of EID-linked technologies for on-farm sheep management is still underdeveloped, despite recent advances and demonstration activities carried out by SRUC on their upland sheep research and demonstration farms. Recent farmer surveys (e.g., SheepNet; Sm@RT, DiGiRangeland) identified a desire from the industry to use Precision Livestock Farming solutions (especially automatic weighing using EID) for better production, health and welfare management. Animal weights could be useful indicators for welfare and survival in ewes, especially in extensive systems (Morgan-Davies et al., 2024; Dwyer et al., 2026). It is therefore important to understand how integrating individual ewe weight data could help assess ewe survival, highlighting potential benefits of using EID technology in Scottish sheep farming systems.

What was the aim of the study?

To see if monitoring ewe weight at certain key points in the sheep year can help predict their survival

Methods

In previous studies carried out at the SRUC Kirkton & Auchtertyre farms, ewe weights were collected using an EID weigh-crate at pre-mating (November), scanning (February), 8 weeks post-lambing (June), weaning (August) and stockdraw (October). The fate of the ewes (dead or alive) was also recorded at stockdraw. Over 4600 ewes (aged 2 years and more) were recorded between 2012 and 2020 (411 in 2012, 820 in 2013, 890 in 2014, 609 in 2015, 584 in 2017, 619 in 2018, 656 in 2019, 673 in 2020). The ewes were a mix of Scottish Blackface and Lleyn. Between 2012 and 2016, ewes were split in 2 management systems: one conventional, and one using PLF technology at handling. Between 2017 and 2020, ewes were split in 2 grazing management systems: one HILL, where ewes spent most of the year on hill or rough ground, and one PARK, where ewes spent most of the year on inbye land.

A General Linear Mixed Model (GLMM) using a binomial logit function was used to analyse the ewe fate data. Two analyses were carried out: one for 2012-2016, the other for 2017-2020.

Results

- For 2012-2016, the ewe weaning weight ($p=0.050$) could explain ewe survival
- For 2017-2020, the ewe weight at stockdraw ($p=0.038$) could explain the ewe survival, and the age of the ewe ($p=0.06$) tended to also explain ewe survival

Conclusion

These results based on a large dataset showed that monitoring ewe weights at weaning (in August) and at stockdraw (in October) are the most efficient times to be able to predict the subsequent survival of the animal. Using EID weighcrate allows to collect individual weight data and identify any animal not reaching their target weight, or losing weight, at these 2 crucial points.

Policy Implications

- Providing support to farmers to acquire EID technologies (such as an EID weigh crate) can help them make informed decisions based on reliable individual animal data.
- Providing training to farmers on how to use data collected can also enable them to make the best husbandry decisions to ensure flock welfare and better efficiency.

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