



## Breeding Easier-Managed Sheep

### Background

- Labour costs dictate that often more than 1000 sheep are looked after per shepherd.
- Appropriate management and handling practices can lead to reductions in labour use.
- The use of suitable genotypes for easy care sheep systems is often overlooked.
- Differences between breeds are known to exist in key traits important for easier management.
- New breeding tools are required to facilitate within-breed selection for traits that confer greater efficiency and easier sheep management.

### Research at SAC

A major part of handling sheep is associated with disease control, for example footbathing and paring feet for the control of footrot, and dagging dirty sheep and dosing with anthelmintics for the control of internal parasites (worms). Current research in the Sustainable Livestock Systems Group (SLS) at SAC is involved with the identification of resistant and susceptible animals to these diseases.

### Breeding for resistance to footrot

This project aims to find the 'best' Way to breed sheep that are more resistant to footrot. Using state-of-the-art genetic information from DNA samples combined with pedigree information and on-farm footrot scores, practical breeding solutions to avoid breeding footrot-susceptible sheep will be delivered.

**In collaboration with:** The university of Lincoln, NZ, university of Melbourne, Australia, Roslin Institute, ADAS, IRS (Aberystwyth), Texel Sheep Society, Blackface Sire Reference Scheme, MLC, Innovis

**Funded by:** LINK – (Defra, SEERAD, QMS, EBLEX, HCC)

### Breeding for resistance to nematodes

Having sheep that are more resistant to internal parasites is an important goal for sustainable sheep production. This project aims to quantify genetic resistance in Scottish Blackface sheep using two key genetic markers which are known to be important for resistance in other sheep populations. It will also determine the cost-effectiveness of

using faecal egg count (FEC) as an indicator trait for resistance to nematodes.

**In collaboration with:** Glasgow University

**Funded by:** QMS

### Breeding for resistance to mastitis

For some sheep breeds, mastitis is a major reason for premature culling of breeding females. The costs incurred are high from treating mastitic ewes, poorer performance in their lambs and having high replacement rates. This project reviewed the genetics of mastitis in sheep and cattle with a view to combining molecular information with on-farm recording, to breed more resistant sheep to mastitis. In addition, using modelling techniques to estimate the economic impact of mastitis, it was estimated to reduce gross margins by 6%, or £11 per ewe at risk.

**In collaboration with:** The Texel Sheep Society

**Funded by:** Genesis Faraday

### Defining new traits for easier-managed sheep

The high cost of labour to manage sheep flocks in the UK is reflected in the surge in interest in traits that help to minimise labour use. These may be behavioural characteristics, lambing difficulties and fleece shedding. The project has reviewed key traits that are important for breeding easier-managed and more-efficient sheep systems. In collaboration with industry, the results will be used to focus on traits that potentially, can be used *via* structured breeding programmes using BLUP breeding values.

**In collaboration with:** Sheep Easy Breeders Group

**Funded by:** Genesis Faraday

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