The Hill BETTER Farm Sheep Programme: Messages To-Date

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In hill flocks the potential to improve output is often more limited than on lowland farms given the environmental constraints within which they operate. Nevertheless significant capacity to improve these systems exists. Currently, there are 3 hill flocks involved in the BETTER Farm Programme in counties Donegal, Sligo and Mayo. Each of these farms is working on a programme to improve output and profitability from their hill sheep enterprises. This article will highlight a number of the key issues and changes on the farms.

Flock size and replacement policy

On hill farms changing flock size is often not an option, particularly on farms which include access to commonage. Furthermore, the capacity of many hills to provide additional feed resources during the winter period is limited thus hindering flock expansion. Within these constraints a plan was developed for each of the 3 hill farms to maximise the number of breeding ewes allowing for sufficient replacements. Similar to the Lowland Flocks in the BETTER Farm Programme, an inconsistent replacement policy was also evident on the hill farms at the start of the project. This was probably the result of factors; sales of potential female replacements in response to good market conditions, insufficient ewes mated with purebred rams etc. The consequence of this is a highly unstable production pattern which over the course of a few years will ultimately impact flock profitability. For a hill flock a target annual replacement rate is generally slightly higher than in a lowland flock as a result of higher culling practices and higher natural wastage. A replacement rate of 24% is generally sufficient to maintain a stable flock size and structure. This was the basis for a breeding plan in the hill flocks. The number of ewes required to meet this target is influenced by flock prolificacy and this is shown in Table 1. Having provided for flock replacements an opportunity was identified to increase the output from the flock by producing crossbred lambs that can be used either for slaughter/store trade or as prolific replacement females for the lowland sector. This was an area that was not being exploited to its potential within these flocks.

Importance of Ewe Weight

Improvements in ewe weight and body condition score at joining is known to improve the potential litter size and will also have beneficial effects on the proportion lambing. This is especially true for

Scottish Blackface ewes which are particularly responsive to improvements in body weight at joining, more so than in lowland breeds as outlined in (Figure 1).

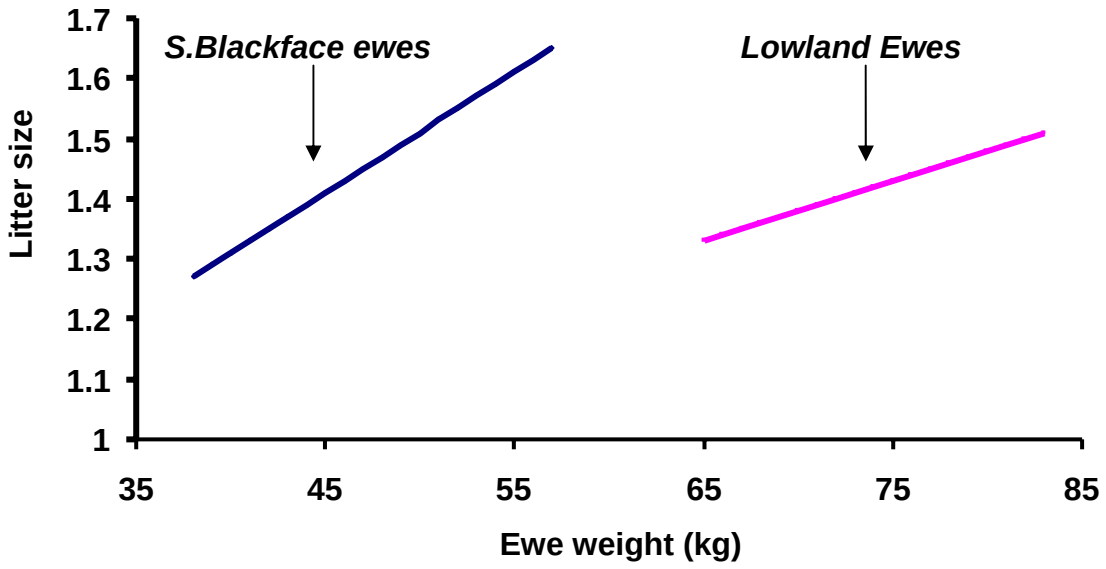

Figure 1. Relationship between ewe liveweight at joining and subsequent litter size for S.Blackface and Lowland ewes

Improving ewe weight and body condition score at mating will improve litter size and the proportion lambing the following spring

As a breed substitution is not a viable option, hill flocks have to rely solely on improvements in weight and condition to increase litter size. The 3 hill flocks involved in the BETTER Farm programme have enclosed areas of semi-improved grazing. There is potential to use these areas strategically to build up a reserve of feed during the early autumn period, which can be used to improve ewe weight and condition at joining. This will improve both ewe prolificacy and the proportion of ewes lambing the following spring, consequently the potential to produce more cross

bred lambs. An increase in litter size of 0.2 would allow for 12% more ewes to be joined with crossing rams.

Table 1. Influence of number lambs reared per ewe joined on the percentage of ewes required to produce purebred replacements ~ Hill Flocks

Number of lambs reared per ewe joined	Percentage of ewes required For pure breeding
0.8	68.8
0.85	64.7
0.9	61.1
0.95	57.9
1.0	55.0

Increased ewe output is a prerequisite to improve profitability from Hill Flocks

Ram Management at Mating

Another issue that was highlighted on the BETTER Farms was problems surrounding the management of rams during the mating period. These included problems of ram infertility and or sub-fertility. The risk of ewes being mated by a sub-fertile/infertile ram can be minimised by

exposing them to more than one ram during the mating period. If using single-sire mating (i.e. an individual ram with a batch of ewes) is practiced it should only be continued for a limited period (e.g. 17 days or so), after which group mating should be used. Similar problems can occur where group mating is used and where the dominant ram is sub-fertile or infertile. Having rams raddled during the mating period and changing colours at appropriate intervals to provide early warning of potential fertility problems is highly recommended.

Increased Productivity To-date

By taking a proactive approach to the management of the flock prior to and during the mating period, benefits for the 3 hill flocks involved in the programme have begun to emerge (Table 2). The target for these flocks is to increase the number of lambs weaned per ewe joined to over 1, and achieve this on an annual basis.

Table 2. Ewe Performance in BETTER Farm hill flocks

	Year		
	1	**2**	**3**
Litter size	1.18	1.29	1.32
Percentage of ewes lambed	88.2	79.5	95.9
Lambs weaned per ewe joined	0.96	0.92	1.10

Key Messages To-Date

- Increased ewe output is a prerequisite to improve profitability from Hill flocks
- There is potential to increase lambs weaned per ewe joined to be above 1.0
- Improving ewe weight at joining impacts on both subsequent litter size and the proportion of ewes lambed
- Management of rams at mating should avoid over-reliance on single sire mating.

Increasing lambs weaned per ewe joined can potentially increasing the proportion of crossbred lambs produced – hence output per ewe.