

## **The Lowland BETTER Farm Sheep Programme: Messages to-date**

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There is great scope on many sheep farms to improve their profitability by adopting relevant technology. However, for this to happen the sheep enterprise must be treated as a business. Furthermore, there must be a willingness to make the relevant changes needed to improve flock productivity and thereby the profitability of the sheep enterprise. The Better Farm Programme for sheep was established in 2008 to provide a forum where technologies developed from the sheep research programme at Athenry and elsewhere could be demonstrated and their benefits quantified on commercial farms. These farms were chosen to provide focal points for the on-farm implementation, development and evaluation of technologies that are relevant to the sheep sector. By doing this the farms and these farmers would be used as a resource to drive wider adoption of technologies in the sheep sector. The focus of this article is to outline some of the key changes made on the 4 lowland flocks in counties Donegal, Roscommon, Wicklow and Kerry currently involved in the BETTER Farm programme.

### **Prolificacy**

In lowland systems the number of lambs weaned per hectare is a major determinant of flock profitability. This is a combination of the number of lambs weaned per ewe joined and stocking rate. The target set for each of the farms is to produce over 1.6 lambs reared per ewe joined which would place them in the top 10 % of flocks nationally. The number of lambs weaned per ewe joined is a combination of litter size, percent ewes lambing and total lamb survival. Of these litter size is the key trait as it sets the upper limit for the number of lambs reared per ewe joined. The progress to date on the farms is summarised in Table 1. At the start of the programme an inventory of ewe breed and age profile was recorded. A total 3 to 6 ewe breed types were present on each farm. This would suggest that the replacements were a largely a by product of the lamb crop as opposed to a product of a defined breeding policy. Clearly, this indicated the lack of emphasis placed on the choice of ewe breed which was evident in the moderate number of lambs weaned per ewe joined in the first year of the programme (Table 1.). Litter size, % ewes lambing and lambs weaned per ewe have consistently increased in each of the 3 years.

Typically, in a flock the 2-tooth ewes would amount to approximately 23% of the ewes available. Initially for the BETTER Farm flocks the level of replacements introduced to the flock for varied

from 11 to 25 %. Part of the plan for these flocks was to produce all replacements using prolific, predominantly Belclare, sires with the resultant progeny having the capacity to deliver litter size of 1.9 or greater.



**Results to-date shows that high lamb performance can be achieved of grass.**

**Table 1. Average lowland flock performance to date**

	Year		
	1	2	3
Litter size	1.71	1.77	1.85
Percentage of ewes lambed	90.2	93.8	95.5
Lambs weaned per ewe joined	1.38	1.5	1.63

The number of ewes required to produce replacements depends on the flock productivity, the more prolific the flock the less ewes need to be mated with maternal rams. The percentage of ewes required to produce ewe replacements allowing for 5 to 10 % of the ewe lambs produced to be discarded is presented in (Table 2).

**Table 2. Influence of number lambs reared per ewe joined on the percentage of ewes required to produce replacements**

Number of lambs reared per ewe joined	Percentage of ewes required to produce ewe replacements
1.1	46.4
1.3	39.2
1.5	34.0
1.7	30.0
1.9	26.8

## Stocking rate and Flock Size

The second component of lamb output per hectare is the number of lambs weaned per ewe joined. Stocking rate is particularly important where the land base is limited. At the start of the programme the 4 lowland BETTER Farm flocks sizes ranged from 60 to 330 ewes with stocking rates ranging from 7 to 10 ewes per hectare. The potential stocking rate on a farm will depend on the level of management, land quality and facilities available. The objective on these farms was to increase flock size and thereby stocking rate. By the end of Year 3 the stocking rate on the farms will be between 10 to 13 ewes per hectare.

## Grassland Management

Grazed grass represents the cheapest source of feed in a sheep system. However, on most sheep farms it is not exploited to its full potential. One of the initial observations on the BETTER Farms was the lack of grass availability at turnout in spring. This was largely as a result of the lack of a winter management policy with fields grazed into early January on some farms and with others fields not closed. For each farm a schedule of closing of fields starting in autumn was agreed to ensure sufficient grass was availability in spring. An example of the impact of this along with addressing soil fertility problems that may have been present has had on grass availability on one of the farms is presented in Figure 1. On another farm where there was insufficient housing for all the flock and an extended grazing plan was agreed and operated for stock that met their dietary demands.

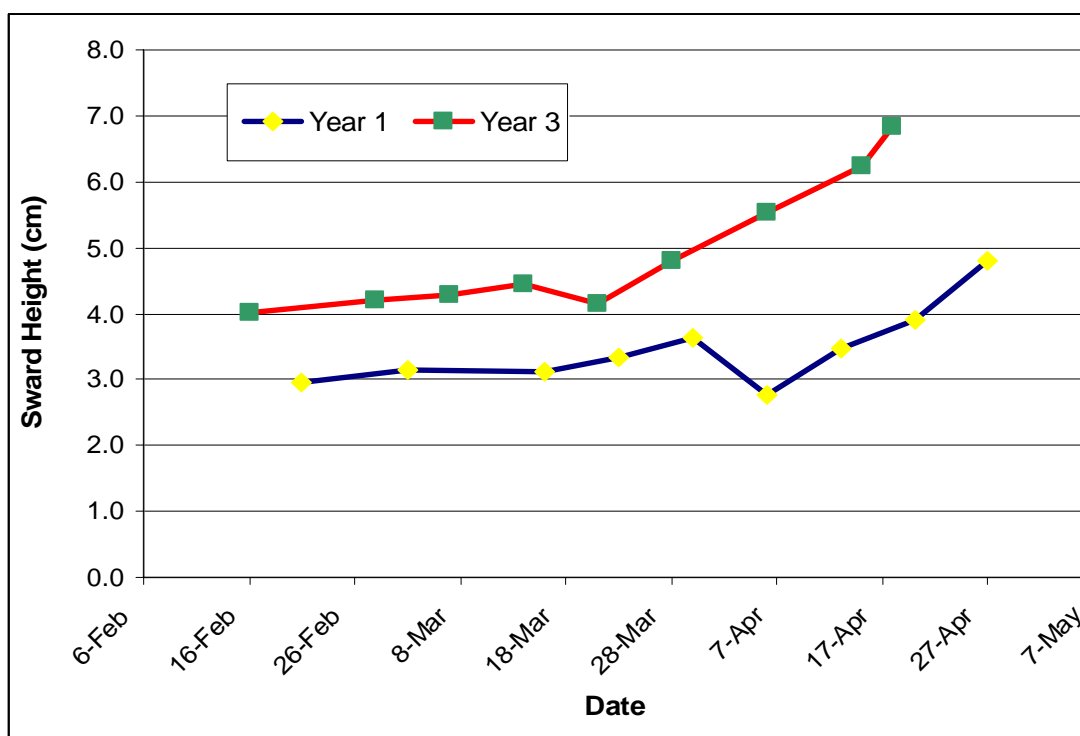


Figure 1. Average sward height following turnout on the 1<sup>st</sup> and 3<sup>rd</sup> year of the programme.

For some of the farms over reliance on concentrate feed to finish lambs was negatively impacting on the overall profitability of the system. The aim for the farms is to maximise the performance of lambs from a grass only diet. By the 3<sup>rd</sup> year of the programme 3 of the 4 farms have ceased feeding concentrates to lambs at grass (excluding triplets and those from yearlings ewes) whilst the fourth farm is limiting the amount of supplementation used.

### **Division of Fields**

One of the changes made on the farms to facilitate good grassland management was the division of fields into manageable grazing areas. On some of the farms field sizes were as large as 8 ha which was not conducive to effective rotational grazing and management of grass. The smaller field sizes and increased number of paddocks allows for efficient grassland management. Additionally, where supply exceeds demand the extra paddocks allow the farmers to remove them for as silage production, thus maintaining grass quality in the grazing system.



**John Curley inspecting his ewe flock in Co. Roscommon. Note the use of electric fence to control the grazing.**

### **Post weaning Lambs Performance**

One area of concern was the level of lamb performance post weaning, with growth rates of 100 to 120 g/day being recorded on a number the farms whilst others were achieving > 170 g/day. This is well below the 200 plus g/day target being achieved in the flocks in Athenry. Clearly, there is

potential to improve lamb performance during the post weaning period, this will be a continued focus of efforts on these farms.

### Gastrointestinal Parasite Control

The control of gastrointestinal parasites in Irish sheep flock is largely dependent on effective anthelmintic treatment. Each of the farms treats lambs for nematodirus at 5 to 6 weeks of age with either a levamisole or a benzimidazole based product. From 10 weeks of age onwards faecal samples are collected for faecal egg counts using FECPAK analysis. This period coincides with increased parasite challenge (*Teladorsagia* and *Trichostrongylus* spp.), which have negative impacts on lamb performance. Lambs are treated based on the faecal egg counts analysis. A serious issue facing sheep farmers is anthelmintic resistance. The farms involved in this programme have exhibited resistance to both benzimidazole and levamisole based products (Table 3).

**Table 3. Incidence of resistance to anthelmintics on 3 of the farms**

	Product group		
	Macrocylic lactone	Levamisole	Benzimidazole
Farm 1	No	No	Yes
Farm 2	No	Yes	Yes
Farm 3	No	Yes	Yes

Good et al. 2011

Continuing dosing with ineffective products represents a cost both in terms of possible reduced lamb performance and product cost.

### Key Messages to Date

- Ewe productivity is the key to flock profitability. There is a need for defined and consistently applied policy to produce quality prolific replacements.
- There is significant potential to increase stocking rate while simultaneously maintaining and or improving the level of lamb performance.
- Good grassland management can result in high levels of lamb performance in the absence of concentrate supplementation
- Anthelmintic resistance has been identified on the BETTER farms and it is likely to be an issue on many sheep farms throughout the country. Need to establish the anthelmintic status of your farm