Beef and Sheep **Bulletin**

cafre
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Coping with a fodder shortage on beef and sheep farms

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Introduction

Due to adverse weather conditions during the previous two grass growing seasons and a late spring this year, there will be a large variation in the quantity and quality of silage available on many beef and sheep farms this winter. This bulletin has been compiled to help farmers to make the right decisions as they plan the feeding strategies for their livestock this year.

Step 1. Calculate available silage stocks

The quantity of silage available on the farm can be estimated by multiplying the length by width by average height of silage in metres. The number of tonnes can then be calculated using the conversion factors in Table 1. An on-line calculator can assist with this - http://eservices.ruralni.gov.uk/onlineservices/Tools/Beef/silovol.asp. Silage should be analysed to determine its dry matter content and quality. There is always a wide range in quality of silages analysed but there tends to be more lower quality silages after a poor harvesting season.

Table 1. Conversion factors to convert silage volume to tonnes of silage

Silage dry matter content %	Conversion (volume in m³ to tonnes of fresh silage)
18	Multiply by 0.81
20	Multiply by 0.77
25	Multiply by 0.68
30	Multiply by 0.60
35	Multiply by 0.53

Worked example:

1: Calculate the volume

e.g., the silage in a silo measures 28m long x 10m wide x 2.4m deep = 672m³

2: Select conversion factor

Silage is 25% DM so, from Table 2, conversion factor is 0.68

3: Calculate fresh weight

Multiply 672m³ x 0.68 = 457 tonnes of fresh silage.

Step 2. Assessing silage requirements

Estimate just how scarce silage stocks are likely to be on the farm by using the information in Table 2. Total silage requirements can be calculated by multiplying the silage requirement per animal (tonnes/month) x number of animals x estimated remaining months of housing period for each group of stock on the farm. It is advisable to be generous with the number of months of housing. These initial estimates will provide an indication on how dramatic the changes to diet and feeding levels may need to be on the farm.

Estimates should then be refined using the Hillsborough Feeding Information System.

Table 2. Estimated monthly fodder requirements

	Silage kg fresh/day	Silage (tonnes/month)
Spring calving suckler cows	33	1.0
500kg finisher/ in-calf heifer	30	0.9
300kg store	26	0.8
Lowland ewe	4.5	0.05

One basic rule is that at least 35 – 40% of the total diet of cows/dry stock should be long fibre in the form of forage (silage/straw).

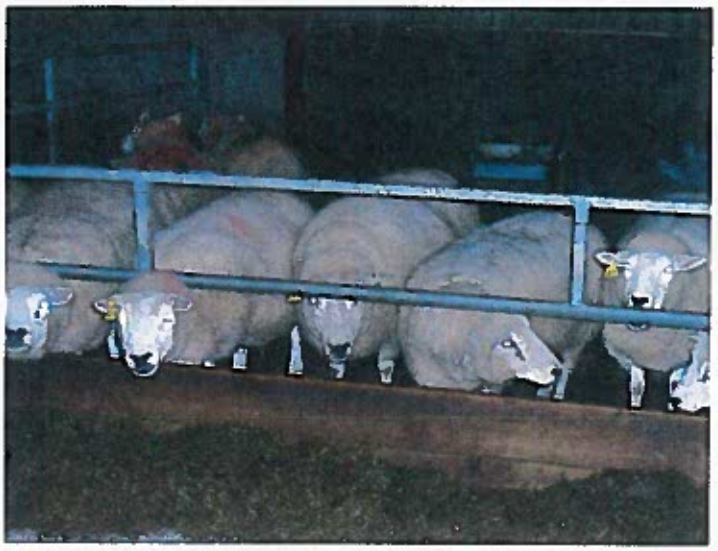
Step 3. Options to best manage fodder stocks

The priority is to maximise the economic return from winter feeding.

- Firstly **reduce forage requirements by culling unproductive animals** such as barren, poor performing or problem cows/ewes. Then consider selling growing animals and only as a last resort sell productive breeding females as your future income is dependent on these animals.
- **Maximise the benefits of good quality silage** by offering it to stock with the highest growth potential, namely young growing animals or to pregnant ewes.
- It may be possible to **restrict silage intakes** to dry cows or those in late lactation with a body condition score above 3, but only do this based on credible information obtained through systems such as the Hillsborough Feeding Information System.
- **Offer high levels of concentrates to finishing stock** to increase the rate of finish. It may be more economical to buy concentrates rather than expensive silage of unknown feeding quality. Table 3 indicates the value of different feeds relative to dried rolled barley at £225/ tonne and soya at £435/tonne[1]. Any feeds which can be purchased at a lower price than their relative value represent good value.

Table 3. Relative feed values of a range of ingredients[2] all on a fresh or as fed basis[4]

Ingredient	£ / Tonne[3]
Barley	225
Soya	435
Good silage[5]	74
Average silage[5]	56
Poor silage [5]	46
Maize silage	61
Barley straw	98
Alternative Feeds	
Brewers Grains	74
Trafford Gold	140
Vitagold	145
Soya hulls	219
Citrus pulp	193
Sugar beet pulp	210
Maize meal	281
Rapeseed	366



- **Purchase alternative feeds** such as maize silage, fermented whole crop wheat, brewers' grains or similar products. These can partially or completely replace grass silage in the diet, but care should be taken when formulating the complementary ration to alternative feeds as, for example, maize silage and whole crop have low crude protein contents. Brewers' grains can be fed to cattle at a rate of 7 – 10kg fresh weight per day. As with most lower dry matter bulky feeds it is important to minimise wastage and losses or it may be more economical to feed concentrates or straights.

- **Some straights can be used as a forage substitute** because they have a chemical analysis on a dry matter basis that is similar to average quality silage. Such ingredients include soya hulls fed to a spring calving suckler cow could save approximately 4-5kg of average silage per day. It is important to ensure that cows have adequate feeding space (0.7m/head) so that all cows receive their allocation of concentrate and also to manage condition score. Shy feeders or fatter cows may have to be batched and managed separately.

- Where **ewes are housed pre-lambing** they are typically offered ad lib silage and concentrates at levels outlined in Table 4 or concentrates at a flat rate of 0.4kg/day for the last 6-8 weeks of pregnancy.

(1) Spot market prices correct at time of writing June 2013

(2) It should be noted that ruminants require some long roughage in the diet, whether or not it appears to be good value for money.

(3) The values in this table are NOT market values, they simply reflect the value of each unit of energy and protein determined from the reference feeds (barley and soya). These relative values will change daily with changes in the spot market prices.

(4) When purchasing feeds or comparing analyses, care should be taken to determine how values are presented, either on a fresh or as fed basis (which includes water content) or dry matter basis (which does not include water). For example a silage which has a dry matter content of 25% may have a crude protein content of 12% on a dry matter basis which is equivalent to 3% on a fresh basis. Protein contents of compound feeds will be quoted on a fresh basis but alternative feeds may be quoted on a dry matter basis or both – buyer beware!

(5) Round bale silage is usually purchased by the bale rather than by weight. The value of a bale is highly dependent on the dry matter content and the chop length of the silage. A well chopped bale may be 150kg heavier than an equivalent unchopped bale but both the presence and efficiency of choppers vary considerably between contractors, another case of buyer beware.

Table 4. Concentrate required (kg/d) for a crossbred ewe offered precision chop silage (10.8 ME, 14% CP)

	Weeks prior to lambing			
Number of lambs expected	6-8 weeks	4-6 weeks	2-4 weeks	0-2 weeks
1	-	-	-	0.3
2	-	0.2	0.3	0.6
3	-	0.2	0.5	0.9

- However where silage is scarce and the housing system allows **ewes can be offered straw ad lib and concentrates** at levels outlined in Table 5. Due to the low protein content of straw it is recommended that the concentrate offered has a crude protein content of 21% and also contains a good quality protein source such as soya. Extreme care must be taken to avoid acidosis at these high feed levels by not using over-processed grain, offering feed twice daily and ensuring ewes never run out of straw or fresh water.

Table 5. Concentrate requirements (kg/d) for a crossbred ewe offered straw

	Weeks prior to lambing			
Number of lambs expected	6-8 weeks	4-6 weeks	2-4 weeks	0-2 weeks
1	0.6	0.7	0.8	1.0
2	0.7	0.85	1.1	1.4
3	0.8	0.9	1.2	1.5

PLEASE NOTE: All figures and prices correct at time of printing.

Useful Contacts

Hillsborough Feeding Information System Tel: (028) 9268 1580

CAFRE Development Advisers are based in the DARD offices listed below and can be contacted on **Tel: 0300 2007843**

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	Coleraine
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