Winter Feed Budgeting Guide

This guide will take you through the steps to create a feed budget for your livestock this winter:

Step 1 - Calculate Livestock Demand

For each stock class on farm complete the following steps to calculate the total feed (tonnes Dry Matter) required per day for each stock class on farm:

Stock Class	Average Number for Period	Average Weight for Period (kg)	Average Demand (%BW) (See table on page 3)	Demand per Hd (kgDM/day)	Total Demand for Group (kgDM/day)	Number of Days	Total Demand for Period (tDM)
A	**B**	**C**	**D**	**E = C * D**	**F = E * B**	**G**	**H = (F*G) ÷ 1000**
Ewes - Post Tupping to Scanning	400	65	2%	1.3	520	60	31.2
In-Calf Suckler Cows	40	700	1.8%	12.6	500	120	60
Repeat for all groups on farm							
Total demand of all groups on farm (tDM/day)					***1020kgDM/day (Total of Column F)***		***91.2tDM (Total of Column H)***

Note – for %BW see animal demand table below

Animal Demand Table	
Ewes - * includes lambs up to 100 days of age	% of Body Weight (Average for Group) (kg)
Dry Ewe- Maintenance	1.5%
Dry Ewe - Maintenance + BCS Gain	2.0%
Ewe (single) 30 Days Pre Lambing	2.5%
Ewe (single) 0-1 month Post Lambing	2.5%
Ewe (single) >1 Month Post Lambing to Weaning	3.0%
Ewe (twins) 30 Days Pre Lambing	2.5%
Ewe (twins) 0-1 month Post Lambing	3.5%
Ewe (twins) >1 Month Post Lambing to Weaning	4.0%
Weaned Lambs	
Maintenance	1.5%
Maintenance + 50g DLWG	2.0%
Maintenance + 150g DLWG	2.5%
Maintenance + >150g DLWG	3.0%
Suckler Cow - * includes calve up to 200 days of age	
Dry - Maintenance	1.5%
Dry - Maintenance + BCS Gain	1.8%
30 Days Pre Calving	2.0%
0-2 months Post Calving	2.5%
3-4 months Post Calving	3.0%
>4 Months Post Calving to Weaning*	3.5%
Growing Cattle	
Maintenance	1.5%
Maintenance + 0.5kg DLWG	2.0%
Maintenance + 1kg DLWG	2.5%
Maintenance + >1kg DLWG	3.0%

Dairy Cow	
Maintenance (Dry)	1.50%
Lactation (0-100 Days)	4%
Lactation (+100 Days)	3.50%

Step 2 - Calculate the amount of winter forage on farm

For each type of forage or feed on farm complete the following steps to calculate the total feed (tonnes Dry Matter) available. Utilisation – how much the animals eat compared to what was available varies depending on the forage type and method of feeding. Typical range is 90-75%.

Forage, particularly silages should be analysed for %DM, energy and protein to help improve the accuracy of the budget.

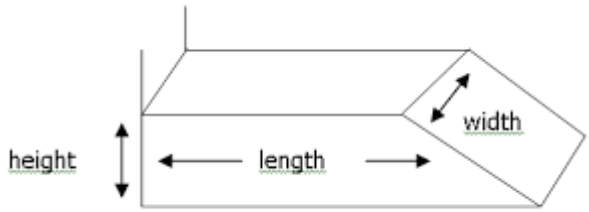
Some initial work is required before completing the budget:

Bales

- Weigh a sample of bales to get the average fresh weight per bale. Repeat for each cut or type of bale made.
- As a guide a 4ft round bale of silage at 40% dry matter is typically 600kg.

Camp Silage

- Measure the volume of the clamp - where there is a ramp at the front measure the length from halfway down as shown below.
- Volume (m3) = Length x Width x Height.



Reference: http://www.qpfeeds.co.uk/archive/silage_stocks.htm

- To calculate the amount of silage, use the table below to select the correct density:
- Silage (kgDM) = Volume of silage (m3) x Silage Density (kgDM/m3)
- Convert to tonnes DM by dividing by 1000.
- Silage (tDM) = kgDM / 1000

	Maize (KgDM/m³)			Grass Silage (KgDM/m³)		
	Clamp height (m)			Clamp height (m)		
%DM	2	3	4	1.5	2	2.5
20	155	175	190	-	-	-
25	170	195	210	185	195	200
30	185	205	220	205	215	225
35	200	220	235	215	230	245

Reference: https://uk.ecosyl.com/toolkit/clamp-stock-levels/how-we-calculated-clamp-stock-levels

Forage Crops

- Use the reference yields provide in the table below.
- If crops are sown – review germination and plant density and use this information to adjust the suggested yields accordingly.
- *Note to convert Acres to Hectares divide the area in acres by 2.47.*

Forage Crop	Estimated Yield (tDM/ha)
Forage Rape	3-5
Fodder Beet	20-25
Kale	7-10
Grazing Turnips	3-5
Swedes	7-10

Reference:
https://projectblue.blob.core.windows.net/media/Default/Beef%20&%20Lamb/BrassicaManual_updated_201005_WEB.pdf

Step 3 – Calculate Total Feed Supply

- Use the table below to calculate total forage on farm.

Forage	Quantity	Average Weight (kgFW)	DM%	kgDM/bale or tDM/ha	Total Feed (tDM)
	A	B	C	D = B*C	E = (A*D)/1000
Silage Bale	50	600	40%	240kgDM/bale	12
Clamp Silage					40
Forage Rape	4ha			4tDM/ha	16
Total					**68**

Step 4 – Review the Budget

- Compare the total demand and total supply – does the farm have a surplus or deficit?
- Compare the demand for each group of animals to the different feeds available – is there a good match of forage quality to animal demand?

In this example the demand from livestock is 91tDM, the supply on farm is estimated at 68tDM – therefore there is a deficit of 21tDM.

- The farmer was planning to feed the ewes on the forage rape – due to low estimated yield they will also need to feed the 50 bales of silage to make up the difference.
- The suckler cows will be housed and therefore fed the clamp silage however this is only 40tDM against demand of 60tDM
- 20tDM needs to be found – for in-calf cows it can be forage of an average quality.

Step 5 – Take Action if Needed

In this case the farmer will need to plan how to fill the deficit either by:

- Harvesting more forage (silage, hay or wholecrop)
- Buying forage
- Wintering less cows or sheep

Additional actions to consider are:

- Rotational grazing to promote more pasture growth into autumn to extend grazing season reduce need for conserved forage.
- Sell other animals – I.e., cattle or lambs as stores rather than finishing
- Sow a short-term winter brassica or forage mix on arable land
- Secure tack or B&B for animals
- Buy in forage (hay/silage/straw)
- Consider feeding concentrate/grain or increase amount fed