

A Guide to Feed Budgeting



Scotland's Farm Advisory Service

The Farm Advisory Service (FAS) is funded by the EU and Scottish Government to help farmers and crofters to increase the profitability and sustainability of their businesses.

Introduction

Forward planning forage supplies helps understand whether you will have enough conserved forage to meet the livestock demand – this is becoming more critical as weather is fluctuating more from the seasonal norms. SAC Consulting have produced this booklet on behalf of FAS to provide a few options that may help. These simple clear messages can then be adapted for an individual circumstance. Contact the FAS advice line or your local consultant to discuss further, contact details are on the back cover.

Know the Starting Point-Feed Budgeting

A key part of planning is to know how much feed is available and roughly how much you need. The following pages present tables showing the number of animal feeding days supplied by either one 700kg bale of silage or one cubic metre of pit silage for the main beef, sheep and dairy enterprises. The number of animal feed days will depend on how wet the silage is, i.e. its dry matter (DM), and its energy content, measured as metabolisable energy (ME). So to utilise this information you need –

- Your silage analysed to measure its dry matter and energy content, i.e. its feed value.
- To weigh some bales and/or measure the height x width x depth of your silage clamp.
- **The following tables are an early guide to whether you have enough forage – a farm specific plan should be carried out once the silage analysis is available.**

How Much Fodder is Needed?

SPRING CALVING BEEF COWS

Animal feed days per bale of silage or m³ of clamp silage

DM%	9.5ME		10.5ME	
	Bale	Clamp	Bale	Clamp
20	15	16	18	18
25	19	18	22	21
30	23	20	26	23
35	26	23	30	26
40	30	25	35	30

Assumptions: 650kg cow losing 0.25kg/d. 700kg bale for all dry matters. 10% wastage.

Examples:

- A 100 cow herd housed for 120 days is 12,000 cow days. The bale silage is 35% drymatter and 9.5ME so one bale provides 26 cows feed for a day. Requirement would be 461 bales.

$$\frac{12,000 \div}{26 \text{ cows/bale}} = 461 \text{ bales}$$

- A 200 cow herd housed for 150 days is 30,000 cow days. The pit silage is 20% dry matter and 10.5ME so provides 18 cows feed for a day per m³. Requirement would be 1667m³ of silage.

Notes:

- Condition score and weight of the cows will affect the amount to be fed.
- As a guide – if you add straw into the ration, containing average grass silage, for every 1kg of straw added take out 3kg of silage.
- Be aware of low protein levels in the diet particularly if feeding straw with silage – this can have serious consequences, so seek advice.



AUTUMN CALVING BEEF COWS

Animal feed days per bale of silage or m³ of clamp silage

DM%	9.5 ME		10.5 ME	
	Bale	Clamp	Bale	Clamp
20	11	12	10	11
25	13	13	13	13
30	16	15	16	15
35	21	17	19	17
40	22	19	21	19
Concentrates kg/day	2.3		1.1	

Assumptions: 650kg cow with 8kg milk and losing 0.15kg/d. 700kg bale for all dry matters. 10% wastage.

Examples:

- A 100 cow herd inside for 120 days is 12,000 cow days. If their bale silage is 40% dry matter and 10.5ME one bale feeds 22 cows for a day. Requirement would be 545 bales.
- A 200 cow herd inside for 150 days is 30,000 cow days. If their pit silage is 25% dry matter and 10.5ME it will feed 13 cows for a day per m³. Requirement would be 2,307m³ of silage.

Notes:

- Silage requirement includes intake from calf at foot
- Condition and weight of the cows will affect the amount to be fed
- Be aware of low protein levels in the diet and supplement appropriately

STORE CATTLE

Animal feed days per bale of silage or m³ of clamp silage

DM%	9.5ME		10.5ME	
	Bale	Clamp	Bale	Clamp
20	32	33	29	30
25	41	38	36	34
30	51	42	43	38
35	57	49	50	43
40	66	56	59	50
Concentrate allowance kg/hd/day	3.8kg		2.9kg	

Assumptions: 350kg steer gaining 0.8kg/day. 700kg bale for all dry matter. 10% wastage.

Examples:

- 80 store cattle inside for 180 days is 14,400 animal days. If a bale of silage is 35% dry matter and has an energy content of 9.5ME then each bale will feed 57 stores for a day. This gives a total requirement of 253 bales.

- For 130 store cattle wintered for 150 days would be a total of 19,500 animal days. If the clamp silage is 25% dry matter with an energy content of 10.5ME each cubic meter would provide feed 34 stores for a day. This would give a total requirement of 575 cubic meters.

WARNING

- To avoid digestive upsets do not feed more than 0.5kg of concentrates/100 kg of liveweight/feed at any one time e.g. for 350kg steer a maximum of $350 \times 0.5 \div 100 = 1.75\text{kg/feed}$**

FINISHING CATTLE

Animal feed days per bale of silage or m³ of clamp silage

DM%	10.5ME		11.5ME	
	Bale	Clamp	Bale	Clamp
20	24	25	21	21
25	29	28	25	24
30	36	32	31	27
35	42	36	36	31
40	48	40	41	34
Concentrate allowance kg/hd/day	5.5		4.0	

Assumptions: 550kg steer gaining 1kg/day. 700kg bale for all dry matters. 10% wastage.

Examples:

- For 90 finishing cattle with a 150 day finishing period the total requirement would be 13,500 feed days. With bales at 40% dry matter and with an energy content of 10.5ME each bale would feed 48 animals for a day. This would give a total requirement of 280 bales.
- For 150 finishing cattle with an average 180 day finishing period the total requirement would be 27,000 feed days. Using pit silage at 25% dry matter and an energy value of 11.5ME each cubic meter would feed 24 animals for a day. This gives a total winter requirement of 1,125m cubic meters. With a clamp height of 2m high and a face 9m wide, 62.5m length would be needed to provide 1,125 cubic meters of silage.

WARNING

- To avoid digestive upsets do not feed more than 0.5kg of concentrates per 100kg of liveweight per feed at any one time.**



UPLAND EWES

Animal feed days per bale of silage or m³ of clamp silage

DM%	9.5ME		11.5ME	
	Bale	Clamp	Bale	Clamp
20	141	146	98	101
25	177	167	122	115
30	212	186	148	130
35	245	210	172	147
40	277	233	193	163
Concentrate allowance kg/hd/day	0.75		0.15	

Assumptions: 75kg ewe, no weight change. Carrying twin lambs, 3 weeks before lambing.
700kg bale for all dry matters. 10% Wastage.

Notes:

- If a hay based ration, assuming average hay of 8.5 MJ ME/kgDM and bales weighing 200kg:- one bale will feed roughly 200 lowland sheep for a day, at 3 weeks from lambing. Supplementation with a concentrate will be necessary (around 0.8kg/head/ day).

WARNING

- Feeding concentrates over 0.4-0.5kg/head/day should be fed in two feeds to avoid digestive upsets.**

HILL EWES

Animal feed days per bale of silage or m³ of clamp silage

DM%	9.5ME		11.5ME	
	Bale	Clamp	Bale	Clamp
20	177	183	125	129
25	219	207	155	146
30	265	233	187	164
35	303	260	219	188
40	354	298	255	215
Concentrate allowance kg/hd/day	0.5		0.1	

Assumptions: 60kg ewe, no weight change. Carrying a single lamb, 3 weeks before lambing.
700kg bales for all dry matters. 10% wastage.

Examples:

- For a 600 flock of hill ewes fed silage for 40 days the total number of ewe feeding days would be 24,000 feeding days. For 40% dry matter baled silage with an energy content of 9.5ME, one bale would feed 354 ewes for a day. This would give a total requirement of 68 bales for the winter.

Notes:

- If a hay based ration, assuming average hay of 8.5 MJ ME/kgDM and bales weighing 200kg:- one bale will feed roughly 260 hill ewes at 3 weeks from lambing. Supplementation with a concentrate will be necessary (around 0.5kg/head/day).

WARNING

- *Feeding concentrates over 0.4-0.5kg/day should be fed in two feeds to avoid digestive upsets.*

LACATATING AND DRY DAIRY COWS

As the majority of dairy cows are fed TMR we have used 3 different proportions of silage in the TMR.

Animal feed days per bale of silage or m³ of clamp silage

	8kg DM intake		10kg DM intake		12kg DM intake	
DM%	Bale	Clamp	Bale	Clamp	Bale	Clamp
20	15	17	12	14	10	11
25	19	19	15	15	13	13
30	23	21	18	16	15	14
35	27	22	22	17	18	15
40	31	23	25	18	21	15

Assumptions :700kg bales for all dry matters. 10% wastage.

Examples:

- A 150 cow herd inside for a 210 day winter is 31,500 cow days. If the pit silage is 30% DM and fed at 10kg DM/cow 1m³ should feed 16 cows for a day. This gives a total requirement of 1970m³.
- For 40 dry cows inside for a 210 day winter is 8,400 cow days. If the bale silage is 35% DM and fed at 8kg DM/cow each bale should feed 27 cows for a day. This gives a total requirement of 311 bales.

Notes:

Breed or weight of the cow and concentrate use will affect the amount of silage to be fed, as well as other forages available (wholecrop or maize silage). The same calculations apply to maize silage and wholecrop cereals as bulk densities will be similar. For young stock see store cattle section.





For more information contact:

Advice line

For free telephone advice on a wide variety of topics including cross compliance, water framework directive requirements, climate change and other technical issues call us on **0300 323 0161** or email **advice@fas.scot**. The advice line operates between 9am and 5pm Monday to Friday.

Bespoke Advice and Grants

FAS can also help you to increase the profitability and sustainability of your farming business through Scottish Government grants including Integrated Land Management Plans (ILMPs) – worth up to £1,200. The ILMP will identify opportunities and cost savings for your business, based on an independent and confidential assessment of your business by an experienced farm business adviser of your choosing. As part of your plan you can choose to benefit from up to two further specialist advice plans.

Online resource

Also, visit our online resource which contains articles, videos and much more at,

www.fas.scot/