Fodder and Finance Guide 2018/19

Teagasc
Agriculture and Food Development Authority

Introduction

As we face into the winter of 2018/2019, seven out of 10 farmers are short of feed to varying degrees across the country with the worst hit areas in the South and South East of the country. It is important that farmers establish the deficit on their own farm.

Doing this task with an advisor or consultant, can help relieve some of the stress associated with this situation and often a solution becomes obvious.

Aside from sourcing feed, other issues that need to be addressed include finances and maintaining cash flow, ensuring you have enough bedding where straw is in scarce supply and checking that there is adequate feeding space on the farm to facilitate restricting access to silage and feeding meals.

Even if you have enough feed for the winter, it's important to regularly re-assess what you have because no one knows what weather conditions will be like in the autumn or spring.

Teagasc advisors across the country are available to provide advice to farmers, clients and non-clients alike over the coming months. Please contact your local office if you need assistance.

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Fodder Plan Winter 2018 Requirements

Section 1. What Fodder is required on the Farm?

	A	B	C	
Animal Type	**No. of Stock to be kept over Winter**	**Number of Months (Include a 4-6 week *reserve)***	**Pit Silage Needed, tonnes / animal / month**	**Total Tonnes of Silage Needed Multiply (AxBxC)**
Dairy cows			1.6	
Suckler cows			1.4	
0-1 year old			0.7	
1-2 year old			1.3	
2+ year old			1.3	
Ewes			0.15	

Total tonnes needed **D** ____

Total bales needed (tonnes multiplied by 1.25) **E** ____

Section 2. Calculate the forage in the yard

i. Pit silage	Length x breadth x settled height metres ÷1.35 =	Silage in the pit (t)
		F

ii. Bales of silage	G	H	
	Number of bales	Yield / bale	Total yield (t) (GxH)
		0.8 t / bale	I

iii. Other forages	Bales or tonnes		Silage Equivalents (see table below) (t)
		Total Yield of Other Feeds	J

Converting other forages to silage equivalents	Silage Equivalents @25% DM (tonnes)
20 bales of hay (4x4)	Is equivalent to 16 tonnes fresh silage
20 bales straw (4x4)	Is equivalent to 10 tonnes fresh silage
20 tonnes fresh maize silage	Is equivalent to 24 tonnes fresh silage
20 tonnes fresh whole crop cereal silage	Is equivalent to 32 tonnes fresh silage
20 tonnes fresh forage crop (kale, rape, hybrid)	Is equivalent to 10 tonnes fresh silage

Section 3. Calculate the surplus / deficit

Total silage demand (D) minus total silage produced (F, I, J) = D-F-I-J		
% deficit= (deficit in tonnes ÷ total demand in tonnes) x 100		

Autumn Rotation Planner

The most important task any farmer will undertake over the next 2 months is to ensure that the farm is closed off properly to have an adequate supply of grass early next spring.

THE AUTUMN ROTATION PLANNER IS A TOOL

1 **to help keep grass in the diet of grazing animals for as long as possible**

2 **to set up paddocks for grazing the following spring**

The 60:40 plan is based on having proportions of the farm closed by certain dates. The target is to have 60% of the farm closed early.

Total Area of Your Farm _____ha:

60% of Total Area:____ha

40% of Total Area_____ha

Date	HEAVY FARM	DRY FARM
25 Sept	___ha	
2 Oct	___ha	
9 Oct	___ha	___ha
16 Oct	___ha	___ha
24 Oct	___ha	___ha
31 Oct	___ha	___ha
7 Nov	___ha	___ha
14 Nov	___ha	___ha
21 Nov		___ha

60%

40%

HEAVY FARMS: Start Closing by 25th September with 60% (or more) of the farm grazed off by Oct 31st

DRY FARMS: Start Closing by 9th October with 60% of the farm grazed off by Nov 7th

The target closing average farm cover is 550-600kgDM/ha (2.5 LU/ha). Farms with a higher stocking rate should close with a higher average farm cover.

Cash Flow

It is a measure of the movement of money in and out of the business. If the bank account is always in credit, the cash flow is positive. This is the ideal situation. Cash flow management is central to business success.

In good price years, it is important that cash flow is managed so as to build a cash reserve and to undertake necessary on-farm improvements. In poor price years, cash flow must be managed to ensure that all essential bills are paid (including living expenses) and that no long term damage is done to the business due to a cash shortage.

Creating a cash flow budget can appear a daunting task. The “cash flow exercises” in this document is an ideal way to start to improve you financial management. Remember that budgeting is not an exact science but that in most cases a ‘best estimate’ is better than ‘no estimate’.

List of all current debt as of today __/__/20__

	Loan Name/ Debtor	Current Amount Outstanding	Remaining Loan Term (years)	Current Interest Rate	Total Repayment per year	Payments due before Date _____
Term Loans (incl house mortgage)		€		%		€
		€		%	€	€
		€		%	€	€
		€		%		€
Overdraft & Stocking Loans		€		%	€	€
		€		%	€	€
		€		%	€	€
Merchant Co- Op Debt (+outstanding farm-to-farm debt)		€		%		€
		€		%		€
		€		%		€
		€		%		€
		€		%		€
Hire Purchase/ Finance		€		%	€	€
		€		%		€
TOTAL PAYMENTS (A)						€

Cash Flow Assessment (to end of year or next spring as appropriate)

Cash Out [to_____enter date]	Current Outstanding	From Today to to_____enter date	Total
Total Repayments From above (A)	€	€	€
Feed & Fertiliser		€	€
Contractor	€	€	€
Vet	€	€	€
Other Operating Expenses	€	€	€
Health Ins/ Policies (Pension etc.)	€	€	€
Tax	€	€	€
Living Expenses	€	€	€
TOTAL PAYMENTS		(B)	€
Cash In [to_____enter date]	Enter Date _____		
Farm Sales (milk + other Sales less Exp. not included above)		€	€
Direct Payments (BPS, GLAS, etc.)		€	€
Off Farm Income (Net)		€	€
Child Benefit, Pension, Farm Assist,		€	€
TOTAL NET INCOME AVAILABLE		(C)	€
BALANCE SURPLUS /DEFICIT (Deficit should not exceed available merchant credit and OD limit)		(C - B)	

For those farmers still short of feed:

1 Do a fodder budget now and establish the extent of your deficit.

2 Examine the options of buying forage, buying concentrate feeds, setting up for early turnout in spring and selling stock.

3 Don't ignore the risk of an early winter or a late spring. Build a reserve into your feed budget: a surplus of two bales of silage per livestock unit at the end of the winter is a valuable asset.

4 If cash flow is an issue, act now. Draw up a plan in conjunction with your Teagasc adviser, consultant or accountant, and don't be afraid to submit an application for money to your financial institution.

For those farmers who have just enough feed:

1 Don't ignore the risk of an early winter or a late spring: a surplus of two bales of silage per livestock unit at the end of the winter is a valuable asset.

2 Start your fodder management plan from day one of the housing period:

   a if you have planned on a short winter, stretch the silage – for example, if you've planned a four-month winter, budget to stretch the silage for a five-month winter;

   b use meals and other forages to stretch silage; and,

   c revise the fodder budget regularly throughout the winter.

   Be conservative in planning the length of the winter.

Planning for early turnout

Turning out stock in early spring will reduce the demand for feed over the winter:

1. Autumn grassland management has an impact on spring grass.
2. Close paddocks or fields in rotation from early October until Mid November.
3. This grass can be grazed, for example by weanlings where weight gains of over 1kg per day on grass alone is being achieved in spring.

Selling stock

Selling stock will reduce demand for winter feed:

1. Scan cows and sell empty cows that are in good condition before the winter.
2. Meal feed cattle that can be finished off grass this autumn.
3. It is important to do the sums on the economics of selling stock.

Restricting silage and feeding meals to fill the gap

The following table outlines the quantities of silage and meals to feed with 50% and 75% of forage requirement available on farm.

	50% of forage available		75% of forage available	
	Silage Allowance (kg)	**Meal Needed (kg)**	**Silage allowance (kg)**	**Meal needed (kg)**
Dry dairy cow	25	3-4	38	2-3
Dry suckler (good condition)	20	2.5-3.0	30	0.5-1.0*
Suckler cow with calf	20	5-6	30	3-4
Store (500 kg) / Incalf heifer	20	3-4	30	2-3
Weanling	12	2-4	20	2-3

* Thin cows may require additional meals

What to look out for if restricting access to silage:

1. Adequate feeding space is critically important, all animals must be able to feed at the same time
2. Don't forget to feed minerals;
3. Ensure a good supply of fresh water;
4. Build up feeding rates slowly;
5. Monitor cow condition regularly. Supplementation rates may need to be increased or decreased.

Guidelines on restricted silage plus concentrate diets

If feeding restricted silage and concentrates, diets have to be managed carefully to meet animal performance and feed-saving targets. For example, feeding mature cows 3-4kg concentrates along with ad-lib silage will typically only reduce daily forage intakes by 5-10%. Furthermore, feeding additional meals with ad lib silage may cause excess body condition gain.

Clearly, **restricting daily silage allowance must form part of the feeding plan if using meal to stretch fodder supplies.**

Practical guidelines on feeding restricted silage plus concentrates:

- Test pit silage and bales to establish quality, before the start of winter feeding and repeat in early January.
- Weigh a sample of silage blocks/bales regularly and adjust daily silage allowances if needed.
- Offer fresh silage daily, keeping to a fixed feeding schedule if possible.
- Ration ingredients can vary provided total energy, protein and fibre requirements are met.
- Have a defined feeding plan in place to feed the restricted silage.

Feeding Restricted Silage to Dry Cows on a Dairy Farm

A 3-4kg concentrate feeding rate can be used to reduce daily silage feeding by 20-25% in a dairy herd. For example, where 12 silage blocks per day would usually be fed ad-lib to dry cows, this would be reduced to around 9 silage blocks per day to the same cow numbers. Balance with meal.

Where silage and meal are handled separately, a simple plan may be to feed out silage to dry cows in the evening. Offer 3-4kg meal per cow as a mid-morning feed. A token amount of straw or hay (if available) may be offered along the barrier after meal feeding (1/2 round straw bale or 1/3 hay bale for 100 cows). This is not required from a feed fibre point of view, but will help satisfy cows with higher intake capacity until evening silage feeding.

- Check water supply daily

Creating adequate feed space

Where restricted silage diets are planned, adequate feed space must be available to allow all animals access to silage at one time. This will be a major issue on many farms. Solutions will differ greatly between farms but. Take steps to address the issue before housing:

- Audit current feed space. Divide cow herd size by 7 to calculate number of feeding bays needed e.g. 120 cows will need 16-17 bays to feed restricted silage. Divide by 9 for weanlings.
- Sell cull cows and low-margin stock before housing to reduce housing density
- Look for additional housing to rent for young stock and/or late calving cows. Consider all options
- Create extra feed space by adding feed rails external to current housing e.g. on gable ends or extended beyond sheds
- Use feed trailers/extra barriers in holding yards to increase feed space. Consider cross compliance
- On dairy farms feed meal to (a proportion of) dry cows through the milking parlour to reduce bullying

Table3. Minimum space required for silage feeding

Animal Type	Ad Lib (mm/animal)	Restricted Silage (mm/animal)	Animals per standard bay (4.8m)
Weanling	225-300	400-500	9-10
In calf Heifer (450 kg)	400	500-600	8-9
Cow (550kg)	400-500	**600-700**	**7-8**

A guide to managing forage crops

Pressure on fodder stocks for the 2018/2019 winter has seen an increase in the area of forage crops such as Forage Rape or Hybrid Brassicas (Redstart or Gorilla) being sown this autumn.

These are a useful source of feed and are even more so this year due to their ability to be used outside of the normal grazing season which was so significantly hampered by drought conditions. However, there are risks associated with these crops if animals were to gorge themselves in particular, bloat and nitrate poisoning. Consequently, there must be a plan of how to graze the crop in order to manage and maximise the return.

WHEN GRAZING FORAGE CROPS ANIMALS WILL NEED:

- To be adapted to grazing the crop over a period of approximately a week
- Have fresh breaks allocated **daily**
- Access to a roughage source is an absolute necessity (silage/hay/straw @ 1/3 of DM requirements)
- Access to fresh water at all times
- Access to good quality minerals (boluses are best) that have high Iodine levels as brassica crops contain goitrogens.

ALONG WITH THE ABOVE THE FOLLOWING IS NECESSARY FOR MANAGING ANIMALS ON BRASSICAS:

- A run-back area
- Good secure fencing to prevent animals from breaking through which would allow them to gorge themselves
- Care in frosty weather: If frost occurs during the feeding period, it is recommended to wait until the frost has thawed before allocating a new break.

PREPARING TO GRAZE FORAGE CROPS:

- Start off with small breaks to build up to full allocation over a week
- Breaks should be long and narrow rather than short and wide as you don't want animals walking through the crop as this will result in wastage so graze from the longest side of the field
- Unless you can accurately estimate crop yield, there will be some trial and error initially to find the correct area to allocate each day
- Of the total diet forage crops should account for 70% and the remainder should be in the form of silage, hay or straw

Estimating Crop Yield can be done using a 1m x 1m quadrat e.g. Crop weight in $1m^2$ = 3.5kg. DM% of forage crop ffi 13% > 3.5kg x $10000m^2$ (1 hectare) x 13%DM = 4550kgDM/ha

2 hectares (5 acres) of forage crops at a yield of 4550kgDM/ha with 19 bales of silage (200kg DM/bale) will feed 25 weanlings for approximately 100 days.

While stock will be out for the winter on these crops it should be noted that you are required to have the slurry storage capacity for all animals on the farm under the Nitrates Regulations.

Alternatives to straw bedding

SUMMARY OF BEDDING MATERIALS

	Absorbency (hold own weight in water)	Animal Health	Disposal	Cost/tonne (including VAT where applicable)	Cost to bed a 200 kg suckler calf/week (lie back)
Straw	2.5 times	Dust and mould spores	Rots and spreads easily	€167 (€25 per 150 kg bale)	€1.19
Woodchip	2.5 to 4	Ideally 20%moisture (but must be <30%)	Can be composted, spread directly or filtered & reused	€56	€1.07

OTHER OPTIONS

Rearing calves on plastic or hardwood slats while keeping young calves warm by using calf jackets maybe a viable option for some farmers. A calf jacket will cost about €30 which is reasonable considering it takes one round bale of straw to rear a calf.

Farmers have successfully used rubber mats in calving pens instead of straw. The 'Bama' mat from Mayo Mats has been made specifically for this purpose with a good grip to facilitate the baby calf to stand. Likewise the 'Kraiburg' mat is available from Condon Engineering.

A high standard of management is needed for all alternatives to straw bedding.

No endorsement of the above products or product suppliers is intended nor is any criticism implied of person(s) or companies or their products that are not mentioned.

APPENDIX 1: VALUE OF CONCENTRATE INGREDIENTS RELATIVE TO BARLEY (€250/T) AND SOYBEAN MEAL (€380/T)

	Value €/t	Comment
Barley	210	
Soybean meal	360	
Maize meal	276	Useful in high performance diets
Maize gluten	245	Moderate energy and protein
Distillers	278	
Rapeseed meal	263	
Citrus pulp	245	Not a fibre source, low in P, high energy
Beet pulp	***256***	***Hi fibre and energy, excellent fodder stretcher***
Hulls	***232***	***Excellent fibre source, moderate energy***
Palm kernel	***251***	***Very hi-fibre, fodder stretcher, poor palatability***
Oats	219	Moderate energy ingredient
Wheat	252	High energy feed, acidosis risk
Molasses	171	75% DM product, cereal replacement, no fibre

APPENDIX 2 VALUE OF COMMON OTHER FEEDS RELATIVE TO BARLEY (€250/T) AND SOYBEAN MEAL (€380/T)

	Value €/t	Comment
Brewers	58	Good fibre levels
Fodder beet	51	High energy, low protein, low fibre
Potatoes	57	To replace cereals, no fibre value
Maize silage	63	Assuming 30% DM
Barley Straw	101	4x4 bales have feed value of €14
Good Hay	155	4x4 bales have feed value of €34

APPENDIX 3: SAMPLE DRY DAIRY COW DIETS TO MEET REQUIREMENTS USING HAY, STRAW & LIMITED SILAGE (8-10 WEEK DRY PERIOD)

	Dry cow diet		
	Straw	***Hay***	***Lo-Silage***
Grass Silage 68[2] DMD	6.0 kg DM	6.0 kg DM	3.5 kg DM
	kg as fed		
Barley straw	3.0	-	3.0
Hay	-	3.5	-
Barley/Gluten mix	2.5	1.5	2.0
Hulls/Pulp/PKE	-	-	2.5
Soybean meal	0.75	0.5	0.75
	Total diet[3]		
UFL	8.7	8.8	8.7
PDI	840	850	860
Extra[4] cost per day €	€0.62	€0.54	€0.61

[1]Assuming 0.25 BCS units gain required, daily energy intake 8.7 UFL and adequate PDI (650-800g)
[2]For higher silage quality (70-72 DMD), reduce barley/gluten mix by 0.5kg per cow per day
[3]Optimal diet cost will depend on price and availability of feeds and so will vary between farms
[4]Compared to 11kg silage at €0.165 per kg DM, based on straw at €0.205 per kg, hay at €0.18 per kg

APPENDIX 4: MILKING COW DIETS TO MEET REQUIREMENTS[1] USING LIMITED SILAGE (60% OF GRASS SILAGE AVAILABLE)

	Indoor Diet[2]			Grass
	Straw, Pulp + Brewers	***Maize/Whole Crop***	***Fodder Beet +straw***	***Early Spring***
	kg DM			
Grass Silage 70[3] DMD	7.5	7.5	7.5	6.0
Spring grass	-	-	-	6.0
Maize/Whole crop	-	3.5	-	-
	kg as fed			
Hi Energy 18 parlour nut	8.0	7.5	7.5	5.0 [4]
Soybean meal	-	0.5	0.5	-
Fodder Beet	-	-	9.0	-
Beet Pulp (Hulls)	2.5	2.0	2.5	2.5
Brewer's grains	8.0	-	-	-
Straw	1.5	-	1.5	-
	Total diet			
UFL	18.5	18.5	18.8	18.3
PDI	1890	1905	1890	1840

[1]Assuming 29 litres of milk per day, balanced for NDF to exceed 34% with adequate NDF from forage
[2]Optimal diet will depend on price and availability of feeds and so will vary between farms
[3]Adjust parlour concentrate depending on silage quality
[4]Ration crude protein can be reduced to 14-16% when grass is included in the diet

APPENDIX 5: SAMPLE RATIONS FOR BEEF CATTLE

Varying Protein Levels	UFL	UFV
12% Crude Protein		
65% barley:20% citrus pulp:15% rapeseed meal	0.98	0.95
50% cereal:20% maize meal:20% soya hulls: 10% rapeseed meal	0.98	0.95
14% Crude Protein		
60% barley:25% soya hulls:15% rapeseed meal	0.96	0.92
90% barley:10% soyabean meal	1.00	0.98
16% Crude Protein		
45% barley:25% citrus pulp/soyahulls:30% rapeseed meal	0.97	0.93
40% barley:40% citrus pulp/soya hulls:20% soyabean meal	1.00	0.98
18% Crude Protein		
40% barley: 35% citrus pulp/soya hulls: 25% soyabean meal	1.00	0.98

Notes; Because of the increased cost of barley this year a number of producers will look to substitute barley/wheat with maize meal which is currently competitively priced.

All rations should include a balanced mineral mix to suit the type of animals being supplemented.

For finishing rations, crude protein content would be adequate at 12-14%. For Autumn calving suckler cows and weanling typically rations with 16-18% crude protein would be needed.

In the case of rations being used to top restricted forage ensure that all animals have adequate feed space at the feed rail/troughs at feeding time.

APPENDIX 6: CONCENTRATE-FEED LEVELS (KG) FOR 70 KG EWES IN GOOD CONDITION CARRYING TWINS

It is possible to successfully fed ewes on all concentrate diets with a limited access to roughage. Ewes will need 0.9kg of a standard sheep ration (min 7% Crude Fibre) per head per day to meet maintenance requirement in mid pregnancy. In late pregnancy concentrate intake should be increased in 0.2 kg increments per fortnight up to lambing. It is a good idea to provide a small amount of roughage (100-200grams DM/head/day) where ewes are bedded on slats. On this type of diet the ewes will consume approximately 100kg of concentrates over a 12 week period and the equivalent of 10% of a bale of silage / hay.

Roughage Quality	Wks Pre-Lambing Concentrates kg / hd /day						
	12-11	10-9	8-7	6-5	4-3	2-1	Total fed
75% DMD	0	0	0	0.1	0.4	0.6	16
70% DMD	0	0	0.1	0.3	0.5	0.7	23
65% DMD	0	0.1	0.2	0.4	0.6	0.8	30
60% DMD	0	0.1	0.3	0.6	0.8	1.0	40
55% DMD	0	0.4	0.5	0.8	1.1	1.4	60
All Concentrate diet		0.9	0.9	1.0	1.2	1.4	1.6 98

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