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POLICY, ECONOMICS AND STATISTICS DIVISION

Farm Business Data

2018

Foreword

The 2018 year will see the agricultural industry and individual farm businesses continue to face challenges created by relatively high input costs and volatile farm-gate prices. As always, the availability of a sound, robust framework for farm planning decisions is of paramount importance. This is the role that 'Farm Business Data' fulfils, providing a comprehensive and authoritative source of physical and financial information tailored to farm planning needs in Northern Ireland.

The handbook is divided into sections and presents budgets for all the enterprises commonly found in Northern Ireland. Within the section on Farm Support Schemes details on the operation of selected schemes such as the Basic Payment Scheme can be found. A range of useful information is also presented in the Miscellaneous section including a summary of nitrates and phosphorous regulations. The latter also includes details on taxation, fixed costs, machinery costs, hire charges, contractors' charges and conacre rents.

It is important to stress that the handbook is designed to facilitate farm planning exercises. As such, the data presented in the enterprise budgets are in 'normalised' gross margin format and are unsuitable for benchmarking or comparison purposes. Farm performance data are published in 'Northern Ireland Farm Performance Indicators 2016/17', available from Policy, Economics and Statistics Division in DAERA. Alternatively, it may be accessed on the DAERA website at https://www.daera-ni.gov.uk/articles/ni-farm-performance-indicators.

Uncertainties surrounding future prices mean that users of the data are again advised to make appropriate adjustments to enterprise data when those presented in the handbook become out of date or are felt to be inappropriate for long-term planning.

'Farm Business Data' has been prepared by Paul Keatley with assistance from many individuals inside and outside DAERA. The author would like to thank all those who provided information for inclusion in this edition and all who made constructive suggestions for change. Further comments or enquiries about the publication should be addressed to:

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USER NOTES

Arable crops
It should be noted that total variable costs **exclude** contract costs. In situations where a contractor will be used it should be remembered that this additional variable cost will have to be included. Contract rates are given on pages 99 to 101.

Grassland based enterprises
Grassland costs are split in each of the budgets into a grazing cost and a silage cost per head. In the dairy and dairy follower budgets the grazing costs have been calculated at a standard stocking rate of 2 cow equivalents per hectare. For most other grazing livestock budgets a stocking rate of 1.8 cow equivalents is used. If these stocking rates are considered inappropriate for individual farm situations they can be adjusted by referring to page 18. The silage cost per tonne charged in all budgets includes a contractor cost for harvesting and buckraking 2.5 cuts into the silo. In situations where the farmer uses his own machinery or makes 2 or 3 cuts the silage cost can be adjusted by referring to page 19.

Taxation
The taxation section on pages 111 to 114 gives general information only. Users are reminded that tax is a complex subject and that professional advice should be obtained before any action is taken which might affect liability to taxation.

DEFINITION OF TERMS

1. **Enterprise output of a crop enterprise** is the total returns for the crop produced; it is the total value for crop sales plus the market value of any part of the crop used or in store on the farm.

2. **Enterprise output of a livestock enterprise** is the value of livestock sold plus the market value of livestock and livestock products transferred to another enterprise (transfers out), plus the market value of any production from the enterprise consumed on the farm less expenditure on livestock and less the market value of livestock transferred in from another enterprise (transfers in).

3. **Variable costs** are defined as those costs which can both be readily allocated to a specific enterprise and vary in proportion with the level of output. Examples of variable costs are fertilisers, sprays, seeds, concentrate feedstuffs, silage and grassland variable costs. Casual labour and contract charges which can be allocated to a specific enterprise are usually regarded as variable costs.

4. **Gross margin** of an enterprise is its **enterprise output** less its **variable costs**.

5. **Enterprise marginal capital** is the estimated amount of capital required to establish the enterprise to the point of first sale of output.

INTRODUCTION

This handbook contains both physical and financial information for farm enterprises in Northern Ireland. For each enterprise, details of output, variable costs and gross margin are presented. The information relates to the production year beginning January 2018 (unless otherwise stated) and is based on price information available at the time of preparation (March 2018). For this reason, adjustments may be necessary to budgeted data where prices have deviated significantly from forecast levels.

The sources of information used in the booklet include the Farm Business Survey, the Agri-food and Biosciences Institute and the College of Agriculture Food and Rural Enterprise (CAFRE). In most of the budgets, more than one level of performance is given. The "typical" level of performance represents that most likely to be achieved. The "low" and "high" levels of performance, where given, encompass the range of performances found in approximately 80% of farms in Northern Ireland. On some farms, the level of performance will be outside the range given for a given enterprise.

If it is considered that the data are not appropriate for a particular farm, a different performance level should be substituted. This may be necessary when a series of farm plans with different levels of performance are used to indicate the range of possible outcomes for a particular farming situation. However, the levels of performance imputed should be realistic as the use of over optimistic or pessimistic levels of performance in a budget can result in the wrong decision being taken. Thus, each farming situation should be assessed adequately so that achievable levels of performance are used in budgets. For situations where a farm enterprise is being expanded, a level of performance similar to that presently achieved should not always be assumed. The quality of the land and livestock may differ, as may the seasonality of production.

Area Based Payments

In January 2015, the Single Farm Payment Scheme (SFP) was replaced by the Basic Payment Scheme, a Greening Payment and a Young Farmers' Payment. As these Area Based Payments are also decoupled from production, they do not form part of the Gross margin of any enterprise. As a consequence, **in this handbook, gross margin budgets for all enterprises have been presented without the Area Based Payments.** Further details relating to the operation of the schemes associated with these payments are available on pages 75-78.

Fixed Costs

In assessing the impact of a change in the farm plan on farm profit, it is necessary to deduct the expected total farm fixed costs from the total farm gross margin. The projected farm profit can then be compared with the likely profit from continuing with the existing activities. To show the likely return on additional capital, the budgeted additional net profit should be related to the additional capital required to implement the new plan. When borrowed funds

are used to finance the change, the interest charge should be deducted from the additional net profit.

Changes in fixed costs which occur when there is a change in the mix or size of enterprises on a farm will differ considerably between farms as these costs are very dependent on the scale of change and the resources already present on the farm. Such costs by their nature do not change gradually unlike variable costs which vary roughly in proportion to changes in the size of an enterprise. When preparing budgets the fixed costs should be changed if alterations are planned in the area of land farmed, the employment of regular labour, investment in machinery and buildings or, if there are appreciable changes in the usage of other fixed cost items such as fuel.

Farm planning exercises may range from a small modification of the present farming system to a completely new business plan for the farm. The first of these alternatives will, in most circumstances, require considerably less new information on fixed costs than is needed when a new farm plan has to be prepared. In either situation it is more sensible and accurate to prepare a list of the fixed cost items and calculate their cost to the business rather than using fixed cost 'standards' as guidelines. The list should include hired regular labour, depreciation of fixed capital and machinery, machinery repairs, fuel and oil, interest and general overhead costs.

Capital Requirements

Another essential element in farm planning is the cash flow budget. Such a budget will indicate how changes in the farm plan will affect the timing and flow of funds through the business. This can be critical information particularly when outside funding is required or capital resources are limited.

When new plans or budgets incorporating changes are prepared, it is important to determine how much extra capital will be needed. The return on the extra capital may be of particular significance in deciding how best to employ additional resources. Return on existing capital is of less importance, especially as machinery and buildings may have been written-off or have a low salvage value. For this reason, only marginal operating capital requirements per hectare of crop or per head of livestock are given on pages 93 and 94. In a livestock enterprise, this includes the cost of the extra animal(s) and the variable costs required to finance the production cycle until sufficient incoming funds have been obtained to finance the next period. This figure indicates the minimum necessary operating capital required per extra head of livestock. For a large increase in herd size, the additional operating capital should include the proposed capital outlay on the additional buildings, machinery and funds to pay extra labour until the production cycle is self-financing. Each particular situation should be investigated to determine whether extra labour or other fixed costs should be taken into account.

As many cattle enterprises require a large amount of operating capital (often financed from outside sources) per head and per hectare, an interest charge per head is given below the calculated gross margin in each of the cattle budgets. This, in many instances, is a substantial cost and should not be overlooked when comparing enterprises. Interest charge is calculated by

applying the interest rate to the outlay on the animal plus the average variable costs for the production period.

Grassland, forage and calf rearing variable costs are common to many of the cattle enterprises and these topics are covered in pages 18 to 23 and 32 as a basis for inclusion in subsequent cattle budgets.

Occasional reference is made to trade names and proprietary products. No endorsement of such products is intended nor is any criticism implied of similar products not mentioned.

SPRING BARLEY PER HECTARE

	LOW	TYPICAL	HIGH
Grain yield (tonnes)	4.0	5.0	6.5
Price per tonne (£)		140	
Grain output (£)	**560**	**700**	**910**
Straw yield (tonnes)	3.0	3.5	4.5
Price per tonne (£)		80	
Straw output (£)	**240**	**280**	**360**
OUTPUT (£)	**800**	**980**	**1,270**
		£	
Seed 187 kg		75	
Fertiliser 120: 55:55		150	
Sprays herbicide		30	
fungicide		40	
growth regulator		15	
Sundries twine etc.		30	
Total Variable Costs		**340**	
GROSS MARGIN	**460**	**640**	**930**

(a) Grain price - estimated on the basis of 15% moisture content with grain sold at harvest for animal feed. For information on seasonal price movements see page 15.

(b) Seed - 80% certified second generation, 20% farm saved.

(c) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(d) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(e) Sprays - post emergent herbicide.
- fungicide spray for mildew and rhynchosporium.

SPRING OATS PER HECTARE

	LOW	TYPICAL	HIGH
Grain yield (tonnes)	3.8	5.0	6.0
Price per tonne (£)		150	
Grain output (£)	**570**	**750**	**900**
Straw yield (tonnes)	3.3	3.6	4.2
Price per tonne (£)		70	
Straw output (£)	**231**	**252**	**294**
OUTPUT (£)	**801**	**1,002**	**1,194**
		£	
Seed 187 kg		80	
Fertiliser 80: 55: 55		120	
Sprays herbicide		30	
fungicide		25	
growth regulator		15	
Sundries twine etc.		35	
Total Variable Costs		**305**	
GROSS MARGIN	**496**	**697**	**889**

(a) Grain price - estimated on the basis of 15% moisture content with grain sold at harvest for animal feed.

(b) Seed - 100% certified second generation.

(c) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(d) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(e) Sprays - post emergent herbicide.
- fungicide, mildew spray.
- growth regulator.

WINTER BARLEY PER HECTARE

		LOW	TYPICAL	HIGH
Grain yield (tonnes)		6.0	7.0	8.0
Price per tonne (£)			145	
Grain output (£)		**870**	**1,015**	**1,160**
Straw yield (tonnes)		3.5	4.5	5.0
Price per tonne (£)			75	
Straw output (£)		**263**	**338**	**375**
OUTPUT (£)		**1,133**	**1,353**	**1,535**
			£	
Seed	187 kg		75	
Fertiliser	150: 70: 70		190	
Sprays	herbicide		40	
	fungicide (x3)		120	
	insecticide		8	
	growth regulator		15	
Sundries	twine etc.		35	
Total Variable Costs			**483**	
GROSS MARGIN		**650**	**870**	**1,052**

(a) Grain price - estimated on the basis of 15% moisture content with grain sold at harvest for animal feed. For information on seasonal price movements see page 15.

(b) Seed 100% certified second generation.

(c) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(d) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(e) Sprays - pre or post emergence herbicide.
- April/May, 3 spray fungicide program.
- insecticide for barley yellow dwarf virus.
- growth regulator.

WINTER OATS PER HECTARE

	LOW	TYPICAL	HIGH
Grain yield (tonnes)	5.0	6.5	8.0
Price per tonne (£)		150	
Grain output (£)	**750**	**975**	**1,200**
Straw yield (tonnes)	4.0	4.6	5.3
Price per tonne (£)		70	
Straw output (£)	**280**	**322**	**371**
OUTPUT (£)	**1,030**	**1,297**	**1,571**
		£	
Seed 187 kg		80	
Fertiliser 100: 55: 55		135	
Sprays herbicide		40	
fungicide (x 2)		80	
growth regulator		15	
Sundries twine etc.		35	
Total Variable Costs		**385**	
GROSS MARGIN	**645**	**912**	**1,186**

(a) Grain price - estimated on the basis of 15% moisture content with grain sold at harvest for animal feed.

(b) Seed - 100% certified second generation.

(c) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(d) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(e) Sprays - pre emergent herbicide.
- 2 spray fungicide program.
- growth regulator.
- insecticide (Barley Yellow Dwarf Virus) may be required.

WINTER WHEAT PER HECTARE

	LOW	TYPICAL	HIGH
Grain yield (tonnes)	7.0	8.0	9.5
Price per tonne (£)		150	
Grain output (£)	**1,050**	**1,200**	**1,425**
Straw yield (tonnes)	4.5	5.0	5.5
Price per tonne (£)		70	
Straw output (£)	**315**	**350**	**385**
OUTPUT (£)	**1,365**	**1,550**	**1,810**
		£	
Seed 187 kg		80	
Fertiliser 180: 70: 70		210	
Sprays herbicide		40	
fungicide (x3)		130	
growth regulator		15	
Sundries twine etc.		35	
Total Variable Costs		**510**	
GROSS MARGIN	**855**	**1,040**	**1,300**

(a) Grain price - estimated on the basis of 15% moisture content with grain sold at harvest for animal feed.

(b) Seed - 100% certified second generation.

(c) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(d) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(e) Sprays - pre or post emergence herbicide.
- fungicides for control of septoria,ear diseases and mildew/yellow rust if required.
- growth regulator.

SPRING OILSEED RAPE PER HECTARE

		LOW	TYPICAL	HIGH
Yield (tonnes)		1.8	2.4	2.9
Price per tonne (£)			300	
Seed output (£)		**540**	**720**	**870**
OUTPUT (£)		**540**	**720**	**870**
			£	
Seed	8 kg		70	
Fertiliser	80: 30: 0		70	
Sprays	insecticide		15	
	fungicide		40	
	desiccant		35	
Slug pellets			15	
Total Variable Costs			**245**	
GROSS MARGIN		**295**	**475**	**625**

(a) Price estimated on the basis of 'double low' varieties sold at harvest.

(b) Yield based on 9% moisture content, desiccant applied 7 to 14 days before harvesting.

(c) Sowing date between late March and mid April. Oilseed rape should not be grown more than 1 year in 5 on the same land.

(d) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(e) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(f) Sprays - insecticide for pollen beetle/seed weevil.
- herbicide is normally not necessary.
- fungicide for light leaf spot and/or sclerotinia.

WINTER OILSEED RAPE PER HECTARE

		LOW	TYPICAL	HIGH
Yield (tonnes)		2.6	3.3	4.0
Price per tonne (£)			300	
Seed output (£)		**780**	**990**	**1,200**
OUTPUT (£)		**780**	**990**	**1,200**
			£	
Seed	8 kg		70	
Fertiliser	190: 50: 20		170	
Sprays	herbicide		55	
	fungicide		40	
	desiccant		35	
Slug pellets			15	
Total Variable Costs			**385**	
GROSS MARGIN		**395**	**605**	**815**

(a) Price estimated on the basis of 'double low' varieties sold at harvest.

(b) Yield based on 9% moisture content, desiccant applied 7 to 14 days before harvesting.

(c) Sowing date, mid August to early September. Oilseed rape should not be grown more than 1 year in 5 on the same land.

(d) Fertiliser - Fertiliser application rate based on a medium type soil with a Soil Nitrogen Supply Index of 2, a Soil Phosphate Index of 2 and a Soil Potash Index of 2+

(e) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations.
See pages 84 to 88 for further details.

(f) Sprays - pre or post emergence herbicide.
- fungicide for light leaf spot and/or sclerotinia.

SEED POTATOES PER HECTARE

				LOW		TYPICAL		HIGH
		£/t		£		£		£
Seed ( ) tonnes	@	250	(14)	3,500	(21)	5,250	(25)	6,250
Ware ( ) tonnes	@	150	(5)	750	(8)	1,200	(10)	1,500
Chats ( ) tonnes	@	10	(1)	10	(2)	20	(3)	30
OUTPUT				**4,260**		**6,470**		**7,780**
		£/t						
Seed 4.0t	@	350				1,400		
Fertiliser 95 : 195 : 185						330		
Sprays herbicide						45		
fungicide (blight x 7)						155		
desiccant (burning down)						40		
aphidicide						25		
Potato inspection fees				113		147		166
Total Variable Costs				**2,108**		**2,142**		**2,161**
GROSS MARGIN				**2,152**		**4,328**		**5,619**

(a) Potato inspection fees quoted are those proposed for 2018. They comprise a growing crop inspection fee of £46 per hectare and tuber inspection fees and labels of £4.80 per tonne.

(b) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations. See pages 84 to 88 for further details.

(c) Seed cost depends on variety used and class of seed planted.

(d) Potato sacks are supplied by the merchant.

(e) Price per tonne - Prices for potatoes can vary significantly from year to year and even during the season.

(f) Output of seed per hectare (£)

Price per tonne	Seed Yield (tonnes per hectare)				
£	14	17	20	22	25
140	1,960	2,380	2,800	3,080	3,500
160	2,240	2,720	3,200	3,520	4,000
180	2,520	3,060	3,600	3,960	4,500
200	2,800	3,400	4,000	4,400	5,000
220	3,080	3,740	4,400	4,840	5,500
240	3,360	4,080	4,800	5,280	6,000
260	3,640	4,420	5,200	5,720	6,500

FIRST EARLY POTATOES PER HECTARE

		£/t		LOW £		TYPICAL £		HIGH £
Ware ( ) tonnes	@	275	(14)	3,850	(19)	5,225	(22)	6,050
Chats (1) tonne	@	10		10		10		10
OUTPUT				**3,860**		**5,235**		**6,060**
		£/t						
Seed 3.5t	@	350				1,225		
Fertiliser 120 : 130 : 200						305		
Sprays herbicide						35		
fungicide (blight x 3)						90		
Potato sacks	@	8.30		116		158		183
Total Variable Costs				**1,771**		**1,813**		**1,838**
GROSS MARGIN				**2,089**		**3,422**		**4,222**

(a) Budget assumes haulm chopping rather than burning down.

(b) Seed **-** cost depends on variety used and class of seed planted.

(c) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations.
See pages 84 to 88 for further details.

(d) Potato sacks **-** 25kg paper bags typically 20p per bag.

(e) Price per tonne - Prices for potatoes can vary significantly from year to year and even during the season.

(f) Output of ware per hectare (£)

Price per tonne	Early Ware Yield (tonnes per hectare)			
£	10	15	20	25
150	1,500	2,250	3,000	3,750
200	2,000	3,000	4,000	5,000
250	2,500	3,750	5,000	6,250
300	3,000	4,500	6,000	7,500
350	3,500	5,250	7,000	8,750

MAINCROP WARE POTATOES PER HECTARE

		£/t		LOW £		TYPICAL £		HIGH £
Ware ( ) tonnes	@	150	(33)	4,950	(40)	6,000	(45)	6,750
Chats (2) tonnes	@	10		20		20		20
OUTPUT				**4,970**		**6,020**		**6,770**
		£/t						
Seed 3.0t	@	350				1,050		
Fertiliser 100 :180 : 200						335		
Sprays herbicide						35		
fungicide (blight x 11)						245		
desiccant (burning down)						40		
Slug pellets						15		
Potato boxes	@	10.50		347		420		473
Total Variable Costs				**2,067**		**2,140**		**2,193**
GROSS MARGIN				**2,903**		**3,880**		**4,577**

(a) Seed **-** cost depends on variety used and class of seed planted.

(b) Fertiliser - For individual farms, fertiliser application rates must be in accordance with the Nitrate and Phosphorous Regulations.
See pages 84 to 88 for further details.

(c) Potato boxes **-** £70.00 per 1 tonne with a 15% depreciation charge (i.e. £10.50 per tonne per year).

(d) Price per tonne - Prices for potatoes can vary significantly from year to year and even during the season.

(e) Output of ware per hectare (£)

Price per tonne	Ware Yield (tonnes per hectare)				
£	20	25	30	35	40
90	1,800	2,250	2,700	3,150	3,600
110	2,200	2,750	3,300	3,850	4,400
130	2,600	3,250	3,900	4,550	5,200
150	3,000	3,750	4,500	5,250	6,000
170	3,400	4,250	5,100	5,950	6,800
190	3,800	4,750	5,700	6,650	7,600

CEREAL SPRAYS

	Main use	Examples of proprietary products	Approximate cost per hectare (£)
Herbicides	Spring cereals (Broad spectrum)	Ally SX, Jubilee SX, Starane XL, Harmony M, Compitox Plus	15 to 31
	Winter cereals (Broad spectrum)	**Pre-emergence –** Crystal, Orient Firebird.	25 to 48
	Winter cereals (Broad spectrum)	**Post-emergence -** Ally SX, Jubilee SX, Othello	15 to 41
Fungicides	Barley (Broad spectrum)	Amistar Pro, Fandango, Siltra	36 to 49
	Wheat (Broad spectrum)	Folicur, Opera, Opus, Proline, Aviator Brutus	25 to 53
	(Mildew)	Corbel	23 to 26
Insecticides	Winter barley (aphids - vector BYDV)	Decis, Hallmark, Sumi-Alpha,	5 to 10

This list is not exhaustive and no criticism is implied of products which have been omitted. The products listed above are for example purposes only. **No pesticide should be used without careful reference to the manufacturer's label especially regarding crop suitability.**

GRAIN DRYING AND STORAGE

(i) Moist grain storage

@ 16% moisture content requires 5.5 litres per tonne propionic acid.
@ 20% moisture content requires 7.5 litres per tonne propionic acid.
@ 24% moisture content requires 9.5 litres per tonne propionic acid.
@ 28% moisture content requires 11.5 litres per tonne propionic acid.

Propionic acid costs approximately £1.30 - £1.75 per litre. Contractors charge for treatment (excluding chemical) approximately £1.30 per tonne.

(ii) Grain drying

Contract charges - handling charge approximately £2-3 per tonne plus £2-4 per 1% moisture removed.

(iii) Bulk storage requirements (whole grain)

Barley 1.45 cubic metres per tonne.
Wheat 1.35 cubic metres per tonne.
Oats 1.95 cubic metres per tonne.

(iv) Weight and weight loss on drying to 15% Moisture Content

Original MC	**Equiv. Weight of 100t dried To 15% MC (t)**	**% Weight loss**
15	100.0	0
17	97.7	2.3
19	95.3	4.7
21	92.9	7.1
23	90.6	9.4
25	88.2	11.8
27	85.9	14.1

(v) Anticipated growers prices for barley (ex-farm) 2017/2018

Feed Barley (£/tonne)

November 2017	155
January 2018	158
March	165
May	175

OILSEED RAPE SPRAYS

	Examples of proprietary products	Approximate cost per hectare (£)
Herbicides	**Post-emergence -** Kerb, Butisan, Galera	30 to 49
Fungicides	Folicur, Proline	25 to 56

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POTATO SPRAYS

		Examples of proprietary products	Approximate cost per hectare (£)
Herbicides	Broad Spectrum	Sencorex, Linuron, Titus, Retro	27 to 75
	Couchgrass	Glyphosate, Laser	35 to 70
Fungicides		Bravo 500, Dithane 945, Invader, Fubol Gold, Shirlan, Curzate, Prompto	7 to 30
Desiccants		Reglone, Harvest, Sulphuric acid[1],Spotlight	35 to 46

(Haulm chopping can be an alternative to spraying.)

[1] Sulphuric acid normally applied by a contractor

This list is not exhaustive and no criticism is implied of products which have been omitted. The products listed above are for example purposes only. **No pesticide should be used without careful reference to the manufacturer's label especially regarding crop suitability.**

GRASSLAND VARIABLE COSTS

(i) Grazing Variable Costs

Stocking rate (ce/ha)	Fertiliser N kg/ha	Fertiliser £/ha	Other variable costs (£)	Total variable cost per hectare (£)
1.4	60	47	54	101
1.5	75	58	54	112
1.6	90	70	54	124
1.7	105	82	54	136
1.8	**120**	**93**	**54**	**147**
1.9	135	105	54	159
2.0	**150**	**117**	**54**	**171**
2.1	170	132	54	186
2.2	190	148	54	202
2.3	210	163	54	217
2.4	230	179	54	233
2.5	250	194	54	248

In the dairy cow and dairy follower budgets in this handbook, a stocking rate of 2 cow equivalents per hectare is used, i.e. the grazing variable costs are £171 per hectare. For most other grazing livestock budgets a stocking rate of 1.8 cow equivalents per hectare is used i.e. the grazing variable costs are £147 per hectare. If these stocking rates are considered to be inappropriate for a specific farming situation, a more appropriate stocking rate and variable costs per hectare can be selected. Readers should be aware that the implementation of the Nitrates Action Plan may impact on permitted stocking rates on farms (see pages 84 to 88 for further details).

(ii) Grazing - other variable costs

a) Grassland reseeding costs

			£ per hectare
Ground limestone	5 tonnes @	18 £/t	90
Grass seed	35 kg @	4.80 £/kg	168
Fertiliser 60 : 50 : 50			110
Spray - sward kill			30
- herbicide			40
Total Cost			**438**

(1) The quantity of lime and fertiliser applied will depend on soil analysis.
(2) For autumn reseeds the old sward may be burnt down with a Glyphosate or Roundup spray prior to ploughing.
(3) With a sward life of 10 years the annual reseeding allowance would be £43.80 per hectare.

b) Grassland spraying costs

The annual cost of herbicide is estimated at £10.00 per hectare – assumes spray 1 year in 4 against grassland weeds at cost of £40.00 per hectare.

(iii) Silage Variable Costs

	£ per hectare	£ per tonne
Fertiliser 190 : 50 : 100	235	5.88
Other variable costs	54	1.35
Contractors charge	425	10.63
Additives	65	1.63
Polythene	5	0.13
Total Cost	784	19.62

(1) The yield of silage is assumed to be 40 tonnes per hectare.
(2) The sward life is assumed to be 10 years.
(3) Contractor cost includes mowing, harvesting and buckraking 2.5 cuts into the silo.
(4) The total variable cost per tonne of silage (assuming an unchanged yield) with the contractor taking 2 cuts is £17.50. This increases to £21.75 with 3 cuts.
(5) When the farmer uses his own machinery, the total variable cost per tonne of silage is £8.98.
(6) Costs per tonne for additive would be lower for systems involving fewer cuts. Additive costs range from £0.50 to £5.00 per tonne depending on the additive used and the conditions - typically £1.70 per tonne.
(7) Silage as a cash crop. To achieve a gross margin of £200 per hectare, a farmer would require a price of £24.62 per tonne.

(iv) Silage Additives

Category	Examples of products	Approximate cost per tonne Ensiled (£)
Acid based	Add-F, Add-safeR, Co-Sil.	0.50 - 4.00
Sugar based	Molasses, molassed sugar beet pulp Sweet n' Dry.	1.00 - 3.00
Enzymes	Exellex, Clampzyme.	1.50 - 3.00
Inoculants	Bioferm Gold, Ecosyl	0.90 - 2.00
Salts	Ultrasile	2.00 - 2.50
Enzymes plus inoculements	Axphast gold, Supersile	1.10 - 1.75

This list is not exhaustive and there is no implied criticism of products omitted.

(v) Hay Variable Costs

	£ per hectare	£ per tonne	Pence per 20 kg bale
Fertiliser 130 : 40 : 40	155	19	39
Reseeding allowance	54	7	14
Contract - mowing	35	4	9
- turning (x2)	32	4	8
- bailing (inc. twine)	200	25	50
Total Cost	476	60	119

(1) A yield of 8 tonnes per hectare is assumed.
(2) The variable cost per 20 kg bale of hay for a farmer using his own machinery would be 52p.
(3) A hay crop cut in mid July and sold for £2.00, £2.50 or £3.00 per 20 kg bale would generate gross margins of £324, £524 and £724 per hectare respectively. These figures rise to £591, £791 and £991 per hectare if contractor costs are disregarded. As approximately 60% of total grass production occurs by mid July these gross margins are effectively from 0.6 hectares.

(vi) Grassland sprays

Main Use	Examples of proprietary products	Approximate Cost per hectare (£)
Chickweed (non clover swards)	Transfer, Mircam Plus.	15 to 22
Chickweed (will protect clover swards)	Triad	29
Ragwort	2-4D Ester, (e.g Depitox)	9 to 13
Thistle	2-4-D, MCPA	9 to 10
Nettle	Nushot, Grazon, Flail.	60 to 120
Docks (non clover swards)	Doxstar, Starane, Forefront Dockmaster Grassland.	45 to 49
Docks (will protect clover swards)	Squire.	41
Sward Kill	Roundup Biactive, Clinic, Glyphosate.	13 to 30

This list is not exhaustive and there is no criticism implied of products omitted.

(vii) Seasonality of production

	% of Harvestable Dry Matter
April	11
May	19
June	20
July	17
August	14
September	12
October	3
November to March	4
Total	100.0

(viii) Stocking rates on farms in Northern Ireland

Average stocking rates and the corresponding range on Northern Ireland farms are shown for the main enterprises. The differences illustrate the variation in stocking rates found in practice.

Stocking rate (ce/ha)

	Average	**Range**
Dairy cows	2.05	1.76 to 2.35
Dairy followers	2.16	1.89 to 2.46
Sucklers cows (new LFA)	1.34	0.99 to 1.57
Dairy calf to beef systems	1.91	1.75 to 2.21
Beef calf to beef systems	1.50	1.20 to 1.75
Breeding ewes (lowland)	1.53	1.43 to 1.73

Source: Northern Ireland Farm Business Survey, 2016/17.

(ix) Coefficients for converting into cow equivalents (ce)

Type of Livestock	ce
Dairy cow	1.0
Beef cow (excluding calf)	0.8
Breeding bull	1.0
Other cattle	
under 1 year old	0.4
between 1 and 2 years old	0.6
over 2 years old	0.8
Breeding ewe and lamb(s)	0.2
Breeding ram	0.2
Lamb 6 months to 1 year old	0.1
Other sheep over 1 year old	0.2

(1) One cow equivalent is usually defined in terms of annual metabolizable energy requirements to maintain a 625 kg Friesian cow, produce 4,500 litres of milk and a 45 kg calf.

(2) To calculate the total cow equivalents on a farm, the annual average livestock numbers should be multiplied by the appropriate cow equivalent coefficient.

(3) To calculate the stocking rate on a farm (cow equivalents per hectare) the total cow equivalents are divided by the area of grassland plus the adjusted areas of rough grazing and forage crops.

(4) To calculate stocking rate of grazing livestock, allowances should strictly be made for variation in output, e.g. yield per cow or liveweight gain per head and also for quantities of non-forage feed consumed by each category of livestock.

(x) Typical nutrient content of animal manures at spreading

Manure		Total Nutrient			Available Nutrient [1]		
Form	**% DM**	**N**	**P_2O_5**	**K_2O**	**N**	**P_2O_5**	**K_2O**
Fresh FYM [2]	---------- (kg/t) ----------						
Cattle	25	6.0	3.5	8.0	0.3- 1.2	2.1	4.8
Pig	25	7.0	7.0	5.0	0.3- 1.4	4.2	3.0
Poultry Manure	---------- (kg/t) ----------						
Layer Manure	30	15	13	9	0.1- 5.2	7.9	6.8
Broiler Litter	60	29	25	18	0.3-10.1	15.0	14.0
Slurries	---------- (kg/m^3) ----------						
Dairy [3]	6	3.0	1.2	3.5	0.1- 0.9	0.6	3.2
Beef [3]	6	2.3	1.2	2.7	0.1- 0.7	0.6	2.4
Pig [3]	6	5.0	3.0	3.0	0.2- 1.8	1.5	2.7

[1] Nutrients available for utilisation by the next crop. In the case of nitrogen, availability is dependent on soil type and time of application. Figures given assume surface application and higher figures relate to spring application.

[2] N and K_2O values will be lower if farm yard manure (FYM) is stored under open conditions for long periods.

[3] Undiluted slurry typically contains 10% dry matter (DM), but with rain dilution the DM content may be lowered to 6% and under.

(xi) Approximate conversion factors

1 hectare = 2.471 acres
1 metre = 3.279 feet
1 m^3 = 220 gallons
1 litre = 0.22 gallon
1 kilogram = 2.205 pounds
100 kg/ha = 80 units/acre

DAIRY COWS - JAN/FEB CALVING (60% SUMMER MILK)

		LOW	TYPICAL	HIGH
Milk yield (litres)		5,100	5,800	6,300
	ppl	£	£	£
Milk sales	@ 27.0	**1,377**	**1,566**	**1,701**
Calves			**110**	
Less herd replacement cost			**166**	
OUTPUT		**1,321**	**1,510**	**1,645**
	£			
Concentrates	@ 240	343	390	423
Grazing	0.275 @ 171		47	
Silage	9.0 @ 19.62		177	
Sundries (AI, vet, misc)			140	
Total Variable costs		**706**	**753**	**787**
GROSS MARGIN PER COW		**615**	**757**	**858**
GROSS MARGIN PER HECTARE @ (2 ce/ha)		**1,229**	**1,513**	**1,716**
GROSS MARGIN PER 1,000 LITRES		**121**	**130**	**136**

(1) Milk price forecast on the basis of compositional quality and the seasonality of production. Net of all deductions.

(2) 93 calves sold or transferred per 100 dairy cows.

(3) Herd replacement cost:
- 24% replacement rate and 4% mortality are typical.
- replacement cost £1150; cull cow value £550.

(4) Concentrate usage of 0.28kg/litre assumed

(5) For details of grazing and silage variable costs, see pages 18 and 19.

(6) Sensitivity analysis

Change in typical gross margin (£)

	per cow	per hectare
± 1 ppl in milk	58.00	116.00
± £5/t in concentrates price	8.12	16.24
± 100 litres milk	14.01	28.02

DAIRY COWS - MARCH/APRIL CALVING (70% SUMMER MILK)

			LOW	TYPICAL	HIGH
Milk yield (litres)			5,000	5,500	6,000
		ppl	£	£	£
Milk sales		@ 27.0	**1,350**	**1,485**	**1,620**
Calves				**110**	
Less herd replacement cost				**166**	
OUTPUT			**1,294**	**1,429**	**1,564**
		£			
Concentrates		@ 240	324	356	389
Grazing	0.325	@ 171		56	
Silage	7.0	@ 19.62		137	
Sundries (AI, vet, misc)				140	
Total Variable costs			**657**	**689**	**722**
GROSS MARGIN PER COW			**637**	**740**	**842**
GROSS MARGIN PER HECTARE @ (2 ce/ha)			**1,274**	**1,479**	**1,685**
GROSS MARGIN PER 1,000 LITRES			**127**	**134**	**140**

(1) Milk price forecast on the basis of compositional quality and the seasonality of production. Net of all deductions.

(2) 93 calves sold or transferred per 100 dairy cows.

(3) Herd replacement cost:
- 24% replacement rate and 4% mortality are typical.
- replacement cost £1150; cull cow value £550.

(4) Concentrate usage of 0.27kg/litre assumed

(5) For details of grazing and silage variable costs, see pages 18 and 19.

(6) Sensitivity analysis

Change in typical gross margin (£)

	per cow	per hectare
± 1 ppl in milk	55.00	110.00
± £5/t in concentrates price	7.43	14.85
± 100 litres milk	14.47	28.93

DAIRY COWS - OCT/NOV CALVING (55% SUMMER MILK)

			LOW	TYPICAL	HIGH
Milk yield (litres)			6,000	7,000	7,800
		ppl	£	£	£
Milk sales		27.0	**1,620**	**1,890**	**2,106**
Calves				**110**	
Less herd replacement cost				**172**	
OUTPUT			**1,558**	**1,828**	**2,044**
		£			
Concentrates		@ 240	475	554	618
Grazing	0.250	@ 171		43	
Silage	10.0	@ 19.62		196	
Sundries (AI, vet, misc)				160	
Total Variable costs			**874**	**953**	**1017**
GROSS MARGIN PER COW			**684**	**875**	**1,027**
GROSS MARGIN PER HECTARE @ (2 ce/ha)			**1,368**	**1,749**	**2,055**
GROSS MARGIN PER 1,000 LITRES			**114**	**125**	**132**

(1) Milk price forecast on the basis of compositional quality and the seasonality of production. Net of all deductions.

(2) 93 calves sold or transferred per 100 dairy cows.

(3) Herd replacement cost:
- 25% replacement rate and 4% mortality are typical.
- replacement cost £1150; cull cow value £550.

(4) Concentrate usage of 0.33kg/litre assumed

(5) For details of grazing and silage variable costs, see pages 18 and 19.

(6) Sensitivity analysis

Change in typical gross margin (£)

	per cow	per hectare
± 1 ppl in milk	70.00	140.00
± £5/t in concentrates price	11.55	23.10
± 100 litres milk	13.38	26.76

DAIRY COWS - AVERAGE CALVING PATTERN (53% SUMMER MILK)

				LOW	TYPICAL	HIGH
Milk yield (litres)				6,300	7,200	8,000
			ppl	£	£	£
Milk sales			27.0	**1,701**	**1,944**	**2,160**
Calves					**110**	
Less herd replacement cost					**172**	
OUTPUT				**1,639**	**1,882**	**2,098**
			£			
Concentrates		@	240	514	588	653
Grazing	0.262	@	171		45	
Silage	9.5	@	19.62		186	
Sundries (AI, vet, misc)					150	
Total Variable costs				**895**	**969**	**1034**
GROSS MARGIN PER COW				**744**	**913**	**1,064**
GROSS MARGIN PER HECTARE @ (2 ce/ha)				**1,487**	**1,827**	**2,128**
GROSS MARGIN PER 1,000 LITRES				**118**	**127**	**133**

(1) Average calving pattern of dairy cows in Northern Ireland during 2017:-

January/February	18.5%	
March/April	18.2%	
May/June	13.3%	
July/August	11.6%	
September/October	19.9%	
November/December	18.4%	(based on calf registrations)

(2) Milk price forecast on the basis of compositional quality and the seasonality of production. Net of all deductions.

(3) 93 calves sold or transferred per 100 dairy cows.

(4) Herd replacement cost:
- 25% replacement rate and 4% mortality are typical.
- replacement cost £1150; cull cow value £550.

(5) Concentrate usage of 0.34kg/litre assumed

(6) For details of grazing and silage variable costs, see pages 18 and 19.

(7) Sensitivity analysis

	Change in gross margin(£)	
	per cow	per hectare
± 1 ppl in milk	72.00	144.00
± £5/t in concentrates price	12.24	24.48
± 100 litres milk	13.55	27.09

DAIRY HEIFER REPLACEMENTS - AUTUMN BORN (2017)

	30 MONTH CALVING			24 MONTH CALVING	
	Physical		Financial	Physical	Financial
			£		£
Value of heifer (allowing for barreners and rejects)			1150		1150
Less value of calf (plus 2% mortality allowance)			225		225
OUTPUT PER HEIFER			**925**		**925**
Calf rearing costs to 3 months			110		110
		£			
4-6 months (indoors)					
Concentrates (17% protein)	125 kg	@240	30	250 kg	60
Silage	0.7 tonnes	@19.62	14	0.7 tonnes	14
Bedding straw	0.15 tonnes		12	0.15 tonnes	12
Veterinary and miscellaneous			8		10
7-12 months (at grass)					
Concentrates (15% protein)	25 kg	@220	6	180 kg	40
Grazing	0.15 ha	@171	26	0.17 ha	29
Veterinary and miscellaneous			14		14
13-18 months (indoors)					
Barley and minerals	160 kg	@175	28	360 kg	63
Silage	5 tonnes	@19.62	98	4.5 tonnes	88
AI, Veterinary and miscellaneous			13		33
19-24 months (at grass)					
Grazing	0.21 ha	@171	36	0.23 ha	39
AI, Veterinary and miscellaneous			38		13
25-30 months (indoors)					
Barley and minerals	180 kg	@175	32		
Silage	6 tonnes	@19.62	118		
Veterinary and miscellaneous			5		
Total Variable Costs			**586**		**525**
GROSS MARGIN PER HEIFER			**339**		**400**
GROSS MARGIN PER HECTARE @ (2 ce/ha)			**485**		**800**

DAIRY HEIFER REPLACEMENTS - AUTUMN BORN (CONTINUED)

(1) See page 32 for details of calf rearing costs.

(2) For details of grazing & silage variable costs, see pages 18 and 19.

(3) Sensitivity analysis

Change in gross margin (£)

	30 month calving	
	per head	per hectare
± £50 in heifer value	50	71
± £10 in calf price	10	15

Change in gross margin (£)

	24 month calving	
	per head	per hectare
± £50 in heifer value	50	100
± £10 in calf price	10	20

(4) Targets weights (kilograms)

Age (months)	Autumn born	
	24 month calving	30 month calving
3	85	85
6	155	145
12	290	260
18	415	355
24	560	460
30	-	580

Target daily liveweight gain (kgs/day)

Age (months)	Autumn born	
	24 month calving	30 month calving
3-6	0.78	0.67
6-12	0.75	0.64
12-18	0.69	0.53
18-24	0.81	0.58
24-30	-	0.67

DAIRY HEIFER REPLACEMENTS - SPRING BORN (2018)

	27 MONTH CALVING			24 MONTH CALVING		
	Physical		Financial £	Physical		Financial £
Value of heifer (allowing for barreners and rejects)			1150			1150
Less value of calf (plus 2% mortality allowance)			225			225
OUTPUT PER HEIFER			**925**			**925**
Calf rearing costs to 3 months			110			110
		£				
4-9 months (at grass)						
Concentrates (17% protein)	100 kg	@240	24	180 kg		43
Grazing	0.14 ha	@171	24	0.15 ha		26
Veterinary and miscellaneous			14			14
10-15 months (indoors)						
Barley and minerals	360 kg	@175	63	405 kg		71
Silage	3.5 tonnes	@19.62	69	3.75 tonnes		74
Veterinary and miscellaneous			8			10
16-21 months (at grass)						
Barley and minerals	0 kg	@175	0	50 kg		9
Grazing	0.21 ha	@171	36	0.22 ha		38
AI, Veterinary and miscellaneous			38			34
22-24 months (indoors)						
Barley and minerals	25 kg	@175	4	135 kg		24
Silage	2.75 tonnes	@19.62	54	2.50 tonnes		49
Veterinary and miscellaneous			7			5
25-27 months (indoors)						
Barley and minerals	65 kg	@175	11			
Silage	2.75 tonnes	@19.62	54			
Veterinary and miscellaneous			7			
Total Variable Costs			**523**			**505**
GROSS MARGIN PER HEIFER			**402**			**420**
GROSS MARGIN PER HECTARE @ (2 ce/ha)			**671**			**839**

DAIRY HEIFER REPLACEMENTS - SPRING BORN (CONTINUED)

(1) See page 32 for details of calf rearing costs.

(2) For details of grazing & silage variable costs, see pages 18 and 19.
It is assumed that silage is harvested by contractor.

(3) Sensitivity analysis

Change in gross margin (£)

	27 month calving	
	per head	per hectare
± £50 in heifer value	50	84
± £10 in calf price	10	17

Change in gross margin (£)

	24 month calving	
	per head	per hectare
± £50 in heifer value	50	100
± £10 in calf price	10	20

(4) Target weights (kgs)

Age (months)	Spring born	
	24 month calving	27 month calving
3	85	85
9	215	195
15	345	300
21	485	435
24	560	500
27	-	580

Target daily liveweight gain (kgs/day)

Age (months)	Spring born	
	24 month calving	27 month calving
3-9	0.72	0.61
9-15	0.72	0.58
15-21	0.78	0.75
21-24	0.83	0.72
24-27	-	0.89

BULL CALF REARING (TO 3 MONTHS)

	kg		£/tonne	TYPICAL £/head
Milk substitute	25	@	1900	48
Concentrates (17-18% Protein)	150	@	270	41
Hay	20	@	130	3
Bedding Straw	70	@	80	6
Veterinary & sundries				20
Total variable costs				**116**

(1) Intake per calf of milk substitute depends on the system of feeding. A calf would consume 35 kg of milk substitute in 6 weeks on ad libitum feeding system whereas on a bucket rearing system the intake per calf would be between 16 and 24 kg.

(2) When whole milk is fed to calves, 135 litres would provide the same energy and protein as 20 kg of milk substitute.

(3) A heifer calf will consume less concentrates over the first three months (130 to 140 kg). The rearing cost for a dairy heifer calf would be approximately £110.

(4) The daily liveweight gain during the first 3 months will average 0.7 kg.

(5) Typical liveweights at 3 months of age are 120 kg for bull calves and 110 kg for heifer calves.

LIVEWEIGHT TO DEADWEIGHT PRICE CONVERSION TABLE

Liveweight Price (pence per kg)	**Deadweight Price** (pence per kg)							
	Kill out							
	48%	50%	52%	54%	56%	58%	60%	62%
140	291.7	280.0	269.2	259.3	250.0	241.4	233.3	225.8
142	295.8	284.0	273.1	263.0	253.6	244.8	236.7	229.0
144	300.0	288.0	276.9	266.7	257.1	248.3	240.0	232.3
146	304.2	292.0	280.8	270.4	260.7	251.7	243.3	235.5
148	308.3	296.0	284.6	274.1	264.3	255.2	246.7	238.7
150	312.5	300.0	288.5	277.8	267.9	258.6	250.0	241.9
152	316.7	304.0	292.3	281.5	271.4	262.1	253.3	245.2
154	320.8	308.0	296.2	285.2	275.0	265.5	256.7	248.4
156	325.0	312.0	300.0	288.9	278.6	269.0	260.0	251.6
158	329.2	316.0	303.8	292.6	282.1	272.4	263.3	254.8
160	333.3	320.0	307.7	296.3	285.7	275.9	266.7	258.1
162	337.5	324.0	311.5	300.0	289.3	279.3	270.0	261.3
164	341.7	328.0	315.4	303.7	292.9	282.8	273.3	264.5
166	345.8	332.0	319.2	307.4	296.4	286.2	276.7	267.7
168	350.0	336.0	323.1	311.1	300.0	289.7	280.0	271.0
170	354.2	340.0	326.9	314.8	303.6	293.1	283.3	274.2
172	358.3	344.0	330.8	318.5	307.1	296.6	286.7	277.4
174	362.5	348.0	334.6	322.2	310.7	300.0	290.0	280.6
176	366.7	352.0	338.5	325.9	314.3	303.4	293.3	283.9
178	370.8	356.0	342.3	329.6	317.9	306.9	296.7	287.1
180	375.0	360.0	346.2	333.3	321.4	310.3	300.0	290.3
182	379.2	364.0	350.0	337.0	325.0	313.8	303.3	293.5
184	383.3	368.0	353.8	340.7	328.6	317.2	306.7	296.8
186	387.5	372.0	357.7	344.4	332.1	320.7	310.0	300.0
188	391.7	376.0	361.5	348.1	335.7	324.1	313.3	303.2
190	395.8	380.0	365.4	351.9	339.3	327.6	316.7	306.5
192	400.0	384.0	369.2	355.6	342.9	331.0	320.0	309.7
194	404.2	388.0	373.1	359.3	346.4	334.5	323.3	312.9
196	408.3	392.0	376.9	363.0	350.0	337.9	326.7	316.1
198	412.5	396.0	380.8	366.7	353.6	341.4	330.0	319.4
200	416.7	400.0	384.6	370.4	357.1	344.8	333.3	322.6
210	437.5	420.0	403.8	388.9	375.0	362.1	350.0	338.7
220	458.3	440.0	423.1	407.4	392.9	379.3	366.7	354.8
230	479.2	460.0	442.3	425.9	410.7	396.6	383.3	371.0
240	500.0	480.0	461.5	444.4	428.6	413.8	400.0	387.1
250	520.8	500.0	480.8	463.0	446.4	431.0	416.7	403.2
260	541.7	520.0	500.0	481.5	464.3	448.3	433.3	419.4

18 MONTH HEIFER BEEF

(October/November 2018 born continental type calves)

				TYPICAL	HIGH
	kg(dwt)		p/kg	£/head	£/head
Finished Heifer	275	@	350	963	963
Less Value of calf plus 2% mortality allowance				260	260
OUTPUT				**703**	**703**
Calf rearing costs to 3 months				110	110
4-6 months (indoors)			£/t		
Concentrates (17% protein)	2.0 to 1.0 kg/day	@	240	43	22
Silage	1.5 tonnes	@	19.62	29	29
Veterinary and miscellaneous				7	7
7-12 months (at grass)			£/t		
Concentrates (15% protein)	100 kg to 30 kg	@	225	23	7
			£/ha		
Grazing	0.15 ha	@	147	22	22
Veterinary and miscellaneous				9	9
13-18 months (indoors)			£/t		
Barley and minerals	4.3 to 2.0 kg/day	@	175	135	63
Silage	4.5 to 5 tonnes	@	19.62	88	98
Veterinary and miscellaneous				7	7
Total variable costs				**474**	**374**
GROSS MARGIN PER HEAD				**228**	**328**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**609**	**880**
Number of cattle finished per hectare				3.3	3.2
Interest charge per head (@ 4%)				30	27

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Two levels of concentrate requirements are given. The lower quantity is required with 'GOOD' quality silage (6 to 7 weeks regrowth, 70 D) and the higher level with 'MEDIUM' quality silage (10 weeks regrowth, 60 D).

18 MONTH HEIFER BEEF (CONTINUED)

(3) Number of housed and grazing days and daily liveweight gain (DLWG)

	1st Winter Housed	Grass	2nd Winter Housed
Days	90	180	180
DLWG (kg)	0.75	0.9	0.9

(4) For details of grazing & silage variable costs, see pages 18 and 19.

(5) Sensitivity analysis

Change in gross margin (£)

	Quality of silage			
	MEDIUM		**GOOD**	
	per head	per hectare	per head	per hectare
+ £10 in calf value	10	27	10	27
+ 5p/kg in sale value	14	37	14	37

22 MONTH STEER BEEF

(October/November 2018 born continental type calves)

				TYPICAL	HIGH
	kg(dwt)		p/kg	£/head	£/head
Finished steer	320	@	350	1120	1120
Less Value of calf plus 2% mortality allowance				310	310
OUTPUT				**810**	**810**
Calf rearing costs to 3 months				116	116
4-6 months (indoors)			£/t		
Concentrates (17% protein)	2.5 to 1.0 kg/day	@	240	54	22
Silage	1.2 tonnes	@	19.62	24	24
Veterinary and miscellaneous				7	7
7-12 months (at grass)			£/t		
Concentrates (15% protein)	110 kg to 40 kg	@	225	25	9
			£/ha		
Grazing	0.15 ha	@	147	22	22
Veterinary and miscellaneous				9	9
13-18 months (indoors)			£/t		
Concentrates (15% protein)	2.0 to 0.5 kg/day	@	225	81	20
Silage	4.5 to 5 tonnes	@	19.62	88	98
Veterinary and miscellaneous				7	7
19-22 months (at grass)			£/t		
Barley and minerals	130 kg to 60 kg	@	175	23	11
			£/ha		
Grazing	0.17 ha	@	147	25	25
Veterinary and miscellaneous				9	9
Total variable costs				**490**	**378**
GROSS MARGIN PER HEAD				**320**	**432**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**665**	**900**
Number of cattle finished per hectare				2.2	2.1
Interest charge per head (@ 4%)				41	37

22 MONTH STEER BEEF (CONTINUED)

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Two levels of concentrate requirements are given. The lower quantity is required with 'GOOD' quality silage (6 to 7 weeks regrowth, 70 D) and the higher level with 'MEDIUM' quality silage (10 weeks regrowth, 60 D).

(3) Weight at 3 Months: 120 kg lwt.

Daily liveweight gain (kg)	
0.75 (3 months to turnout)	0.6 Housed (1st winter)
0.90 At grass (1st summer)	1.0 At grass (2nd summer)

(4) Grazing and silage costs - see pages 18 and 19.

(5) Sensitivity analysis

Change in gross margin (£)

	Quality of silage			
	MEDIUM		GOOD	
	per head	per hectare	per head	per hectare
± £10 in calf value	10	21	10	21
± 5p/kg in sale value	16	33	16	33

24 MONTH STEER BEEF

(January/February 2018 born continental type calves)

				TYPICAL	HIGH
	kg(dw t)		p/kg	£/head	£/head
Finished steer	335	@	360	1206	1206
Less Value of calf plus 2% mortality allowance				310	310
OUTPUT				**896**	**896**
Calf rearing costs to 3 months				116	116
4-9 months (at grass)			£/t		
Concentrates (15% protein)	100 to 50 kg	@	225	23	11
			£/ha		
Grazing	0.11 ha	@	147	16	16
Veterinary and miscellaneous				9	9
10-15 months (indoors)			£/t		
Concentrates (15% protein)	1.8 to 0.5 kg/day	@	225	73	20
Silage	4 to 4.5 tonnes	@	19.62	78	88
Veterinary and miscellaneous				6	6
16-21 months (at grass)			£/ha		
Grazing	0.20 ha	@	147	29	29
Veterinary and miscellaneous				9	9
22-24 months (indoors)			£/t		
Barley and minerals	6.7 to 3.0 kg/day	@	175	106	47
Silage	2.75 to 3.0 tonnes	@	19.62	54	59
Veterinary and miscellaneous				5	5
Total variable costs				**524**	**417**
GROSS MARGIN PER HEAD				**372**	**479**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**669**	**863**
Number of cattle finished per hectare				2.09	2.0
Interest charge per head (@ 4%)				46	41

24 MONTH STEER BEEF (CONTINUED)

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Two levels of concentrate requirements are given. The lower quantity is required with 'GOOD' quality silage (6 to 7 weeks regrowth, 68 D) the higher levels with 'MEDIUM' quality silage (10 weeks regrowth, 60 D).

(3) Weight at 3 Months: 120 kg lwt.

Daily liveweight gain (kg)	
0.75 At grass (1st summer)	0.90 At grass (2nd summer)
0.60 Housed (1st winter)	1.0 Housed (2nd winter)

(4) Grazing and silage costs - see pages 18 and 19.

(5) Sensitivity analysis

Change in gross margin (£)

	Quality of silage			
	MEDIUM		GOOD	
	per head	per hectare	per head	per hectare
± £10 in calf value	10	18	10	18
± 5p/kg in sale value	17	30	17	30

28 MONTH STEER BEEF

(April/May 2018 born continental type calves)

				TYPICAL	HIGH
	kg(dw t)		p/kg	£/head	£/head
Finished steer	365	@	360	1,314	1,314
Less Value of calf plus 2% mortality allowance				310	310
OUTPUT				**1,004**	**1,004**
Calf rearing costs to 3 months				116	116
4-5 months (at grass)			£/t		
Concentrates (17% Protein)	60 to 30 kg	@	240	14	7
			£/ha		
Grazing	.04 ha	@	147	6	6
Veterinary and miscellaneous				9	9
6-11 months (indoors)			£/t		
Concentrates (15% Protein)	2 to 1 kg/day	@	225	81	41
Silage	3 to 4 tonnes	@	19.62	59	78
Veterinary and miscellaneous				6	6
12-17 months (at grass)			£/ha		
Grazing	0.16 ha	@	147	24	24
Veterinary and miscellaneous				9	9
18-23 months (indoors)			£/t		
Concentrates (15% Protein)	2 to 1 kg/day	@	225	81	41
Silage	5 to 5.5 tonnes	@	19.62	98	108
Veterinary and miscellaneous				6	6
24-28 months (outdoors)			£/ha		
Grazing	0.25 ha	@	147	37	37
Veterinary and miscellaneous				9	9
Total variable costs				**555**	**496**
GROSS MARGIN PER HEAD				**449**	**508**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**642**	**727**
Number of cattle finished per hectare				1.5	1.5
Interest charge per head (@ 4%)				55	52

28 MONTH STEER BEEF (CONTINUED)

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Steers over 30 months of age may be subject to price deductions.

(3) Two levels of concentrate requirements are given. The lower quantity is required with 'GOOD' quality silage (6 to 7 weeks regrowth, 68 D) and the higher level with 'MEDIUM' quality silage (10 weeks regrowth, 60 D).

(4) Weight at 3 Months: 120 kg lwt.

Daily Liveweight Gain (kg)	
0.75 At grass	0.50 Housed (2nd Winter)
0.60 Housed (1st Winter)	1.00 At grass
0.90 At grass	

(5) Grazing and silage costs - see pages 18 and 19.

(6) Sensitivity Analysis

Change in Gross Margin (£)

	Quality of silage			
	MEDIUM		GOOD	
	per head	per hectare	per head	per hectare
+ £10 in calf value	10	14	10	14
+ 5p/kg in sale value	18	26	18	26

CEREAL BULL BEEF

(Friesian type calves)

	kg(dwt)		p/kg	TYPICAL £ /head
Finished Bull	270	@	330	891
Less Value of calf plus 2% mortality allowance				100
OUTPUT				**791**
Calf rearing costs to 3 months				116
4-13 months			£/t	
Concentrates (13-15% Protein)	2 tonnes	@	225	450
Straw				18
Veterinary and miscellaneous				32
Total variable costs				**616**
GROSS MARGIN PER HEAD				**175**
Interest charge per head (@ 4%)				18

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Bulls are potentially dangerous. Guidance on the handling of bulls can be obtained from DAERA.

(3) Market outlets for bull beef should be identified before production is commenced.

(4) Friesian type bull calves finished at 13 months of age. DLWG of 1.3 kg between 4 and 13 months of age

(5) Sensitivity analysis

Change in gross margin (£)

	per head
± £10 in calf value	10
± 5p/kg in sale value	13.5
± £10/t in concentrate price	20

GRASS SILAGE BULL BEEF

(Born spring 2018 continental type calves)

				TYPICAL	HIGH
	kg(dwt)		p/kg	£/head	£/head
Finished Bull	335	@	350	1,173	1,173
Less Value of calf plus 2% mortality allowance				310	310
OUTPUT				**863**	**863**
Calf rearing costs to 3 months				116	116
4-6 months			£/t		
Concentrates (17% Protein)	0.5 to 0.3 tonnes	@	240	120	72
Silage	0.5 to 1.0 tonnes	@	19.62	10	20
Veterinary and miscellaneous				13	13
7-14 months					
Concentrates (15% Protein)	1.4 to 0.9 tonnes	@	225	315	203
Silage	5.0 to 6.0 tonnes	@	19.62	98	118
Veterinary and miscellaneous				18	18
Total variable costs				**690**	**559**
GROSS MARGIN PER HEAD				**172**	**303**
GROSS MARGIN PER HECTARE @ 2 ce/ha				**575**	**759**
Number of cattle finished per hectare				6.7	5.0
Interest charge per head (@ 4%)				31	28

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(2) Bulls are potentially dangerous. Guidance on the handling of bulls can be obtained from DAERA.

(3) Market outlets for bull beef should be identified before production is commenced.

(4) Two levels of concentrate requirements are given. The lower quantity is required with 'GOOD' quality silage (6 to 7 weeks regrowth, 68 D) and the higher level with 'MEDIUM' quality silage (10 weeks regrowth, 60 D). Care should be exercised with silage intake levels to avoid under finished animals at 15 months.

GRASS SILAGE BULL BEEF (CONTINUED)

(5) Continental type bull calves born during the spring and finished at 14 months of age. DLWG of 1.40 kg between 4 and 14 months of age.

(6) Silage costs - see page 19.

(7) Sensitivity Analysis

Change in Gross Margin (£)

	Quality of silage			
	MEDIUM		GOOD	
	per head	per hectare	per head	per hectare
+ £10 in calf value	10	33	10	25
+ 5p/kg in sale value	17	56	17	42
+ £10/t in concentrate price	19	63	12	30

CALF TO STORE SYSTEM

(January 2018 born continental type calves)

				TYPICAL
	kg(lwt)		£/100kg	£/head
Sale	390	@	205	800
Less value of calf plus 2% mortality allowance				310
OUTPUT				**490**
Calf rearing cost to 3 months				116
4 - 10 months (at grass)			£/t	
Concentrates (17% protein)	100 kg	@	240	24
Grazing	0.15 ha	@	147	22
Veterinary and miscellaneous				11
11 - 16 months (indoors)				
Concentrates (15% protein)	1.5 kg/day	@	225	61
Silage	4.5 tonnes	@	19.62	88
Veterinary and miscellaneous				13
Total Variable Costs				**335**
GROSS MARGIN PER CALF				**154**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**365**
Interest per head (@ 4%)				25

(1) January born continental type bull calves sold during the following spring ; 3.8 cattle per hectare.

(2) Weight at 3 Months: 120 kg lwt.

Daily liveweight gain (kg): - At grass 0.8
- Housed 0.6

LOWLAND SUCKLER COWS - MAY/JUNE CALVING (2018)

						TYPICAL
	sold per cow		kg(lwt)		£/100kg	£/head
Calves	0.94	@	320	@	220	662
Less herd replacement cost						72
calf purchases	0.06					17
OUTPUT						**573**
					£/t	
Concentrates - cow & calf			150 kg	@	175	26
					£/ha	
Grazing			0.31 ha	@	147	46
					£/t	
Silage - cow			8 tonnes	@	19.62	157
- calf			2.5 tonnes	@	19.62	49
Veterinary and miscellaneous						55
Total Variable Costs						**333**
GROSS MARGIN PER COW						**240**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha						**381**

(1) Calves weaned during March/April (10 months old) at a liveweight between 300 and 340 kg. 0.92 calves born per cow and 4 per cent mortality birth to weaning.

(2) Herd replacement cost

Cow purchase price	£1,250
Cull cow price	£900
Replacement/Mortality	15% replacement rate and 1% mortality per annum
Bull depreciation	£10 per cow/year

(3) Daily liveweight gain

	At grass	Housed
Bulls	1kg	0.9kg
Heifers	1kg	0.9kg

(4) For details of grazing & silage variable costs, see pages 18 and 19.

(5) Sensitivity analysis

	Change in Gross Margin (£)	
	per cow	per hectare
± £10/t in concentrate price	2	2
± £5/100 kg in sale price	15	24
± 0.1 calves sold per cow	70	112

LOWLAND SUCKLER COWS - FEBRUARY/MARCH CALVING (2018)

					TYPICAL
	sold per cow		kg(lwt)	£/100kg	£/head
Calves	0.94	@	270 @	220	558
Less herd replacement cost					72
calf purchases	0.06				17
OUTPUT					**469**
				£/t	
Concentrates - calf			50 kg @	240	12
- cow			50 kg @	175	9
				£/ha	
Grazing			0.30 ha @	147	44
				£/t	
Silage - cow			7 tonnes @	19.62	137
Veterinary and miscellaneous					65
Total Variable Costs					**267**
GROSS MARGIN PER COW					**202**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha					**344**

(1) Calves weaned during October. DLWG of 0.95 kg. 0.92 calves born per cow and 4 per cent mortality birth to weaning.

(2) Herd replacement cost

Cow purchase price	£1,250
Cull cow price	£900
Replacement/Mortality	15% replacement rate and 1% mortality per annum
Bull depreciation	£10 per cow/year

(3) For details of grazing & silage variable costs, see pages 18 and 19.

(4) Sensitivity analysis

Change in gross margin (£)

	per cow	per hectare
+ £10/t in concentrate price	1	2
+ £5/100 kg in sale price	13	22
± 0.1 calves sold per cow	59	101

LOWLAND SUCKLER COWS - SEPTEMBER/OCTOBER CALVING (2018)

					TYPICAL
	sold per cow	kg(lwt)		£/100kg	£/head
Calves	0.94	@ 290	@	220	600
Less herd replacement cost					72
calf purchases	0.06				17
OUTPUT					**511**
				£/t	
Concentrates - calf		150 kg	@	240	36
- cow		200 kg	@	175	35
				£/t	
Silage - cow		8 tonnes	@	19.62	157
- calf		1 tonnes	@	19.62	20
				£/ha	
Grazing		0.28 ha	@	147	41
Veterinary and miscellaneous					65
Total Variable Costs					**354**
GROSS MARGIN PER COW					**157**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha					**258**

(1) Calves weaned during June. DLWG of 0.95 kg. 0.92 calves born per cow and 4 per cent mortality birth to weaning.

(2) Herd replacement cost

Cow purchase price	£1,250
Cull cow price	£900
Replacement/Mortality	15% replacement rate per annum
	1% mortality per annum
Bull depreciation	£10 per cow/year

(3) For details of grazing & silage variable costs, see pages 18 and 19.

(4) Sensitivity analysis

Change in gross margin (£)

	per cow	per hectare
± £10/t in concentrate price	4	6
± £5/100 kg in sale price	14	22
± 0.1 calves sold per cow	64	105

HILL SUCKLER COWS - SPRING CALVING (2018)

	sold per cow		kg(lwt)		£/100kg	TYPICAL £/head
Calves	0.94	@	230	@	220	476
Less herd replacement cost						70
calf purchases	0.06					17
OUTPUT						**388**
			kg		£/t	
Barley and minerals			110	@	175	19
Grazing						30
			tonnes		£/t	
Silage			6	@	19.62	118
Veterinary and miscellaneous						55
Total Variable Costs						**222**
GROSS MARGIN PER COW						**166**

(1) Calves weaned during October. 0.92 calves born per cow and 4 per cent mortality birth to weaning.

(2) Herd replacement cost

Cow purchase price	£1,100
Cull cow price	£750
Replacement/Mortality	15% replacement rate per annum
	1% mortality per annum
Bull depreciation	£10 per cow/year

(3) For details of grazing & silage variable costs, see pages 18 and 19.

Change in gross margin (£)

	per head
± £10/t in concentrate price	1
± £5/100 kg in sale price	11
± 0.1 calves sold per cow	51

BEEF HEIFER REPLACEMENTS - SPRING BORN 2018
24 MONTH CALVING

				TYPICAL
				£/head
Value of heifer (allowing for barreners & rejects)				1150
Less Value of calf plus 2% mortality allowance				290
OUTPUT				**860**
Calf rearing costs to 3 months				110
4-9 months (at grass)			£/t	
Concentrates (17% protein)	20 kg	@	240	5
			£/ha	
Grazing	0.11 ha	@	147	16
Veterinary and miscellaneous				12
10-15 months (indoors)			£/t	
Barley and minerals	400 kg	@	175	70
Silage	4.5 tonnes	@	19.62	88
Veterinary and miscellaneous				9
16-21 months (at grass)				
Grazing	0.19 ha	@	147	28
AI Bull charges, veterinary and miscellaneous				32
22-24 months (indoors)			£/t	
Barley and minerals	40 kg	@	175	7
Silage	3 tonnes	@	19.62	59
Veterinary and miscellaneous				4
Total variable costs				**440**
GROSS MARGIN PER HEAD				**420**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**742**

(1) Production of a continental cross Friesian heifer. Target weights:-

360-380 kg at 15 months
560-580 kg at 24 months

(2) 2.1 heifer replacements per hectare.

BEEF HEIFER REPLACEMENTS - SPRING BORN - 24 MONTH CALVING (CONTINUED)

(3) For details of grazing & silage variable costs, see pages 18 and 19.

(4) Sensitivity analysis

Change in gross margin (£)

	per head	per hectare
± £10 in heifer values	10	18
± £10 in calf prices	10	18

FINISHING SUCKLED STEER CALVES

(Purchased Autumn 2018)

				TYPICAL
	kg (dwt)		p/kg	£/head
Sale of finished steer	360	@	365	1,314
	kg (lwt)		£/100 kg	
Less Value of calf plus 2% mortality allowance	280	@	225	630
OUTPUT				**684**
			£/t	
9-14 months (indoors)				
Concentrates (17% Protein)	2.0 kg/day	@	240	86
Silage	3.5 tonnes	@	19.62	69
Veterinary and miscellaneous				10
			£/t	
15-20 months (at grass)				
Barley and minerals	40 kg	@	175	7
			£/ha	
Grazing	0.19 ha	@	147	28
Veterinary and miscellaneous				12
21-24 months (indoors)				
Barley and minerals	6 kg/day	@	175	126
Silage	3 tonnes	@	19.62	59
Veterinary and miscellaneous				10
Total variable costs				**407**
GROSS MARGIN PER HEAD				**277**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**677**
Interest charge per head (@ 4%)				42

(1) Continental calves born during the spring 2018, purchased at the autumn suckler sales and sold at 2 years of age. 2.8 steers finished per hectare.

	1st Winter Housed	Grass	2nd Winter Housed
Days	180	180	120
DLWG (kg)	0.6	0.9	1.0
Concentrates (kg)	360	40	720

(2) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies.

(3) Sensitivity analysis

	Change in gross margin (£)	
	per head	per hectare
+ £5/100 kg in purchase price	14	34
+ 5p/kg in sale prices	17	42

WINTER (2018/2019) STEER FINISHING
400 KG STORE

				TYPICAL
	kg (dwt)		p/kg	£/head
Sale of finished steer	340	@	360	1,224
	kg(lwt)		p/kg	
Less Purchase	400	@	215	860
OUTPUT				**364**
			£/t	
Barley and minerals	5 kg/day	@	175	201
Silage	7 tonnes	@	19.62	137
Veterinary and miscellaneous				12
Total Variable Costs				**351**
GROSS MARGIN PER HEAD				**13**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**64**
Interest charge per head (@ 4%)				26

(1) Continental cross steers purchased during the autumn of 2018 and finished in 230 days in house with a DLWG of 0.95kg. 5.7 steers finished per hectare. Deadweight price is net of marketing expenses.

(2) Cattle are sold at 22 months.

(3) Gross margin under various purchase and sale price scenarios.

Gross margin (£ per head)

		Purchase Price p/kg (lwt)				
		195	**205**	**215**	**225**	**235**
Sale price (pence per per kg (dwt))	**320**	-43	-83	-123	-163	-203
	340	25	-15	-55	-95	-135
	360	93	53	13	-27	-67
	380	161	121	81	41	1
	400	229	189	149	109	69

WINTER (2018/2019) STEER FINISHING
500 KG STORE

				TYPICAL
	kg(dwt)		p/kg	£/head
Sale of finished steer	360	@	360	1,296
	kg(lwt)		p/kg	
Less Purchase	500	@	210	1,050
OUTPUT				**246**
			£/t	
Barley and minerals	6 kg/day	@	175	158
Silage	5 tonnes	@	19.62	98
Veterinary and miscellaneous				12
Total Variable Costs				**268**
GROSS MARGIN PER HEAD				**-22**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**-158**
Interest charge per head (@ 4%)				19

(1) Continental cross steers. Purchased during the autumn 2018 and housed for 150 days with a daily liveweight gain of 1.0 kg. An average of 8.0 steers finished per hectare. Deadweight price is net of marketing expenses.

(3) Silage costs - see page 19.

(3) Gross margin under various purchase and sale price scenarios.

Gross margin per head

		Purchase Price p/kg (lwt)				
		190	**200**	**210**	**220**	**230**
Sale price (pence per per kg (dwt))	**320**	-66	-116	-166	-216	-266
	340	6	-44	-94	-144	-194
	360	78	28	-22	-72	-122
	380	150	100	50	0	-50
	400	222	172	122	72	22

SUMMER STEER FINISHING 2018
420 KG STORE

				TYPICAL
	kg(dwt)		p/kg	£/head
Sale of finished steer	320	@	355	1,136
	kg(lwt)		£/100kg	
Less Purchase	420	@	220	924
OUTPUT				**212**
			£/t	
Barley and Minerals	20 kg	@	175	4
			£/ha	
Grazing	0.25 ha	@	147	37
Veterinary and miscellaneous				12
Total Variable Costs				**52**
GROSS MARGIN PER HEAD				**160**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**959**
Interest charge per head (@ 4%)				19

(1) Sale price is after deduction of marketing expenses which include fees for meat inspection, grading, insurance, offal disposal, clipping, R&D and LMC levies

(2) Continental cross steers. Purchased during the spring 2018 and grazed for 180 days with a daily liveweight gain of 0.9 kg. An average of 4.0 steers grazed per hectare.

(3) Grazing variable costs - see page 18.

(4) Average Northern Ireland stocking rates for summer cattle finishing would typically be lower with approximately 2.6 cattle finished per hectare.

(5) Gross margin under various purchase and sale price scenarios.

Gross margin per head

		Purchase price p/kg (lwt)				
		200	**210**	**220**	**230**	**240**
Sale price (pence per per kg (dwt))	**315**	116	74	32	-10	-52
	335	180	138	96	54	12
	355	244	202	160	118	76
	375	308	266	224	182	140
	395	372	330	288	246	204

'TRADITIONAL' STORE TO BEEF SYSTEM

(Purchased October 2018)

				TYPICAL
	kg(dwt)		p/kg	£/head
Sale of finished steer	350	@	355	1,243
	kg(lwt)		£/100kg	
Less Purchase	360	@	220	792
OUTPUT				**451**
			£/t	
Barley and minerals	300 kg	@	175	53
Silage	5.5 tonnes	@	19.62	108
			£/ha	
Grazing	0.22 ha	@	147	32
Veterinary and miscellaneous				25
Total Variable Costs				**218**
GROSS MARGIN PER HEAD				**233**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha				**698**
Interest charge per head (@ 4%)				36

(1) Continental cross steers. Purchased during October 2018 and finished one year later. 2.8 cattle finished per hectare. Deadweight price is net of marketing expenses.

	Housed	Grass 2nd year
Days	180	180
DLWG (kg)	0.55	1.0
Concentrates (kg)	300	NIL

(2) Grazing and silage costs - see pages 18 and 19.

(3) Average Northern Ireland stocking rates for summer cattle finishing would typically be lower with approximately 1.6 cattle finished per hectare.

(4) Sensitivity analysis

	Change in gross margin (£)	
	per head	per hectare
± £5/100kg in purchase price	18	50
± 1p/kg in sale price	4	11

SUMMER GRAZING OF STORE CATTLE 2018

			TYPICAL
	kg(lwt)	£/100kg	£/head
Sale of store steer	450 @	215	968
Less Purchase	300 @	230	690
OUTPUT			**278**
		£/t	
Barley and minerals	40 kg @	175	7
		£/ha	
Grazing	0.18 ha @	147	26
Veterinary and miscellaneous			13
Total Variable Costs			**46**
GROSS MARGIN PER HEAD			**231**
GROSS MARGIN PER HECTARE @ 1.8 ce/ha			**1,383**
Interest charge per head (@ 4%)			14

(1) Continental cross steer purchased during the Spring 2018 and grazed for 180 days with a daily liveweight gain of 0.85 kg. An average of 5.6 steers grazed per hectare.

(2) Grazing variable costs - see page 18.

(3) At the average Northern Ireland stocking rate of 1.67 cow equivalents per hectare, 4.5 steers would be stocked per hectare.

(4) Gross margin under various purchase and sale price scenarios.

Gross margin per head

		Purchase Price p/kg (lwt)				
		210	**220**	**230**	**240**	**250**
Sale price (pence per per kg (lwt)	**195**	201	171	141	111	81
	205	246	216	186	156	126
	215	291	261	231	201	171
	225	336	306	276	246	216
	235	381	351	321	291	261

LOWLAND BREEDING EWES - MID MARCH LAMBING

	kg		p/kg		LOW £		TYPICAL £		HIGH £
Lambs (no.) sold finished	21	@	420	(1.20)	106	(1.40)	123	(1.60)	141
Wool							3		
Less Flock replacement cost							18		
OUTPUT					**91**		**108**		**126**
	kg		£/t						
Concentrates	65	@	240				16		
Grassland (including hay/silage)							20		
Veterinary and miscellaneous							16		
Total Variable Costs							**52**		
GROSS MARGIN PER EWE					**39**		**57**		**74**
GROSS MARGIN PER HECTARE @ 1.6 ce/ha					**312**		**453**		**594**

(1) Lamb sales pattern (%)

	June	July	Aug	Sept	Oct to Dec
Mid March lambing	17	19	14	13	37
Mid April lambing	4	14	21	25	36

(2) Sale price of lambs is net of marketing expenses.

(3) A stocking rate of 8 ewes per hectare is assumed in this budget.

(4) Flock replacement cost. Ewe replacement rate of 25% (inclusive of 5% ewe mortality). Ewes purchased at £120 and culls sold at £70. Rams purchased at £350 and sold after 3 years at £75.

(5) If replacements are retained rather than purchased, the flock replacement cost will fall, but so too will lamb output.

(6) Flocks in the new LFA will have a similar physical performance.

(7) Grazing, silage and hay costs - see pages 18 - 20.

(8) Sensitivity analysis

Change in gross margin(£)

	TYPICAL	
	per ewe	per hectare
± 0.1 in lambs reared per ewe	8.8	71
± 10p/kg in sale value	2.9	24
± £20/t in concentrate price	1.3	10

LOWLAND BREEDING EWES
EARLY (DECEMBER/JANUARY) LAMBING

	kg	p/kg		LOW £		TYPICAL £		HIGH £
Lambs (no.) sold finished	21 @	450		(1.15) 109		(1.35) 128	(1.55)	146
Wool						3		
Less Flock replacement cost						18		
OUTPUT				**93**		**112**		**131**
	kg		£/t					
Concentrates - ewe	85	@	240			20		
lambs	35	@	235			8		
Grazing and hay/silage						24		
Veterinary and miscellaneous						19		
Total Variable Costs						**72**		
GROSS MARGIN PER EWE				**22**		**41**		**60**
GROSS MARGIN PER HECTARE @ 2.2 ce/ha				**239**		**447**		**655**

(1) Lamb sales pattern (%)

April	May	June	July	Aug to Nov
15	20	20	15	30

Some producers may be able to sell up to 90% of their lambs before the end of June.

(2) Sale price of lambs is net of marketing expenses.

(3) A stocking rate of 11 ewes per hectare is assumed in this budget. Stocking rate is higher than that achieved by 'Mid March' lambing due to the earlier lamb sales.

(4) Flock replacement cost . Ewe replacement rate of 25% (inclusive of 5% ewe mortality). Ewes purchased at £120 and culls sold at £70. Rams purchased at £350 and sold after 3 years at £75.

(5) With this production system, housing is normally required at lambing. Approximately 0.10 to 0.15 fewer lambs will be reared per ewe than for 'Mid March' lambing.

LOWLAND BREEDING EWES - EARLY (DECEMBER/JANUARY) LAMBING (CONTINUED)

(6) Flocks in the new LFA will have a similar physical performance.

(7) Grazing, silage and hay costs - see pages 18 - 20.

(8) Sensitivity analysis

Change in gross margin (£)

	TYPICAL	
	per ewe	per hectare
± 0.1 in lambs reared per ewe	9.5	104
± 10p/kg in sale value	2.8	31
± £20/t in concentrate price	2.4	26

UPLAND BREEDING EWES - CROSSBRED TYPE IN SDA

			LOW		TYPICAL		HIGH
			£		£		£
	kg @ p/kg						
Lambs sales (no.)	21 @ 410	(0.88)	76	(1.02)	88	(1.16)	100
	16 @ 415	(0.37)	25	(0.43)	29	(0.49)	33
Wool					3		
Less Flock replacement cost					18		
OUTPUT			**85**		**101**		**117**
	kg	£/t					
Concentrates	65 @	240			16		
Grazing and hay					20		
Veterinary and miscellaneous					16		
Total Variable Costs					**52**		
GROSS MARGIN PER EWE			**33**		**49**		**66**

(1) For the typical flock, 70% of lambs are sold fat at 21kg halfweight, 30% as stores at 16kg halfweight.

(2) Sale price of lambs is net of marketing expenses.

(3) Flock replacement. Ewe replacement rate of 25% (inclusive of 5% mortality). Ewe replacements purchased at £120 each and culls sold at £70 each. Rams purchased at £350 each and sold after 3 years for £75.

(4) Sensitivity analysis

Change in gross margin(£)

	TYPICAL
	per ewe
± 0.1 in lambs reared per ewe	8.0
± 10p/kg in sale value	2.8
± £20/t in concentrate price	1.3

HILL BREEDING EWES - MOUNTAIN TYPE IN SDA

			LOW		TYPICAL		HIGH	
				£		£		£
	kg	p/kg						
Lamb sales (no.)	19 @	400	(0.21)	16	(0.27)	21	(0.33)	25
	14 @	405	(0.49)	28	(0.63)	36	(0.77)	44
		£/head						
Cull ewes	0.18 @	50				9		
Wool						2		
Less Flock replacement cost						3		
OUTPUT				**52**		**64**		**77**
	kg	£/t						
Concentrates	55 @	240				13		
Grazing						15		
Veterinary and miscellaneous						15		
Total Variable Costs						**43**		
GROSS MARGIN PER EWE				**8**		**21**		**33**

(1) 25 lambs per 100 ewes retained as replacements.

(2) Lambs sales, 30% sold fat at 20kg halfweight and 70% sold as stores at 14kg halfweight.

(3) Sale price of lambs is net of marketing expenses.

(4) Flock replacement. Rams purchased at £350 each and sold after 3 years for £65. Ewe replacements are retained from own flock.

(5) Ewe mortality of 7% per annum.

(6) Sensitivity analysis

Change in gross margin(£)

	TYPICAL
	per ewe
± 0.1 in lambs reared per ewe	6.2
± 10p/kg in lamb sale value	2.0
± £20/t in concentrate price	1.1

STORE LAMB (16 kg +) FINISHED ON GRASS

	kg (halfweight)	p/kg	TYPICAL £
Lamb sale	21	@ 410	86
Less lamb purchase	16	@ 410	66
OUTPUT (feeder's margin)			**21**
Grazing			3
Veterinary and miscellaneous			2
Total Variable Costs			**5**
GROSS MARGIN PER LAMB			**16**

(1) Store lambs are purchased at an average half weight of 16 kg during the summer/autumn and typically grazed for approximately 100 days. Approximately 70% of the finished lambs are sold in the period October to December. Price for finished lambs is net of marketing deductions.

(2) Average weekly liveweight gain of 0.7 kg. However, some producers could achieve a liveweight gain of 1.0 kg per week.

(3) A mortality rate of less than 1% is typical.

(4) Own grazing is charged at £1 per month for each lamb. Rented grass keep would cost approximately £0.55 per lamb per week.

(5) Sensitivity analysis

	Change in gross margin (£)
	per lamb
± 10p per kg halfweight in purchase price	1.60
± 10p per kg halfweight in sale price	2.10

STORE LAMB (14 kg +) FINISHED ON GRASS AND CONCENTRATES

	kg (halfweight)	p/kg	TYPICAL £
Lamb sale	21	@ 415	87
Less lamb purchase	14	@ 410	57
OUTPUT (feeder's margin)			**30**
	kg	£/tonne	
Concentrates	45	@ 235	11
Grazing			5
Veterinary and miscellaneous			2
Total Variable Costs			**18**
GROSS MARGIN PER LAMB			**12**

(1) Store lambs are purchased during the summer/autumn at an average half weight of 14kg and typically grazed for 150 days. Approximately 66% of the finished lambs are sold in the period December to February. Price for finished lambs is net of marketing expenses.

(2) Average weekly liveweight gain of 0.66 kg.

(3) A mortality rate of 1% is typical.

(4) Typically 15kg of concentrates per month are fed for 3 months. However, up to 25kg of concentrates may be fed per month.

(5) Own grazing is charged at £1 per month for each lamb. Rented grass keep would cost approximately £0.55 per lamb per week.

(6) Sensitivity analysis

	Change in gross margin(£) per lamb
± 10p/kg in purchase price	1.40
± 10p/kg in sale value	2.10
± £10/t in concentrate price	0.45
± 10 kg in concentrate use	2.35

STORE LAMB (14 kg) FINISHED ON FORAGE CROPS

	kg (halfweight)			TYPICAL
	kg		p/kg	£
Lamb sale	21	@	420	88
Less lamb purchase	14	@	410	57
OUTPUT (feeder's margin)				**31**
	kg/day		£/tonne days	
Concentrates	0.2	@	235 125	6
			p/day @	
Grazing			7.1 @ 100	7
Veterinary and miscellaneous				2
Total Variable Costs				**15**
GROSS MARGIN PER LAMB				**16**

(1) Store lambs are purchased at an average halfweight of 14kg during the autumn and typically fed during a 125 day finishing period on forage crops. The finished lambs are assumed to be sold in February.

(2) Price for finished lambs is net of marketing expenses.

(3) Average weekly liveweight gain of 0.8kg.

(4) A mortality rate of 1% is typical.

(5) Forage costs include seed, fertiliser and spray expenses only. No allowance for crop cultivations has been included.

(6) Swedes sown in May and fed from November provide 4,500 lamb grazing days per hectare at a typical variable cost of £320 per hectare or 7.1 pence per lamb grazing day. Stubble turnips sown in July and grazed from November provide 2,500 grazing days per hectare at a typical variable cost of £290 per hectare or 11.5 pence per lamb grazing day.

(7) Sensitivity analysis

Change in gross margin (£)

	per lamb
+10p/kg in purchase price	1.40
+10p/kg in sale value	2.10

STORE LAMBS FINISHED INDOORS

	kg (halfweight)	TYPICAL
	kg @ p/kg	£
Lamb sale	22 @ 430	95
Less lamb purchase	15 @ 405	61
OUTPUT (feeder's margin)		**34**
	kg £/tonne	
Concentrates	100 @ 235	24
Veterinary and miscellaneous (including fodder)		3
Total Variable Costs		**27**
GROSS MARGIN PER LAMB		**7**

(1) Store lambs are housed in November at an average half weight of 15kg. They are typically finished after 100 (up to 140) days concentrate only feeding period. The finished lambs are sold in the early spring.

(2) Price for finished lambs is net of marketing deductions.

(3) Concentrate intake and liveweight gain

	Store lamb	
	30 kg (lwt)	40 kg (lwt)
Concentrate intake per month (kg)	25	35
Typical weekly liveweight gain (kg)	0.8	1.1

(4) A mortality rate of 2.5% is typical.

(5) Sensitivity analysis

Change in gross margin (£)

	per lamb
+ 10p/kg in purchase price	1.50
+ 10p/kg in sale value	2.20
+ £10/t in concentrate price	1.00
+ 10 kg in concentrate use	2.35

PIG REARING

				LOW		TYPICAL		HIGH
		£/head		£		£		£
Sales (no.) of 39 kg weaners	@	53	(20.0)	1,060	(23.0)	1,219	(25.0)	1,325
	number	£/head						
Plus cull sows & boars	0.41	@ 100				41		
OUTPUT				**1,101**		**1,260**		**1,366**
		£/t						
Sow meal - Dry sow		255		235		235		236
- Lactating Sow		285		137		138		143
Creep and link feeds		530		159		183		199
Grower feed		305		250		288		313
A.I. Costs				31		31		31
Veterinary and miscellaneous				100		100		100
Total Variable Costs				**912**		**974**		**1021**
GROSS MARGIN PER SOW				**190**		**286**		**345**
GROSS MARGIN PER WEANED PIG				**9.5**		**12.4**		**13.8**

(1) Herd replacement. It is assumed that sows and boars have an average breeding life of 2.5 years; 1 boar per 75 sows; sow mortality 4.0% and 100% of replacements . retained

(2) As the number of weaners sold per sow increases, the sow meal allocation per weaner falls.

	LOW	TYPICAL	HIGH
Number of weaners sold per sow per year	20	23	25
Meal consumption per weaner (kg)	**LOW**	**TYPICAL**	**HIGH**
Sow meal (Dry sow)	46	40	37
Sow meal (Lactating sow)	24	21	20
Creep & link feeds	15	15	15
Grower feed	41	41	41
Total feed	**126**	**117**	**113**

(3) A.I. Costs - semen cost £6 per bottle. Each sow inseminated on average 2.6 times per year and uses two bottles of semen per insemination.

(4) 'Veterinary and miscellaneous' costs do not include 'fixed costs' such as electricity, water and transport which are directly associated with the pig enterprise - **See page 95 for a breakdown of fixed costs**

(5) Sensitivity analysis

	Change in gross margin (£ per sow)		
	LOW	**TYPICAL**	**HIGH**
+ £1 in sale price	20	23	25
+ £5 in average feed price	13	13	14

PIG FINISHING

				TYPICAL £
	kg (dwt)		p/kg	
Sale	89	@	140	125
	kg (lwt)			
Less purchase	39			53
OUTPUT				**72**
	kg		£/t	
Finisher feed	195	@	260	51
Veterinary and miscellaneous				4
Total variable cost				**55**
GROSS MARGIN PER PIG				**17**

(1) Prices for finished animals are net of marketing deductions.

(2) The mortality rate is typically 1.5%. On average 1 pig in 350 sold is condemned and no payment is received.

(3) Typical feed conversion ratio (FCR) of 2.7 : 1. There is a large variation in FCR between units depending on management practices adopted, genetics, slaughter weight and health status.

(4) 'Veterinary and miscellaneous' costs do not include 'fixed costs' such as electricity, water and transport which are associated with the pig enterprise - **See page 95 for a breakdown of fixed costs**

(5) Sensitivity analysis

	Change in gross margin £ per pig
± 1p/kg in sale price	0.89
± £5/tonne in average feed price (FCR 2.7:1)	0.98

PIG REARING AND FINISHING

		LOW		TYPICAL		HIGH	
			£		£		£
	kg (dwt) p/kg						
Sales of pigs (no.) @	89 @ 140	(21)	2,617	(25)	3,115	(28)	3,489
	Number £/head						
Plus cull sows & boars	0.41 @ 100				41		
OUTPUT			**2,658**		**3,156**		**3,530**
	£/t						
Sow meal - Dry sow	255		230		236		250
- Lactating Sow	285		138		143		144
Creep & link feeds	530		167		199		223
Grower feed	305		436		503		555
Finisher feed	260		1010		1138		1252
A.I. Costs			31		31		31
Veterinary and miscellaneous			175		175		175
Total Variable Costs			**2,187**		**2,424**		**2,629**
GROSS MARGIN PER SOW			**471**		**732**		**900**
GROSS MARGIN PER FINISHED PIG			**22.43**		**29.29**		**32.16**

(1) Sale price for finished animals are net of marketing expenses.

(2) Herd replacement. It is assumed that sows and boars have an average breeding life of 2.5 years; 1 boar per 75 sows; sow mortality 4.0% and 100% of replacements retained.

(3) Mortality 5% weaning to sale. In addition, 1 pig in 350 sold is condemned for which no payment is received.

(4) It is assumed high performing herds have better FCR than low performing herds.

(5) A.I. Costs - semen cost £6 per bottle. Each sow inseminated on average 2.6 times per year and uses two bottles of semen per insemination

(6) As the number of pigs sold per sow increases, the sow feed allocation per finisher falls.

	LOW	TYPICAL	HIGH
Number of finishers sold per sow per year	21.0	25.0	28.0

Meal consumption per finished pig (kg)	LOW	TYPICAL	HIGH
Sow meal (Dry sow)	43	37	35
Sow meal (Lactating sow)	23	20	18
Creep & link feed	15	15	15
Grower feed	68	66	65
Finisher feed	185	175	172
Total feed	**334**	**313**	**305**

PIG REARING AND FINISHING (CONTINUED)

(5) 'Veterinary and miscellaneous' costs do not include 'fixed costs' such as electricity, water and transport which are directly associated with the pig enterprise
- **See page 95 for a breakdown of fixed costs**

(6) Sensitivity analysis

Change in gross margin

Change	£ per sow		
	LOW	**TYPICAL**	**HIGH**
± 1p/kg in sale price	18.7	22.3	24.9
± £5/tonne in average feed price	35	39	43

ENRICHED COLONY LAYING HENS

PER HEN HOUSED	TYPICAL pence/dozen	GOOD pence/dozen
Sales	67.00	67.00
Less pullet	13.40	13.40
OUTPUT	**53.60**	**53.60**
Concentrates @205/t	34.78	33.01
Miscellaneous	3.00	2.91
Total Variable Costs	**37.78**	**35.92**
GROSS MARGIN PER DOZEN (pence)	**15.82**	**17.69**
GROSS MARGIN PER BIRD (£)	**4.43**	**5.13**

(1) Average data per hen housed over the typical 58 week laying cycle

Type of production	Yield (dozen eggs)	Feed used (g. per day)	Mortality (%)
Typical production	28	117	6
Good production	29	115	4

(2) The egg price is a weighted average (by class of egg and market destination) and excludes packaging and marketing costs. Fluctuations in egg prices make it imperative that up to date information is obtained in the preparation of any budget.

(3) Miscellaneous costs are comprised of electricity, water, insurance, repairs, maintenance and sundries. Labour, rent and depreciation are not included in miscellaneous costs.

(4) Sensitivity analysis

	Change in gross margin(£) per hen housed	
	TYPICAL	**GOOD**
± 1p in sale price/dozen	0.28	0.29
± £5/t in feed price	0.24	0.23

(5) Further information and advice may be obtained from DAERA's Poultry Technology Service.

FREE RANGE LAYING HENS

PER HEN HOUSED	**TYPICAL** pence/dozen	**GOOD** pence/dozen
Sales	89.00	89.00
Less pullet	13.89	13.89
OUTPUT	**75.11**	**75.11**
Concentrates @£230-233/t	44.39	40.81
Miscellaneous	3.70	4.00
Total Variable Costs	**48.09**	**44.81**
GROSS MARGIN PER DOZEN (pence)	**27.02**	**30.30**
GROSS MARGIN PER BIRD (£)	**7.03**	**8.18**

(1) Average data per hen over the typical 58 week laying cycle

Type of production	Yield (dozen eggs)	Feed Used (g. per day)	Mortality (%)
Typical production	26	122	8
Good production	27	118	5

(2) The egg price is a weighted average and excludes packaging and marketing costs.

(3) Miscellaneous costs are comprised of electricity, water, insurance, repairs, maintenance, litter and sundries. Labour, rent and depreciation are not included in miscellaneous costs.

(5) Sensitivity analysis

	Change in gross margin(£) per hen housed	
	TYPICAL	**GOOD**
± 1p in sale price/dozen	0.26	0.27
± £5/t in feed price	0.25	0.24

(6) Further information and advice can be obtained from DAERA's Poultry Technology Service.

BROILERS

				TYPICAL
	kg		p/kg	pence/bird
Sales	2.15	@	79.50	170.93
	No.		£/100	
Less Day Old Chicks	1.03	@	33.00	33.99
OUTPUT				**136.94**
	kg		£/t	
Concentrates	3.31	@	309	102.28
Miscellaneous				22.56
Total Variable Costs				**124.84**
MARGIN PER BIRD (pence)				**12.10**
MARGIN PER 1,000 BIRDS (£)				**120.96**

(1) Most broilers in Northern Ireland are produced under contract to poultrymeat processors. Where growers have invested in new or modernised housing, additional payments may be made.

(2) 39 day production period of mixed sex birds.

(3) 3% mortality is typical.

(4) Feed Conversion Ratio of 1.55:1.

(5) Miscellaneous costs include litter, medication, electricity, gas, and cleaning and washing, insurance, maintenance, repairs . and sundries. Labour, rent and depreciation are not included.

(6) Sensitivity analysis

	Change in gross margin	
	per bird (p)	per 1,000 birds (£)
+ 1p/kg in sale price	2.15	21.50
+ £5/t in concentrate price	1.66	16.55
+ 0.01 in FCR	0.66	6.60

(7) Further information and advice may be obtained from DAERA's Poultry Technology Service.

Basic Payment Scheme

In Northern Ireland, the Basic Payment Scheme (BPS) was introduced on 1 January 2015 and payment entitlements were allocated to those eligible farmers who applied for BPS in 2015. Payment entitlements form the basis of the BPS and are what farmers use to get paid BPS each year. The Basic Payment that individual farmers receive will be based on the number of entitlements they hold and value of those entitlements for that scheme year.

Eligibility to apply for the Basic Payment Scheme

To be eligible to claim payment under the Basic Payment Scheme you must meet all of the following conditions-

- You must hold at least 3 BPS entitlements and have 3 ha of eligible agricultural land or are eligible to activate 3 BPS entitlements by applying to the Regional Reserve in 2018;

- You must be farming the land that you are declaring to activate entitlements (claiming);

- The land on which you claim payment must be at your disposal on 15 May in the year of the claim and remain eligible for the full calendar year;

- Any individual field you declare to activate BPS entitlements must be at least 0.1 hectares (except for common land).

Note: By farming it is meant that you have the decision making power, obtain the benefits, and take the financial risks in relation to the agricultural activity on the land declared to activate entitlements.

Fields declared on one application only

A field must be declared on only one Single Application except in very specific circumstances for agri-environment schemes.

Only declare and claim the land that you are farming, irrespective if that land is owned by you and that you are farming, or land leased in or taken in conacre by you which you are farming. Land which you own but are not farming because it is leased out/let in conacre to another farmer should not normally be declared on your application. Rather it should be declared on the application of the person who is actually farming it.

Duplicate field cases

Only one claimant is permitted to activate entitlements on each field and in this case where there is any doubt, claimants will be asked to provide evidence demonstrating to the Department's satisfaction that the requirements have been met.

Duplicate field cases will be investigated and the claimant who is found to enjoy the decision making power, benefits and financial risks in relation to the agricultural activity on land parcels subject to a duplicate application will be the applicant who can claim their Basic Payment Scheme entitlements on that land. Financial penalties may be applied to the farmer who has wrongly claimed.

Cross-Compliance

Cross-Compliance applies to a number of area-based schemes including the Basic Payment Scheme. The Cross-Compliance requirements are designed to promote sustainable agricultural practices in Europe and reflect a number of environmental and other objectives. They are good farm management practices, and encourage responsible stewardship of land.

In return for payments under the area-based schemes covered by Cross Compliance you must meet the requirements of a number of Statutory Management Requirements and keep your land in Good Agricultural and Environmental Condition. Inspections are carried out to verify that all the Cross-Compliance requirements are being met. Failure to meet these requirements will lead to financial penalties being applied to your area-based payments. Details of the Cross-Compliance requirements and information on how Cross-Compliance penalties are calculated can be found at - https://www.daera-ni.gov.uk/articles/cross-compliance

The unit value of entitlements and convergence towards a flat rate

The unit value of entitlements allocated to you in 2015 will move towards a flat rate in equal annual steps from 2015 to 2019. This is in accordance with EU legislation, and is known as 'convergence towards a flat rate'. The rate of transition will be consistent with achieving a flat rate payment by 2021.

However, arrangements after 2019 scheme year will depend on negotiations concerning the exit of the UK from the EU, decisions taken by the UK government and devolved administrations in relation to agricultural support and possibly future EU CAP Reform decisions.

'Flat rate' means that all hectares of land in a region would attract the same level of support, instead of the previous system where many different entitlement rates (€/ha) existed within the Single Farm Payment Scheme. You will have received an entitlement statement showing the entitlements you established in 2015, how these were calculated and the unit value of these entitlements from 2015 to 2019.

Further information on the Basic Payment Scheme can be found here:
https://www.daera-ni.gov.uk/publications/2018-guide-basic-payment-scheme

Greening Payment

All farmers applying for payment under the Basic Payment Scheme will have to comply with greening requirements on all the eligible agricultural land on their holding. In return, they will receive a Greening Payment calculated as a percentage of the total value of the Basic Payment Scheme payment entitlements they activate each year. For any given scheme year, the percentage will be calculated by dividing the total budget available for greening by the total value of all payment entitlements activated in Northern Ireland in that year

Non compliance with the greening requirements will result in the loss of some or all of the Greening Payment. Therefore, it is important that you understand the greening requirements and comply with them, where necessary. There are three greening requirements. These are:

- **Permanent grassland -** This relates to the requirement to retain permanent grassland and to protect environmentally sensitive permanent grassland.

- **Crop Diversification -** This is designed to encourage a diversity of crops on holdings with 10 or more hectares of arable land.

- **Ecological Focus Areas -** This is designed to improve biodiversity on farms and to provide habitats for species in decline or at risk of extinction on holdings with more than 15 hectares of arable land.

Note: There are a number of exemptions from the greening requirements meaning that certain applicants, depending on their land use, will not have to undertake some or all of the greening requirements but will still receive the Greening Payment.

How to assess the greening requirements for your holding:

- Step 1: Familiarise yourself with the definitions of the different field classifications. For example, the definition of arable land includes more land than that used to grow arable crops in 2018.

- Step 2: Check the field classifications for all of the eligible land you farm (arable land, permanent grassland, environmentally sensitive permanent grassland and permanent crops).

- Step 3: Work out if you qualify for an exemption from any or all of the greening requirements.

- Step 4: If you do not meet any of the exemptions, identify the greening requirements that apply to you.

The information you need to make the above assessments is contained in the Greening guidance which can be found here:
https://www.daera-ni.gov.uk/publications/2018-guide-greening-payment

Young Farmers' Payment

The Young Farmers' Payment (YFP) provides an annual top-up to the BPS to those farmers who meet its eligibility requirements. The level of top-up will be based on 25% of the total direct payments regional average per hectare. The top-up payment will be limited to 90 hectares and the rate per hectare will if necessary, be scaled back to respect the regional ceiling. The rate can vary between years depending on the number of young farmers claiming the payment

The CAP Regulations define "young farmers" as natural persons who are setting up for the first time an agricultural holding as head of the holding, or who have already set up such a holding during the five years preceding the first submission of an application under the Basic Payment Scheme (BPS) and who are no more than 40 years of age in the year of submission of their first application for the BPS. Legal persons may be granted access to the scheme if they meet similar conditions. The maximum period that a YFP can be made is 5 years. This period is reduced by the number of years elapsed between setting up as HOH and the first submission of a successful application for YFP.

Eligibility to apply for the Young Farmers' Payment

To be eligible for the YFP the applicant must:

- Be an active farmer * at the date of application to the BPS / YFP and have at least 3 hectares of eligible land on their holding which must be used to carry out an agricultural activity.

  * Note: *An active farmer is the person / farm business enjoying the decision making power, the benefits and the financial risks in relation to agricultural activity being carried out on the land.*

- Be establishing, for the first time, an agricultural holding as Head of Holding (HOH) ** or have already done so during the 5 years preceding their first successful application to the BPS.

  **Note: *To be HOH means the applicant must be exercising effective and long-term control over the business in terms of decisions related to management, benefits and financial risk*

- Be no more than 40 years of age*** in the year of first successful application for the BPS.

  ***Note: This applies for the entire scheme year in which the application is made. This means that for first time successful BPS applicants in 2018 must be born on or after 1 January 1978.

- Hold at least a Level II qualification**** in agriculture (or a related subject containing at least a farm business management module) at the BPS application closing date.

****Note: The College of Agriculture, Food and Rural Enterprise (CAFRE) has compiled a list of eligible qualifications which can be found on the CAFRE website http://www.cafre.ac.uk/industry-support/level-2-agricultural-qualification-list

Further information on the Young Farmers' Payment can be found here: https://www.daera-ni.gov.uk/publications/guide-young-farmers-payment-regional-reserve-2018

Regional Reserve

As part of the Basic Payment Scheme (BPS), the European Commission requires all EU Member States to set up National or Regional Reserves to help farmers in certain situations. In the United Kingdom it was decided to establish Regional Reserves for each of the devolved administrations. This means that in Northern Ireland the Regional Reserve will be used to provide entitlements for Northern Ireland farmers under the BPS.

The Regional Reserve (RR) will provide funding which will enable DAERA to allocate entitlements or to top up existing entitlements to the 'regional average value of entitlements' for certain categories of farmers. It must be used to allocate payment entitlements to young farmers and new entrants. DAERA may also use it to make awards to farmers who were prevented from being allocated entitlements as a result of force majeure or exceptional circumstances and farmers eligible for revised entitlements following a court ruling or administrative act by DAERA.

There are four categories under which farmers can receive an allocation from the Regional Reserve (RR):

- **Farmers who qualify as Young Farmers** (including those who never held entitlements and those who will otherwise have established entitlements with a unit value below the regional average) can apply to the RR to have entitlements allocated at the regional average value or to have the value of entitlements increased to the regional average in 2018;
- **Farmers who have commenced their agricultural activity and qualify as New Entrants** (including those who never held entitlements and those who will otherwise have established entitlements with a unit value below the regional average) can apply to the RR to have entitlements allocated at the regional average value or to have the value of entitlements increased to the regional average in 2018;
- **Farmers who were prevented from being allocated entitlements due to Force Majeure or Exceptional Circumstances;**
- **Farmers eligible for revised entitlements following a court ruling or administrative act by DAERA.**

Further information on the Regional Reserve can be found here: https://www.daera-ni.gov.uk/publications/guide-young-farmers-payment-regional-reserve-2018

Areas of Natural Constraint Scheme 2018

The Areas of Natural Constraint Scheme (ANC) provides a payment to farmers with a minimum of 3 hectares of SDA land (and common land located in the SDA). Eligible stock for the Scheme are:

- Beef breed suckler cows;
- Heifers over 24 months;
- Beef breed heifers over 8 months and up to and including 24 months;
- Breeding ewes;
- Breeding female goats;
- Breeding female farmed deer 27 months and over; and
- Breeding female farmed deer over 6 months but less than 27 months.

The stocking density requirements are 0.2 LU/Hectare of eligible animals. The 40% heifer rule applies for the purposes of meeting stocking density. Stocking density requirements may be modified where an agri- environment stocking density agreement exists. In terms of eligible forage land, it must be identified as SDA land, have been available for a seven month period from 1 April to 31 October 2017 and be eligible forage area as per the Basic Payment Scheme. Cross compliance arrangements will also apply.

Those farm businesses eligible to apply will have submitted a 2017 Single Application Form and;

- Indicated in that form that they wished to apply for ANC, and
- Completed ANC information in that return.

The payment rates for ANC 2018, which had a total budget of approximately £8 million, were as follows:

- £26.57/ha for the first 200 hectares
- £19.93/ha above 200 hectares

ANC 2018 is the last year of the ANC Scheme.

AGRI-ENVIRONMENT SCHEMES

Agri-environment schemes reward farmers for using sustainable land management practices that enhance the environment. They are considered crucial in delivering Government's commitment to:

- Enhance biodiversity;
- Improve water quality;
- Reduce the impact of climate change

(A) Northern Ireland Countryside Management Scheme (NICMS)

Participation in all of DAERA's legacy agri-environment schemes had declined very significantly by the end of 2016 as agreements ended. Less than 600 agreements remain within the Northern Ireland Countryside Management Scheme (NICMS), with the last of these due to end in 2019. NICMS has now been succeeded by the Environmental Farming Scheme.

(B) Environmental Farming Scheme (EFS)

In 2017 DAERA launched its new agri-environment scheme - the Environmental Farming Scheme (EFS). This is a voluntary scheme under the NI Rural Development Programme 2014-2020, which is part financed by the EU. It provides financial support to farm businesses in return for a 5 year agreement to undertake environmentally beneficial farming practices.

The EFS has three levels:

- EFS (W) - a Wider Level Scheme aimed at delivering benefits across the wider countryside outside of environmentally designated areas;
- EFS (H) - a Higher Level Scheme primarily aimed at environmentally designated sites; and
- EFS (G) - a Group Level Scheme to support co-operative work by farmers in specific areas, such as river catchments, or commonages.

Following a series of awareness events, the first tranche of EFS opened for applications in 2017, and around 1300 farm businesses are now benefitting under the Scheme.

The EFS Group Level funds facilitators for projects which support groups of farmers who have EFS agreements. Five pilot projects are being progressed in 2018, covering habitat, species and water quality.

The current target is to have up to 6,200 EFS agreements in place by 2020. New application windows to the EFS are being made available in 2018 and 2019.

Further information for the EFS is available from the DAERA website, https://www.daera-ni.gov.uk

Forestry Schemes

Our woodlands are a vital community resource and there is a clear consensus about the need to increase woodland area to counter the impact of climate change, to provide a habitat for wildlife and places for people to relax and unwind from stress and take part in physical exercise.

The Rural Development Programme for 2014 – 2020 has allocated up to £17.4 million to support private woodland expansion and the sustainable management of existing woodland.

New Planting

This funding is sufficient to create 1,800 hectares of new woodland and sustain approximately 4,000 hectares of woodland created under previous programmes.

In addition to forestry payments, current EU rules allow land eligible for Basic Payment Scheme, which is then planted with trees under a Rural Development Programme scheme to remain eligible for the Basic Payment.

The Forest Expansion Scheme and Establishment of Native Woodland less than 5ha Option of the Environmental Farming Scheme will support new planting.

Sustainable Management of Woodland

The Forest Protection Scheme is available to support woodland owners to manage woodland affected by Chalara ash dieback and the Woodland Investment Grant provides support for replanting woodland after it has been harvested.

Further Information

Is available from the DAERA website:

- Forest Expansion Scheme, the Forest Protection Scheme, the Woodland Investment Grant
  https://www.daera-ni.gov.uk/articles/daera-forestry-grants

- Establishment of Native Woodland less than 5ha
  https://www.daera-ni.gov.uk/articles/environmental-farming-scheme-efs

How to apply to Area-Based Schemes

You can apply for the following area-based schemes on the **Single Application Form** online at https://www.daera-ni.gov.uk/services/daera-online-services

- Basic Payment Scheme (BPS) and Greening Payment
- Young Farmers' Payment (YFP)
- Regional Reserve Entitlement allocation or top up (as a Young Farmer or New Entrant)
- Areas of Natural Constraint Scheme (ANC)
- NI Countryside Management Scheme (NICMS)
- Farm Woodland Premium Scheme (FWPS)
- Farm Woodland Scheme (FWS)
- Forest Expansion Scheme (Annual Premia)
- Environmental Farming Scheme (EFS)

If you want to find out more about what you need to do and how to complete your Single Application you can access the link below:

https://www.daera-ni.gov.uk/articles/2018-online-help-and-videos

Nitrates and Phosphorus Regulations

The Nitrates Action Programme Regulations (NAP) and the Phosphorus (Use in Agriculture) Regulations (Northern Ireland) bring into operation measures to improve the use of nutrients on farms and reduce their input to Northern Ireland's water environment from agricultural sources.

The Nitrates Action Programme has to be reviewed and, where necessary, revised, at least every four years. There have been two Nitrates Action Programmes implemented in NI since 2006. A third Nitrates Action Programme for 2015-2018 came into effect on 1 January 2015.

The following is a summary of the current Nitrates Action Programme and the Phosphorus Regulations:

1. Closed Spreading Periods

- Chemical nitrogen and phosphorus fertiliser must not be applied to grassland from midnight 15 September to midnight 31 January.
- All types of chemical fertiliser must not be applied to arable land from midnight 15 September to midnight 31 January unless there is a demonstrable crop requirement.
- Organic manures, including slurry, poultry litter, digestate, sewage sludge and abattoir waste, must not be applied from midnight 15 October to midnight 31 January.
- Farmyard manure (FYM) must not be applied from midnight 31 October to midnight 31 January.
- There is no closed spreading period for dirty water.

2. Land Application Restrictions

Land application restrictions listed below apply to spreading of all fertilisers, including dirty water.

- All fertilisers, chemical and organic, must not be applied:
  - on waterlogged soils, flooded land or land liable to flood;
  - on frozen ground or snow covered ground;
  - if heavy rain is falling or forecast in the next 48 hours;
  - on steep slopes (that is an average incline of 20% or more on grassland or an average incline of 15% or more on all other land) where other significant risks of water pollution exist. Risk factors to be considered include the proximity to waterways, the length of time to incorporation, the type and amount of fertiliser being applied and / or the soil and weather conditions.
  - on less steep slopes (with an average incline of 15% or more on grassland or 12% or more on all other land), organic manures must not be applied within 30m of lakes and 15m of other waterways; chemical fertilisers must not be applied within 10m of lakes and 5m of other waterways.
- Prevent entry of fertilisers to waters and ensure application is accurate, uniform and not in a location or manner likely to cause entry to waters.
- All types of chemical fertilisers must not be applied within 2m of any waterway.

- Organic manures including dirty water must not be applied within:
  - 20m of lakes;
  - 50m of a borehole, spring or well;
  - 250m of a borehole used for a public water supply;
  - 15m of exposed cavernous or karstified limestone features;
  - 10m of a waterway other than lakes; this distance may be reduced to 3m where slope is less than 10% towards the waterway and where organic manures are spread by bandspreaders, trailing shoe, trailing hose or soil injection or where adjoining area is less than 1 ha in size or not more than 50m in width.
- Application rates:
  - No more than $50m^3$/ha (4500 gal/ac) or 50 tonnes/ha (20t/ac) of organic manures to be applied at one time, with a minimum of three weeks between applications;
  - No more than $50m^3$/ha (4500 gal/ac) of dirty water to be applied at one time, with a minimum of two weeks between applications.
- Slurry can only be spread by inverted splashplate, bandspreaders, trailing shoe, trailing hose or soil injection.
- Dirty water to be spread by same methods as slurry and by irrigation.
- Sludgigators and upward facing splash plates must not be used.

3. Nitrogen (N) Fertiliser Application Limits

Maximum kg N/ha/year on grassland (apart from nitrogen in livestock manure):-

Dairy farms* 272 (8 1/4 bags/ac)**

Other farms 222 (6 3/4 bags/ac)**

*More than 50% of N in livestock manure comes from dairy cattle.

** Approximate number of 50kg bags of a 27% N type fertiliser

(When applying chemical nitrogen fertiliser, nitrogen from organic manures other than livestock manure and anaerobic digestate containing digested livestock manure must be subtracted)

- For non-grassland crops, maximum nitrogen applied (from all types of fertiliser, including livestock manure) must not exceed crop requirement, and for certain arable crops an N-Max limit applies to the total crop area.

4. High Phosphorus Manures

- From 1 January 2017, organic manure with more than 0.25kg of total phosphorus per 1kg of total nitrogen (e.g. some anaerobic digestates) can only be applied where soil analysis shows there is a crop requirement for phosphorus.

5. Chemical Phosphorus Fertiliser

- Can only apply chemical fertiliser containing phosphorus if soil analysis shows a crop requirement. Records must be kept to demonstrate this.
- New values for phosphorus recommendations for grassland and phosphorus availabilities for organic manures.

6. Livestock Manure Nitrogen Limits

- 170kgN/ha/year farm limit.
- Farms with at least 80% grassland may apply annually by 1 March to NIEA for a derogation to permit application of up to 250kgN/ha/year from grazing livestock manure. Additional conditions and Cross-Compliance verifiable standards will apply. Further guidance is available from NIEA.

7. Livestock Manure and Silage Effluent Storage Requirements

- A minimum of 26 weeks livestock manure storage capacity for pig and poultry enterprises. A minimum of 22 weeks for other enterprises.
- Provided certain criteria are met there are allowances for out-wintering, animals on bedded accommodation, separated cattle slurry, renting additional tanks, poultry litter stored in a midden or field heap and exporting manure to approved outlets.
- Livestock manure and silage effluent storage must be maintained and managed to prevent seepage or run-off.
- Silage and slurry stores constructed or substantially modified after 1 December 2003 must comply with certain construction standards (set out in the NAP Regulations) and be notified to NIEA at least 28 days before they are brought into use.
- Silage bales must be stored at least 10m from any waterway and stored and managed in such a way as to prevent seepage into the waterway.

- FYM and poultry litter storage:
  - both may be stored in middens with adequate effluent collection facilities.
  - both may be stored in a field heap where they are to be applied but for a maximum of 120 days.
  - field storage of poultry litter is subject to authorisation by NIEA.
- FYM and poultry litter field heaps must not be stored:
  - in the same location of the field year after year;
  - within 50m of a borehole, spring or well;
  - within 250m of a borehole used for a public water supply;
  - within 50m of exposed cavernous or karstified limestone features;
  - on land that is water logged, flooded or likely to flood;
  - FYM field heaps must not be stored within 20m of any waterway and 50m of lakes;
  - Poultry litter field heaps must not be stored within 100m of lakes and 40m of a waterway;
  - Poultry litter field heaps must be covered with an impermeable membrane as soon as possible and within 24 hours of placement in the field.
- Provide storage for dirty water during periods when conditions for land application are unsuitable.

8. Land Management

- From harvest of a crop other than grass until 15 January of the following year, the controller must manage the land to ensure minimum soil cover and to minimise soil erosion and nutrient run off.

9. Record Keeping

- Agricultural area, field size and location
- Cropping regimes and areas, Soil Nitrogen Supply (SNS) index for crops other than grassland.
- Livestock numbers, type, species and time kept.
- Organic and chemical fertiliser details including imports and exports.
- From 1 January 2017, evidence of crop phosphorus requirement from soil analysis if organic manure with over 0.25kg total phosphorus per 1kg total nitrogen is applied.
- Storage capacity and, where applicable, details of rental agreements, authorisation to store poultry litter in field heaps and associated evidence to support allowances to reduce capacity.
- Evidence of control over the agricultural area (including controller agreements) and the right to graze common land. From 2015 you will not need to keep controller agreements, but you will still need to produce them for the calendar years 2010-2014 if selected for an inspection.

Many of these records already exist on farms, for example, SAF / IACS form, farm maps, herd and flock records and fertiliser receipts. Nitrogen and phosphorus requirements for grassland are set out in the NAP and Phosphorus Regulations. Nitrogen and phosphorus requirements for other crops should be determined using the DEFRA Fertiliser Manual (RB209). Records must also be kept for the Phosphorus Regulations (see para 5 above).

- Records to be ready by 30 June each year for period 1 January to 31 December of previous year.
- Records to be available for inspection from previous five calendar years.
- Records relating to export of organic manure to be submitted annually to NIEA by 31 January of the following year and by 1 March for derogated holdings.
- If you are operating under an approved derogation, you must keep your fertilisation plan on farm and have it ready for inspection by 1 March for that calendar year. Your fertilisation account for the previous calendar year must be received by NIEA by 1 March.

Full details of all Measures in the Nitrates Action Programme and Phosphorus Regulations 2015 - 2018 can be found on the DAERA website at:

www.daera-ni.gov.uk/publications/2015-2018-nitrates-action-programme-and-phosphorus-regulations-and-associated-documents

Further information and advice on these Nitrates and Phosphorous Regulations can be obtained from the local DAERA offices or Northern Ireland Environment Agency. Contacts details are provided on pages 122&124.

AVERAGE FERTILISER PRICES 2017

		£ per tonne
C.A.N (27% N)		206
Urea (46% N)		263
Cereal fertiliser	18.14.14	279
	16.16.16	295
	15.15.17	291
Grassland fertiliser	20.10.10	263
	27.6.6	273
	27.4.4	258
	25.5.5	254
	25.0.5	223
	26.0.6	240
Silage fertiliser	24.6.12	276
	22.3.14	265
	24.0.13	260
Ground limestone	(Collected)	12
	(Delivered and spread)	18

(1) All prices refer to the average net retail price charged to Northern Ireland farmers in the period January-December 2017.

(2) Figures used in the budgets in this publication are based on anticipated prices for 2018.

FEEDINGSTUFF PRICES AT FEBRUARY 2018

	% protein	£ per tonne
Dairy nuts	18	290
	20	300
Calf milk replacer (bags)	22	1980
Calf starter/weaner meal	18	315
Calf rearing nuts	17	300
Cattle fattening nuts	16	260
Sheep feed (bulk)	18	265
(bags)	18	290
Lamb feed	16	270
Pig creep pellets (bulk)	20	735
(bags)	20	755
Pig link/early grower	21	400
Pig grower/rearer meal	20	350
Pig fattening meal	15	310
Sow meal	18	320
Barley meal		180
Maize meal		175
Soya bean meal		310
Whole wheat		180
Whole barley		175

(1) The prices quoted above are for bulk purchase except where stated.

(2) Figures used for the budgets in this publication are based on anticipated prices for 2018.

RELATIVE FEED VALUES

These relative feed values are calculated using unit costs for metabolisable energy and crude protein derived from the reference feedstuffs of barley and soya. The value of the rumen degradable protein (if applied) is allowed for by calculating a unit cost based on the price of urea. If a particular feedstuff price is lower than the relative value then it is a 'good buy' and vice versa. Two feedstuffs may be compared with each other in terms of the differences between the price of each foodstuff and its relative value.

CAUTIONS

These relative values are only a guide:-

(1) They are based on average analysis; actual samples may differ from the averages used.

(2) The unit values for metabolisable energy and crude protein depend on the balance of nutrients in the reference feedstuff. Barley and soya have been chosen as the most appropriate; other reference feedstuffs would give different answers.

(3) The real unit values of metabolisable energy and crude protein depend on the feeding situation and not entirely on the feedstuffs. For example, undegradable protein has a low value for mature growing cattle but a high value for fast growing young stock.

(4) Energy density is also an important consideration, i.e. straw may be a 'good buy' compared with flaked maize, but would be entirely unsuitable for high yielding dairy cows.

Relative feed values therefore only give a crude guide to feedstuff values.

Feed	Relative Value
Barley	100.00
Wheat	103.80
Hipro soya	170.00
Maize	105.60
Oats	92.10
Urea	185.00
Grass	25.00
Hay (Good)	63.75
Hay (Average)	56.25
Silage (Good)	24.10
Silage (Average)	22.47
Barley straw	35.00
Maize gluten meal	184.30
Maize gluten feed	113.00
Herring fish meal	213.50

Feed	Relative Value
Linseed meal	129.00
Rapeseed meal	125.90
Soya bean meal 44	141.80
Potatoes	23.10
Molasses	73.90
Dried molassed sugar beet pulp	101.00
Brewers' grains	27.90

ENTERPRISE MARGINAL CAPITAL REQUIREMENTS (EMCR)

(a) Arable Enterprises

	EMCR £ per hectare
Spring barley (6 months)	340
Spring oats (6 months)	305
Winter barley (10 months)	483
Winter oats (10 months)	385
Winter wheat (10 months)	510
Spring oilseed rape (6 months)	245
Winter oilseed rape (10 months)	385
Seed potatoes (6 months)	2,142
First early potatoes (6 months)	1,813
Maincrop ware potatoes (6 months)	2,140

(b) Livestock Enterprises

	Initial Capital (1) (£)	Variable Costs per livestock place (2) (£)	Total EMCR per livestock place (3) (£)
Dairy cows (1 month)	1150	57 – 81	1207 – 1231
Dairy heifer replacements	225	505 – 586	730 – 811
18 month heifer beef	260	474	734
22 month steer beef	310	490	800
24 month steer beef	310	524	834
28 month steer beef	310	555	865
Cereal bull beef	100	616	716
Grass silage bull beef	310	690	1000
Calf to store system	310	335	645
Lowland suckler cows - May calving	1250	333	1583
- Feb calving	1250	267	1517
- Oct calving	1250	354	1604
Hill suckler cows	1100	222	1322
Beef heifer replacements	290	440	730
Finishing suckled calves	630	407	1037
Winter cattle finishing 400kg (230 days)	860	351	1211
Winter cattle finishing 500kg (150 days)	1050	268	1318
Summer cattle finishing 420kg (180 days)	924	52	976
Traditional store to beef system (12 mths)	792	218	1010
Summer grazing of store cattle (6 mths)	690	46	736
Lowland breeding ewes - March lambing	120	52	172
Lowland breeding ewes - Dec lambing	120	72	192
Upland breeding ewes	120	52	172
Hill breeding ewes	120	43	163
Store lamb finishing (3-5 mths)	57 – 66	5 – 27	71 – 88

	Initial Capital	Variable Costs Livestock per place	Total EMCR Livestock per place
	(1) (£)	(2) (£)	(3) (£)
Pig rearing (per sow) (5mths)	140	406	546
Pig finishing (per pig) (3 mths)	53	55	108
Pig rearing/finishing (per sow) (6 mths)	140	1212	1352

(1) For livestock enterprises the initial capital is the purchase price of the animal.

(2) The variable costs quoted for a livestock enterprise are the total variable costs invested in the enterprise until the point of first sale. In the case of a dairy cow this represents one month's variable costs. Details of total variable costs for each enterprise can be found under the appropriate enterprise gross margin budget.

Fixed costs (excluding labour)
By type of farm business 2016/2017[1]

Dairy Farms	Very Small	Small	Medium	Large
Area farmed (hectares)[2]	28	47	71	132
		£'s per Ha		
Conacre rent	21	65	79	147
Depreciation of buildings/work	68	167	231	245
Depreciation of machinery	117	168	161	164
Machinery running costs	173	203	168	179
Electricity and heating fuels	52	49	42	49
Building repairs	54	50	52	49
Misc. (inc. farm rates)	99	84	64	70
Total	**583**	**786**	**797**	**903**
Cattle and Sheep Farms	SDA	DA	LFA	Non-LFA
Area farmed (hectares)[2]	97	70	86	66
		£'s per Ha		
Conacre rent	28	59	38	95
Depreciation of buildings/work	41	82	54	67
Depreciation of machinery	72	107	83	118
Machinery running costs	86	115	95	124
Electricity and heating fuels	5	8	6	10
Building repairs	32	35	33	42
Misc. (inc. farm rates)	29	50	36	56
Total	**293**	**456**	**346**	**512**

Other Farm Types	Cereals	General Cropping	Mixed	Pigs
Area farmed (hectares)[2]	88	71	74	28
		£'s per Ha		£'s per £100 output
Conacre rent	77	181	63	1
Depreciation of buildings/work	46	3	188	5
Depreciation of machinery	233	255	158	2
Machinery running costs	193	226	199	2
Electricity and heating fuels	16	11	32	2
Building repairs	19	23	52	1
Misc. (inc. farm rates)	57	64	78	2
Total	**642**	**765**	**769**	**16**

(1) Farm types

Dairying	Farms on which dairy cows account for more than two-thirds of the total Standard Output (SO).
Cattle and Sheep	Farms which do not qualify as Dairy farms but have more than two-thirds of total SO from cattle and sheep.
Cereals	Farms on which cereals and combinable crops account for more than two-thirds of the total SO.
General cropping	Farms which do not qualify as Cereal farms but have more than two-thirds of the total SO in arable crops (including field scale vegetables) or in a mixture of arable and horticultural crops where arable crops account for more than one-third of total SO and no other grouping accounts for more than one-third
Pigs	Farms with more than two-thirds of total SO from pigs.
Mixed	Farms that have no dominant enterprise and do not fit into the above categories.

(2) Area farmed has been adjusted for conacre taken or let. Planning for 2018 should take account of any anticipated changes in fixed costs. As the levels of fixed costs per hectare differ considerably between farms, the data quoted above should be treated with caution. Since the composition of the labour force between family and hired workers is so variable between farms, no attempt has been made to produce data for comparison.

ANNUAL TRACTOR COSTS - Estimates for 2018

	4-Wheel drive						2-Wheel drive			
Horse power	150		120		100		90		80	
Initial Cost (£)	80,000		60,000		50,000		45,000		40,000	
	Per year	Per hour	Per year	Per hour	Per year	Per hour	Per year	Per hour	Per year	Per hour
Repairs	3,200	6.40	2,400	4.80	2,000	4.00	1,800	3.60	1,600	3.20
Depreciation (average charge)	6,830	13.66	5,120	10.24	4,270	8.54	3,840	7.68	3,420	6.84
Insurance	1,050	2.10	875	1.75	780	1.56	710	1.42	670	1.34
Fuel & Oil	5,500	11.00	4,675	9.35	4,125	8.25	3,850	7.70	3,025	6.05
TOTAL	16,580	33.16	13,070	26.14	11,175	22.35	10,200	20.40	8,715	17.43

(1) Initial cost based on purchase price.

(2) Based on annual use of 500 hours. Higher annual use will result in higher annual, but lower hourly costs. Heavy operations, e.g. slurry mixing, will result in a greater cost than light work.

(3) Annual repair costs have been estimated using 4% of the initial cost.

(4) Depreciation has been calculated by reducing balance method, using 15% depreciation and a life of 9 years.

(5) Insurance costs are for comprehensive cover with up to 5% contracting. Costs will also depend on excesses, claims history and the need for cover on implements

(6) Fuel has been costed at 55 pence per litre.

(7) No interest or leasing charges have been included.

NEW MACHINERY PRICES

Tractors (See Page 97)

	£		£
Pick-up	20,000 - 38,000	Plough	16,000 - 30,000
Quad (4WD Bike)	3,000 - 7,500	Harrow	2,000 - 3,000
Telescopic Loader	45,000 - 85,000	Power harrow	10,000 - 30,000
Skid-steer loader	20,000 - 30,000	Land roller	1,000 - 10,000
Slurry tanker	6,000 - 35,000	Land leveller	750 - 3,000
Slurry pump	2,700 - 6,000	Fertiliser sower	1,000 - 19,000
Manure rotaspreader	2,000 - 30,000	Crop sprayer	1,000 - 45,000
Yard scraper	350 - 1,350	Potato harvester	35,000 - 300,000
Mower conditioner	10,000 - 45,000	Box tipper	2,500 - 8,000
Precision chop harvester	30,000 - 60,000	Cattle trailer	3,000 - 7,300
Silage trailer	4,500 - 25,000	Link box	500 - 2,000
Buckrake	2,700 - 7,000	Welder	250 - 2,000
Bale spike	250 - 800	Compressor	200 - 1,500
Grass topper	800 - 10,000	Generator	800 - 3,250
Sheargrab	1,200 - 5,000	Power washer	350 - 2,800
Tractor loader	6,000 - 12,000	Hedge cutter	10,000 - 35,000
Silage feeding trailer	1,200 - 2,700	Chain saw	300 - 1,500
Diet feeder wagon	12,000 - 40,000	Bulk meal bin	1,800 - 5,000

AGRICULTURAL CONTRACTORS' CHARGES

	Cost (£)	
1. Cultivations		
Ploughing - Lea	60 to 90	per hectare
- Stubble and other	60 to 80	"
Discing	25 to 32	per hour
Chain harrowing	20 to 25	"
Power harrowing	30 to 45	per hectare **or**
	30 to 32	per hour
Ground driven rotary harrowing	20	"
Springtine harrowing	20 to 30	"
Rotavating - Large types 100"	40 to 60	per hectare **or**
	30 to 40	per hour
Land Levelling	25	per hour
Rolling - Light	20	per hectare
- Heavy	20 to 25	"
Reseeding (Complete operation not including seed/fertiliser)	150 to 250	"
Shakerator	20 to 40	per hour
2. Seeding and Planting		
- combined drilling	50 to 60	per hectare
- precision seeding	60 to 70	"
- potato planting (automatic)	35 to 40	per hour
- direct drilling	50 to 55	per hectare
- one pass cultivation and drilling	50 to 75	"
- destoning	250 to 350	"
3. Spraying and Spreading		
Crop spraying (excluding chemicals)	15 to 40	per hectare
Fertiliser	15 to 30	per tonne
	10 to 15	per hectare
	20 to 30	per hour
Lime spreading	10 to 20	per tonne
Farmyard Manure		
- Entire operation	50 to 55	per hour
Slurry spreading (1,100-1,500) gallon tanker	20 to 30	"
Slurry spreading (2,000 gallon tanker)	25 to 40	"
Slurry spreading (self-propelled tanker)	40 to 55	"
Slurry Spreading (umbilical system)	70 to 85	"
Slurry Spreading (umbilical system)	5 to 10	per 1000 gallons
Pumping and agitating (tanks)	25 to 35	per hour

	Cost (£)	
4. Harvesting		
Forage, including harvester, tractor and trailer		
- precision (complete operation)	150 to 190	per hectare
- precision (without buckraking)	120 to 160	"
- double chop (complete operation)	110 to 150	"
Forage wagon (without mowing / buckraking)	54 to 62	per hectare **or**
and diesel supplied by farmer	75 to 80	per hour
Silage wagon (complete operation)	110 to 165	per hectare
Buckraking into silo	20 to 30	"
Additional tractor and trailer for haulage	25 to 40	per hectare **or**
	25 to 35	per hour
Mowing hay or grass (conventional)	25 to 45	per hectare
Mowing hay or grass (Conditioner/auto swather)	25 to 45	"
Topping grass	20 to 35	"
Tedding, turning or raking	14 to 20	"
Pick-up baling - including twine	0.35 to 0.60	per small bale
- excluding twine	0.22 to 0.30	"
Big bale silage - round, chop, net and wrap	7 to 8.50	per bale
Big bale straw (round)	3.25 to 3.75	"
Big bale straw (large rectangular 8 x 4 x 3)	4.50 to 5.00	"
Combine harvesting	90 to 110	per hectare
Potato harvesting (ground destoned)	280 to 320	"
Forage Maize harvesting (complete operation)	180 to 220	"
5. Grain Drying and rolling		
Drying - Handling charge	2.00 to 3.00	per tonne
per 1% moisture removed,	2.00 to 4.00	"
Rolling	19 to 22	"

	Cost (£)	
6. Ditching and Field Drainage		
Wheeled digger - bucket type	30 to 35	per hour
Tracked digger	30 to 40	"
Bulldozing	60 to 90	"
Opening field drains only	0.7-0.8	per metre
Laying drains (excluding stones)	0.80 to 1.00	"
Mole draining	100 to 120	per hectare
Laying water piping	18 to 25	per hour
Subsoiling	25 to 30	"
Stoner	18 to 25	"
7. Miscellaneous		
Hedge cutting - flail	25 to 35	per hour
- saw	30 to 40	"
Flail Heather/Rushes	30 to 50	"
Sawing logs - chainsaw	12 to 15	"
Haulage - tractor and trailer (higher prices for larger tractors and 4WD)	25 to 40	per hour
Relief milking - typical (largely dependent on size of herd and milking system)		
Monday-Saturday	25 to 70	per milking
Sunday	45 to 110	"
Hoof paring		
Call out fee (includes first 3 cows)	40-60	per call
Additional cows	5-10	per cow
Sheep shearing	1.30 to 1.60	per ewe
Sheep scanning	0.50 to 0.80	"
Fencing: assume strainers max 30m apart, and double strainers on corners		
5 rows of barbed wire		
- total cost	4.75 to 6.50	per metre
- labour only	1.40 to 2.20	"
Sheep fence plus 3 lines of barbed wire		
- total cost	5.00 to 6.75	per metre
- labour only	1.70 to 2.40	"

These contract charges are considered to be reasonable for operations carried out in normal circumstances. The rates include fuel, oil lubricant and operator's wages. Prices will differ from one district to another and will be affected by the contracted area. If a farmer supplies fuel, the price may be lower. The charges may be subject to VAT.

TYPICAL HIRE CHARGES

	Capacity	Per Day (£)	Per Week (£)
Quad		40	175
Plough		75	375
Plough (reversible)		100	500
Chain harrow		20 to 40	100 to 200
Power harrow (3m plus blades)		100	450
Rotavator (plus blades)		150	600
Land roller		40 to 120	170 to 350
Fertiliser sower		20 to 40	100 to 125
Crop sprayer		40 to 50	200
Lagoon mixer		25	100
Slurry pump		45 to 50	200
Rotary spreader	7.3 cu yard	50 to 100	200 to 500
Rear discharge manure spreader	9t to 10t	120	400
"	11t to 12t	150	500
Slurry tanker	2250 gall	75	300 to 375
"	1600 gall	55 to 70	200 to 300
"	1100 to 1300 gall	50 to 70	200 to 300
Bale lifter		12 to 15	30
Telescopic handler	13m	110	440
Rough terrain forklifts	3t	50	175
Single axle dump trailer	8t	30	120
Twin axle dump trailer	10t to 15t	30 to 70	140 to 180
Tractor	80hp		300
Tractor (4wd)	100hp	80	350 to 450
Mini digger	3t	100 to 130	360 to 440
Strimmer	40cc	15 to 28	35 to 75
Chain saw		30 to 50	90 to 150
Welder (diesel)	400 amp	90	200
Generator diesel	5kw	25	60
"	10kw	35	150
Power washer	3000 si	40 to 50	100 to 135
"	1500 psi	25 to 35	65 to 100
Steam washers		30 to 40	80 to 120
Compressor/Jack hammers	100 ctm	25 to 38	75 to 95
Round bale trailer		25 to 30	90
Yard sweeper		50 to 65	-
Silage trailer	6t	25 to 40	100 to 120
	12t	65	-
	14t	70 to 85	-
Post driver		40 to 65	160 to 200
Low loader		40 to 45	200
Grasseed sower		30 to 40	85 to 175
Weed wiper		40	175
Grass topper		50 to 55	150 to 250
Rush topper		75 to 90	375
Flail topper		100	500
Spiker		45	120 to 200

1.) Prices do not include VAT.
2.) Prices listed above are intended for guidance only, considerable variation may be expected.

AMORTIZATION TABLE

Annual charge to write off £1,000, repayment includes capital and interest assuming payment by one annual instalment

Write off period (years)	Rate of interest %															
Year	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
5	231	237	244	250	257	264	271	278	284	291	299	305	313	320	327	334
6	197	203	210	216	223	230	237	243	250	257	265	271	279	286	293	301
7	173	179	186	192	199	205	212	219	226	233	240	248	255	262	270	278
8	155	161	167	174	181	187	194	202	208	216	223	230	238	245	253	261
10	130	136	142	149	156	163	170	177	184	192	200	207	215	223	231	239
12	113	119	126	133	140	147	154	162	169	177	185	192	201	209	217	226
15	96	103	110	117	124	132	139	147	155	163	171	179	188	196	205	214
20	80	87	94	102	110	118	126	134	142	151	160	168	178	187	196	205
25	71	78	86	94	102	110	119	128	136	146	155	164	173	183	193	202
30	65	73	81	89	97	106	113	124	133	143	153	161	172	181	191	202
40	58	66	75	84	93	102	111	121	131	141	150	160	170	180	190	200

Example : £10,000 is borrowed. (The equivalent annual cost factor at 8% over 8 years is £174 per £1,000) Therefore, the annual service charge to service interest and capital repayment on the £10,000, repayable over 8 years is 10 x £174 = £1,740

LOAN OUTSTANDING

Amount outstanding on a 10 year loan of £1000 at the end of each year

	Rate of interest %															
Year	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	920	924	928	931	934	937	940	943	946	948	951	954	957	960	963	966
2	836	843	850	856	862	868	874	879	884	889	894	900	905	910	916	922
3	747	758	768	776	784	792	800	808	815	822	829	836	844	852	860	867
4	655	667	680	689	699	709	718	728	737	746	754	763	772	782	792	801
5	558	571	585	595	606	617	628	638	648	658	668	678	688	698	708	718
6	456	469	484	494	505	516	527	538	548	559	569	580	591	601	611	622
7	348	362	376	384	395	405	415	425	435	445	455	465	476	486	496	506
8	236	247	261	266	274	283	291	299	307	316	324	333	341	350	358	367
9	117	126	137	138	143	148	153	158	163	168	173	178	183	188	193	198

The annual charge to write-off the loan must first be calculated.
The equivalent annual cost factor at 8% over 10 years = £149. At the end of the first year the amount to repay, at 8% interest, will equal £1,080. When the annual charge of £149 is deducted, the amount outstanding on the loan is £1,080 - £149 = £931.

INTEREST RATES - ANNUAL PERCENTAGE RATE (APR)

It is important to distinguish between nominal rates which are often quoted by lending institutions and true rates of interest. The Annual Percentage Rate (APR) allows for the fact that interest is usually charged at less than annual intervals, and hence an element of compounding will occur, i.e. interest will be charged on the accumulated interest. The higher the annual nominal interest rate and the more frequently the interest charges are applied to the loan, the more pronounced will this compounding be and the higher the APR.

Loans from all sources should be converted to APR, which shows the effective rate of interest calculated on an annual basis. This allows a true comparison to be made between different sources of borrowed finance.

The approximate annual percentage rate is given by:

$$\left[\left(1+\frac{n}{p}\right)^{p}-1\right]\times 100$$

where n = nominal interest rate expressed as a decimal
p = number of instalments per year

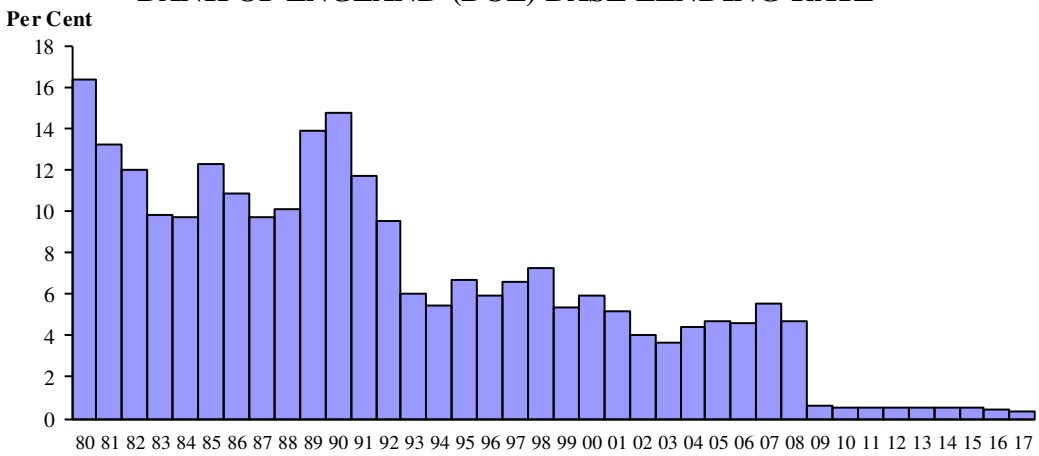
example : A nominal interest rate of 14% with monthly charging gives an approximate annual percentage rate of 14.9%

REAL INTEREST RATES

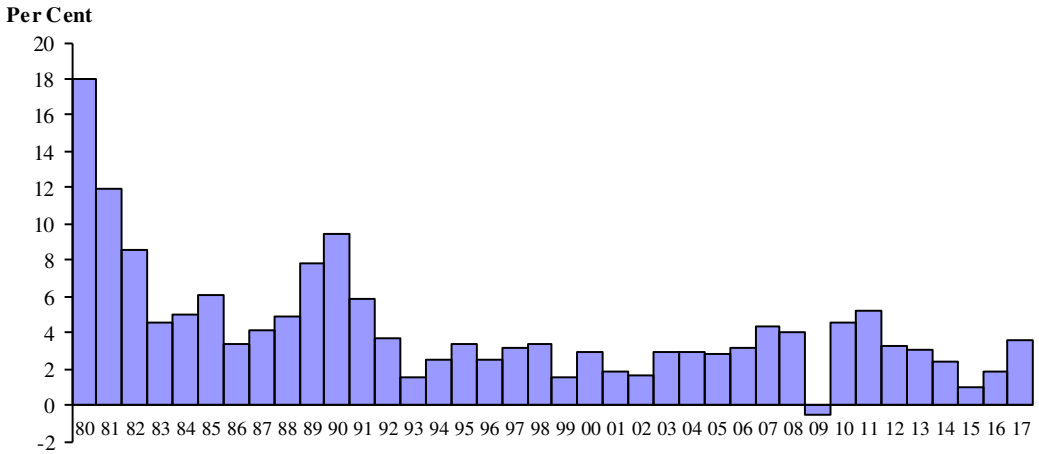
When preparing budgets to estimate the viability of an investment, it is common to include costs and returns at present day values, even though these may be expected to rise due to inflation over the life of the investment. Where this real terms approach is adopted, a more realistic estimate of the effect on profitability can be gained by basing capital charges on the real rate of interest rather than the APR. On the other hand it is important to remember that all costs and returns may not increase or, indeed decrease at the same rate. Also some allowance should be made in decision making for possible changes in inflation rates. Often in times of rising or falling inflation, nominal interest rates will rise or fall. This will clearly have consequences for cash flow.

The real rate of interest is the APR adjusted for the annual rate at which costs and prices relating to the investment are expected to increase. A crude estimate of the real rate of interest may be made by subtracting the expected inflation rate from the APR (see figure overleaf).

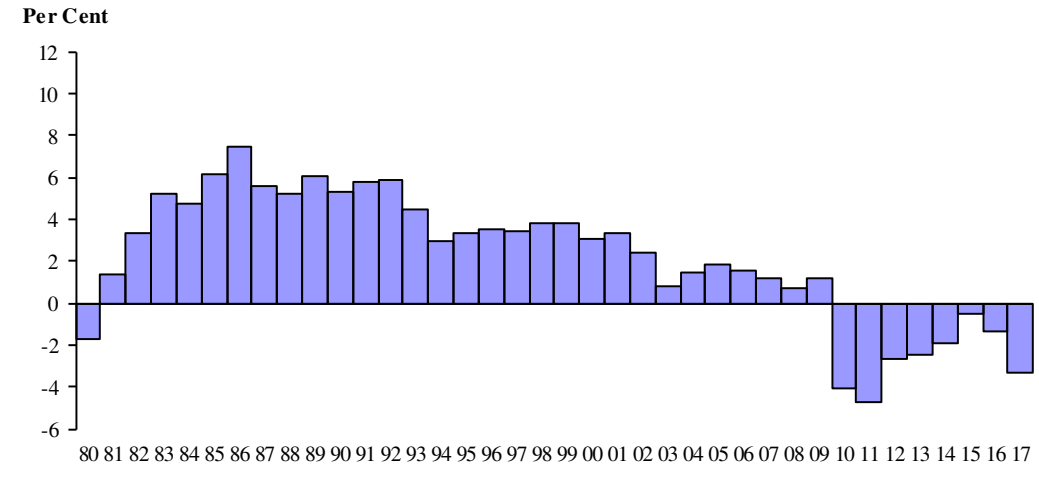
BANK OF ENGLAND (BOE) BASE LENDING RATE[1]



ANNUAL RATE OF INFLATION



REAL INTEREST RATES[1,2]



1. Actual commercial lending rates applied depend on various factors such as loan term and risk.

2. Calculated as the difference between Bank of England base rate and annual rate of inflation.

AGRICULTURAL WAGES (REGULATION) (NORTHERN IRELAND) ORDER 2018

The Agricultural Wages Board (AWB) for Northern Ireland by Order No. 98, which comes into operation on 1st April 2018, provides revised rates for minimum agricultural wages. This Order replaces Order No. 97, which was operative from 1st April 2017. Under this minimum wage system, advancement is conditional on a worker's experience and qualifications.

Minimum wage rate

The minimum wage rates (£ per hour), effective from 1st April 2018 for grades 1 to 6 workers, are as follows:

Grade	Rate per Hour £
Grade 1-Minimum Rate (Applicable for first 40 weeks cumulative employment)	6.88
Grade 2-Standard Worker	7.42
Grade 3-Lead Worker	8.16
Grade 4-Craft Grade	8.76
Grade 5-Supervisory Grade	9.26
Grade 6-Farm Management Grade	10.04

These rates represent a 3.5% increase on 2017 rates for agricultural workers in grades 2 to 6. The minimum rate (grade 1) remains the same. The AWB met on 9 March 2018 to make an Order to introduce the above rates, which came into operation on 1 April 2018.

If at any time the National Minimum Wage (NMW) rates or the National Living Wage for workers aged 25 or over (NLW) are higher than the hourly rates set out above, then the minimum rates shall be equal to the NMW or NLW, whichever applies. In these circumstances, the higher rate should be used in relation to all pay calculations (including the calculation of overtime rates).

The definitions for the grades and the qualifications required for each grade are available at: https://www.daera-ni.gov.uk/publications/grading-system-agricultural-workers

Overtime should be applied at a minimum of time and a half. The following employment is defined as the employment which is to be treated as overtime employment:

(a) employment in excess of 39 hours in any week for a whole-time worker.

(b) employment on a day on which a worker is entitled to be allowed a holiday in accordance with the holiday provisions of the Order.

Holiday Entitlements

Full time Agricultural workers in the first year of continuous employment with the same employer are entitled to 28 days holidays. Holiday entitlement is proportionate to the number of days worked as detailed below:

- works 1 day per week = 6 days holiday;
- works 2 days per week = 11.5 days holiday;
- works 3 days per week = 17 days holiday;
- works 4 days per week = 22.5 days holiday; and
- works 5 days per week = 28 days holiday.

An agricultural worker in continuous employment with the same employer for **more than** 52 weeks is entitled to 29 days holiday. This holiday entitlement is proportionate to the number of days worked.

The rate of holiday remuneration must not be less than the minimum wage rate set out above.

Accommodation Offset

For all workers employed in agriculture prior to 6th April 2009 (excluding Temporary and Harvest workers), a house or other accommodation provided by the employer may (with the consent of the worker) be reckoned as payment of wages in lieu of payment in cash to the maximum of £1.50 per week.

For all workers commencing work in agriculture for the first time from 6th April 2009, a house or other accommodation provided by the employer may (with the consent of the worker) be reckoned as payment of wages in lieu of payment in cash to the maximum of £37 per week.

Further information on Agricultural Wages Board Orders or matters relating to Agricultural Wages is available from: The Secretary, Agricultural Wages Board, Room 917, Dundonald House, Upper Newtownards Road, Belfast, BT4 3SB or telephone: 028 9052 4012 .

ALTERNATIVE ENTERPRISES

A wide range of alternative enterprises is found on individual farms in Northern Ireland. Some of these developments are relatively new, while others are simply being more widely publicised. Such enterprises may be seen to be attractive; however, they should not be undertaken without a considerable amount of research. Substantial capital may be required and new skills in production and marketing may have to be acquired. With alternative enterprises there is often a high level of risk and the potential market outlets should be thoroughly investigated before production is started.

The main groups of alternative enterprises are agricultural contracting; tourism and recreation (bed and breakfast, open farms, horse breeding); value-adding enterprises (on-farm processing, farm shops and stalls); unconventional agricultural enterprises (Christmas trees, amenity turf, game birds, ostriches, rabbits, snails, goats' and sheeps' milk); ancillary resources (letting buildings for non-agricultural use, forestry); and the production of environmental goods in return for government grants.

ORGANIC FARMING

Organic farming aims to produce high quality food using sustainable methods of production and avoids the use of artificial fertilisers and chemicals which minimises damage to the environment and wildlife. Organic produce must comply with organic food standards and, in general, there is a minimum two year conversion period from non-organic methods.

It is difficult to be specific about the margins from organic farming. There is a specific market (that should be identified before production is commenced) and it is possible to obtain a premium for organically produced food. However, any premium can, at least in part, be offset by lower yields.

ON FARM WELFARE

Owners and keepers of farmed animals are required to comply fully with The Welfare of Farmed Animals (Northern Ireland) Regulations 2012 (as amended). These Regulations sets down minimum standards for the keeping of farmed animals. They contains specific requirements such as inspections, record keeping, freedom of movement, buildings and equipment and the feeding and watering of animals.

The Northern Ireland Codes of Practice for the Welfare of Livestock provide advice and guidance for the upkeep of farm animals and details of relevant legislation. Any person responsible for a farmed animal is required by law to ensure that they have access to and are acquainted with the relevant codes.

A person commits an offence if that person does not take such steps as are reasonable in all the circumstances to ensure that the needs of an animal for

which that person is responsible are met to the extent required by good practice. An animal's needs shall be taken to include-
(a) its need for a suitable environment,
(b) its need for a suitable diet,
(c) its need to be able to exhibit normal behaviour patterns,
(d) any need it has to be housed with, or apart from, other animals, and
(e) its need to be protected from pain, suffering, injury and disease.

For further information about Farm Animal Welfare please visit the DAERA website at www.daera-ni.gov.uk/topics/animal-health-and-welfare/

AVERAGE CONACRE RENTS BY TYPE OF USE 2011 - 2016

£ per hectare

Use	2011	2012	2013	2014	2015	2016
Grass	195	216	226	236	241	262
Potatoes	703	501	734	706	508	670
Cereals	246	241	263	293	289	301
Rough grazing	41	37	33	38	49	51
All uses	**179**	**179**	**182**	**191**	**208**	**224**

Source:- Farm Business Survey

SALES OF AGRICULTURAL LAND 1981 - 2006 [2] [3] [4] [5] [6]

Year	Number of sales	Area sold (ha)	Price [1] (£/ha)
1981	696	7,081	2,897
1982	921	8,950	2,683
1983	863	7,870	2,866
1984	815	8,105	2,958
1985	709	7,785	3,130
1986	725	7,682	3,128
1987	660	7,179	3,204
1988	660	7,791	2,855
1989	639	7,695	3,359
1990	489	5,249	3,313
1991	462	5,243	3,362
1992	467	4,552	3,383
1993	467	4,721	4,330
1994	420	4,605	5,056
1995	355	4,050	5,950
1996	223	3,425	5,419
1997	257	2,912	7,858
1998	223	2,151	8,746
1999	163	1,672	8,267
2000	174	1,614	9,634
2001	67	597	9,961
2002	55	550	12,456
2003	44	520	14,950
2004	40	562	16,286
2005	63	1,095	19,837
2006	85	2,303	24,870

(1) Calculated by dividing the total value of sales by the total area sold.

(2) Source:- DARD, compiled from Valuations and Lands Agency data.

(3) Excludes individual sales under 2 hectares (5 acres) up to 2001 and sales outside agriculture.

(4) There is a delay (estimated to be 3 months) between the date on which a sale is agreed and when it appears in this series.

(5) Figures for 2002 are estimates due to lack of data.

(6) Land sales of less than 5 hectares are not included for 2003, 2004 and 2005.

TAXATION 2017-2018

These notes on taxation are a summary only. A series of booklets giving details of tax related matters are available from any tax office on request. All booklets and other information are also available on the internet at www.gov.uk/government/organisations/hm-revenue-customs Alternatively, a professional adviser may be approached.

1. Income Tax

1.1 Income Tax Allowances

	£
Personal Allowance for everyone[1]	11,500
Minimum amount of Married Couple's Allowance for people born before 6th April 1935[3]	3,260
Maximum amount of Married Couple's Allowance for people born before 6th April 1935[2, 3]	8,445
Marriage Allowance[4]	1,150
Blind person's allowance	2,320
Income limit for Personal Allowance	100,000
Income limit for Married Couple's Allowance	28,000
Partner's minimum income for Marriage Allowance	11,501
Partner's maximum income for Marriage Allowance	45,000

[1] The personal allowance reduces where the income is above £100,000. When this is the case, it is reduced by £1 for every £2 of income above the £100,000 limit. This reduction applies irrespective of age or date of birth.

[2] This allowance reduces where the income is above the income limit by £1 for every £2 of income above the limit until it reaches the minimum amount.

[3] Tax relief for the Married Couple's allowance is given at the rate of 10 per cent.

[4] Marriage Allowance lets you transfer £1,150 of your Personal Allowance to your husband, wife or civil partner. To benefit as a couple, the lowest earner must have an income of £11,500 or less.

1.2 Income Tax rates (%)

	Income Tax Rate	Taxable Band
Basic rate:	20%	£0 to £33,500
Higher rate:	40%	£33,501-£150,000
Additional rate:	45%	Over £150,000

The income tax rates available for dividends are 7.5% (basic), 32.5% (higher) and 38.1% (additional). You do not pay tax on the first £5,000 of dividends you get in the tax year.

2. Corporation Tax

Profits are chargeable at a rate of 19% from 1 April 2017.

3. Capital Gains Tax (CGT)

Applies to capital gains made by an individual. Capital gains accruing to companies are chargeable to Corporation Tax.

(a) Annual exemption of £11,300 for individuals with independent taxation.

(b) The tax rate for individuals is 10%, 18%, 20% or 28%. The rate of tax applied depends on total level of taxable income, whether the gains qualify for Entrepreneurs relief and if the capital gain arose from residential property or other chargeable assets.

4. Inheritance Tax

Inheritance Tax (IHT) may be payable on an estate when someone dies, or when assets are transferred into a discretionary trust or to a company.

There is no Inheritance Tax to pay on estates up to £325,000 (effective from 6th April 2009). An excess above this value is liable to inheritance tax at a rate of 40% (most farms in Northern Ireland get 100% property relief).

5. Value Added Tax (VAT)

VAT is a tax that's charged on most business transactions in the UK. Businesses add VAT to the price they charge when they provide goods and services to customers.

The annual turnover threshold for VAT registration is £85,000.

Three rates of VAT (Effective from 4th January 2011):

Standard rate – 20% - Most goods and services
Reduced Rate - 5% - Various items e.g. domestic fuel and power
Zero Rate – 0% - Certain goods and services e.g. food.

All VAT businesses are now required to submit online VAT returns and pay any VAT due electronically.

In order to submit your VAT returns online you must register for online services on HMRC website (www.gov.uk/government/organisations/hm-revenue-customs)

6. Stamp Duty

Purchasers of **residential** property are subject to the following rates of stamp duty for property purchased from 4 December 2014.

- 0% on the first £125,000 of the property price
- 2% on the next £125,000
- 5% on the next £675,000
- 10% on the next £575,000
- 12% on the rest (above £1.5 million)

Note if buying an additional residential property the rates are usually 3% higher than the normal rates. Whereas, for first time buyers a discount (relief) is available on the above rates for properties purchased on or after 22 November 2017 for £500,000 or less. With this discount, first-time buyers pay 0% on the first £300,000 of the property price and 5% on the next £200,000. For properties over £500,000, no discount is available for first-time buyers.

Purchasers of **non-residential and mixed used** property are subject to the following rates of stamp duty for property purchased from 17 March 2016.

- 0% on the first £150,000 of the property price
- 2% on the next £100,000
- 5% on the rest (above £250,000)

(Contact HM Revenue and Customs for further details).

7. Forestry - wholly removed from income and corporation tax from 14 March 1988.

8. National Insurance

If you're self-employed you normally have to pay Class 2 National Insurance contributions. If your annual profits are over a certain amount you also pay Class 4 contributions. The relevant rates and thresholds for 2017/18 are:

Class 2	Self employed (up to state pension age)	
	Flat rate £2.85 per week (small profits threshold £6,025 per year)	
Class 4	Self employed (up to state pension age)	
	9.0% of profits/gains between £8,164 and £45,000	
	2.0% of profits/gains over £45,000	

SELF ASSESSMENT AND CURRENT YEAR ASSESSMENT OF TAX

1. Self assessment

Self Assessment involves completing an online or paper return to inform HM Revenue & Customs (HMRC) about income, capital gains etc. This information is used by HMRC to work out your tax bill. Tax returns relating to 2017/18 tax year must be sent back by the following deadlines:

- Paper returns - **31 October 2018**.
- Online returns - **31 January 2019**.

In order to submit your form online you must register for online services on the HMRC website (www.gov.uk/government/organisations/hm-revenue-customs)

The deadline for payment of tax is **31 January**. There is an additional payment deadline of **31 July** if you make advance payments towards your bill.

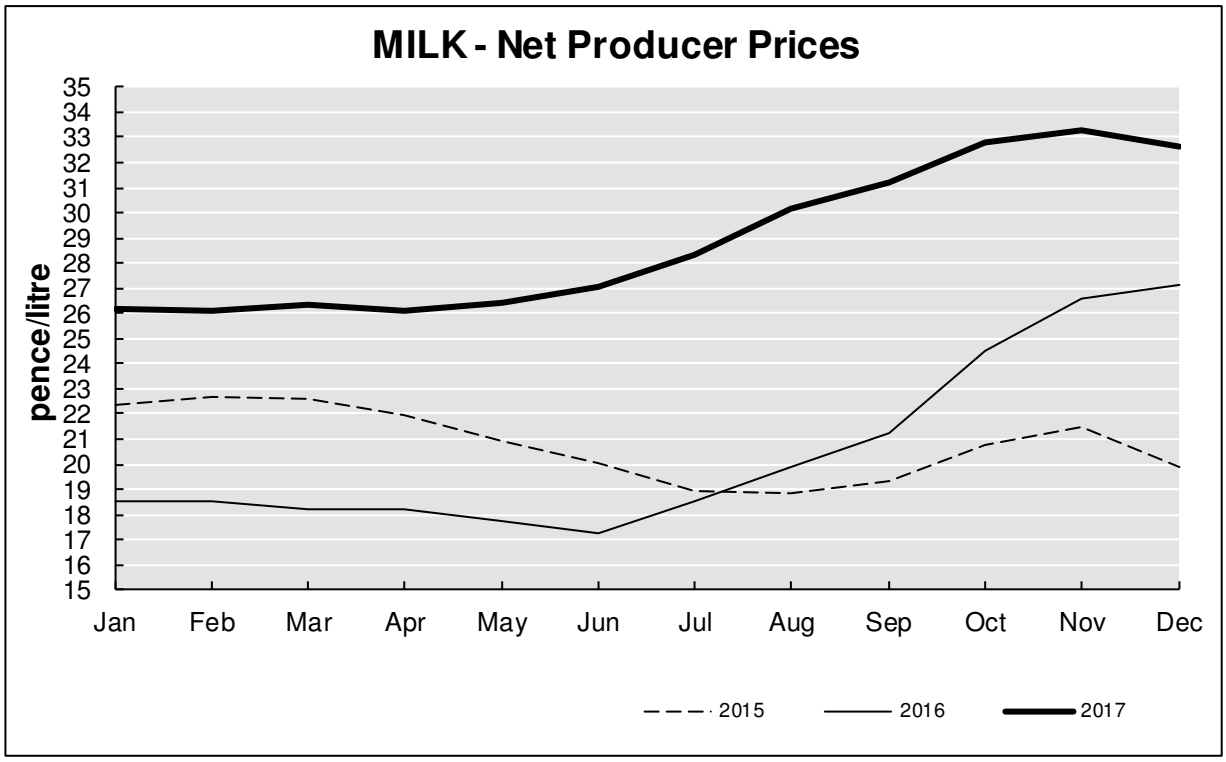
There are penalties for both late tax returns and for the late payment of tax bills. For example, if your tax return is up to 3 months late there is a fixed penalty of £100. Additional penalties are applied when returns become 3, 6 & 12 months late. Whereas, when payment of your tax bill is 30 days late there is a penalty equivalent to 5% of the tax due. Similarly, additional penalties are applied when your payment becomes 6 & 12 months late. Interest is also charged on both unpaid tax and unpaid penalties.

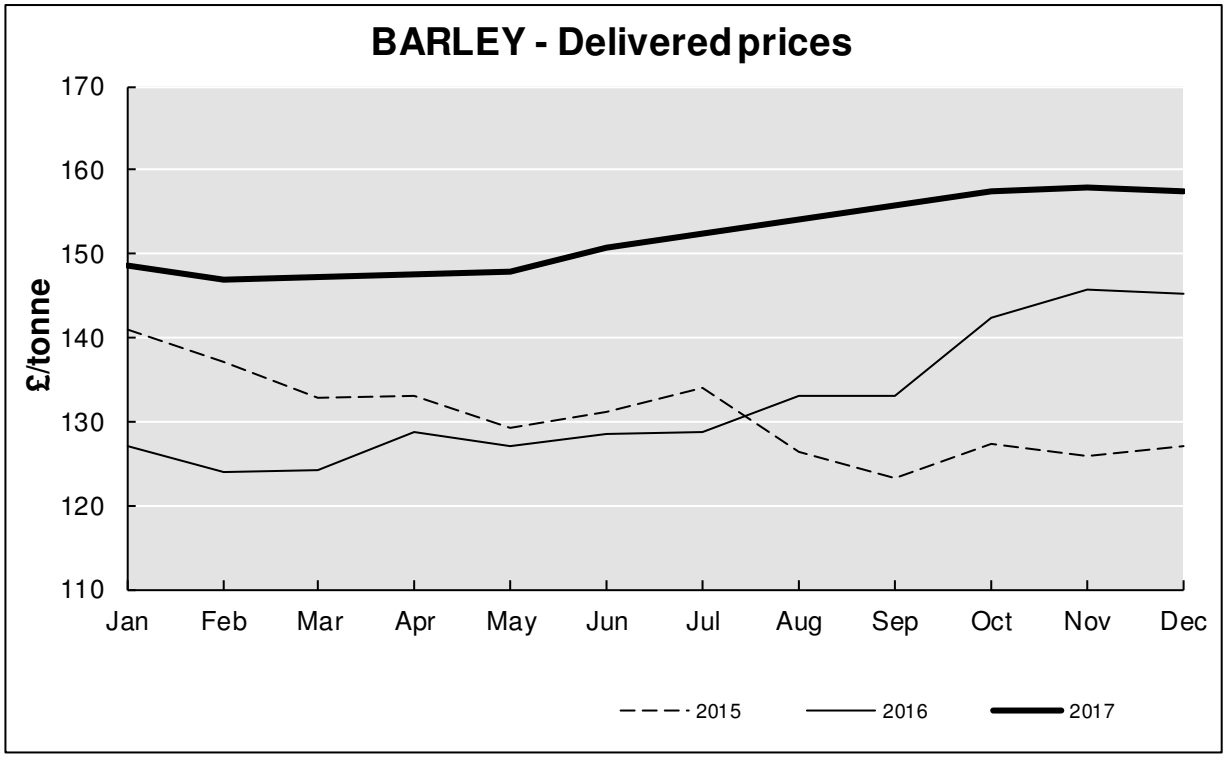
There is a statutory requirement to keep records including relevant receipts, invoices etc. to support the figures entered on the tax return.

2. Current (same) year assessment.

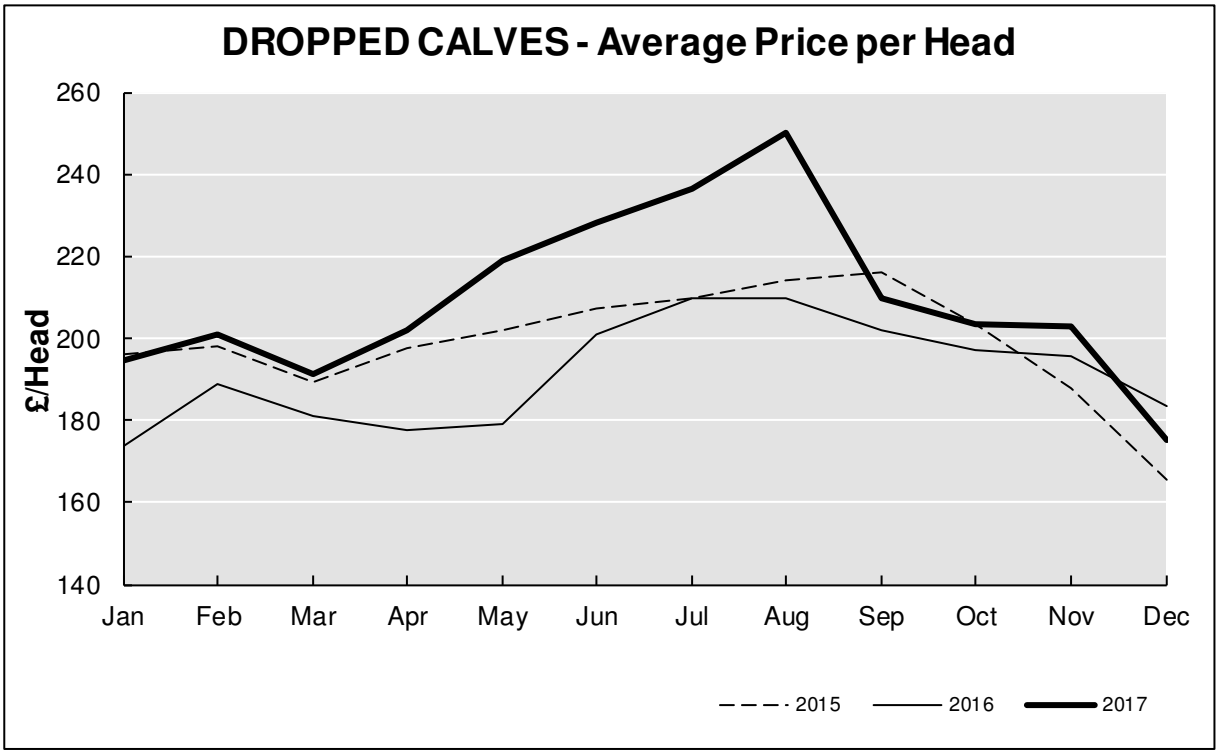
The tax liability will be based on the profit arising in the same year. Therefore, taxable business profits for any year will be those shown on a set of yearly accounts ending in that tax year.

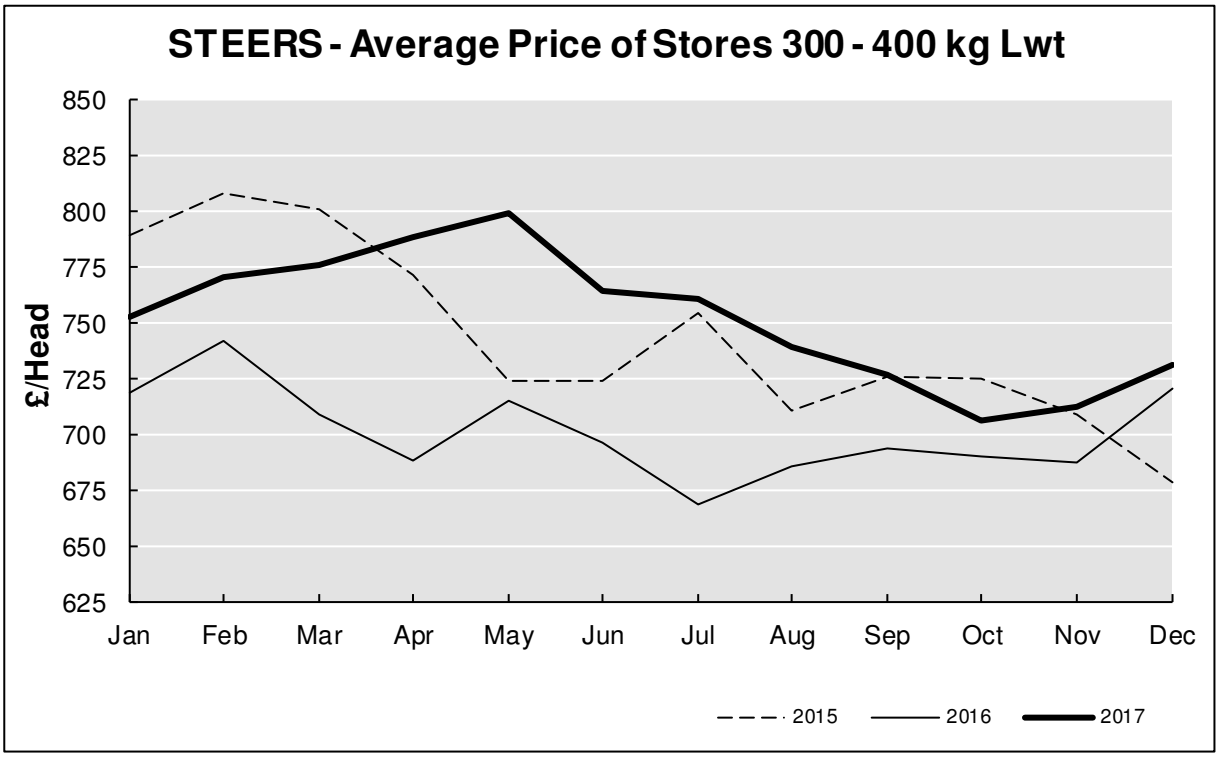
MILK AND BARLEY PRICES, 2015 - 2017



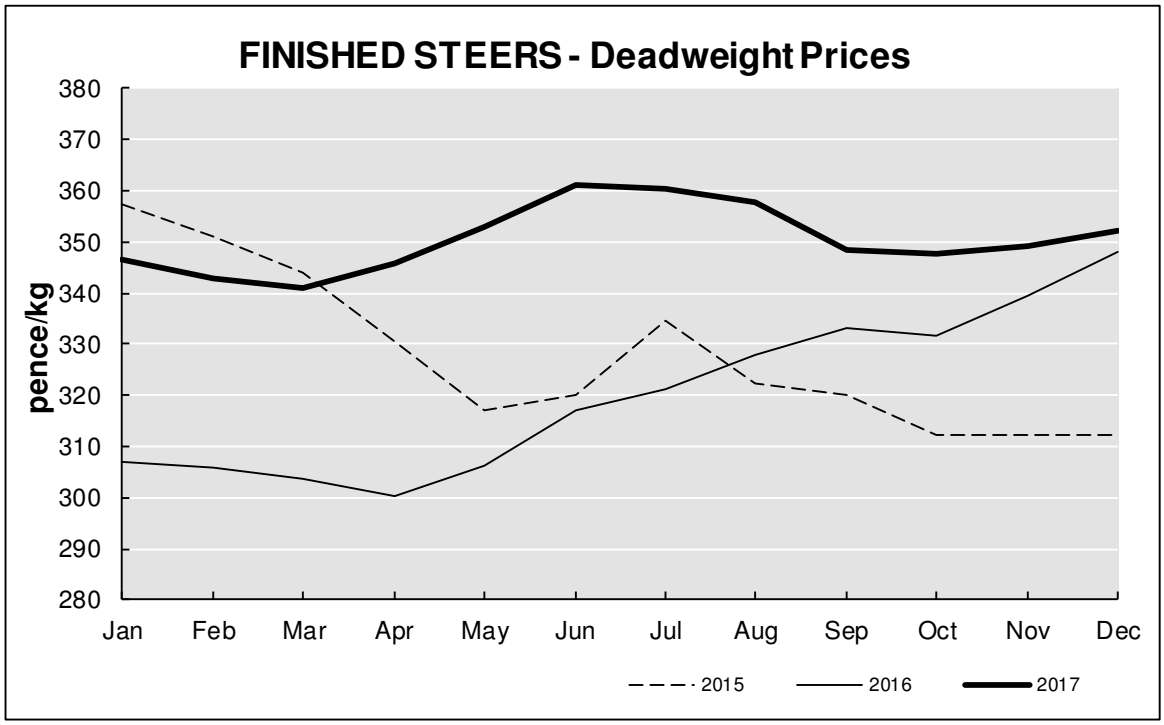


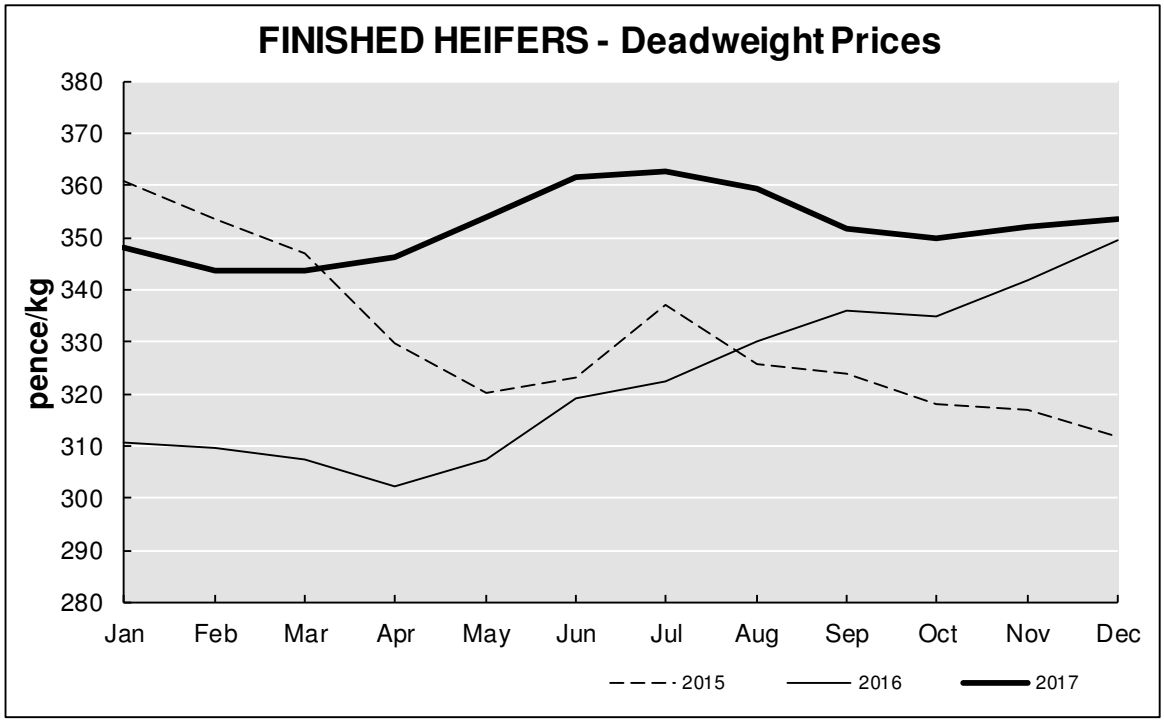
CATTLE PRICES, 2015 - 2017





BEEF PRICES, 2015 - 2017





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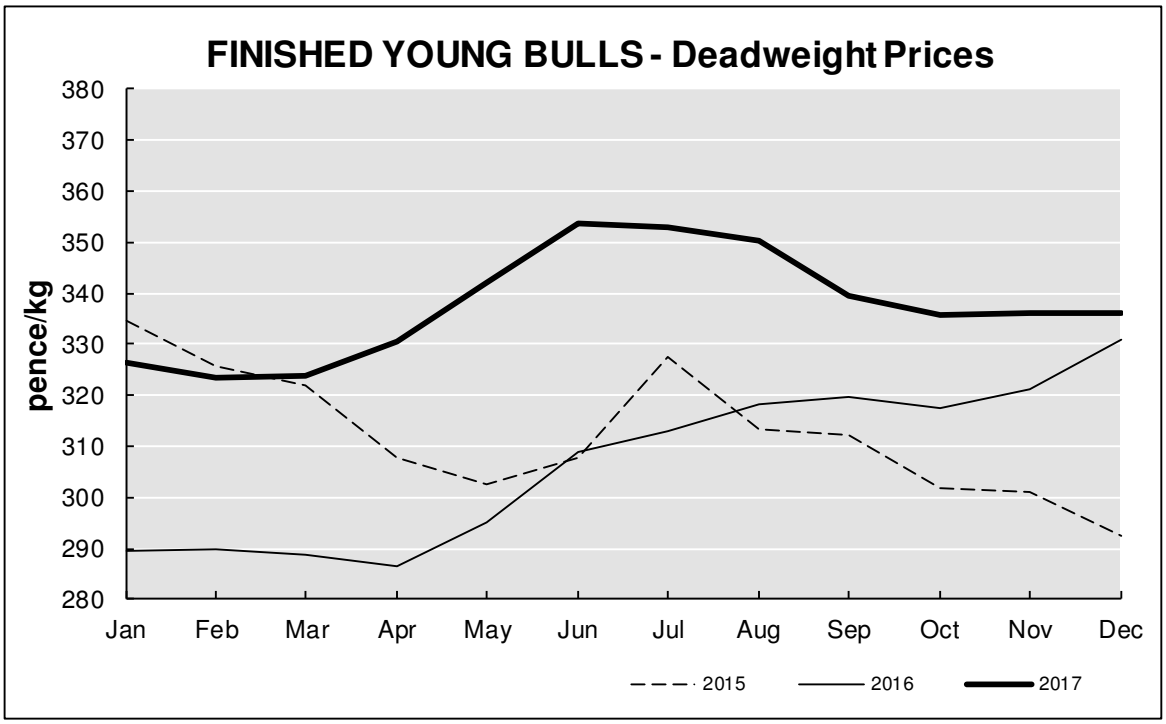
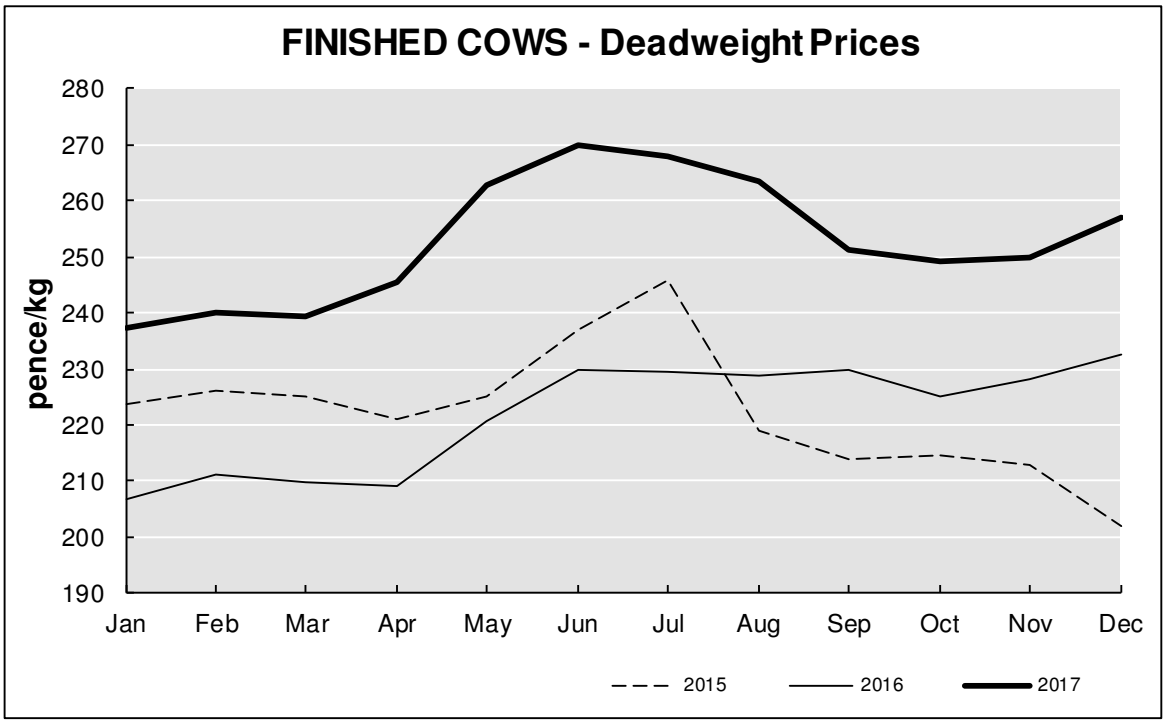
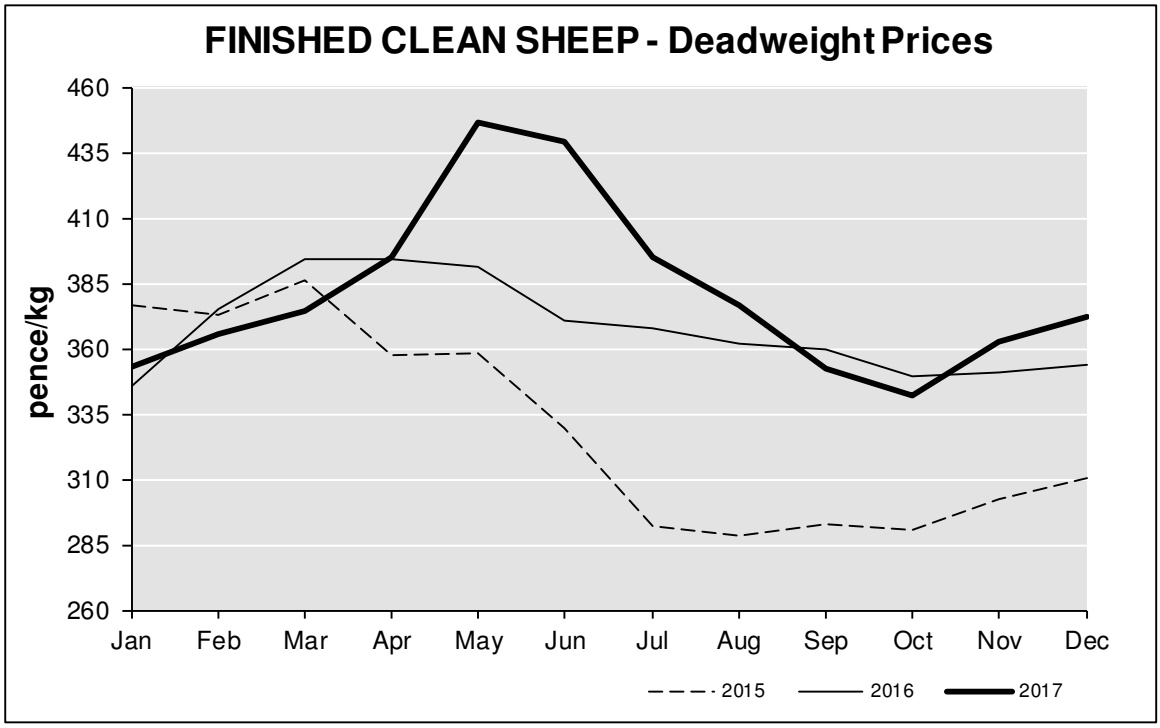
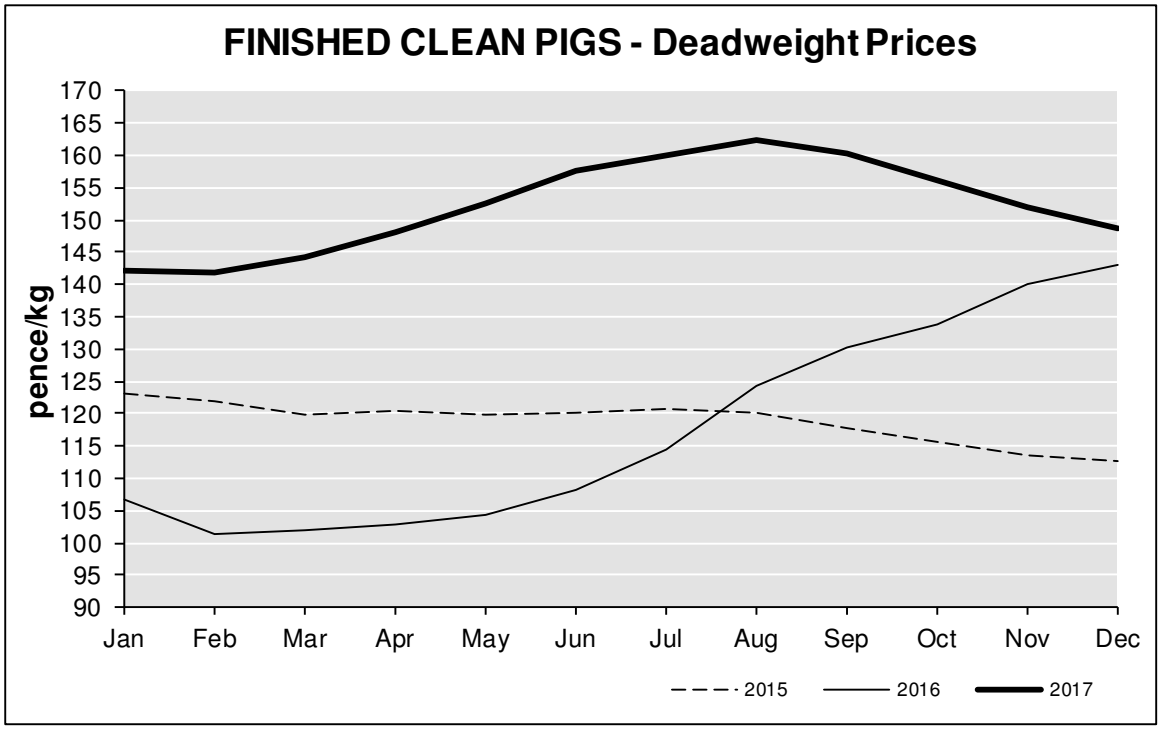




LAMB AND PIGMEAT PRICES, 2015 - 2017





DAERA CONTACT LIST

You can contact the Department of Agriculture, Environment and Rural Affairs (DAERA) by telephone, in writing, or by email

By Telephone

If you know the name of the person you wish to speak to, please telephone **0300 200 7850**. For all other enquiries please select the appropriate number from page 121.

The DAERA Helpline number is **0300 200 7852**

In Writing

If you wish to write to the Department you can use the following postal address:

Department of Agriculture, Environment and Rural Affairs
Dundonald House
Upper Newtownards Road
Ballymiscaw
Belfast BT4 3SB

By Email

The DAERA Helpline email is daera.helpline@daera-ni.gov.uk

DAERA Telephone Numbers

Animal Health & Welfare and Veterinary Public Health Information and services relating to livestock movements, trade, animal welfare, veterinary public health, and the prevention and control of animal diseases.	**0300 200 7840**
Cattle Registration Line Registration of cattle births and deaths by telephone.	**0300 200 7855**
Education and Training Education and training courses provided by CAFRE.	**0300 200 7841**
Environment Agri-environment schemes. Countryside Management advice including Cross-Compliance, Nitrates Directive, Codes of Good Agriculture Practice, Farm Waste Management, Uncultivated Land Regulations and Field Boundary Removals.	**0300 200 7842**
Farming Livestock. Crops. Horticulture. Plant health. Equine. Organic farming. Farm business management. Information technology and online services.	**0300 200 7843**
Fisheries Aquaculture. Sea fisheries. Fish health. Foyle, Carlingford & Irish Lights Commission.	**0300 200 7844**
Food Knowledge and technology transfer. Marketing support to food businesses. Food industry training. Food Business Incubation Centre. Food Safety. Product certification. Marketing and quality standards.	**0300 200 7846**
Forests Timber production and marketing. Plant health controls for wood and bark, Woodland grants (including Short Rotation Coppice). Recreation. Educational visits. For caravanning and camping bookings you will need to book directly with the Forest Park.	**0300 200 7847**
Grants and Funding Basic Payment Scheme, Areas of Natural Constraint Scheme, agri-environment, farm, fisheries, forestry and rural development payments and grants, pre-2015 schemes.	**0300 200 7848**
Rural Development Northern Ireland Rural Development Programme, Rural and community development, Farm diversification, Rural Champion, Rural Proofing, Rural White Paper.	**0300 200 7849**
DAERA Corporate Services DAERA Headquarters, Press Office, information services and systems, human resources and facilities management.	**0300 200 7850**
Text Relay If you have hearing difficulties you can contact the department via text relay.	**18001 + number (from a textphone)** **18002 + number (from a telephone)**
Calls from non-UK numbers or networks/International Calls	**+44(0) 28 9049 5780**

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AFBI Crossnacreevy
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Tel: 028 8224 3337

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Tel: 028 9052 0011

AFBI Loughgall
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Tel: 028 3889 2344

AFBI Bushmills
River Bush Salmon Station
Church Street
BUSHMILLS
BT57 8QJ
Tel: 028 2073 2544

Agri-Food and Biosciences Institute (AFBI) was created on 1st April 2006 as the amalgamation of DARD Science Service and the Agricultural Research Institute of Northern Ireland.

Department of Agriculture, Environment and Rural Affairs (DAERA)
Northern Ireland Environment Agency (NIEA)

Water Management Unit, 17 Antrim Rd, Lisburn, BT28 3AL
www.daera-ni.gov.uk/topics/water/water-management-unit
General Enquiries Tel: 0845 302 0008

Agriculture Regulation team Tel: 028 9262 3184
(Nitrates Action Programme, Nitrates Derogations & Field Storage of Poultry Litter)

SSAFO Issues Tel: 028 9262 3102
Contact the NIEA before planning to substantially alter any existing storage facility or commission new diesel tank(s), silos or slurry tanks.

SSAFO is the control of pollution from Silage, Slurry & Agricultural Fuel Oil

Applying Sewage Sludge to Land Tel: 028 9263 3445

Ground Water Authorisations Tel: 028 9263 3445
(Authorisation for disposal of spent sheep-dip)

Water Pollution Hotline Tel: 0800 80 70 60
(A 24-hour confidential hotline for reporting pollution incidents)

Regulation Unit, Klondyke Building, Gasworks Business Park, Ormeau Road, BELFAST, BT7 2JA
www.daera-ni.gov.uk/topics/waste
General Enquiries Tel: 0845 302 0008

Registration of Waste Carriers Tel: 028 9056 9360

Simple Waste Management Exemptions Tel: 028 9056 9360

Other Waste Management Exemptions Tel: 028 9056 9380

Hazardous Waste Queries Tel: 028 9056 9710

Transfrontier Waste Shipment Queries Tel: 028 9056 9742

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Copies of this booklet can be made available on request in alternative formats.
Please telephone 028 9052 4063

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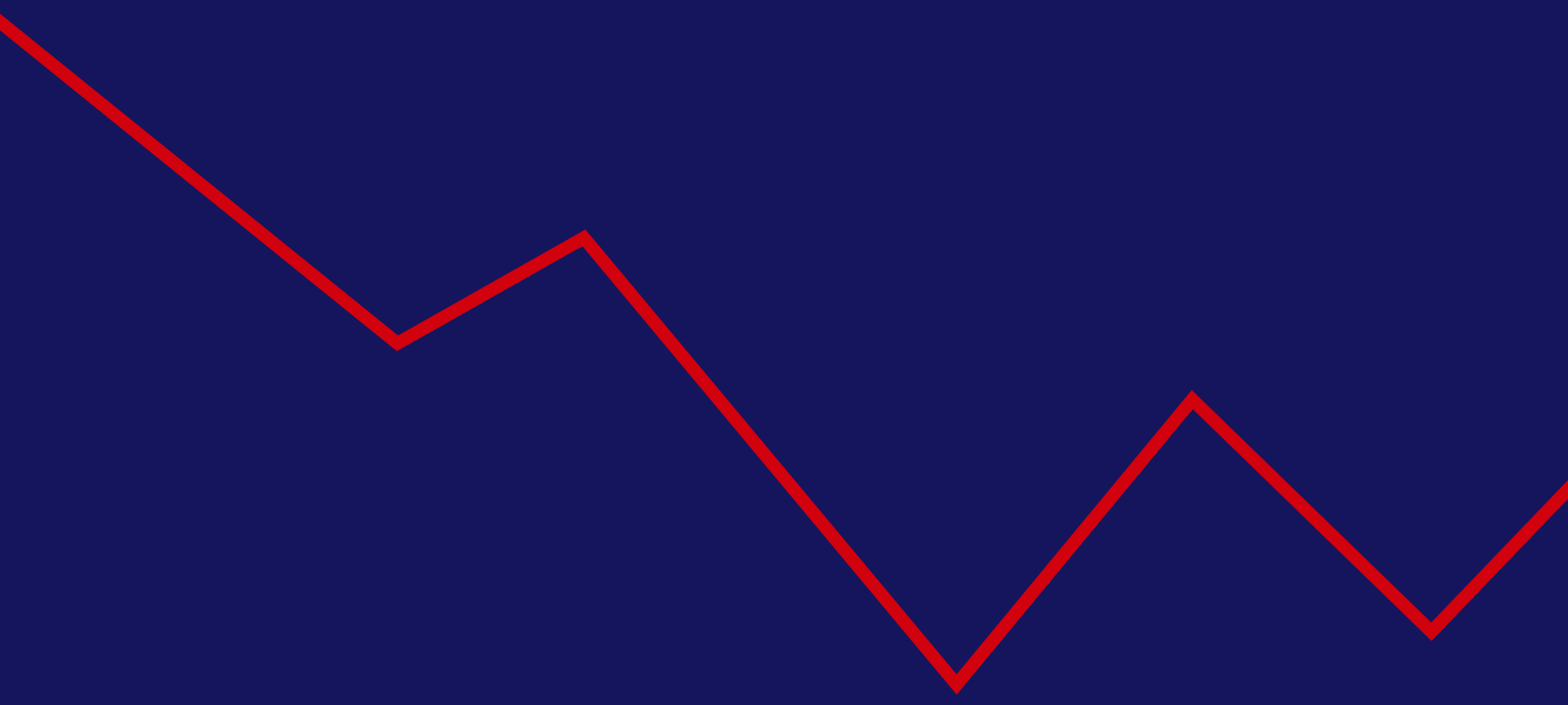

Department of
Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

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