



Farm Business Survey

2014/2015

Dairy Farming in England



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Davina Smith and
Paul Wilson**

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2014/15**

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Foreword to the First Series

This report is one of a series being produced based on the results of the Farm Business Survey (FBS) for England. The annual Farm Business Survey is the most comprehensive and independent survey of farm incomes and provides a definitive data source on the economic and physical performance of farm businesses in England. It is conducted by a Consortium comprising the Universities of Cambridge, Newcastle upon Tyne, Nottingham and Reading, and Askham Bryan, Duchy and Imperial Colleges. The Consortium is led by the University of Nottingham and its members work in partnership, using uniform and standard practices in reporting on their findings to ensure consistent data quality, accuracy and validity. The Survey is financed by Defra and the Consortium values greatly the input of their staff.

These detailed reports for various farm types and enterprises are in addition to the comprehensive Farm Business Survey Reports for Government Office Regions published at www.farmbusinesssurvey.co.uk. The Consortium is seeking by these additional reports to ensure that timely and relevant information is available to farmers, consultants, advisers and other organisations and individuals interested in farming and land management. The analysis and publication of these reports uses data from farm businesses across England, with an individual member of the Consortium undertaking the research analysis. In line with the ethos of the Consortium, these reports present results in such a way as to ensure a significant element of continuity and consistency from one report to the other, whilst also ensuring that each report captures the contemporary issues of relevance to the sector of agriculture in England to which it relates.

We believe these reports will make a valuable and useful contribution to the farming industry and we commend them to you.

Prof. Martin Seabrook

(Chief Executive of the Consortium)

Spring 2007

Foreword to the Tenth Series

This series of reports on the economics of agriculture and horticulture in England celebrates ten years of *Rural Business Research (RBR)* providing independent data and analysis to the individual sectors of the agricultural and horticultural industry. Drawing upon Farm Business Survey data from the 2014/15 financial year our reports are set against a modest decrease in overall Farm Business Income (FBI) of around 8% to an average £39,700 per farm. Of this overall measure of farm business profitability, the income derived from the Single Payment Scheme accounted for around 55%, highlighting the importance of support payments to the average farm business in England. The 2014/15 data relates to the 2014 harvest / production year – since this time there have been some marked downturns in a number of output prices for farm businesses – it is therefore clear that the importance of policy support to businesses at the start of 2016 is even greater than the above data indicates.

Over the ten years that RBR has been presenting this series of reports, farm businesses have witnessed widely fluctuating fortunes due to the vagaries of world market input and output prices and fluctuations in weather patterns. Throughout this period our reports have sought to demonstrate the variation in performance across farm businesses, within the specific sectors covered in each report, and also to provide businesses with the independent data required to benchmark their own performance and explore possibilities for production within the sectors. Ten years on, our aim to provide comprehensive and independent analysis remains at the very core of our work on the Farm Business Survey research programme for England.

The wider agricultural and horticultural market place in the mid-2010s clearly demonstrates the need for farm businesses to focus on the market opportunities for their produce and to understand the wider economic environment in which they operate. There are a number of technical and weather-related issues facing farm businesses at the start of 2016. But arguably the largest political issue over recent decades – the EU referendum which the current government will hold on the 23 June 2016 – represents the greatest uncertainty. There will be numerous debates and discussions about this major political issue over the coming months and, potentially, years. Given the importance of the EU Common Agricultural Policy support to the average FBI figures for 2014/15, the outcome of the EU referendum will be closely watched by those managing UK farm businesses. At the same time, the wider global economy continues to exhibit rather sluggish performance, with UK inflation remaining around the 0% mark, oil prices substantially lower than a year ago and signs of any interest rate increase in the UK being continually pushed further out into the future. With recent price volatility, and generally lower output prices, it remains important for businesses to plan ahead and focus on financial margins in contrast to physical output performance.

Against this wider economic context we hope that this tenth series of reports helps farm businesses in England to examine and benchmark their own performance. Our research work within the FBS programme could not be possible without the direct support of our farmer and grower co-operators and the wider support of agricultural and horticultural businesses and sector stakeholders; our thanks are given to them all.

Professor Paul Wilson

Chief Executive Officer, Rural Business Research
March 2016

www.ruralbusinessresearch.co.uk

Acknowledgements

Rural Business Research thanks sincerely all the farmers who have voluntarily provided records and information on which the annual Farm Business Survey, and this report, is based.

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Summary

The Dairying Sector

- During 2014/15, dairy farming in the UK witnessed a decrease in milk prices with a yearly average price of 29.63 pence per litre (ppl) compared to 32.58 ppl in 2013/14
- In a reversal of the recent trend, key input costs such as feeds and energy both witnessed decreases on the levels of previous years, whilst the cost of fertiliser continued to fall.
- Annual milk production in the UK for 2014/15 increased by just over 700 million litres (+5.1%), building on a similar increase to that experienced in 2013/14.
- Average milk yield increased by 1.9% to just under 7,900 litres per cow (lpc), building on the previous year's increase (7,300 to 7,700 lpc).
- The national herd size increased by approximately 56,000 cows to a level of 1,860,000 cows and returned to a level not seen since 2009/10.
- In December 2015, there were approximately 340 fewer milk producers in England and Wales than a year earlier; a fall of 3.4%. Since 2007, numbers have fallen by 2,900, a decrease of 23.2%.

Farm level results

- Farm Business Survey data from 2014/15 shows that the average Farm Business Income (FBI) from dairying was £552/ha, which at the average farm size equates to an FBI of approximately £83,900, representing a decrease of 4% from 2013/14.
- Average FBI on all conventional dairy farms in 2014/15 was £553/ha (£84,000 per farm), whilst on organic farms average FBI was £529/ha (£74,500 per farm). These results represent a decrease in FBI of 6% for conventional farms and an increase of 17% for organic farms.
- Average FBI on lowland dairy farms was £552/ha (a decrease from £567/ha in 2013/14). For LFA dairy farms, average FBI was £558/ha compared to £772/ha in 2013/14.
- Management and Investment Income (MII) across all dairy farms decreased by £35/ha to £254/ha in 2014/15. This equates to an average MII of £38,600 per farm, compared to £43,400 in 2013/14.
- The reliance on family labour typically found on the smaller dairy farms, i.e. less than 60 hectares, resulted in a familiar, lower MII than was achieved for the two larger size groups presented. The smaller size group achieved a MII of -£198/ha, compared to £266/ha and £284/ha for the 60 to 120 hectares and greater than 120 hectares groups, respectively.
- Profitability analysis reveals that FBI for the upper quartile of lowland dairy farms was £1,067/ha compared to -£82/ha for the lower quartile. The upper quartile group has the largest average farm size at 183ha, compared to 109ha for the lower quartile.
- LFA dairy farms within the largest size group operated less intensive systems, achieving the lowest total farm output whilst incurring the lowest variable and fixed costs, a regular feature of LFA income results during the ten years that this report has been published. MII for the large, small and medium groups were £291/ha, £85/ha and £3/ha respectively. On a per hectare basis, MII for the medium group has fallen below that of the small size group in 2014/15. The respective approximate FBIs for the less than 60 hectares, the 60 to 120 hectares and the greater than 120 hectares size groups are £38,200, £49,400 and £106,300

- An analysis of FBI by LFA quartile groupings reveals that the upper quartile achieved a milk output that was only £359/ha greater than that achieved by the lower quartile (in comparison with £1,019/ha in 2013/14), but had a greater reduction in variable costs. In 2014/15, total variable costs for the lower quartile group fell by 12% to £1,551/ha, whilst the upper quartile's total variable costs decreased by 28% to £1,218/ha. At the average farm sizes for these groups, the lower and upper quartiles achieved FBI returns of approximately £10,400 and £144,000 respectively

Dairy Enterprise Results

- Enterprise-level analysis shows that in 2014/15 the conventional herd total dairy output fell below the level achieved by the organic herd (organic herds total dairy output increased by 5% to £2,310/cow, while the conventional herd total dairy output fell by 6% to £2,303/cow). These outcomes were driven by the fall in milk price and drop in yield for the conventional herd (from 32.4ppl to 30.5ppl, with a drop in yield of 72 litres to 7876 lpc), in contrast to the rise in milk price and yield for the organic herd (from 37.0ppl to 38.6ppl with a rise in yield of 51 litres to 6262 lpc)
- Lowland and LFA dairy herds saw a decrease in average milk price of 1.8 ppl and 2.4 ppl respectively, with decreases in GM/cow of £32 for lowland herds and £120 for LFA herds. In 2014/15, at the average herd sizes, the total farm GM for lowland herds was just under £221,000 compared to approximately £217,500 in 2013/14 and for LFA farms total farm GM was just under £149,000 compared to approximately £159,500 in 2013/14
- For lowland herds, a continuation of a trend from previous years can be seen, i.e. as herd size increases, so do milk price, milk output/cow, total dairy output/cow and total gross margin/cow. Gross margins per cow for the less than 80 cows, the 80 to 130 cows and the greater than 130 cows groups were £1,086, £1,154 and £1,261, respectively. These margins per cow equate to gross margins per litre of 15.75ppl, 15.53ppl and 15.55ppl respectively, i.e. the smallest sized group achieved the highest gross margin per litre
- Lowland dairy farms in the upper quartile (by gross margin performance) produced on average around 2,600 lpc more than those in the lower quartile, with average milk prices for the upper quartile exceeding those of the lower quartile by 1.6ppl
- Feed concentrate to milk conversion rates of 7.9ppl and 9.4ppl were recorded for the gross margin upper and lower quartile lowland farms respectively (8.6ppl and 11.1ppl in 2013/14), whilst gross margin per litre results were 18.2ppl (upper quartile) and 12.4ppl (lower quartile) compared to 18.6ppl and 12.9ppl in 2013/14
- Gross margin performance quartile analysis of LFA dairy farms reveals that the better performers have larger herds and achieve substantially higher yields (+1,771 lpc) and receive higher milk prices (+1.1ppl) than the lowest quartile; leading to a disparity of more than £650 between the two quartile's relative gross margin per cow performances
- The higher milk price achieved by organic herds, coupled with their lower concentrate feed costs, resulted in organic herds achieving a margin over concentrate performance that exceeded that of conventional herds by 7.22ppl., compared to the previous year's excess of 4.2ppl

Chapter 1: The Dairying Sector

1.1: Introduction

The 2014/15 milk year was characterized by differing fortunes for conventional versus organic production. Conventional milk production saw declines in incomes and margins, whilst organic producers witnessed increases in their incomes and margins. With both production systems experiencing reductions in variable costs, these differing outcomes centered on reductions in yield per cow and price per litre for conventional production, as opposed to yield and milk price increases for organic production.

Last year's report noted the beginnings of a fall in milk prices that began in December 2013 and mentioned that 2014/15 looked set to experience a continuation of lower milk prices. This was indeed the case with the average price falling from approximately 33 ppl to 25 ppl by March 2015. For conventional producers, as mentioned above and shown in later parts of this report, this was a major contributor to lower returns. The concern for 2015/16 results is that they will show even lower returns as a result of even lower milk prices throughout that year.

Other important factors that contributed to the final incomes and margins reported in this report are:

- a reduction in feed costs which helped offset lower milk outputs
- good quality conserved forage for the 2014/15 winter period
- lower fertiliser and energy costs

Drawing upon information from a range of published sources together with analysis of data from the Farm Business Survey 2014/15, *Dairy Farming in England* provides a contemporary analysis of the performance of dairy farms, and dairy production, in England for the 2014/15 financial year. The purpose of this introductory section of the report is to set out the market environment and key factors affecting the sector during this financial year. Specifically, this section of the report gives an overview of the UK dairying sector, focusing on:

- farmgate milk prices
- input prices
- annual milk production
- UK dairy herd and average milk yield
- producer numbers

1.2: Farmgate Milk Prices

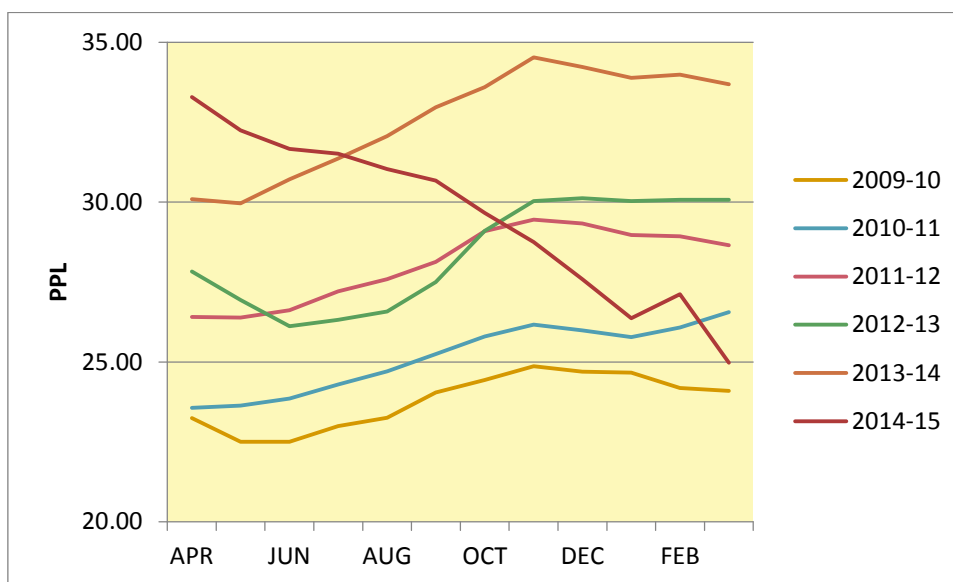
Figure 1.1 shows the UK monthly average ex-farmgate milk price (including seasonality; net of delivery charges) for milk years 2009/10 to 2014/15. Milk prices fell dramatically during 2014/15; whilst the annual average remained above 2012/13 at 29.63ppl (table 1.1), the monthly average price fell by almost 25% from 33.28ppl in April 2014 to 24.98ppl in March 2015 (and continued to fall thereafter).

Table 1.1: Average Annual Milk Prices

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Average annual price (ppl)	23.59	25.11	28.03	28.35	32.59	29.63

Source: Defra (2016a); Milk Price Surveys

Figure 1.1: Average Farmgate Milk Prices (UK)



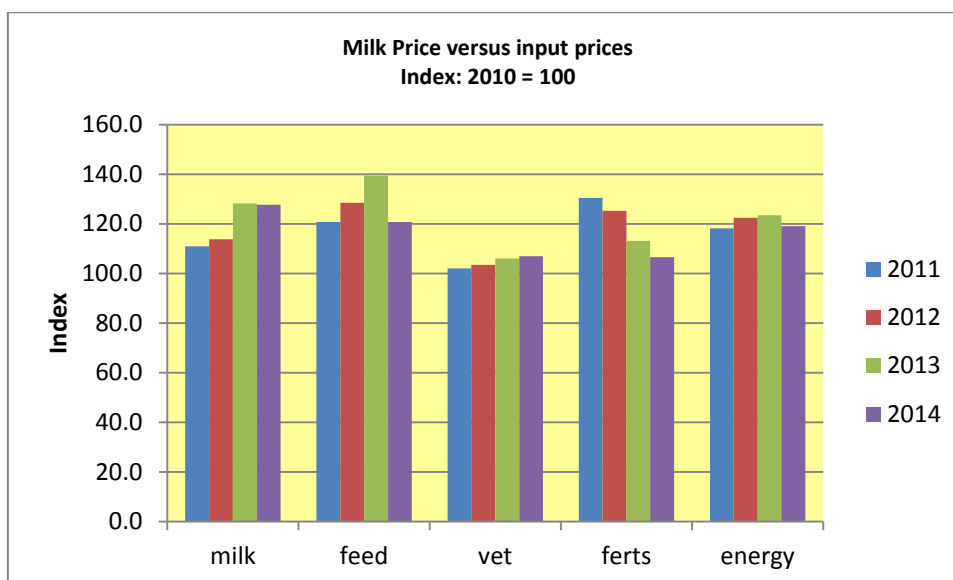
Source: Defra (2016b); Milk Price Surveys

1.3: Input Prices

Figure 1.2 shows the trends in farmgate milk prices and the prices of some key dairying inputs from 2011 to 2014, using the year 2010 as the base year (index 2010 = 100). Note that the price changes presented here are overall averages for UK farmers and not necessarily those of dairy farmers. Whilst the average milk price fell by 9% between 2013/14 and 2014/15 (ref table 1.1), this decrease is not evident in the data shown in figure 1.2. This is due to the differing time periods. The data in figure 1.2 relate to calendar years, that shown in table 1.1 to quota years (ending March). The 2014 cost of veterinary services and medicines recorded a small increase, whilst feed and energy decreased (by around 13% and 3.5% respectively), with fertiliser prices continuing the downward trend seen in the previous three years, albeit to a lesser degree.

A comparison of input and output costs for dairy farms can be found later in this report.

Figure 1.2: Milk and Input Prices (UK)

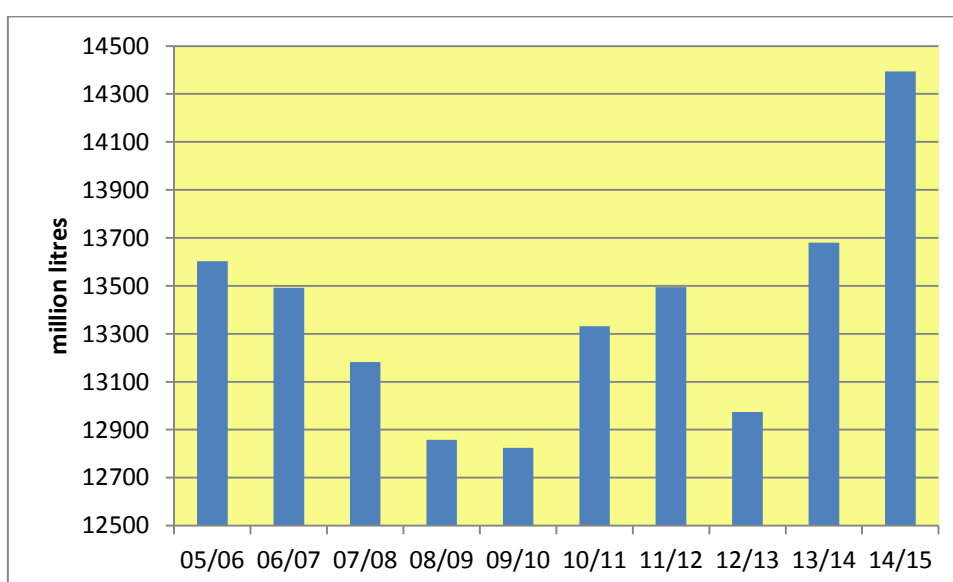


Source: Defra (2016c); Agriculture in the UK 2014

1.4: Annual Milk Production

Figure 1.3 shows annual milk production in the UK (defined as wholesale deliveries) for the years 2005/6 to 2014/15. Milk production increased significantly in 2014/15, showing a markedly greater increase than the general overall trend since 2010/11. Annual production increased by 714 million litres (+5%) to 14,394 million litres in 2014/15, a similar increase to the previous year, which was higher following a temporary drop in production in 2012/13.

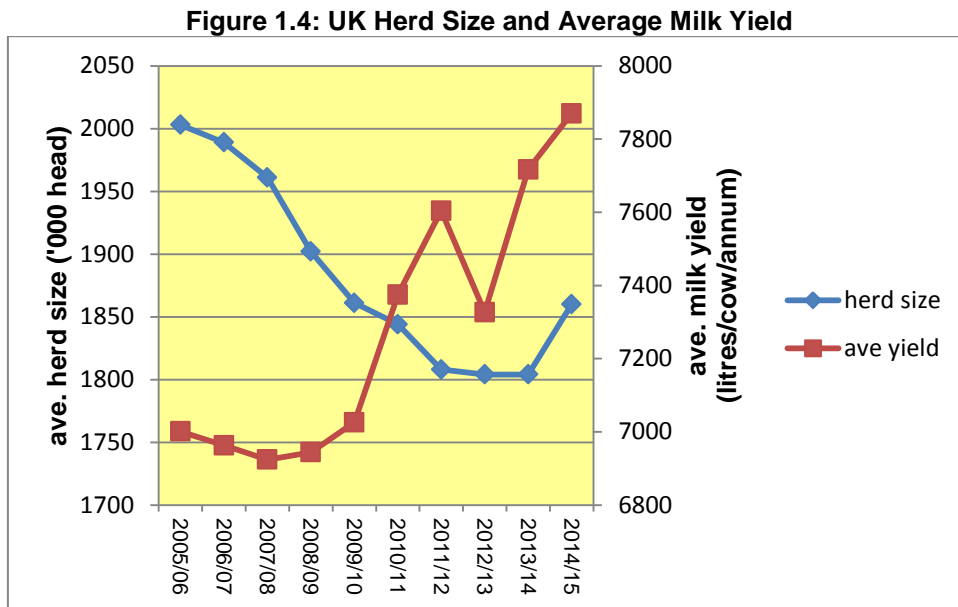
Figure 1.3: UK Annual Milk Production



Source: AHDB Dairy (2016a)

1.5: UK Dairy Herd and Average Milk Yield

Figure 1.4 shows that in 2014/15 the average milk yield per cow continued to increase in line with the general trend seen since 2009/10. Average yields of around 7870 litres per cow in 2014/15 represent a 150 litres per cow (+1.9%) increase on the 2013/14 average yield; the excellent summer grazing and large quantities of good quality silage available for overwintered dairy cows both contributed to the increase in milk yield. Figure 1.4 illustrates that during 2014/15 there was an increase of 56,000 cows in the national herd size (+3.1%) to 1,860,000 cows, bucking the downward trend of the previous twenty years.

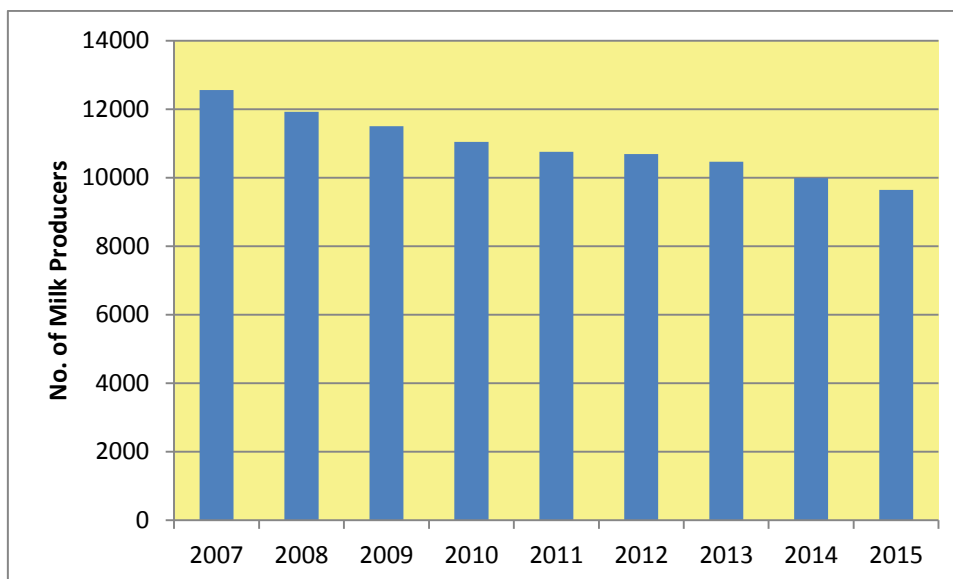


Source: AHDB Dairy (2016b)

1.6: Producer Numbers (England & Wales)

Figure 1.5 shows a further decline in the number of milk producers in England and Wales in 2015, following the general trend of the last few years. In December 2015 there were approximately 340 (3.4%) fewer producers than in December 2014, compared to a net loss of around 475 producers (4.5%) in the year to December 2014. Compared to 2007, there are just over 2,900 fewer milk producers in England and Wales, a decrease of 23.2%.

Figure 1.5: Number of Milk Producers (England & Wales)



Source: AHDB Dairy (2016c)

1.7: Structure of Report

The above sections have described the market environment in which the dairy sector has been operating during the 2014/15 financial year, whilst making reference to the economic and market conditions over recent years. The remaining chapters of this report are as follows:

- Chapter 2 details the data source and data analysis undertaken
- Chapter 3 provides the results of the data analysis

Chapter 2: Data and Methodology

2.1: Data

The data used in this report are derived from the Farm Business Survey returns for England for those farms classed as Dairy Farms¹ and relate to the outputs, inputs and returns to each farm, together with total farm area and farm size data. Table 2.1 below details the number of observations for the per hectare farm results, in each category by farm type (All, Lowland Conventional, Less Favoured Area (LFA) Conventional and Organic), by EU super region (North, East, West), by farm size categories and by lower and upper performance quartiles. Table 2.2 details the number of observations for the enterprise level results, in each category by farm type (All, Lowland Conventional, Less Favoured Area (LFA) Conventional and Organic), by EU super region (North, East, West), by herd size categories and by lower and upper performance quartiles.

For the 2014/15 edition of this report, the farm type classification is based on 2010 Standard Outputs.

Table 2.1: Observations by Category: Farm-Level Data 2014/15

Category		All	Lowland Conventional	LFA Conventional	Fully Organic ²
Number of farms		286	196	58	32
EU Super	North	-	55	35	-
	East	-	40	8	-
	West	-	101	15	-
Farm Size	<60 hectares	-	22	14	-
	60-120	-	79	22	-
	>120	-	95	22	-
Performance by ratio output:costs	Lower	-	54	15	-
	Upper	-	45	15	-

Ins. data = Insufficient data available (<10 observations)

1. Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and a lowland holding if less than 50 per cent of its total area is in the LFA.

2. In-conversion organic farms are included in the conventional groups.

Table 2.2: Observations by Category: Enterprise-Level Data 2014/15

Category		All	Lowland Conventional	LFA Conventional	Fully Organic ³
Number of farms		268	183	53	32
EU Super Region	North	-	51	32	-
	East	-	38	7	-
	West	-	94	14	-
Farm Size	<80 cows	-	34	14	-
	80-130 cows	-	41	23	-
	>130 cows	-	108	16	-
Performance Quartile (by GM/cow)	Lower quartile	-	51	14	-
	Upper quartile	-	41	12	-

Ins. data = Insufficient data available (<10 observations).

1 Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and a lowland holding if less than 50 per cent of its total area is in the LFA.

3 In-conversion organic farms are included in the conventional groups.

2.2: Methodology

The farm and enterprise level data were weighted using the Farm Business Survey weights and the subsequent results presented on a per hectare (farm level analysis) or per cow (gross margin analysis) basis. Descriptive results with the mean (average) for each category are reported as detailed in Chapter 3.

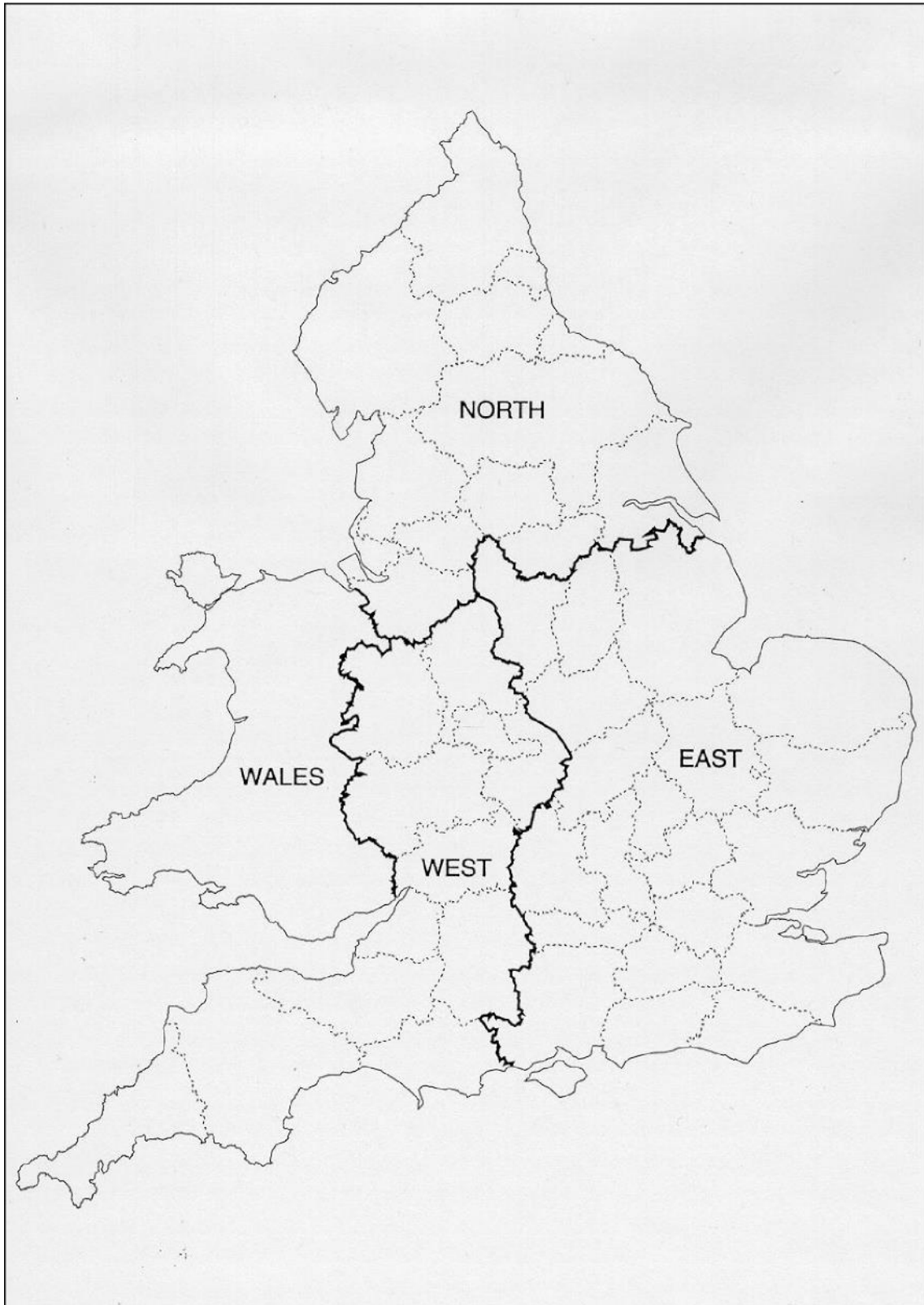


Figure 2.1: The EU Super Regions of England and Wales

Chapter 3: Results

3.1: All Farms – including Conventional and Organic

The results of the outputs, inputs, and margins from dairy farms in England on a per hectare (ha)⁴ basis for 2013/14 and 2014/15 are presented in Table 3.1. This table shows the results for all dairy farms, together with results for conventional and organic farms detailed separately.

The results for all farms show that for 2014/15, Farm Business Income (FBI) was £552 per hectare, which at the average farm size provides an average FBI of £83,904; a decrease of 4.2% on the 2013/14 figure of £87,600. In contrast, the previous year's result had shown an increase of 58% on the 2012/13 figure which had followed a decrease of 41% between 2011/12 and 2012/13. These figures illustrate the relatively large fluctuations which have occurred in the dairy sector in terms of FBI over recent years.

It is interesting to note the important significance of the Single Farm Payment (SFP) to dairy farm's total income. In 2014/15, for all dairy farms, the average SFP was £25,039 per farm and this contributed to an FBI of £83,760, i.e. 29.9% of FBI. In 2013/14, 30.1% of FBI (£87,809) came from the SFP (£26,400). Another important element of dairy farm's total income is receipts derived from agri-environmental schemes, other grants and subsidies. In 2014/15 this amounted to an average £5,100 per farm, an almost identical amount compared to 2013/14.

<http://www.farmbusinesssurvey.co.uk/regional/Farming-England-Regions-Reports-January-29-2016.asp>

Management and Investment Income (MII) of £254/ha for 2014/15 shows a 12% reduction on the £289/ha for 2013/14 but clearly has not returned to the relatively low levels recorded for 2012/13 when MII was £48/ha. MII is the economic return after accounting for the value of the farmer's and spouse's manual labour and a nominal rental value for owned land. In 2014/15, the average MII on dairy farms in England was £38,608 per farm, compared to the 2013/14 result of £43,350.

The data shows a 2.6% decrease in total farm output; decreasing from £3,721/ha to £3,625/ha. Milk output fell by 3.1% to £2,728/ha compared to £2,816/ha in 2013/14.

Total variable costs fell by 5.5% from £1,678/ha to £1,586/ha. This brings a reversal to the pattern of rising costs recorded in previous years' reports. That is, in 2011/12, 2012/13 and 2013/14 variable costs rose by 8%, 17% and 7% respectively (McHoul et al., 2013). The most notable variable cost categories which show a reduction on the previous year are purchased concentrates (-8%), coarse fodder (-22%), seed costs (-12%) and fertilizer costs (-7%). It is interesting to note that in the previous edition of this report, these cost factors, with the exception of fertiliser, were those noted to have increased substantially from 2012/13 to 2013/14.

Fixed costs increased overall by 2% to £1,584/ha compared to £1,556/ha in 2013/14. The fixed cost categories show increases on the previous year's levels for labour (2%), contract (7%), miscellaneous (3%) and rent and rental equivalent (4%), however, machinery depreciation and other machinery costs fell by 1% and 4% respectively.

⁴ The area used is the total farm area including woodland, roads, water, area not used for agriculture

Table 3.1: Outputs, Inputs and Margins for All Farms, Conventional and Organic

	All		Conventional		Organic	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	303	286	267	254	36	32
Area (ha)	150	152	151	152	142	141
	£/ha		£/ha		£/ha	
Output						
Milk	2816	2728	2853	2755	2065	2048
Calf	126	122	128	123	88	84
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	1	1	1	1	0	0
Herd Replacement	-250	-238	-254	-241	-192	-177
Total Dairy Output	2692	2613	2727	2639	1962	1955
Other Livestock	524	494	531	501	361	319
Other	504	517	507	521	419	430
Total Farm Output	3721	3625	3766	3661	2742	2704
Variable Costs						
Home-grown Concentrates	58	60	58	59	77	85
Purchased Concentrates	926	853	942	866	580	533
Coarse Fodder	92	72	94	74	69	34
Other Livestock Concentrates	9	10	9	10	1	1
Vet and Medicine	104	104	105	106	65	55
Other Livestock Costs	256	257	257	259	234	225
Seed	42	37	42	38	37	29
Fertiliser	137	128	142	133	19	7
Crop Protection	32	39	34	40	2	0
Other Crop Costs	22	25	22	26	12	11
Total Variable Costs	1678	1586	1705	1609	1096	980
Fixed Costs						
Labour	381	387	384	389	313	319
Contract	171	183	173	185	123	133
Machinery Depreciation	197	195	199	197	151	142
Other Machinery	223	214	225	216	165	150
Miscellaneous	286	294	289	296	241	245
Rent and Rental Equivalent	298	311	300	313	264	276
Total Fixed Costs	1556	1584	1570	1596	1257	1264
Net Farm Income	486	455	490	455	390	459
Farmer / Spouse Labour	197	201	197	200	205	214
Management and Investment Income (MII)	289	254	294	255	185	245
Farm Business Income FBI)	584	552	590	553	447	529

3.2: Comparison of Conventional and Organic Farms

Table 3.1 also shows the performance of conventional and organic dairy farms.

In 2014/15 conventional farm's FBI fell by 6% from £590/ha to £553/ha, whilst for organic farms, FBI rose by 18% from £447/ha to £529/ha. On a per farm basis, conventional farm FBI in 2014/15 equated to £84,056 compared to organic farm FBI of £74,589; a difference of £9,467; in contrast to the previous year whereby conventional farm FBI was £89,090 and organic farm FBI was £63,474 which equates to a difference of £25,616.

Conventional farm's total farm output decreased by 3% from £3,766/ha to £3,661/ha; organic total farm output decreased by 1%, from £2,742/ha to £2,704/ha.

On conventional farms, milk output fell by 3% from £2,853/ha to £2,755/ha. On organic farms, milk output decreased by less than 1% from £2,065/ha to £2,048/ha.

Variable costs decreased by 6% from £1,705/ha to £1,609/ha on conventional farms compared to a decrease of 11% from £1,096/ha to £980/ha on organic farms and thus returning to levels comparable with the 2012/13 year.

Fixed costs increased by 2% on conventional and by less than 1% on organic farms resulting in an increase from £1,570/ha to £1,596/ha on conventional farms compared to an increase from £1,257/ha to £1,264/ha on organic farms.

From this part of the report onwards when referring to data on a per hectare basis, unless otherwise stated, organic farm results are not included in the data presented.

3.3: Comparison of Lowland and Less Favoured Area (LFA) farms

Table 3.2 shows the FBI performance of lowland and LFA dairy farms.

The average farm area of lowland farms increased by approximately 2ha to 158ha, whilst for LFA farms the average farm area increased by 1ha to 126ha.

In 2013/14, lowland dairy farms achieved, on average, a total farm output of £340/ha greater than the LFA group; in 2014/15 this figure widened to £544/ha. Total farm output decreased by 2% on lowland farms and by 8% on the LFA farms. It is important to note that although the lowland group achieved a higher total output, it also incurred greater variable and fixed costs.

Milk output fell by £71/ha to £2,803/ha on lowland dairy farms compared to a fall of £248/ha to £2,480/ha on LFA farms.

Total variable costs and total fixed costs for lowland farms were respectively £181/ha and £339/ha greater than for the LFA group. Variable costs fell by £85/ha for lowland dairy farms and by £155/ha for LFA farms.

Despite the higher total output achieved by the lowland group, its average FBI was £552/ha; very similar to £558/ha for the LFA group. These figures represent a decrease in FBI return for lowland farms of £15/ha (-3%), and for LFA farms of £164/ha (-23%). These results equate to an average FBI of around £87,200 per farm for lowland farms and £70,300 per farm for LFA farms.

Taking into account values for all unpaid labour and imputed rents for owned land, the respective MII for lowland and LFA farms are approximately £41,700 and £25,100 per farm, respectively. In 2013/14, the difference in MII between lowland and LFA farms on a per farm basis was just over £550, however this gap has widened considerably in 2014/15 to £16,650.

Table 3.2: Outputs, Inputs and Margins: Lowland and LFA Farms

	Lowland		LFA	
	13/14	14/15	13/14	14/15
Number of farms	203	196	64	58
Area (ha)	156	158	125	126
	£/ha		£/ha	
Output				
Milk	2874	2803	2728	2480
Calf	125	121	142	136
Lease Quota (net)	0	0	0	0
Other Dairy	1	2	0	0
Herd Replacement	-254	-239	-254	-249
Total Dairy Output	2746	2687	2617	2368
Other Livestock	531	499	534	512
Other	538	556	325	318
Total Farm Output	3815	3742	3475	3198
Variable Costs				
Home-grown Concentrates	59	62	50	45
Purchased Concentrates	941	875	944	812
Coarse Fodder	93	72	97	82
Other Livestock Concentrates	10	12	0	0
Vet and Medicine	106	106	100	104
Other Livestock Costs	259	259	246	257
Seed	47	42	15	13
Fertiliser	144	136	132	115
Crop Protection	38	46	9	9
Other Crop Costs	23	27	16	17
Total Variable Costs	1721	1636	1610	1455
Fixed Costs				
Labour	400	404	291	303
Contract	182	195	121	128
Machinery Depreciation	201	198	184	189
Other Machinery	233	224	183	175
Miscellaneous	295	300	255	271
Rent and Rental Equivalent	309	325	244	242
Total Fixed Costs	1620	1647	1278	1308
Net Farm Income	474	458	588	435
Farmer / Spouse Labour	190	194	238	235
Management and Investment Income (MII)	284	264	350	199
Farm Business Income (FBI)	567	552	722	558

3.4: Lowland: Influence of Farm Size

Table 3.3 presents the results of lowland dairy farms according to the three size groupings (**less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large**).

Analysis of the three farm size groups, shows that the medium size group recorded the highest milk output (£3,528/ha) and total farm output (£4,373/ha) and also the highest variable costs (£1,942/ha) and fixed costs (£1,807/ha).

The small size group achieved a MII of minus £198/ha, compared to the medium and large size groups which achieved a MII of £266/ha and £284/ha respectively. The key factor is the greater reliance on farmer and spouse labour recorded on farms in the small size group, where the farmer and spouse labour is valued at £706/ha. This figure contrasts sharply with the two other groups which show respective contributions of £357/ha and £131/ha for the medium and large size groups. Total labour costs (paid and unpaid labour, plus farmer and spouse labour) for the small, medium and large size groups were £900/ha, £749/ha and £547/ha respectively, with the small size group utilizing the lowest cost per hectare (£154/ha) for contracting.

Analysis of the three groups by FBI performance, reveals that the large size group recorded the lowest FBI of £499/ha in comparison to the small size group's FBI of £601/ha and the medium size group's FBI of £740/ha.

The range of FBI across the three size groups is noteworthy, with the small size group achieving an average FBI per farm of £28,247 compared to that of the medium size group and the large size group which achieved £65,860 and £112,275, respectively. These figures represent an FBI decrease of 9%, 2.5% and less than 1% on the 2013/14 year for the small, medium and large size groups respectively.

Table 3.3: Outputs, Inputs and Margins: Lowland by Farm Size

Lowland	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	23	22	81	79	99	95
Area (ha)	48	47	89	89	221	225
	£/ha		£/ha		£/ha	
Output						
Milk	3205	2988	3579	3528	2666	2602
Calf	176	198	185	169	107	105
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	25	27	1	2	0	1
Herd Replacement	-302	-262	-333	-339	-230	-211
Total Dairy Output	3104	2950	3432	3360	2543	2496
Other Livestock	637	630	621	617	502	462
Other	332	322	354	396	596	608
Total Farm Output	4073	3902	4408	4373	3641	3566
Variable Costs						
Home-grown Concentrates	39	51	42	46	64	66
Purchased Concentrates	1032	974	1157	1097	878	812
Coarse Fodder	131	114	128	90	82	66
Other Livestock Concentrates	2	2	1	0	13	16
Vet and Medicine	119	128	120	121	102	101
Other Livestock Costs	297	287	334	356	237	232
Seed	22	21	36	33	51	45
Fertiliser	186	155	155	152	139	131
Crop Protection	7	10	19	22	44	53
Other Crop Costs	39	39	25	25	22	27
Total Variable Costs	1875	1782	2017	1942	1633	1549
Fixed Costs						
Labour	227	194	371	392	414	416
Contract	159	154	201	226	178	188
Machinery Depreciation	246	251	238	240	189	185
Other Machinery	272	256	224	228	234	222
Miscellaneous	379	413	357	364	274	276
Rent and Rental Equivalent	363	344	330	357	302	316
Total Fixed Costs	1646	1612	1720	1807	1591	1602
Net Farm Income	552	508	670	623	417	415
Farmer / Spouse Labour	674	706	351	357	128	131
Management and Investment Income (MII)	-122	-198	319	266	289	284
Farm Business Income (FBI)	650	601	759	740	511	499

3.5: LFA: Influence of Farm Size

Table 3.4 presents the results of LFA dairy farms according to the three size groupings (**less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large**).

Examination of the input-output systems of the three size groupings, confirms that similarly to the findings for lowland farms, the large size group operates at a substantially lower intensity level of production than the two other smaller size groups. The large size group achieved the lowest total farm output (£3,000/ha), compared to the small and medium size groups which achieved total farm outputs of £4,135/ha and £3,398/ha respectively.

Across all three size groups, the percentage of total output derived from milk sales was very similar to the previous year's; for the small size group (79% *cf.* 79% in 2013/14), the medium size group (82% *cf.* 83% in 2013/14) and the large size group (75% *cf.* 76% in 2013/14).

From 2013/14 to 2014/15, total variable costs increased by 2% for the small size group, however, they fell by 13% and 10% for the medium and large size groups respectively. In contrast to previous years' reports (McHoul et al., 2013 and 2014), purchased concentrates costs have not continued to increase across all farm sizes. That is; for the medium and large size groups, purchased concentrates fell by 15% and 16% respectively, but increased slightly - by less than 1% for the small size group.

Fixed costs increased for the three size groupings; that is by 5% (+£72/ha) for the small group; 1% (+£20/ha) for the medium group and 2% (+£25) for the large group.

For MII returns, the lower input-output system (large size group) achieved the highest MII of £291/ha, compared to the higher input-output systems of the small size group's MII of £85/ha and the medium size group which attained an MII of £3/ha. It is interesting to note that the small size group's MII remained fairly stable compared to 2013/14 falling by only £2/ha from £87/ha to £85/ha, whereas the medium size group's MII fell from £274/ha to £3/ha and thus fell below the level achieved by the small size group.

With reference to the average farm sizes noted in Table 3.4, average FBI farm returns are approximately £38,200, £49,400 and £106,300 per farm for the small, medium and large size groups respectively. This results in a small increase on the 2013/14 FBI returns of less than 1% (+£301) for the small size group but falls of 33% (-£24,252) and 18% (-£23,631) for the medium and large size groups respectively.

Table 3.4: Outputs, Inputs and Margins: LFA by Farm Size

LFA	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	16	14	21	22	27	22
Area (ha)	46	45	93	92	190	201
	£/ha		£/ha		£/ha	
Output						
Milk	3180	3281	3234	2803	2482	2252
Calf	218	228	176	187	120	105
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	0	0	0
Herd Replacement	-371	-372	-269	-273	-234	-224
Total Dairy Output	3027	3136	3140	2717	2369	2133
Other Livestock	513	503	470	426	561	548
Other	477	496	265	256	329	319
Total Farm Output	4017	4135	3876	3398	3258	3000
Variable Costs						
Home-grown Concentrates	20	21	46	35	54	53
Purchased Concentrates	1052	1059	1106	938	870	731
Coarse Fodder	124	149	123	109	83	63
Other Livestock Concentrates	0	0	0	0	0	0
Vet and Medicine	97	118	121	116	93	97
Other Livestock Costs	363	365	268	256	224	244
Seed	8	11	11	8	17	16
Fertiliser	165	143	142	117	124	110
Crop Protection	3	8	8	8	10	10
Other Crop Costs	17	16	18	21	16	16
Total Variable Costs	1851	1890	1843	1607	1492	1340
Fixed Costs						
Labour	212	254	306	320	294	303
Contract	178	181	121	124	114	123
Machinery Depreciation	270	246	249	239	149	163
Other Machinery	216	223	199	194	172	161
Miscellaneous	360	396	313	330	221	231
Rent and Rental Equivalent	243	249	248	250	243	238
Total Fixed Costs	1478	1550	1436	1456	1194	1219
Net Farm Income	688	695	597	335	572	441
Farmer / Spouse Labour	601	610	323	332	162	150
Management and Investment Income (MII)	87	85	274	3	410	291
Farm Business Income (FBI)	824	849	792	537	684	529

The upper and lower quartiles referred to in the sections below represent the top and bottom 25% of the total population, which can produce sample numbers per upper and lower quartile that are not equal.

3.6: Lowland: Comparison by Profitability Quartiles

The profitability quartiles referred to are based on the ratio of output to costs (adjusted for unpaid labour).

In 2014/15 (Table 3.5) the average farm size of the upper quartile of 183ha compared to 109ha of the lower quartile shows a widening of the variation in farm size between the high and low performing quartiles. That is, in 2013/14 the difference was 32ha (lower quartile 137ha and upper quartile 169ha) compared to a variation of 74ha in 2014/15.

The upper quartile achieved a substantially greater total farm output (£4,202/ha) compared to the lower quartile (£3,181/ha).

There are notable differences between the two performance groups regarding the changes in output achieved and costs incurred when comparing the 2013/14 and 2014/15 years. In 2013/14, the upper quartile incurred higher levels of total variable costs (£1,673/ha) but similar levels of total fixed costs (£1,548/ha) compared to the lower quartile's respective costs of £1,397/ha and £1,526/ha. This resulted in an average FBI for the upper quartile of £1,036/ha, in contrast to the lower quartile's FBI of £38/ha. However, in 2014/15 total variable and fixed costs show much less variation between the quartiles. The upper quartile incurred costs of £1,627/ha and £1,629/ha for the variable and fixed costs respectively compared to the lower quartile's variable and fixed costs of £1,622/ha and £1,683/ha respectively. The resulting FBI for the upper quartile is £1,067/ha, in contrast to the lower quartile's FBI of -£82/ha. The variation in FBI remains at a similar level to the previous year despite the similar levels of variable and fixed costs; in part due to the increase in variation in the cost of Farmer and Spouse labour. In 2013/14, the difference between the low and high performance quartiles with regards to Farmer and Spouse labour was £46/ha (£226/ha for the lower quartile and £180/ha for the upper quartile), in contrast to a difference of £112/ha in 2014/15 (£273/ha and £161/ha for the lower and upper quartiles respectively).

At the average farm sizes detailed in Table 3.5, the 2014/15 FBI data equate to average FBIs of approximately £195,000 per farm for the upper quartile and -£8,900 per farm for the lower quartile. Compared to 2013/14, when levels of average FBI were £175,000 per farm for the upper quartile and £5,200 per farm for the lower quartile, 2014/15 witnessed an increase in the difference in FBI between the lower and upper quartiles.

For the upper quartile group, milk output increased by 3% between 2013/14 and 2014/15, whilst for the lower quartile group, milk output increased by 11%. However, variable costs for the upper quartile reduced by 3% (-£46/ha), whilst for the lower quartile variable costs rose by 16% (+£225/ha). With regards to fixed costs, for the lower quartile, these costs increased by 10% (+£157/ha) and for the upper quartile increased by 5% (+£81/ha).

For the lower quartile group, 2014/15 MII fell by £156/ha to minus £397/ha and for the upper quartile group MII increased by £70/ha to £785/ha, resulting in a difference in MII of £1,182/ha between the two performance groups. This is an increase on the previous year's difference of £956/ha.

Table 3.5: Outputs, Inputs and Margins: Lowland by Profitability Quartiles

Lowland	Lower quartile		Upper quartile	
	13/14	14/15	13/14	14/15
Number of farms	63	54	46	45
Area (ha)	137	109	169	183
	£/ha		£/ha	
Output				
Milk	2077	2309	3083	3185
Calf	114	125	142	136
Lease Quota (net)	0	0	0	0
Other Dairy	4	5	0	1
Herd Replacement	-218	-230	-245	-236
Total Dairy Output	1977	2209	2981	3086
Other Livestock	384	473	667	508
Other	546	499	469	608
Total Farm Output	2907	3181	4116	4202
Variable Costs				
Home-grown Concentrates	52	74	52	55
Purchased Concentrates	750	843	887	867
Coarse Fodder	57	60	111	97
Other Livestock Concentrates	1	12	28	0
Vet and Medicine	87	102	109	100
Other Livestock Costs	222	289	252	254
Seed	46	43	38	41
Fertiliser	120	131	145	139
Crop Protection	37	32	33	51
Other Crop Costs	25	36	17	25
Total Variable Costs	1397	1622	1673	1627
Fixed Costs				
Labour	362	409	402	380
Contract	190	180	159	248
Machinery Depreciation	193	219	201	175
Other Machinery	228	246	211	202
Miscellaneous	276	323	278	287
Rent and Rental Equivalent	277	305	297	337
Total Fixed Costs	1526	1683	1548	1629
Net Farm Income	-15	-124	896	946
Farmer / Spouse Labour	226	273	180	161
Management and Investment Income (MII)	-241	-397	715	785
Farm Business Income (FBI)	38	-82	1036	1067

3.7: LFA: Comparison by Profitability Quartiles

The profitability quartiles referred to below are based on the ratio of output to costs (adjusted for unpaid labour).

In 2014/15, (Table 3.6) the upper quartile achieved a higher total farm output (£3,279/ha) than the lower quartile (£2,776/ha); resulting in a difference in output of £503/ha between the two quartile groups. This is a notably smaller variation compared to the £1,124/ha difference recorded in 2013/14.

The lower quartile's total farm output fell by 13% compared to a fall of 24% for the upper quartile.

Output from milk in 2013/14 differed markedly between the two quartile groups when the lower quartile recorded £2,438/ha from milk returns, compared to the upper quartile's £3,457/ha; a difference of £1,019/ha. In 2014/15, this difference notably narrowed to £359/ha; that is the lower quartile achieved a milk output of £2,147/ha compared to the upper quartile which achieved a milk output of £2,506/ha.

In 2014/15, total variable costs for the lower quartile group fell by 12% to £1,551/ha, whilst the upper quartile's total variable costs decreased by 28% to £1,218/ha. Notably, with regards to the lower quartile, feed concentrates, other livestock and fertiliser costs decreased by 13% (-£171/ha), 8% (-£23/ha) and 13% (-£17/ha) respectively; whilst coarse fodder costs rose by 57% (+£55/ha). However, these same costs for the upper quartile group decreased by a larger degree (feed concentrates decreased by 32% (-£310/ha), other livestock costs by fell by 26% (-£69/ha) and fertiliser costs fell by 26% (-£43/ha); whilst coarse fodder costs increased by 'only' 5% (+£3/ha).

The lower and upper quartile's total fixed costs in 2013/14 were £1,409/ha and £1,345/ha respectively, decreasing to £1,288/ha and £1,234/ha in 2014/15. Fixed costs were lower for the upper quartile compared to the lower quartile by £64/ha and £54/ha for 2013/14 and 2014/15 respectively.

Examining MII, the lower quartile shows that the average MII in 2014/15 is -£395/ha compared to -£302/ha in 2013/14, whilst for the upper quartile MII returns were £652/ha compared to £1,076/ha in 2013/14.

In terms of FBI, the lower quartile achieved an FBI return of £105/ha, representing a decrease of £57/ha on 2013/14, whilst the upper quartile achieved an FBI return of £1,008/ha; a fall of £375/ha on 2013/14 returns. At the average farm sizes for these groups, the lower and upper quartiles achieved 2014/15 FBI returns of approximately £10,400 and £144,100 per farm respectively.

Table 3.6: Outputs, Inputs and Margins: LFA by Profitability Quartiles

LFA	Lower quartile		Upper quartile	
	13/14	14/15	13/14	14/15
Number of farms	15	15	16	15
Area (ha)	101	99	142	143
	£/ha		£/ha	
Output				
Milk	2438	2147	3457	2506
Calf	122	137	205	165
Lease Quota (net)	0	0	0	0
Other Dairy	0	0	0	0
Herd Replacement	-282	-281	-277	-247
Total Dairy Output	2279	2003	3385	2425
Other Livestock	553	508	563	503
Other	357	264	365	351
Total Farm Output	3189	2776	4313	3279
Variable Costs				
Home-grown Concentrates	57	25	83	48
Purchased Concentrates	1037	866	964	654
Coarse Fodder	96	151	64	67
Other Livestock Concentrates	0	0	0	0
Vet and Medicine	116	118	106	94
Other Livestock Costs	273	250	266	197
Seed	17	11	17	13
Fertiliser	128	111	166	123
Crop Protection	9	5	13	10
Other Crop Costs	21	16	16	12
Total Variable Costs	1755	1551	1695	1218
Fixed Costs				
Labour	300	252	344	324
Contract	146	146	117	96
Machinery Depreciation	235	208	144	150
Other Machinery	224	176	172	142
Miscellaneous	295	281	246	268
Rent and Rental Equivalent	209	225	321	255
Total Fixed Costs	1409	1288	1345	1234
Net Farm Income	25	-63	1273	827
Farmer / Spouse Labour	327	331	197	175
Management and Investment Income (MII)	-302	-395	1076	652
Farm Business Income (FBI)	162	105	1383	1008

3.8: Further Analysis: Lowland and LFA by Region and Farm Size

The above sections have provided analysis for lowland and LFA dairy farms by size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A1, A3, A5 and A6 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions which are presented in Tables **A2 and A4 in the Appendix**.

3.9: Dairy Enterprise Results: Gross Margin for All Farms including Organic Farms

In the above sections, outputs, inputs and returns were presented for dairy farms on a per hectare basis, with results that included data from the dairy enterprise, plus other enterprises on the farm to produce overall farm results. In this and the following sections, results are presented that relate solely to the dairy enterprise and are reported to Gross Margin (GM) returns (total dairy output minus total variable costs).

Table 3.7 provides the dairy enterprise results for all farms and for conventional and organic farms as separate data.

The results for “all farms” show that between 2013/14 and 2014/15 the average number of cows per farm increased by approximately 4% (a 6% rise was reported in the previous edition of this report between 2012/13 to 2013/14). Average yield per cow decreased by 1% from 2013/14 to 2014/15, in contrast to the 5% rise recorded between 2012/13 to 2013/14. The yield decrease combined with the decrease in average milk price of 1.8pppl from 32.5pppl to 30.7pppl in 2014/15, resulted in the value of milk output per cow decreasing by £163 (-6%). It is interesting to note that the average milk price received in 2008/09 was 26.8pppl, 24.4pppl in 2009/10, 25.4pppl in 2010/11, 28.2pppl in 2011/12, 29.0pppl in 2012/13 and 32.5pppl in 2013/14. Variable costs decreased by 9% (£112/cow) to a total of £1,083/cow in 2014/15.

Decreases in total dairy output (-6%) and variable costs (-9%) resulted in an overall fall in the GM/cow of £39 (-3%) for 2014/15. The average GM per litre decreased to 15.60pppl in 2014/15 from 15.95pppl in 2013/14. It is interesting to note that, based on the average number of cows in 2014/15, the average GM for all farms has increased slightly from just over £206,000, representing a small increase of 0.5% when the average GM in 2013/14 was just over £205,000.

3.10: Dairy Enterprise Results: Gross Margin for Conventional and Organic Farms

Studying the differences between conventional and organic farms in Table 3.7 shows that for the farms studied the average herd size in 2014/15 is 119 cows for organic farms compared to 171 cows for conventional farms.

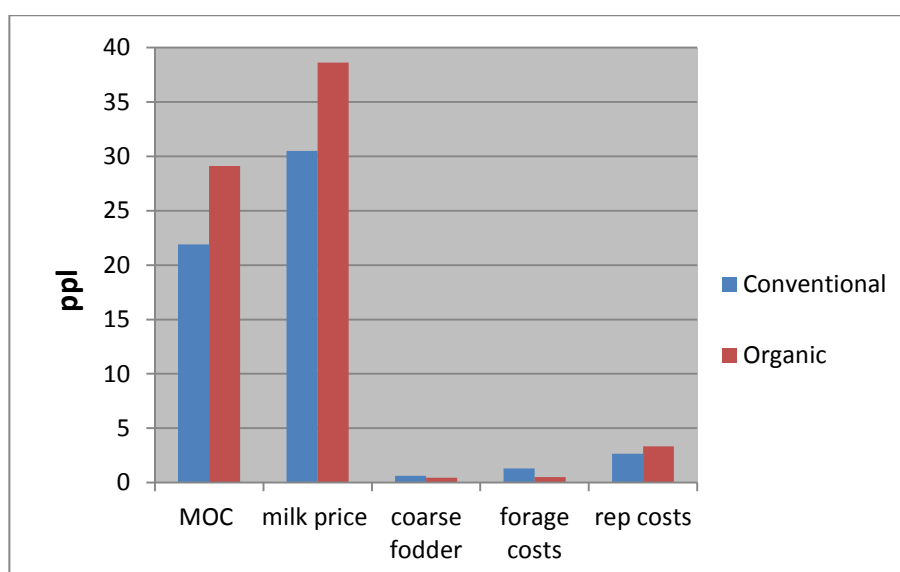
In the previous year's edition of this report (McHoul et al., 2014) it was noted that in 2013/14 the combined increase in both milk output (yield) and price per litre for conventional herds, coupled with a static milk yield for organic farms has resulted in a widening of the difference in total dairy output for the two systems. That is, in 2012/13, the conventional herds achieved a total dairy output of £2,068/cow compared to £2,008/cow for the organic herds, and in 2013/14 the conventional herds recorded a total dairy output of £2,462/cow compared to the organic herd's total dairy output of £2,201/cow. However, in 2014/15, the organic herds total dairy output increased by 5% to £2,310/cow compared to the fall in total dairy output for the conventional herd of 6% to £2,303/cow and thus the conventional herd total dairy output fell below the level achieved by the organic herd. This is predominantly a result of the fall in milk price from 32.4pppl to 30.5pppl for the conventional herd in contrast to the rise in milk price from 37.0pppl to 38.6pppl for the organic herd and the drop in yield of 72 litres to 7876 litres for conventional herds compared to the rise in yield of 51 litres to 6262 litres for organic herds.

The above figures equate to a rise in gross margin per cow for the organic herds and a fall in gross margin per cow for the conventional herds, with organic herds returning the higher total gross margin. This is in contrast to the 2013/14 results whereby the organic herds returned a lower gross margin per cow but reflects the 2012/13 results whereby the organic herds returned a higher gross margin per cow. On a herd basis, conventional herds have a notably higher average total gross margin (influenced by herd size) of £207,765/herd compared to £164,101/herd for the organic farms.

Table 3.7: Gross Margin Results for All Farms, Conventional and Organic

	All		Conventional		Organic	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	283	268	249	236	34	32
Average number cows	163	169	164	171	117	119
Average yield (litres)	7898	7826	7948	7876	6211	6262
Milk price (ppl)	32.5	30.7	32.4	30.5	37.0	38.6
	£/cow		£/cow		£/cow	
Output						
Milk	2568	2405	2576	2404	2295	2420
Calf	116	107	116	107	102	99
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	1	1	1	1	0	0
Herd Replacement	-230	-209	-231	-209	-196	-209
Total Dairy Output	2455	2304	2462	2303	2201	2310
Variable costs						
Concentrates	765	678	769	680	620	597
Coarse Fodder	65	50	65	50	41	28
Vet and Medicine	80	78	81	78	57	56
Other Livestock Costs	181	177	180	175	203	218
Forage Costs	105	101	107	103	34	32
Total Variable Costs	1195	1083	1202	1088	954	931
Total Gross Margin	1260	1221	1260	1215	1247	1379

Figure 3.1: Key Gross Margin Components by Conventional and Organic Herds



MOC = margin over concentrates; rep costs = replacement costs

Table 3.7 shows the GM per cow performances for conventional and organic farms in 2014/15 and reveals that these were £1,215 and £1,379 per cow, respectively. Figure 3.1 provides some data that help explain why in contrast to 2013/14 when, in terms of GM/cow, the conventional herds outperformed the organic herds, GM per cow in 2014/15 was significantly higher for organic farms.

- The average milk price for organic farms was 38.6 ppl, compared to 30.5 ppl for conventional farms. The price of organic milk increased by 1.6 ppl, whereas the price of conventional milk decreased by 1.9 ppl.
- Milk output (£) from organic herds increased by £125 per cow, compared to a decrease of £172 per cow for conventional herds.
- The superior gross margin per cow achieved by the organic herds was driven by higher output performances (pence per litre) and milk output (£ per cow) that were enough to offset higher decreases in variable costs achieved by the conventional herds, which were primarily focused on purchased concentrate costs.

From this part of the report onwards when referring to data on a gross margin basis, unless otherwise stated, organic herd results are not included in the data presented.

3.11: Dairy Enterprise Results: Gross Margin for Lowland and LFA Farms

Table 3.8 provides the dairy enterprise results for lowland and LFA farms as separate data.

Studying the differences between lowland and LFA dairy farms, reveals a familiar pattern, as highlighted in previous editions of this report whereby lowland herds achieve a higher yield, from a larger average herd size and sell milk at higher prices than their LFA counterparts.

In 2014/15, both groups achieved lower milk prices (30.6ppl for lowland and 29.9ppl for LFA farms) with decreases on 2013/14 prices of 1.8ppl and 2.4ppl for lowland and LFA herds, respectively.

The average milk yield per cow remained static at 7,970 litres (7,986 litres in 2013/14) for lowland herds and decreased by 5% to 7,313 litres (7,719 litres in 2013/14) for LFA herds.

Total variable costs for lowland and LFA production decreased by £103/cow and by £179/cow respectively resulting in levels of variable costs per cow of £1,100 and £1,015 on lowland and LFA farms. The fall in the cost of concentrates is noteworthy; equating to £78 and £153 per cow for lowland and LFA herds respectively and which has helped negate the effect of reduced outputs.

Decreases in GM/cow of £32 for lowland herds and £120 for LFA herds were recorded. In 2014/15, at the average herd sizes, the total farm GM for lowland herds was just under £221,000 compared to approximately £217,500 in 2013/14. For LFA farms total farm GM was just under £149,000 compared to approximately £159,500 in 2013/14.

Table 3.8: Gross Margin Results for Lowland and LFA Farms

	Lowland		LFA	
	13/14	14/15	13/14	14/15
Number of farms	190	183	59	53
Average number cows	171	178	134	139
Average yield (litres)	7986	7970	7719	7313
Milk price (ppl)	32.4	30.6	32.3	29.9
	£/cow		£/cow	
Output				
Milk	2589	2441	2493	2183
Calf	114	105	131	118
Lease Quota (net)	0	0	0	0
Other Dairy	1	1	0	0
Herd Replacement	-229	-208	-239	-216
Total Dairy Output	2475	2340	2385	2085
Variable costs				
Concentrates	768	690	777	624
Coarse Fodder	63	48	79	64
Vet and Medicine	81	79	78	75
Other Livestock Costs	183	177	163	165
Forage Costs	108	106	97	86
Total Variable Costs	1203	1100	1194	1015
Total Gross Margin	1272	1240	1191	1071

3.12: Dairy Enterprise Results: Influence of Herd Size on Lowland Herds

Gross margin results by three size categories for lowland farms are shown in Table 3.9 (**less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large**).

For almost all the key performance indicators, the same pattern occurs across all the three size groups over both years of data presented. That is, as herd size increases, so do average yield per cow, milk output per cow, total dairy output per cow, total variable costs per cow and total gross margin per cow. For 2014/15, average yields per cow for the small, medium and large herd size groups are 6,897 litres per cow (lpc), 7,431 lpc and 8,109 lpc respectively, with the large herds outperforming the small herds by 1,212 lpc. This equates to an 18% difference between these two size groups.

In 2014/15, the milk price received by the small, medium and large size groups was 29.8ppl, 30.3ppl and 30.7ppl respectively. This represents the same variation in the difference in milk price between the small and large herds of 0.9ppl also reported in 2013/14.

The 2014/15 data shows average total variable costs per cow for the small, medium and large size groups to be £933/cow, £999/cow and £1,124/cow respectively, resulting in respective total gross margins of £1,086/cow, £1,154/cow and £1,261/cow.

In 2013/14 the largest herds achieved, on average, a lower gross margin per litre (15.8ppl) compared to the medium (16.6ppl) and smallest herds (16.8ppl). However in 2014/15, the difference narrowed, whereby the largest herd size recorded a gross margin per litre of 15.55ppl, medium herd sizes achieved a gross margin of 15.53ppl and the smallest herd sizes a gross margin of 15.75ppl.

Table 3.9: Gross Margin Results Lowland by Herd Size

Lowland	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	40	34	44	41	106	108
Average number cows	59	58	107	106	216	228
Average yield (litres)	6705	6897	7503	7431	8139	8109
Milk price (ppl)	31.7	29.8	31.7	30.3	32.6	30.7
	£/cow		£/cow		£/cow	
Output						
Milk	2128	2056	2380	2249	2649	2491
Calf	128	131	120	120	112	101
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	15	16	0	1	0	1
Herd Replacement	-185	-185	-214	-216	-234	-208
Total Dairy Output	2087	2019	2286	2154	2527	2385
Variable costs						
Concentrates	586	539	633	616	799	709
Coarse Fodder	41	37	41	31	68	51
Vet and Medicine	69	74	78	70	83	80
Other Livestock Costs	168	174	176	177	185	177
Forage Costs	96	109	115	106	108	106
Total Variable Costs	960	933	1043	999	1242	1124
Total Gross Margin	1126	1086	1242	1154	1285	1261

3.13: Dairy Enterprise Results: Influence of Herd Size on LFA Herds

Table 3.10 shows the results of the gross margin analysis of LFA farms by herd size (**less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large**).

Examining the small, medium and large herd sizes show that between 2013/14 to 2014/15, the average yield for the small size group increased by around 80 lpc, yet in contrast for the medium and large size groups, yields fell by approximately 260 lpc and 560 lpc respectively. In 2014/15, all herd sizes received lower milk prices than in the previous year, equating to a 1.7ppl decrease for the small size group, a 2.1ppl decrease for the medium size group and 2.8ppl fall for the large size group.

The fall in GM between the two years shown is 5% (-£48/cow) for the small size group, 5% (-£62/cow) for the medium size group and 14% (-£174/cow) for the large size group. Furthermore, the GMs for 2013/14 and 2014/15 for the LFA herds are lower than that of the lowland herds across all three size groups.

Table 3.10: Gross Margin Results LFA by Herd Size

LFA	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	14	14	27	23	18	16
Average number cows	60	58	107	109	222	232
Average yield (litres)	6672	6755	7898	7637	7782	7224
Milk price (ppl)	30.9	29.2	31.8	29.7	32.9	30.1
	£/cow		£/cow		£/cow	
Output						
Milk	2062	1973	2510	2269	2560	2171
Calf	139	154	121	133	136	103
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	0	0	0
Herd Replacement	-237	-193	-242	-218	-238	-219
Total Dairy Output	1964	1934	2389	2184	2458	2055
Variable costs						
Concentrates	623	623	806	683	784	591
Coarse Fodder	21	28	84	100	86	51
Vet and Medicine	64	69	80	75	80	77
Other Livestock Costs	150	179	177	161	155	165
Forage Costs	96	74	100	86	96	87
Total Variable Costs	955	973	1247	1104	1200	971
Total Gross Margin	1009	961	1142	1080	1258	1084

3.14: Dairy Enterprise Results: Lowland Herds by Performance Groups

Results measured by gross margin performance for lowland farms are presented in Table 3.11. The results are shown for the upper and lower quartiles as measured by gross margin per cow:

The average herd size of the upper quartile is 206 cows compared to the lower quartile's average herd size of 153 cows.

Average milk yield for the upper quartile is around 9,000 lpc, whilst for the lower quartile it is around 6,400lpc; a difference of around 2,600 lpc between the two groups. In 2013/14, the difference in milk price was 1.3ppl (upper quartile 33.1ppl; lower quartile 31.8ppl) however, for 2014/15, it widened slightly to 1.6ppl (upper quartile 31.6ppl; lower quartile 30.0ppl).

Total variable costs for both groups decreased; the lower quartile costs fell by 16% (-£187/cow) whilst the upper quartile costs decreased by 5% (-£61/cow). Interestingly, these decreases have resulted in the widening of the difference in variable costs which had been recorded to be at similar levels in 2013/14; that is £1,187/cow and £1,188/cow for the lower and upper quartile groups respectively. The total variable costs reported for 2014/15 are £1000/ha for the lower quartile and £1,127/ha for the upper quartile.

It is interesting to report the difference in the rates of conversion of concentrates to milk between the two quartile groups and also note the change from 2013/14 to 2014/15. The conversion to concentrates factor represents the cost of concentrate feeds to produce one litre of milk. An analysis of the data in Table 3.11 reveals that in 2013/14 the conversion rate of concentrates to milk was 11.1ppl for the lower quartile and 8.6ppl for the upper quartile. In 2014/15, the conversion rate decreased to 9.4ppl for the lower quartile and to 7.9ppl for the upper quartile.

Gross margin results considered per litre for the lower quartile equal 12.4ppl compared to 12.9ppl in 2013/14 and for the upper quartile equal 18.2ppl compared to 18.6ppl in 2013/14.

This analysis of upper and lower quartile groups reveals a continuation of previous year's findings which show that the larger herds with their high-output systems achieve the higher GM, with the main factor being the higher milk price attained from factors such as a superior quality product and / or better utilisation of the market.

Table 3.11: Gross Margin Results for Lowland by Profitability Quartiles

Lowland	Lower Quartile		Upper Quartile	
	13/14	14/15	13/14	14/15
Number of farms	61	51	39	41
Average number cows	170	153	185	206
Average yield (litres)	6962	6436	8733	8997
Milk price (ppl)	31.8	30.0	33.1	31.6
	£/cow		£/cow	
Output				
Milk	2217	1929	2888	2840
Calf	96	92	128	106
Lease Quota (net)	0	0	0	0
Other Dairy	0	1	1	0
Herd Replacement	-231	-223	-207	-185
Total Dairy Output	2082	1799	2809	2760
Variable costs				
Concentrates	770	602	747	707
Coarse Fodder	76	42	57	35
Vet and Medicine	73	68	87	82
Other Livestock Costs	170	179	186	196
Forage Costs	98	109	112	107
Total Variable Costs	1187	1000	1188	1127
Total Gross Margin	895	799	1621	1633

3.15: Dairy Enterprise Results: LFA Herds by Performance Groups

The analysis by performance quartiles for lowland herds, measured by gross margin per cow and outlined in Section 3.14, highlighted larger herd size, higher average yield and higher milk price for the upper quartile as the main performance drivers in 2014/15. Examining Table 3.12 which shows the lower and upper quartile results for 2013/14 and 2014/15, reveals that the pattern noted for lowland herds is repeated for LFA herds.

The average herd size and average milk yield for the upper quartile in 2014/15 are 76 cows and 1,771lpc greater than for the lower quartile.

The difference in average milk price between the upper quartile and the lower quartile is 1.1ppl. When combined with the average yield, milk outputs of £2,373/cow and £1,765/cow for the upper and lower quartiles respectively are produced.

Herd replacement costs are lower for the upper performance group at £208/cow compared to £233/cow for the lower quartile.

Despite the lower quartile's decrease in total variable costs of £301/cow to £1,001/cow, the high performing group has continued to incur total variable costs which remain at a lower level than those of the lower quartile's. Total variable costs for the high performing group fell by £211/cow to £973/cow.

The upper quartile's high-output system which has incurred comparatively lower variable costs, produced a GM of £1,305/cow, compared to the lower quartile's characteristic low-output system and comparatively higher variable costs which produced a GM of £654/cow in 2014/15.

Table 3.12: Gross Margin Results for LFA by Profitability Quartiles

LFA	Lower Quartile		Upper Quartile	
	13/14	14/15	13/14	14/15
Number of farms	18	14	12	12
Average number cows	101	127	190	203
Average yield (litres)	7013	6052	8268	7823
Milk price (ppl)	31.3	29.2	33.2	30.3
	£/cow		£/cow	
Output				
Milk	2196	1765	2749	2373
Calf	115	122	156	113
Lease Quota (net)	0	0	0	0
Other Dairy	0	0	0	0
Herd Replacement	-299	-233	-204	-208
Total Dairy Output	2012	1655	2700	2278
Variable costs				
Concentrates	840	629	800	602
Coarse Fodder	105	58	58	30
Vet and Medicine	75	71	79	82
Other Livestock Costs	195	169	146	169
Forage Costs	87	75	101	90
Total Variable Costs	1302	1001	1184	973
Total Gross Margin	710	654	1517	1305

3.16: Further Analysis: Dairy Enterprise Results for Lowland and LFA by Region and Herd Size

The above sections have provided analysis for lowland and LFA dairy herds on a gross margin basis by herd size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A7, A9, A11 and A12 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions. These are presented in Tables **A8 and A10 in the appendix**.

References

Defra (2016a). Milk Price Surveys

<https://www.gov.uk/government/statistics/uk-milk-prices-and-composition-of-milk>

(as at 05/11/2015)

Defra (2016b). Milk Price Surveys

<https://www.gov.uk/government/publications/uk-milk-prices-and-composition-of-milk>

(as at 05/11/2015)

Defra (2016c). Agriculture in the UK 2014

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/430411/auk-2014-28may15a.pdf

(as at 05/11/2015)

AHDB Dairy (2016a)

<http://dairy.ahdb.org.uk/market-information/supply-production/milk-production/uk-daily-milk-deliveries/#.VvEb-iLcvcs>

(as at 10/12/2015)

AHDB Dairy (2016b)

<http://dairy.ahdb.org.uk/market-information/farming-data/milk-yield/average-milk-yield/#.VvEcdyLcvcs>

(as at 10/12/2015)

AHDB Dairy (2016c)

<http://dairy.ahdb.org.uk/market-information/farming-data/producer-numbers/uk-producer-numbers/#.VvEc5iLcvcs>

(as at 10/12/2015)

Chapter 3: 3.1

<http://www.farmbusinesssurvey.co.uk/regional/Farming-England-Regions-Reports-January-29-2016.asp>

Glossary

Output: Other Livestock is comprised of sales of non-dairy livestock and livestock products adjusted for valuation changes plus the value of produce used on the farm and consumed in the farmhouse or by the workers, less livestock purchases. Miscellaneous livestock receipts are also included.

Output: Other is the sales of crops adjusted for valuation changes, plus the value of produce used on the farm (other than forage crops and straw) and produce consumed in the farmhouse or by the workers. Income from land let and buildings let, hirework, non-allocated grants e.g. for environmental schemes, single farm payment, profit on resale of purchased agricultural produce and other miscellaneous farm income including the change in valuation of cultivations is also included.

Other livestock costs include livestock haulage, marketing charges, AI charges, straw and woodshavings for bedding and dairy sundries.

Other crop costs include silage bags, twine, all marketing costs including crop haulage, purchase of standing crops, soil analysis and potato sacks.

Labour is comprised of the gross cost of regular paid employees including an allowance for perquisites together with unpaid family labour (other than the farmer and spouse) manual labour.

Machinery depreciation is calculated using the current cost accounting method whereby each item of equipment is revalued by an index prior to the depreciation calculation.

Rent and Rental Equivalent consist of gross rent, imputed rent on the net cost of the tenant's own improvements, drainage rates and for owner-occupied land a rental value based on what a tenant would be paying for similar land with an equal length of occupancy.

Miscellaneous costs include water charges, vehicle tax, insurance, professional fees, bank commission, telephone charges, subscriptions, office expenses and pest control, general repairs.

Net Farm Income (NFI) is total output less total inputs as defined above. It represents the reward to the farmer and spouse for their own manual labour, management and a return on tenant's capital.

Farmer's and spouse's manual labour is the estimated value of their manual labour.

Management and Investment Income (MII) is Net Farm Income less the allowance made for the farmer's and spouse's manual labour. It represents the reward for management and a return on tenant's capital. MII therefore represents the return to management after all costs have been deducted, including the imputed cost of all unpaid manual labour and a notional rent on owner occupied land and buildings.

Farm Business Income (FBI) represents the return to all unpaid labour (farmers, spouses and others with an entrepreneurial interest in the farm business) and to all their capital invested in the farm business including land and farm buildings. It is defined as Total Farm Output (TFO) minus cost (C): where TFO is defined as the sum of output from: crop enterprises, adjustment for disposal of previous crops, livestock enterprises, separable non-agricultural diversification, single farm payment, agri-environmental payments, other grants and subsidies, miscellaneous receipts; C is defined as variable costs plus fixed costs. *[For 2006/07 the definition of FBI included the profit / loss on sale of assets as part of the total farm output]*

Total Gross Margin, presented for the dairy enterprise results, is total dairy output minus total variable costs.

Table A.1: Outputs, Inputs and Margins for Lowland by EU Super Region

Lowland	North		East		West	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	53	55	45	40	105	101
Area (ha)	132	136	203	219	149	146
	£/ha		£/ha		£/ha	
Output						
Milk	3468	3445	2268	2180	2940	2832
Calf	137	128	103	98	132	131
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	1	0	0	2	3
Herd Replacement	-336	-358	-175	-141	-260	-234
Total Dairy Output	3269	3217	2196	2136	2815	2732
Other Livestock	610	656	399	379	570	486
Other	427	401	682	776	507	508
Total Farm Output	4306	4274	3277	3292	3892	3726
Variable Costs						
Home-grown Concentrates	70	66	53	65	57	57
Purchased Concentrates	1190	1150	745	661	934	856
Coarse Fodder	124	91	90	53	80	73
Other Livestock Concentrates	0	0	1	11	21	19
Vet and Medicine	135	137	90	85	101	102
Other Livestock Costs	306	313	197	190	272	271
Seed	35	29	47	48	53	45
Fertiliser	164	143	121	118	147	143
Crop Protection	28	34	43	56	40	45
Other Crop Costs	21	24	25	28	23	28
Total Variable Costs	2074	1988	1412	1316	1729	1640
Fixed Costs						
Labour	393	433	393	392	408	396
Contract	182	201	177	187	185	197
Machinery Depreciation	228	221	173	172	205	201
Other Machinery	235	228	217	210	241	230
Miscellaneous	286	304	277	287	310	306
Rent and Rental Equivalent	301	327	276	285	334	349
Total Fixed Costs	1625	1714	1513	1533	1683	1679
Net Farm Income	607	572	351	442	481	407
Farmer / Spouse Labour	217	215	140	132	207	220
Management and Investment Income (MII)	391	357	212	310	274	188
Farm Business Income (FBI)	660	668	412	481	614	532

Table A.2: Outputs, Inputs and Margins for LFA by EU Super Region

LFA	North		East		West	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	38	35	10	Ins. Data	16	15
Area (ha)	128	124	145		103	117
	£/ha		£/ha		£/ha	
Output						
Milk	2481	2312	3035		3341	2554
Calf	120	124	164		202	173
Lease Quota (net)	0	0	0		0	0
Other Dairy	0	0	1		0	0
Herd Replacement	-274	-252	-203		-232	-237
Total Dairy Output	2327	2184	2997		3312	2491
Other Livestock	562	568	466		498	390
Other	319	289	320		351	385
Total Farm Output	3209	3041	3783		4161	3266
Variable Costs						
Home-grown Concentrates	66	41	14		23	49
Purchased Concentrates	935	829	1053		861	621
Coarse Fodder	97	91	67		129	73
Other Livestock Concentrates	0	0	0		0	0
Vet and Medicine	101	109	103		96	93
Other Livestock Costs	240	264	282		233	210
Seed	13	11	21		15	15
Fertiliser	130	117	101		175	127
Crop Protection	8	8	12		8	9
Other Crop Costs	16	19	19		16	15
Total Variable Costs	1607	1489	1672		1554	1213
Fixed Costs						
Labour	276	301	289		348	308
Contract	113	113	126		143	126
Machinery Depreciation	186	195	201		159	151
Other Machinery	180	180	205		168	150
Miscellaneous	240	246	308		259	271
Rent and Rental Equivalent	201	205	295		356	268
Total Fixed Costs	1196	1239	1424		1433	1275
Net Farm Income	406	312	686		1174	778
Farmer / Spouse Labour	224	232	240		290	246
Management and Investment Income (MII)	182	81	447		883	531
Farm Business Income (FBI)	548	435	738		1371	938

Table A.3: Outputs, Inputs and Margins: Lowland (North) by EU Farm Size

Lowland (North)	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	<i>Ins. Data</i>	<i>Ins. Data</i>	23	24	23	24
Area (ha)			90	92	185	190
	£/ha		£/ha		£/ha	
Output						
Milk			4297	4515	3171	3060
Calf			205	189	107	101
Lease Quota (net)			0	0	0	0
Other Dairy			0	2	0	1
Herd Replacement			-417	-484	-308	-311
Total Dairy Output			4085	4222	2969	2850
Other Livestock			705	745	566	623
Other			322	347	473	422
Total Farm Output			5113	5314	4008	3895
Variable Costs						
Home-grown Concentrates			53	45	79	76
Purchased Concentrates			1414	1443	1112	1048
Coarse Fodder			171	105	107	88
Other Livestock Concentrates			0	0	0	0
Vet and Medicine			140	150	135	132
Other Livestock Costs			407	469	269	255
Seed			29	28	38	30
Fertiliser			190	170	154	131
Crop Protection			21	26	32	39
Other Crop Costs			27	23	18	25
Total Variable Costs			2452	2459	1943	1824
Fixed Costs						
Labour			383	447	410	442
Contract			204	266	179	181
Machinery Depreciation			251	248	218	210
Other Machinery			247	243	230	221
Miscellaneous			384	396	243	259
Rent and Rental Equivalent			342	378	288	310
Total Fixed Costs			1811	1979	1567	1622
Net Farm Income			850	877	497	449
Farmer / Spouse Labour			355	358	140	139
Management and Investment Income (MII)			494	518	357	310
Farm Business Income (FBI)			842	934	578	558

Table A.4: Outputs, Inputs and Margins: LFA (North) by EU Farm Size

LFA (North)	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	<i>Ins. data</i>	Ins. Data	12	12	18	15
Area (ha)			94	95	184	185
	£/ha		£/ha		£/ha	
Output						
Milk			3416	2865	2124	2057
Calf			183	172	96	98
Lease Quota (net)			0	0	0	0
Other Dairy			0	0	0	0
Herd Replacement			-330	-329	-242	-217
Total Dairy Output			3269	2708	1978	1938
Other Livestock			486	471	585	605
Other			271	260	311	261
Total Farm Output			4025	3438	2874	2804
Variable Costs						
Home-grown Concentrates			63	46	71	40
Purchased Concentrates			1191	953	836	765
Coarse Fodder			124	118	93	84
Other Livestock Concentrates			0	0	0	0
Vet and Medicine			135	125	89	103
Other Livestock Costs			293	282	215	256
Seed			15	6	13	13
Fertiliser			146	126	120	111
Crop Protection			7	7	9	8
Other Crop Costs			21	24	14	18
Total Variable Costs			1995	1686	1461	1399
Fixed Costs						
Labour			308	325	278	310
Contract			151	148	96	96
Machinery Depreciation			235	226	157	169
Other Machinery			196	196	169	163
Miscellaneous			325	331	197	192
Rent and Rental Equivalent			224	210	193	199
Total Fixed Costs			1438	1437	1089	1129
Net Farm Income			591	315	325	277
Farmer / Spouse Labour			317	318	157	158
Management and Investment Income (MII)			274	-3	168	119
Farm Business Income (FBI)			800	511	451	378

Table A.5: Outputs, Inputs and Margins: Lowland (East) by EU Farm Size

Lowland (East)	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	<i>Ins. data</i>	Ins. Data	11	10	32	28
Area (ha)			84	87	239	263
	£/ha		£/ha		£/ha	
Output						
Milk			2447	2510	2225	2127
Calf			173	139	96	93
Lease Quota (net)			0	0	0	0
Other Dairy			1	0	0	0
Herd Replacement			-218	-168	-166	-137
Total Dairy Output			2404	2480	2156	2083
Other Livestock			317	414	403	372
Other			586	635	693	795
Total Farm Output			3307	3529	3252	3250
Variable Costs						
Home-grown Concentrates			32	82	54	63
Purchased Concentrates			879	816	727	640
Coarse Fodder			34	57	93	51
Other Livestock Concentrates			0	0	1	13
Vet and Medicine			88	74	89	85
Other Livestock Costs			221	264	193	183
Seed			35	35	47	49
Fertiliser			108	105	121	119
Crop Protection			21	24	46	60
Other Crop Costs			22	13	26	29
Total Variable Costs			1441	1469	1396	1291
Fixed Costs						
Labour			392	416	392	390
Contract			141	130	178	192
Machinery Depreciation			219	224	168	166
Other Machinery			197	201	218	209
Miscellaneous			348	359	269	273
Rent and Rental Equivalent			242	309	275	282
Total Fixed Costs			1540	1639	1500	1511
Net Farm Income			327	422	355	447
Farmer / Spouse Labour			301	290	119	111
Management and Investment Income (MII)			25	132	236	336
Farm Business Income (FBI)			405	559	414	471

Table A.6: Outputs, Inputs and Margins: Lowland (West) by EU Farm Size

Lowland (West)	< 60 ha		60 – 120 ha		>120 ha	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	14	13	47	45	44	43
Area (ha)	47	46	89	88	228	221
	£/ha		£/ha		£/ha	
Output						
Milk	3306	3059	3384	3119	2763	2725
Calf	186	200	177	163	114	117
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	43	39	1	3	0	1
Herd Replacement	-283	-262	-308	-284	-242	-216
Total Dairy Output	3252	3036	3254	3001	2636	2627
Other Livestock	607	638	630	578	547	448
Other	286	286	330	378	582	562
Total Farm Output	4145	3960	4214	3958	3765	3637
Variable Costs						
Home-grown Concentrates	30	51	38	39	65	64
Purchased Concentrates	1059	1002	1064	938	882	821
Coarse Fodder	142	130	121	88	62	65
Other Livestock Concentrates	0	0	1	0	30	26
Vet and Medicine	112	118	115	112	96	97
Other Livestock Costs	321	332	313	304	255	257
Seed	20	24	40	36	59	49
Fertiliser	190	160	144	151	146	140
Crop Protection	9	11	18	20	49	55
Other Crop Costs	42	35	25	28	22	28
Total Variable Costs	1924	1864	1879	1717	1666	1602
Fixed Costs						
Labour	229	191	360	352	434	422
Contract	177	183	210	221	177	190
Machinery Depreciation	229	247	235	239	193	187
Other Machinery	297	250	216	224	247	231
Miscellaneous	391	421	343	346	294	286
Rent and Rental Equivalent	393	380	339	354	329	345
Total Fixed Costs	1716	1672	1702	1735	1674	1661
Net Farm Income	504	424	633	506	425	374
Farmer / Spouse Labour	701	761	358	370	129	142
Management and Investment Income (MII)	-197	-337	275	136	296	232
Farm Business Income (FBI)	640	534	777	656	554	491

Table A.7: Gross Margin Results for Lowland by EU Super Region

Lowland	North		East		West	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	49	51	42	38	99	94
Average number cows	174	186	179	186	166	169
Average yield (litres)	8173	8209	8211	8359	7765	7639
Milk price (ppl)	32.2	30.5	32.4	30.8	32.5	30.7
	£/cow		£/cow		£/cow	
Output						
Milk	2636	2500	2663	2576	2526	2342
Calf	100	89	121	121	118	108
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	1	0	0	2	2
Herd Replacement	-255	-258	-204	-171	-226	-193
Total Dairy Output	2480	2331	2579	2526	2420	2260
Variable costs						
Concentrates	818	756	789	717	727	634
Coarse Fodder	74	57	78	43	49	45
Vet and Medicine	85	82	90	86	75	74
Other Livestock Costs	183	179	193	192	178	169
Forage Costs	108	97	92	102	116	114
Total Variable Costs	1268	1171	1243	1140	1145	1036
Total Gross Margin	1212	1160	1337	1386	1275	1223

Table A.8: Gross Margin Results for LFA by EU Super Region

LFA	North		East		West	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	37	32	<i>Ins. Data</i>	<i>Ins. Data</i>	13	14
Average number cows	121	124			169	164
Average yield (litres)	8136	7861			6827	6239
Milk price (ppl)	31.8	29.5			33.4	30.7
	£/cow		£/cow		£/cow	
Output						
Milk	2588	2321			2280	1917
Calf	127	110			135	128
Lease Quota (net)	0	0			0	0
Other Dairy	0	0			0	0
Herd Replacement	-285	-247			-158	-176
Total Dairy Output	2430	2184			2256	1869
Variable costs						
Concentrates	891	728			530	441
Coarse Fodder	86	77			72	45
Vet and Medicine	86	87			59	60
Other Livestock Costs	184	193			109	117
Forage Costs	96	91			105	80
Total Variable Costs	1342	1176			874	744
Total Gross Margin	1088	1008			1382	1125

Table A.9: Gross Margin Results: Lowland (North) by Herd Size

Lowland (North)	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	10	Ins. Data	Ins. data	Ins. Data	34	36
Average number cows	59				202	216
Average yield (litres)	6387				8293	8297
Milk price (ppl)	31.3				32.3	30.6
	£/cow		£/cow		£/cow	
Output						
Milk	1999				2679	2536
Calf	133				98	84
Lease Quota (net)	0				0	0
Other Dairy	0				0	1
Herd Replacement	-186				-255	-260
Total Dairy Output	1946				2522	2361
Variable costs						
Concentrates	557				841	779
Coarse Fodder	38				76	60
Vet and Medicine	68				85	83
Other Livestock Costs	150				185	182
Forage Costs	107				109	96
Total Variable Costs	920				1296	1199
Total Gross Margin	1027				1226	1162

Table A.10: Gross Margin Results: LFA (North) by Herd Size

LFA (North)	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	11	10	15	12	11	10
Average number cows	59	53	106	105	189	199
Average yield (litres)	6923	7062	8050	7489	8495	8228
Milk price (ppl)	30.8	29.2	31.3	29.3	32.4	29.7
	£/cow		£/cow		£/cow	
Output						
Milk	2129	2063	2516	2194	2752	2442
Calf	109	124	108	114	144	104
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	0	0	0
Herd Replacement	-279	-243	-289	-223	-284	-260
Total Dairy Output	1960	1944	2335	2085	2612	2287
Variable costs						
Concentrates	663	693	872	678	959	761
Coarse Fodder	15	25	66	93	118	80
Vet and Medicine	71	83	84	73	91	95
Other Livestock Costs	151	199	186	156	192	211
Forage Costs	102	86	100	87	91	95
Total Variable Costs	1002	1086	1307	1087	1450	1242
Total Gross Margin	958	858	1028	998	1162	1045

Table A.11: Gross Margin Results: Lowland (East) by Herd Size

Lowland (East)	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	<i>Ins. Data</i>	<i>Ins. Data</i>	14	12	24	24
Average number cows			105	102	217	225
Average yield (litres)			7281	7379	8431	8537
Milk price (ppl)			31.3	29.5	32.6	31.0
	£/cow		£/cow		£/cow	
Output						
Milk			2278	2180	2752	2650
Calf			134	140	118	117
Lease Quota (net)			0	0	0	0
Other Dairy			1	0	0	0
Herd Replacement			-189	-185	-208	-172
Total Dairy Output			2223	2136	2662	2595
Variable costs						
Concentrates			637	658	825	730
Coarse Fodder			45	27	85	46
Vet and Medicine			67	62	95	91
Other Livestock Costs			156	193	200	191
Forage Costs			101	96	92	103
Total Variable Costs			1006	1037	1297	1163
Total Gross Margin			1217	1099	1365	1433

Table A.12: Gross Margin Results: Lowland (West) by Herd Size

Lowland (West)	< 80 cows		80 – 130 cows		>130 cows	
	13/14	14/15	13/14	14/15	13/14	14/15
Number of farms	26	25	25	21	48	48
Average number cows	58	57	108	104	226	238
Average yield (litres)	6867	6945	7578	7203	7884	7772
Milk price (ppl)	32.0	30.2	31.9	30.9	32.7	30.7
	£/cow		£/cow		£/cow	
Output						
Milk	2197	2095	2419	2227	2576	2383
Calf	128	127	117	112	118	106
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	22	19	0	0	0	1
Herd Replacement	-186	-197	-205	-209	-234	-190
Total Dairy Output	2161	2044	2332	2130	2461	2300
Variable costs						
Concentrates	607	559	628	581	756	650
Coarse Fodder	45	43	30	29	53	47
Vet and Medicine	72	76	80	75	74	73
Other Livestock Costs	172	181	187	174	176	168
Forage Costs	97	111	126	111	116	115
Total Variable Costs	994	970	1052	969	1176	1053
Total Gross Margin	1167	1074	1280	1161	1284	1248

Appendix 2: Reports in Series

Reports in this series:

Crop Production in England

Dairying Farming in England

Hill Farming in England

Horticulture Production in England (Horticultural Business Data)

Lowland Grazing Livestock Production in England

Pig Production in England

Poultry Production in England

Organic Farming in England

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