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# Dairy Costings Focus

Annual Report 2016



IN THIS REPORT

YEARLY TRENDS

MILK PRICE AND  
FEED COSTS ANALYSIS

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ANALYSIS

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*Kingshay*

INDEPENDENT DAIRY SPECIALISTS

# Welcome

As we help dairy farmers face the challenge of steep falls in milk price and an increasingly segmented market, Kingshay is proud to celebrate 25 years of providing independent and unbiased advice to dairy farmers across the UK.



Never in those 25 years have we seen anything near the yawning gap in prices experienced in the past 12 months between the best and worst paid producers. While we may be thankful for reduced feed, fuel and fertiliser prices, they make a small dent in the potential losses for most milk producers.

Maximising efficiency must continue to be the focus of all producers and that can be assisted by reviewing how your herd performance compares with others. This is the mission behind this, the fifth, annual Dairy Costings Focus Report, where we look beyond the simple average in the **Dairy Manager** and **Health Manager** data collected.

The data in this report, gives farmers a unique opportunity to see the typical efficiencies of many different systems, to

set realistic targets, to improve efficiency in their existing system or to investigate alternative systems. Use this valuable information to ask yourself could I be better off, perhaps by changing yield level or altering production system?

Times of great challenge mean being open to change, but only if that change will be for the better and result in improved efficiency. This year, we are pleased to bring you comparisons of robotic milking, twice a day milking and three times a day milking and different winter forage options.

Kingshay is proud to have been working with some of the UK's most progressive producers now for 25 years, supporting their decisions with our technical notes and reports, independent advice and services.

In recent months, we have also embraced changes to our set up by joining the larger Origin group. This group includes some of the UK's leading farm animal veterinary businesses, which gives us a wider audience, while allowing us to remain independent.

To discover how our membership and other services can help you, please call our team or visit our website [www.kingshay.com](http://www.kingshay.com). Our industry enthusiasts are always happy to discuss how we can help you achieve your aims and profit from efficient milk production in the years to come.

**Duncan Forbes, Managing Director**

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## Introduction

The milk contract is having an increasing impact on the finances of individual dairy herds in this year's Kingshay Dairy Costings Focus Report, but there has been a little relief with reduced input prices and improved grazing and forage quality.

The lowest 10% paid herds have seen a 30% drop in the annual milk price received in 2015-2016, compared with the average fall of 19% to 24.4ppl. The gap between the best and lowest paying contracts continues to widen into spring 2016 (see page 4).

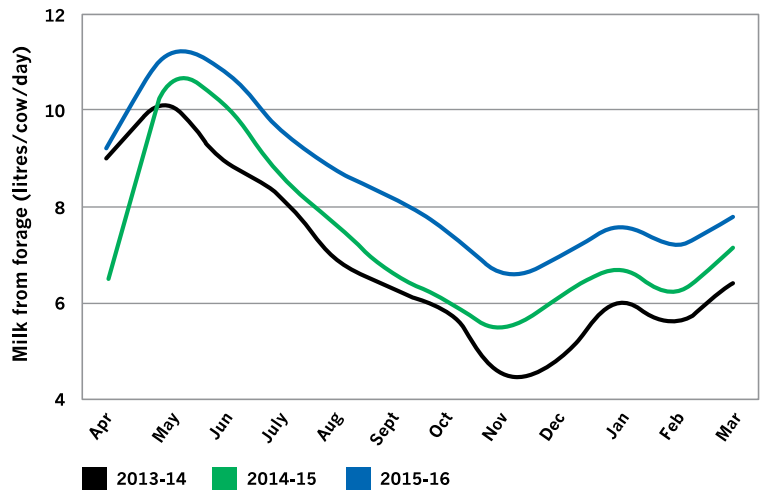
While for the average and lower paid herds it can only make up a small part of the lower milk price, a better year for grazing and forage has contributed to improvements in average feed use efficiency. Coupled with lower feed prices, this has saved the average herd 1.2ppl.

The milk from forage results show better performance for each month than the previous two years, even in March 2016 when turnout was delayed for many herds.

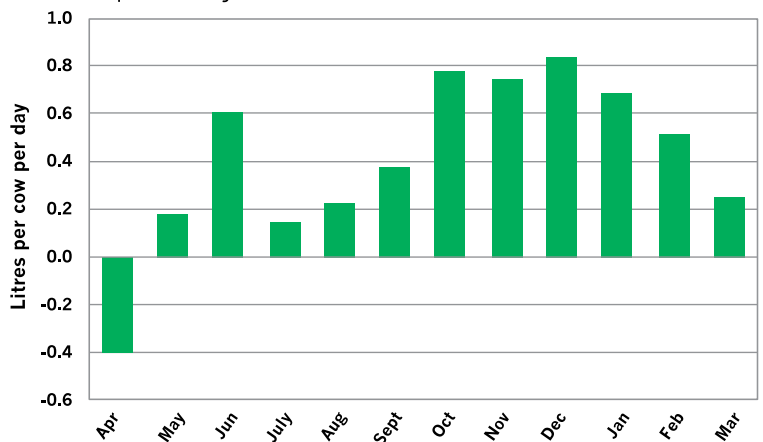
Average milk yields were also higher in every month from May 2015, with that and herd size increases, average total herd output has increased by 0.1m litres to 1.6m litres.

But there is clearly potential for many herds to improve efficiency further, as the top 10% on milk from forage saved 2ppl in feed costs compared with the average at a similar cow yield. For a herd selling 1.6m litres, this is worth £32,000 a year in purchased feed costs.

Monthly milk from forage trends



Change in daily milk yield per cow compared to previous year



There is no doubt some producers have also improved feed use efficiency by managing concentrate inputs more carefully in response to the low milk price being received, but this has not reduced yields as might be expected. Only the lowest 10% herds ranked by milk price see a very small decrease in yield per cow. However, these lowest paid herds increased their herd

size by 32 cows on average (see page 5), compared with the average herd size increase of eight cows. Therefore, the lowest paid 10% have increased output by an average of 0.2m litres to 1.2m litres, while the highest paid 10% have increased sales by 0.02m litres to 2.16m litres.



Our **HowsMyHerd®** and **One2One Consultancy** services offer strategic and practical advice – call Kingshay now to sign up for an assessment.



## Trends over the last 10 years

**Dairy Manager** data shows the average Holstein Friesian herd size increased at a similar rate in the year to March 2016 as the previous year, now being close to 200 cows and 41% higher than 10 years ago.

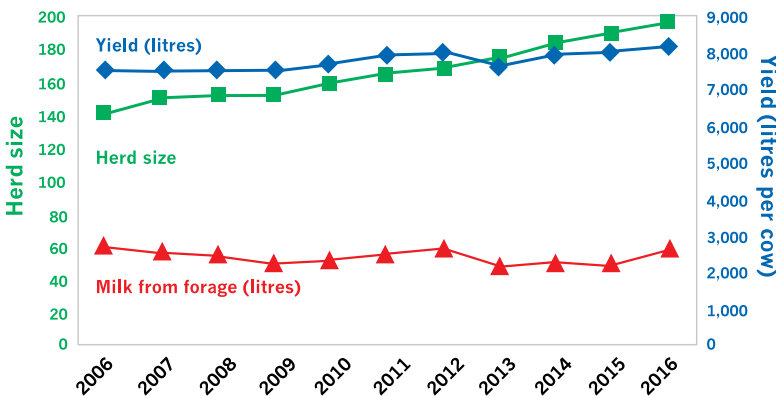
Annual rolling results					
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS					
Year ending March		2006	2016	Difference	% change
Cows in herd		140	197	57	40.7%
Stocking rate	cows/ha	2.17	2.29	0.12	5.5%
MILK PRODUCTION					
Yield per cow	litres	7,469	8,193	724	9.7%
Yield from all forage per cow	litres	2,681	2,638	-43	-1.6%
% of total yield from forage		36%	32%	-4%	-10.3%
Milk price	pence	18.44	24.41	5.97	32.4%
Total milk value per cow	£	1,377	2,000	623	45.2%
Milk price: conc. price ratio		1.41	1.16	-0.25	-17.8%
FEED					
Concentrate use per cow	kg	2,151	2,521	370	17.2%
Concentrate use per litre	kg	0.29	0.31	0.02	6.9%
Concentrate price per tonne	£	131	211	80	61.1%
Other purchased feed cost per cow	£	24	54	30	125.0%
Total purchased feed cost per cow	£	306	586	280	91.5%
Total purchased feed cost per litre	pence	4.10	7.15	3.05	74.4%
All purchased feed @ 86% equivalent per cow	kg	2,358	2,762	404	17.1%
MARGINS					
MOPF per cow	£	1,071	1,414	343	32.0%
MOPF per litre	pence	14.34	17.26	2.92	20.4%

has only decreased in one other year in the last 10 years, with an overall increase of 370kg or 17%.

Together, the increase in cow yield with reduced concentrates over the year to March 2016 has boosted the milk from forage so it is only 1.6% lower than 10 years ago, whereas last year the same measure was 20% lower.

Feed costs per litre have also reduced by 1.2ppl over the past year, with lower use, concentrate price and less other purchased feed, but were 3ppl higher than in the 2006 results.

Trends in milk production and efficiency



from 2006, with an above average 6% increase between 2015 and 2016.

Yield per cow has increased by 10% over the past 10 years to average close to 8,200 litres. However,

an increased proportion of this came in the most recent year, with yields rising 180 litres or 2.2%.

This annual increase in cow yield was achieved despite feeding 54kg less concentrate in the 2016 results compared with 2015. Concentrate use

Average margin over purchased feed might be 2.9ppl higher than 10 years ago, but was at its lowest since 2008 in the most recent results.

Kingshay's **Forage Costs 2016 annual report** clearly shows that forage is very much the cheapest feed and grazed grass is the least cost of all. As revealed in the **Milk from Forage analysis** on page 6, herds have responded to the low milk price by reducing purchased feed use and rediscovering the potential of forage. The challenge remains to take this further again this year.

There is no sign within the average data that increases in herd size or yield per cow were slowing down by March 2016, as might have been an expected response to low milk prices.

Total herd output was 1.61m litres in the year to March 2016, an increase of 54%



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## Milk price analysis

The impact of oversupply of milk on the World market is seen in **Dairy Manager** results for the year to March 2016, with the rolling average milk price for Holstein/Friesian, Conventional herds reducing by 5.7ppl to 24.4ppl.



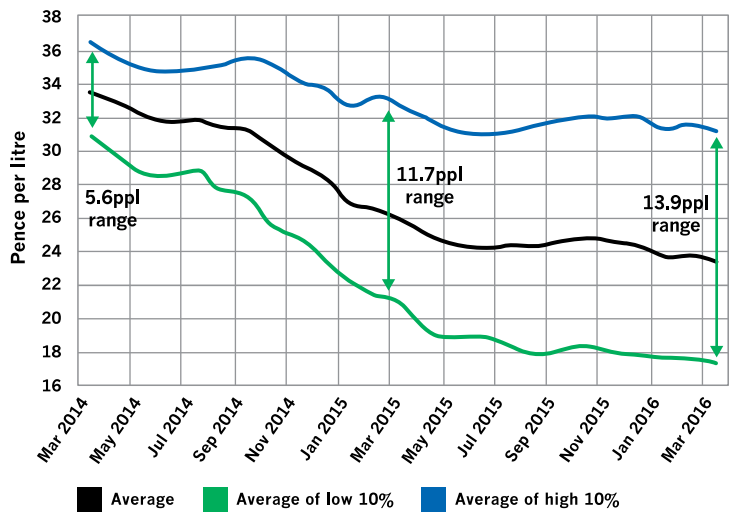
Kingshay's **HowsMyHerd®** consultants 'read' your cows to make your life easier and your farm more profitable. Call us now for more details.

Average milk price for the latest year is now back at 2010-2011 levels, but the average hides the true impact on many producers who are receiving far less for their milk. The increase in market segmentation is clear when data is ranked on milk price paid.

The highest 10% paid received an annual milk price of 31.3ppl, which is 2.5ppl and 7% lower than the previous year, whereas the lowest 10% averaged 8.3ppl and 30% less at 18.7ppl.

This gap has widened to 12.6ppl, from 6.9ppl in the year to March 2015 and from 4.5ppl to March 2014. When the March 2015 and March 2016 milk price received by the top and bottom paid 10% is compared, this gap continues to widen.

Monthly milk prices – Conventional herds



Best vs lowest milk price contracts – calculated based on a level supply of a standard litre

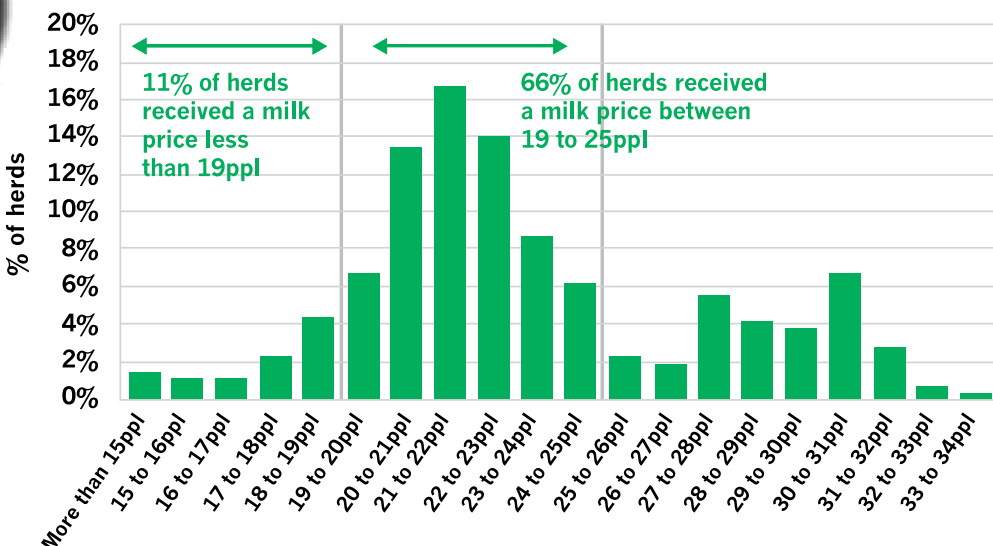
Year ending	Mar 11	Mar 12	Mar 13	Mar 14	Mar 15	Mar 16
Top ppl	29.01	32.07	33.57	34.52	34.41	31.94
Bottom ppl	23.81	27.11	27.78	31.88	20.99	15.76
Difference ppl	5.19	4.96	6.29	2.64	13.42	16.17

Source: AHDB Dairy

The chart tracking monthly milk prices and AHDB Dairy predictions show that in the year ahead the lowest priced standard litre contract is

worth almost half the value of the best, at 15.76p and 31.94p, respectively. This also indicates further widening of the gap is possible, unless

Monthly milk prices for March 2016



See pages 19 and 20 for trends in milk prices for Organic herds and Channel Island herds.

global milk prices start to improve. It is likely those receiving the lowest price, closest to the World spot price, would see an increase in price before those already receiving a higher price. This would be some relief to the 11% of herds using Dairy Manager who received a milk price of below 19ppl for milk sold in March 2016.

### Milk price response

When the data is ranked by the annual milk price

received, those receiving a low milk price might be expected to have reduced output compared from the previous year.

Many of these herds are on A and B pricing contracts, with a lower price paid for additional B litres sold. Therefore, it would be expected that herds receiving a high milk price would be responsible for the increase in average herd milk sales, however, the data shows the reverse is true.

It reveals the response of those in the lowest 10% band for milk price has been to increase herd size by an average of 32 cows and total milk output by 23% to try and maintain income.

Whereas the highest paid 10% reduced cow numbers and a small increase in yield per cow was achieved due to better forage use efficiency, which resulted in a small gain in total milk sales.

Annual results – Ranked by annual milk price					
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS	Highest 10%	Highest 25%	Average	Lowest 25%	Lowest 10%
Milk price 2015-16	31.27ppl	29.58ppl	24.41ppl	20.44ppl	18.68ppl
<b>HERD SIZE</b>					
2014-15	248	224	189	143	130
2015-16	244	221	197	165	162
Change on last year	-4	-3	+8	+22	+32
<b>HERD OUTPUT (litres)</b>					
2014-15	2,137,461	1,869,208	1,509,708	1,103,613	989,015
2015-16	2,162,349	1,924,272	1,614,021	1,277,366	1,213,889
Change on last year	+24,888	+55,064	+104,313	+173,753	+224,874



## Milk from forage

When ranked by milk from forage, the top 10% of Dairy Manager herds reached close to 4,500 litres a cow at an average yield of 8,230 litres in the year to March 2016.



This is an improvement of 490 litres on March 2015 results and slightly better than the high seen in 2012. The good forage year of 2015 also helped average and bottom 25% herds, with the bottom 25% achieving more than 450 litres extra from forage.

However, the bottom 25% herds fed 1,315kg more concentrate to achieve 354 litres more milk than the top 10%, although they had a 0.3 cows/ha higher stocking rate. This resulted in feed costs that were 3.8ppl higher at 8.8ppl. Even with an extra 0.7ppl higher milk price, not

explained by milk constituent quality, the bottom 25% margin was 3.2ppl and £200 a cow worse. Feed prices have reduced since the 2015 results, saving the top 10% herds 1ppl in feed costs and the bottom 25% herds 1.3ppl.

These results show that a typical 8,200 litre yielding herd could produce milk with purchased feed costs of 5ppl, with a focus on yield from forage, and that doing so would improve constituent quality too. With a typical herd selling 1.6m litres a year, moving from average

performance from forage to top 25%, would save a very substantial £26,560 in feed costs.

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Annual results – Year end March 2016 (Ranked by milk from forage)						
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		Top 10%	Top 25%	Average	Bottom 25%	
Cows in herd		167	167	197	240	161
Stocking rate	cows/ha	2.12	2.19	2.29	2.42	2.17
<b>MILK PRODUCTION</b>						
Yield per cow	litres	8,229	8,044	8,193	8,583	7,860
Yield from all forage per cow	litres	4,492	3,983	2,638	1,171	3,536
Milk price	pence	24.30	24.24	24.41	24.96	30.23
<b>FEED</b>						
Concentrate use per cow	kg	1,822	1,966	2,521	3,137	2,047
Concentrate use per litre	kg	0.22	0.24	0.31	0.37	0.26
Concentrate price per tonne	£	214	212	211	210	236
Other purchased feed cost per cow	£	22	24	54	101	31
Total purchased feed cost per litre	pence	5.01	5.49	7.15	8.84	6.56
All purchased feed @ 86% equivalent per cow	kg	1,905	2,060	2,762	3,620	2,165
<b>MARGINS</b>						
MOPF per cow	£	1,587	1,508	1,414	1,384	1,860
MOPF per litre	pence	19.29	18.74	17.26	16.12	23.67
						2,860
						1,736
						21.71



## Winter forage use

The benefits to cow yield of a mixed forage diet can be seen, when **Dairy Manager** data is ranked by forage type, but the true economic gain may be small for some herds.



Compared with an all grass/grass silage winter diet, herds adding wholecrop produced an extra 616 litres a cow in yield on average and those adding maize, an extra 760 litres. When both maize and wholecrop are added, the average yield increased by 981 litres a cow.

However, additional forages achieve far smaller or negative changes in yield from forage and the additional yield is achieved mainly through increases in concentrates fed. Maize or wholecrop feeding herds fed 244kg a cow more and herds adding both forages fed

334kg more. This results in higher purchased feed costs per litre.

While the data shows adding maize produced the highest margin per litre, this results from a higher milk price which is not explained by higher constituent quality. The best constituent quality of 4.12% butterfat comes from a grass only winter diet.

However, the milk price may drive the decision to increase yield per cow with maize to achieve a higher margin per cow with the aim of reducing overhead costs. An extra £259 per cow is gained, supporting this policy to some extent.

Whether this is economic depends on many factors at individual herd level, including the costs of growing, harvesting and feeding out forage, as well as the impact of total herd output on overhead costs.

More information on typical costs of growing many crops can be found in Kingshay's **Forage Costings 2016 Report**.

Annual results – Year end March 2016					
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		All grass	Grass and maize	Grass and wholecrop	Grass, maize and wholecrop
Cows in herd		145	208	216	234
Stocking rate	cows/ha	2.18	2.35	2.23	2.33
<b>MILK PRODUCTION</b>					
Yield per cow	litres	7,668	8,428	8,284	8,649
Yield from all forage per cow	litres	2,613	2,774	2,412	2,578
Milk price	pence	23.41	25.23	23.27	24.81
<b>FEED</b>					
Concentrate use per cow	kg	2,344	2,588	2,588	2,678
Concentrate use per litre	kg	0.31	0.31	0.31	0.31
Concentrate price per tonne	£	212	213	207	211
Other purchased feed cost per cow	£	36	54	64	79
Total purchased feed cost per cow	£	533	605	600	643
Total purchased feed cost per litre	pence	6.95	7.18	7.24	7.44
All purchased feed @ 86% equivalent per cow	kg	2,530	2,802	2,916	3,006
<b>MARGINS</b>					
MOPF per cow	£	1,262	1,521	1,328	1,503
MOPF per litre	pence	16.46	18.05	16.03	17.37



## Regional analysis

The South region continues to receive the highest average milk price, as well as seeing the least fall in price, according to Dairy Manager data.



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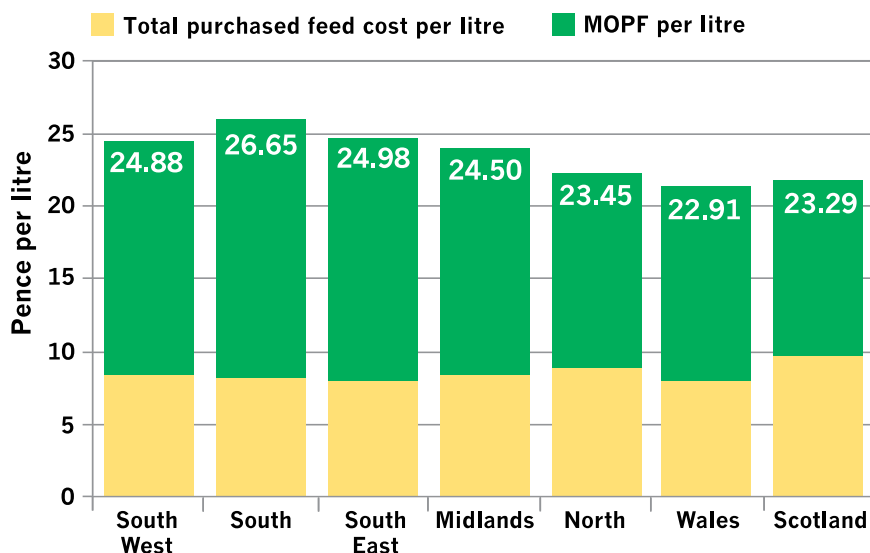
In the year to March 2016, Wales has become the region with the lowest average milk price, suffering a 6.7ppl fall, now putting it behind Scotland and the North. However, Wales continues to have a lower feed cost,

to maintain a higher margin per litre than Scotland or the North. There is also a bigger regional effect on the range of milk prices in this year's data, as the gap between the lowest and highest has reached 3.7ppl compared with

1.8ppl in the previous year's results. The range in margin over purchased feed has also increased by 1.2ppl, compared to a year ago, to reveal a gap of 4.6ppl between the lowest at 15.1ppl and highest at 19.7ppl.

Annual results – Year end March 2016								
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		South West	South	South East	Midlands	North	Wales	Scotland
Cows in herd		188	204	198	214	174	180	234
Stocking rate	cows/ha	2.15	2.27	2.69	2.42	2.28	2.26	2.15
<b>MILK PRODUCTION</b>								
Yield per cow	litres	8,075	8,576	8,334	8,311	8,438	7,608	8,571
Yield from all forage per cow	litres	2,835	3,003	3,198	2,551	2,224	2,738	1,557
Milk price	pence	24.88	26.65	24.98	24.50	23.45	22.91	23.29
Change on last year	pence	-5.50	-4.57	-5.11	-5.66	-5.79	-6.70	-6.12
<b>FEED</b>								
Concentrate use per cow	kg	2,479	2,466	2,324	2,559	2,749	2,264	2,963
Concentrate use per litre	kg	0.31	0.29	0.28	0.31	0.33	0.30	0.35
Concentrate price per tonne	£	215	213	213	206	210	210	208
Other purchased feed cost per cow	£	40	70	50	59	67	40	89
Total purchased feed cost per cow	£	574	595	544	587	644	515	704
Total purchased feed cost per litre	pence	7.11	6.94	6.53	7.07	7.63	6.77	8.21
Change on last year	pence	-1.22	-1.10	-1.25	-1.29	-1.10	-1.17	-1.47
<b>MARGINS</b>								
MOPF per cow	£	1,435	1,690	1,537	1,449	1,335	1,229	1,292
MOPF per litre	pence	17.77	19.71	18.45	17.43	15.82	16.15	15.08
Change on last year	pence	-4.28	-3.47	-3.86	-3.65	-4.69	-5.52	-4.65

Milk prices, feed costs and margins by region



## Milking frequency

Robotic milking is becoming more common, making it possible to compare the performance against twice a day or three times a day milked herds, using **Dairy Manager** results.

Annual results – Year end March 2016					
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		Twice a day milking	Robotic milking	Three times a day milking	
Cows in herd		187	164	395	
Stocking rate	cows/ha	2.28	2.03	2.54	
<b>MILK PRODUCTION</b>					
Yield per cow	litres	8,075	9,028	10,121	
Yield from all forage per cow	litres	2,727	2,093	1,609	
Milk price	pence	24.23	24.78	25.79	
<b>FEED</b>					
Concentrate use per cow	kg	2,438	3,193	3,534	
Concentrate use per litre	kg	0.30	0.35	0.35	
Concentrate price per tonne	£	211	222	211	
Other purchased feed cost per cow	£	51	55	135	
Total purchased feed cost per cow	£	565	763	881	
Total purchased feed cost per litre	pence	6.99	8.45	8.70	
All purchased feed @ 86% equivalent per cow	kg	2,667	3,410	4,108	
<b>MARGINS</b>					
MOPF per cow	£	1,392	1,475	1,730	
MOPF per litre	pence	17.24	16.33	17.09	

The data shows that robotic milking herds produced an additional 953 litres a cow in the year to March 2016, compared with twice a day milking. An additional 755kg of concentrate was fed and the purchased feed costs were 1.46ppl higher on average.

While the data indicates that robotic herds achieved a slightly higher milk price of 0.55ppl, the constituent

quality was lower and herd output similar. This may indicate that those on better paying milk contracts have been more likely to invest in robotic milking equipment.

This slightly higher milk price reduces the difference in margin over purchased feed to 0.9ppl,

with robotic herds averaging 16.3ppl. With the higher yield achieved, the margin per cow is an extra £83.

Generally, the robotic milked herds are grazed less and so the costs of providing forage would be higher, reducing the benefit in margin over feed and forage per cow. There may be cost savings, particularly labour, to take into account when considering the overall

economics, as well as potential lifestyle benefits.

### Three times a day milking

Herds milking three times a day receive a 1.56ppl higher milk price, due to volume bonuses than those milking twice a day.

This helps compensate for the 1.7ppl higher feed cost, averaging 8.7ppl, also resulting from milking three times a day, so the margin over purchased feed is just 0.15ppl lower.

In addition, the three times a day milked herds yield 2,046 litres a cow more, so the margin per cow is £338 a cow higher than twice a day milking. Herds which successfully milk three times a day would be expected to have very high genetic merit and there may be other costs incurred, such as higher forage and labour costs.



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## Input price analysis: feed, fertiliser and fuel

The three key input costs have all fallen in the year to March 2016, giving some relief to those with lower milk prices, although far from making up the difference.

The three main costs that fluctuate on dairy farms are the three “f”s (feed, fertiliser and fuel). But the past year has seen some costs fall more than others.

Fertiliser costs were £77 per tonne (bagged Ammonium Nitrate) lower in March 2016 than in 2015 at £212/t, a fall of 27%, continuing the previous year’s downward trend and reflecting fuel price changes. Fertiliser prices were high at £349/t for AN in Autumn 2011, when fuel prices were also high – with processing having a high demand for energy.

Red diesel fuel was similarly 28% lower than 2015, although white diesel was only 16% lower.

The costs of some feeds were also more than 20% lower on the previous March figures, with soyameal down 21% and rapeseed meal 22%. However, both have increased in the months since March 2016.

Wheat prices were 12% lower and maize gluten 10% lower than in March 2015. Compound feeds have fallen less than 6% and, therefore, straights users are likely to be benefiting more from the

falling feed commodity prices. **Profit Manager** data shows the most profitable herds have lower costs on most inputs, indicating a focus on the relationship between all costs and profit is essential.

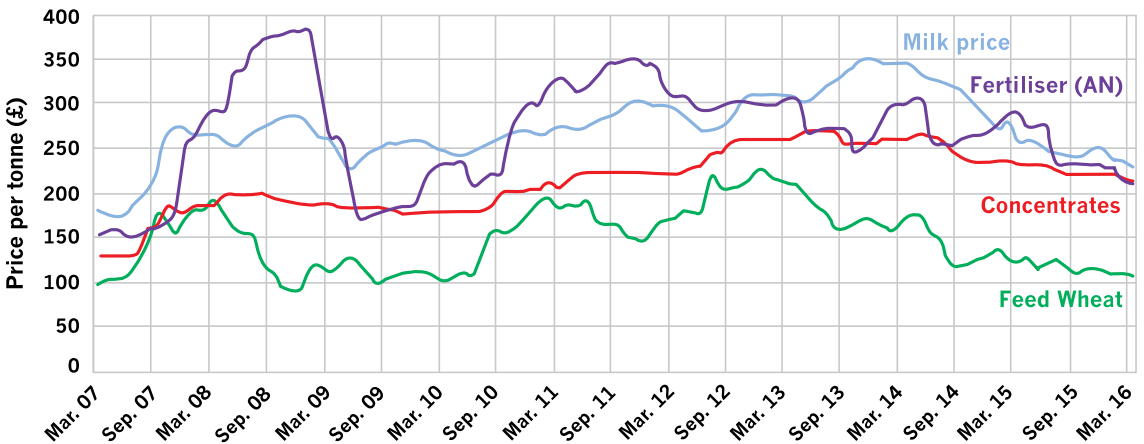
Most now accept that milk price volatility will be a continuing feature. Whilst there are some moves towards providing hedging facilities to enable forward selling of milk products, measures to insulate your business from the impact of a variable milk price, by judicious forward buying of key inputs, is an important consideration.



Already use a **Dairy Manager** package? Ask us about upgrading to our **Premium** option which includes **Health Manager** (see pages 10-11).

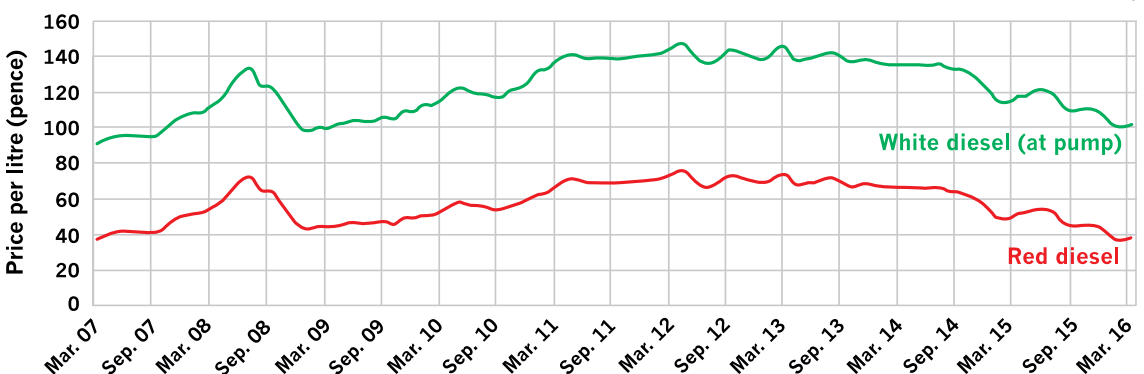
Feed and fertiliser prices vs milk price

Source: AHDB Dairy



Fuel prices

Source: AHDB Dairy



## Milk yield bands

Milk price increases as yield per cow increases when **Dairy Manager** data is ranked by yield bands, with some of the 2.7ppl difference likely to relate to an increase in total herd output.

It is difficult to assess how much of the increased milk price has encouraged management for higher yield or is achieved in part because of higher herd size and output.

It is also worth noting that the average constituent quality falls as milk yield increases, which may be important for farms wanting to maximise milk value on a constituent contract. Butterfat averages 4.23% and protein 3.4% for herds up to 6,000 litres compared with 3.86% and 3.21%, respectively for over 10,000 litre herds. The

gap seen in milk prices has increased since the March 2015 year end results, when it was within 1ppl. But there is less than half the variation in margin over purchased feed per litre this year, with all yield band margins within the range of 17 to 17.6ppl, all of which are down some 4 to 5ppl on 12 months ago.

This narrowing range is because the difference in feed costs per litre has become similar to the milk price difference for an average herd, even though all feed costs are lower than in the previous year. The lowest yield band

spends 2.9ppl less on feed than the highest band.

The higher margin per cow achieved at higher yields can be important in overall farm profitability and return on capital invested.

The data also shows how the number of herds above 10,000 litres has increased, now accounting for 9% of herds using **Dairy Manager** and reported as a separate band to the 9,000 to 10,000 litre herds this year.

### Annual results – Year end March 2016

HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		Up to 6,000 litres	6,000 to 7,000 litres	7,000 to 8,000 litres	8,000 to 9,000 litres	9,000 to 10,000 litres	Over 10,000 litres
Cows in herd		120	164	175	199	214	295
Stocking rate	cows/ha	2.22	2.29	2.21	2.32	2.35	2.34
<b>MILK PRODUCTION</b>							
Yield per cow	litres	5,277	6,555	7,521	8,493	9,441	10,660
Yield from all forage per cow	litres	2,663	2,774	2,850	2,690	2,497	2,014
Milk price	pence	23.05	23.33	23.63	24.81	25.30	25.78
<b>FEED</b>							
Concentrate use per cow	kg	1,322	1,825	2,220	2,635	3,071	3,571
Concentrate use per litre	kg	0.25	0.28	0.30	0.31	0.33	0.33
Concentrate price per tonne	£	213	207	211	212	213	212
Other purchased feed cost per cow	£	6	17	27	55	87	135
Total purchased feed cost per cow	£	287	395	495	613	739	893
Total purchased feed cost per litre	pence	5.44	6.02	6.59	7.21	7.83	8.38
<b>MARGINS</b>							
MOFP per cow	£	929	1,134	1,282	1,495	1,650	1,855
MOFP per litre	pence	17.61	17.31	17.04	17.60	17.47	17.40

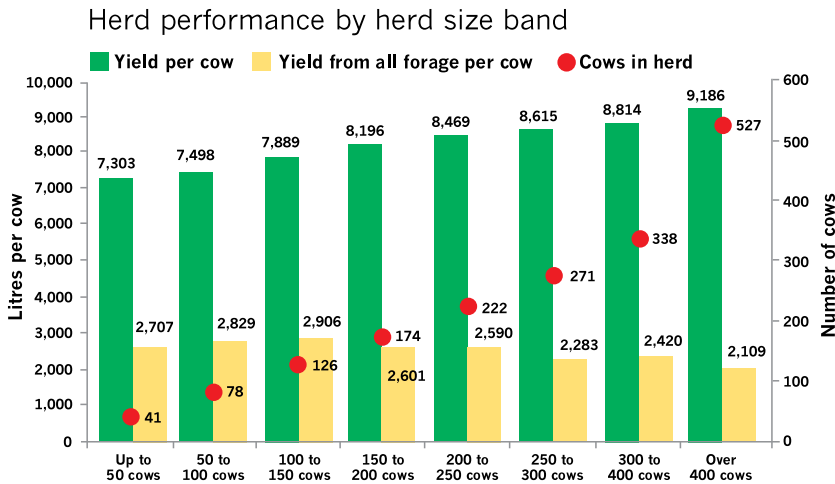


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## Herd size bands

The data shows as herd size increases, so does yield per cow and, generally, average milk price. Some of the benefit of a higher milk price is lost in purchased feed costs.



Between March 2015 results and March 2016, a clear gap in milk price has opened up for herds with over 400 cows. These were paid 26.3ppl on average compared with

one with 50 to 100 cows, even though the constituent quality was lower. Despite spending 0.9ppl more on purchased feed, the margin

between 23.5 and 25.1ppl for herds from 50 to 400 cows. In the 2015 results, all their milk prices were in the 29.4 to 31.3ppl range.

The average herd with over 400 cows received a

was still 1.9ppl higher for the largest herd band. The milk price increases substantially for the largest herd band and is 1.4ppl more than 300-400 cow herds, but with feed costing 0.4ppl more, the margin difference is 1ppl. These differences are much smaller in the herds ranging from 150 to 400 cows.

The impact from yield per cow on these datasets sees more distinct margin per cow increases as herd size increases, which may be beneficial in spreading overhead costs in such herds.

Annual results – Year end March 2016									
HOLSTEIN/FRIESIAN, CONVENTIONAL HERDS		Up to 50 cows	50 to 100 cows	100 to 150 cows	150 to 200 cows	200 to 250 cows	250 to 300 cows	300 to 400 cows	Over 400 cows
Cows in herd		41	78	126	174	222	271	338	527
Stocking rate	cows/ha	1.73	1.92	2.16	2.36	2.32	2.68	2.56	2.77
<b>MILK PRODUCTION</b>									
Yield per cow	litres	7,303	7,498	7,889	8,196	8,469	8,615	8,814	9,186
Yield from all forage per cow	litres	2,707	2,829	2,906	2,601	2,590	2,283	2,420	2,109
Milk price	pence	22.88	23.53	23.85	24.49	25.05	24.70	24.89	26.29
<b>FEED</b>									
Concentrate use per cow	kg	2,277	2,223	2,324	2,544	2,633	2,765	2,810	2,974
Concentrate use per litre	kg	0.31	0.30	0.29	0.31	0.31	0.32	0.32	0.32
Concentrate price per tonne	£	221	220	215	213	206	203	200	205
Other purchased feed cost per cow	£	10	22	39	52	70	79	79	98
Total purchased feed cost per cow	£	513	512	538	594	612	639	642	708
Total purchased feed cost per litre	pence	7.03	6.83	6.82	7.25	7.22	7.42	7.28	7.70
<b>MARGINS</b>									
MOPF per cow	£	1,158	1,252	1,344	1,413	1,510	1,489	1,552	1,707
MOPF per litre	pence	15.85	16.70	17.04	17.24	17.83	17.28	17.61	18.59

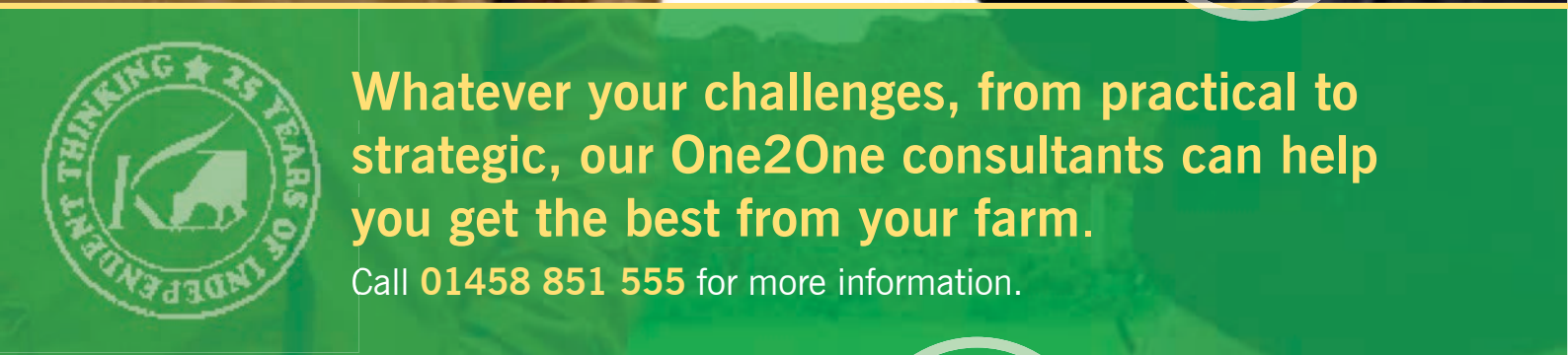




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## Health trends

**Health Manager** figures show that the top 25% herds achieving the lowest incidence of key health issues incur only half the costs of those with average incidence, saving them £15,000 per 100 cows a year.

Cases per 100 cows	2012	2013	2014	2015	2016
Mastitis	59	58	52	50	49
Lameness	48	46	45	44	45

Cases per 100 cows	Group	Top 25%	Est. cost per case	Group cost	Top 25% cost	Difference
Mastitis	49	24	£288	£14,112	£6,912	£7,200
Lameness	45	23	£172	£7,740	£3,956	£3,784
Milk Fever	5.2	2.2	£191	£993	£420	£573
Displaced Abomasums	3.1	0.9	£232	£719	£209	£510
Difficult Calvings	5.3	2.7	£347	£1,839	£937	£902
Retained Cleansings	6.1	4.3	£332	£2,025	£1,428	£598
Abortions	3.6	1.3	£401	£1,444	£521	£922
Metritis	8.4	4.9	£180	£1,512	£882	£630
<b>Total</b>				<b>£30,384</b>	<b>£15,265</b>	<b>£15,120</b>

Please note: Most costs per case have reduced since 2014 due to a lower average milk price used in these calculations.

The costliest health issues are mastitis and lameness, due to losses in milk yield and vet and medicine costs. Lameness costs per case have reduced from £192 last year to £172 but only because milk losses cost less with the current low milk

prices. But mastitis costs have increased by £40 per case because medicine costs have risen and withdrawal times have been extended, increasing milk losses.

For both mastitis and lameness, the top 25%

see only half the cases of the average herd. Mastitis continues at a lower rate than 4-5 years ago, as do cell counts for both average and top 25% herds with significant financial savings being achieved.

What remains evident in this data is the potential for many herds to continue to focus on health, particularly mastitis and lameness, to improve profitability, with these savings not easy to see in farm accounts. **Health Manager** monitors herd health incidence regularly and calculates the cost per case, giving vital information for managing these costs. Find out how your herd compares.

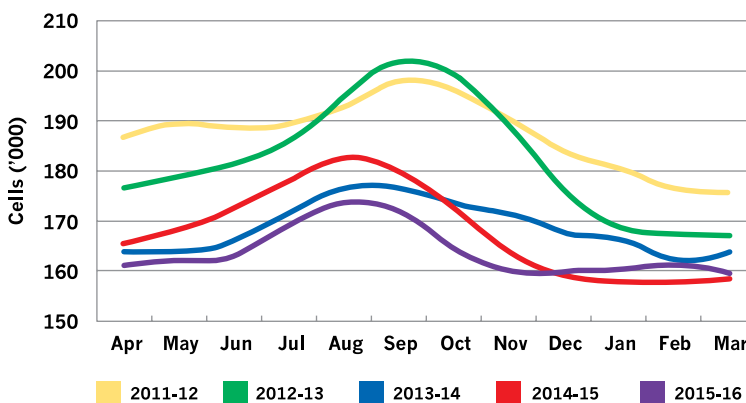
## Cell counts

Average somatic cell counts have remained at a very low level in 2015-2016,

compared with historical data. From April to November 2015, cell counts were at

their lowest for twenty years. The winter period was slightly more challenging than the previous winter, with mild weather in many areas.

Bulk somatic cell counts



Average herds now seem to manage cell counts well to stay below 200,000 all year, avoiding price penalties, with the benefits also seen in the **Health Manager** results for clinical mastitis incidence.

## Fertility facts

Calving intervals have slipped back slightly in the most recent results for herds using **Health Manager** and there remains scope for improvement which would increase profitability in the majority of herds.



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An increase in days to first service by two days for average and top 25% herds appears to be the main contributor to increases in calving intervals in the most recent year's results. This has taken the average back to the 2014-2015 level at 412 days and top 25% herds up to 395 days.

The cost of infertility for a typical 150 cow herd achieving 8,500 litres per cow has been calculated to average 2.9ppl or £247 a cow. The calculations for this year use a 23ppl milk price and a purchased feed price of £210/t.

This means each extra day the calving interval is extended now costs £3.93 a day for the average fertility herd. Top 25% fertility herds reduce this cost to £3.38 a day, but the reduction in these costs from the previous year relates to the fall in milk price, rather than an improvement

in fertility performance.

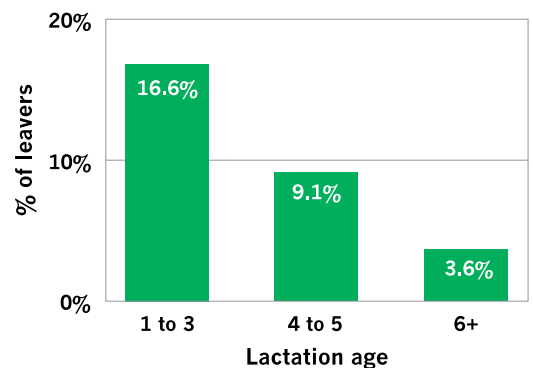
Culling for infertility is a big factor contributing to the variation in fertility costs between different herds. **Health Manager** figures show on average 29% of cows leave the herd due to fertility issues. A higher proportion of culls in the first three lactations occur for fertility related reasons at 16.6% of cows leaving the herd.

This highlights the need to review fertility performance in conjunction with the reasons for and ages of cows culled in individual herds. Herds with high culling for infertility in early lactations

will benefit from reviewing heifer rearing management, as there is clear evidence that well-grown heifers can be expected to perform well in their early lactations without compromising on fertility.

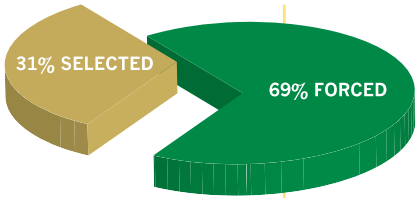
Fertility results	Group	Top 25%
Calving interval	412	395
Days to first service	78	69
Services per conception	2.9	2.4
Conception rate	36%	48%
100 day in calf rate	34%	48%
200 day not in calf rate	22%	16%
Infertility culling rate	6.9%	5.1%
Cost of infertility (ppl)	2.90	1.57
Cost of infertility (£/Cow)	£247	£133
Cost of extended calving interval per day	£3.93	£3.38

Fertility related culling by lactation age



## Reasons for cows leaving herd

There has been a small shift towards selective culling for performance reasons in the year to March 2016, but forced culls still account for 69% of the total, according to **Health Manager** data.



Health reasons for forced culls have reduced by 2%, while fertility reasons have increased by 1%. However,

individual health reasons for forced culls show little change, except for 2% fewer lameness culls.

The data for selective culling shows an almost 1% increase in cows leaving the herd for being out of the desired calving pattern.

The average rate of cows leaving the herd continues to be 26%. However, herds

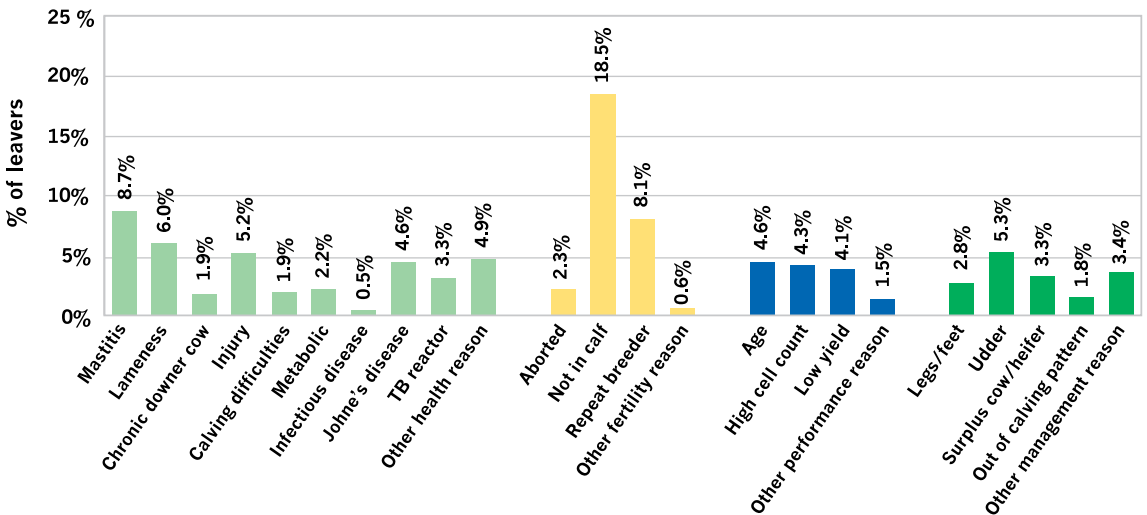
producing between 7,000 and 8,000 litres have reduced average cows leaving herd rates to 22% from 25%, whereas herds yielding above 8,000 litres were closer to 28%. It is possible that the 7,000 to 8,000 litre herds have been better able to keep cows for longer, with fewer culls for health reasons, as a response to current low milk prices.

The data also shows 48% of cows leave herds without reaching a fourth lactation. First lactation heifers account for 15% of culls, with almost a third of these due to fertility reasons.

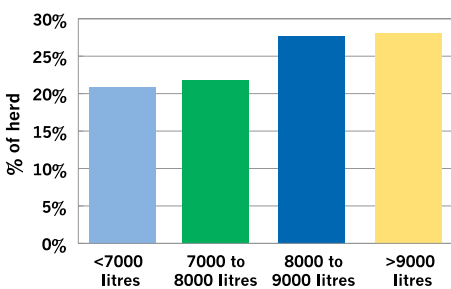
**Health Manager** is an option within **Dairy Manager** which offers a simple method for monitoring cows leaving the herd against a herd health plan, allowing prompt reaction to health issues that can help keep replacement costs down and manage vet costs.

Further advice on managing health and fertility in individual herds is available from Kingshay, via our **One2One** consultants or **HowMyHerd®** assessments, as well as local consultants and vets.

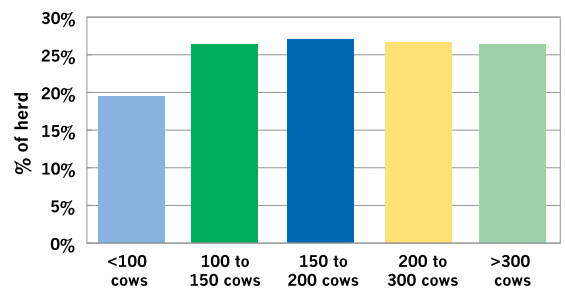
Individual leaving reasons



Cows leaving herd by yield level (culling rate)



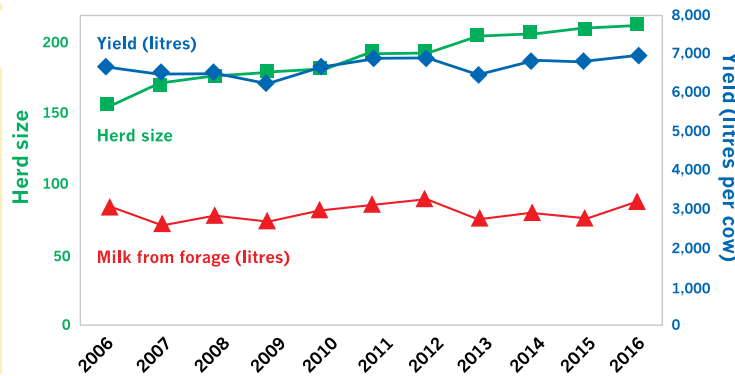
Cows leaving herd by herd size band (culling rate)



## Organic update

The year to March 2016 has seen organic milk prices hold up relatively well, falling by 1.9ppl, when compared with the 5.5ppl conventional price fall.

Trends in milk production and efficiency



results can be seen with higher yield per cow and butterfat % from 23kg less concentrates, leading to an 11% improvement in yield from forage. Organic feed prices have not reduced, remaining at more than £310/t on average compared with conventional feed at £211/t. Therefore, feed cost reductions were minimal and were 1.2ppl higher than conventional herds.

Further analysis of feed costs show a 4.4ppl range between the lowest 25% at 6ppl and the highest 25% at 10.4ppl, worth £66,000 for the average 1.5m litre herd. The herds with the highest costs fed 1,088kg a cow more of higher priced concentrates, which saw them produce an extra 1,163 litres a cow yield, resulting in margins 4.1ppl lower but £54 higher per cow.

Higher yields are seen to pay when herds are ranked by yield from forage, as the top 25% produce 690 more litres a cow than the bottom 25%. The top herds achieve 1,680 more litres from forage at 4,000 litres, helping save 2.9ppl in feed costs and achieving a margin per cow £479 higher at £2,231.

Organic year-on-year comparison					
HOLSTEIN/FRIESIAN, ORGANIC HERDS (Comparing matched herds)		Year ending March 2015	Year ending March 2016	Difference	% change
Cows in herd		216	219	3	1.4%
Stocking rate	cows/ha	1.70	1.77	0.07	4.1%
<b>MILK PRODUCTION</b>					
Yield per cow	litres	6,656	6,894	238	3.6%
Yield from all forage per cow	litres	2,874	3,203	329	11.4%
Butterfat	%	3.93	4.00	0.07	1.8%
Protein	%	3.29	3.32	0.03	0.9%
Cellcount		184	185	1	0.5%
Milk price	pence	39.06	37.12	-1.94	-5.0%
<b>FEED</b>					
Concentrate use per cow	kg	1,843	1,820	-23	-1.2%
Concentrate use per litre	kg	0.28	0.26	-0.02	-7.1%
Concentrate price per tonne	£	310	313	3	1.0%
Other purchased feed cost per cow	£	9	8	-1	-11.1%
Total purchased feed cost per cow	£	580	578	-2	-0.3%
Total purchased feed cost per litre	pence	8.71	8.38	-0.33	-3.8%
All purchased feed @ 86% equivalent per cow	kg	1,877	1,851	-26	-1.4%
<b>MARGINS</b>					
MOPF per cow	£	2,020	1,981	-39	-1.9%
MOPF per litre	pence	30.35	28.74	-1.61	-5.3%

The average Holstein/Friesian organic herd received 12.7ppl more for its milk than a conventional one at 37.1ppl. However, there was a 6ppl gap between the top 25% at 39.6ppl and bottom 25% at 33.7ppl when ranked on milk price. In line with conventional herds, herd size, cow yields and total herd

output have increased from 2015 results, although by a smaller 1.4% for herd size, greater 3.6% for yield and a similar 5% for total output. An average organic herd sold 1.5m litres of milk in the year.

Improvements in technical performance between March 2015 and 2016



## Channel Island update

When Channel Island herds are ranked by milk price, higher constituent quality is a feature of the highest 25% paid herds, receiving 31.7ppl in the year to March 2016.

As it can be assumed that almost all Channel Island herds would sell milk on a constituent contract, the 0.65% extra butterfat and 0.33% extra protein accounts for a significant part of the 5.6ppl gap from the lowest 25%, who were paid 26.1ppl.

The average Channel Island price was 29ppl, a 6.4ppl

fall from the March 2015 Dairy Manager results. At 18.1%, this represents a similar percentage fall to the 18.4% seen by Conventional Holstein/Friesian herds. Where it differs, is that the average, lowest and highest paid have fallen by relatively similar amounts, compared with the steeper than average declines of the lowest paid

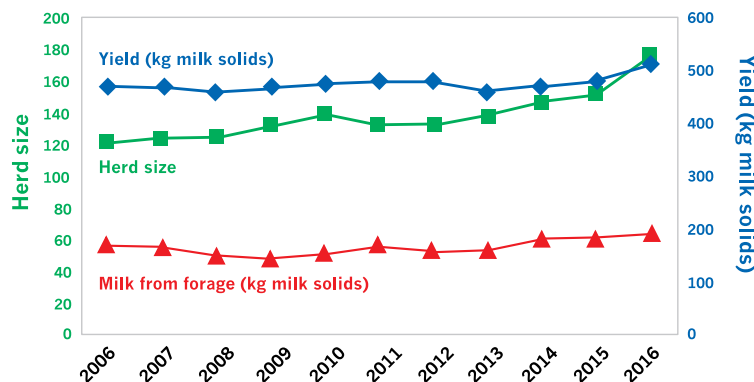
Conventional herds. Unlike Conventional or Organic Holstein Friesian herds, there has been no increase in herd output in the year to March 2016. However, the better forage year is reflected in improvements in technical performance, with yields held despite feeding 54kg less concentrates.

This, and a 10% fall in concentrate prices has seen average feed costs reduce by 1.45ppl, but there is a 5.4ppl range between the highest and lowest herds when they are ranked by feed costs per litre. The lowest 25% had costs averaging 5.6ppl and the highest 25% averaged 10.9ppl.

While there is a yield increase of 1,337 litres for the highest feed cost herds, they fed double the concentrates at 2,733kg a cow and their yield from forage was halved to 1,359 litres a cow. High feed cost herds also achieved slightly higher milk quality which helped boost their milk price by 1.4ppl, but their margin was still 3.9ppl lower and only £42 a cow higher than the lowest feed cost herds, which are far less reliant on purchased feed.

Channel Island year-on-year comparison					
CHANNEL ISLAND, CONVENTIONAL HERDS (Comparing matched herds)		Year ending March 2015	Year ending March 2016	Difference	% change
Cows in herd		182	181	-1	-0.5%
Stocking rate	cows/ha	2.68	2.67	-0.01	-0.4%
<b>MILK PRODUCTION</b>					
Yield per cow	litres	5,771	5,798	27	0.5%
Yield from all forage per cow	litres	1,851	2,129	278	15.0%
Butterfat	%	5.27	5.34	0.07	1.3%
Protein	%	3.82	3.84	0.02	0.5%
Milk price	pence	35.31	28.92	-6.39	-18.1%
<b>FEED</b>					
Concentrate use per cow	kg	2,041	1,987	-54	-2.6%
Concentrate use per litre	kg	0.35	0.34	-0.01	-2.9%
Concentrate price per tonne	£	243	219	-24	-9.9%
Other purchased feed cost per cow	£	67	47	-20	-29.9%
Total purchased feed cost per cow	£	563	482	-81	-14.4%
Total purchased feed cost per litre	pence	9.76	8.31	-1.45	-14.9%
All purchased feed @ 86% equivalent per cow	kg	2,302	2,183	-119	-5.2%
<b>MARGINS</b>					
MOPF per cow	£	1,475	1,195	-280	-19.0%
MOPF per litre	pence	25.56	20.61	-4.95	-19.4%

Trends in milk production and efficiency





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