

Teagasc

# Profit Monitor Analysis Dairy Farms 2018



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## Foreword

Dairy farms are businesses, so an awareness of the factors affecting profitability is vital, both to remain competitive and to identify areas for improvement over time. The Teagasc Profit Monitor (PM) is an online financial analysis tool available to all Teagasc clients. It provides a snapshot of a dairy farm's financial (and physical) performance and allows the farmer to compare their farm's performance with available benchmarks, including their farm's previous year's performance, other farm's performance or Teagasc targets. Completing a Profit Monitor analysis on a yearly basis helps to keep the farmer in tune with how the farm business is performing. It keeps the farm owner/manager informed if changes made in the farm's operation are having a positive effect on farm profitability.

The purpose of this publication is to provide a range of benchmarks for both individual farmers and farmer groups. The analyses in this publication are based on data provided by Teagasc dairy farmer clients relating to the 2018 production year and entered onto the PM system prior to 26th March 2019. In all, 1,754 farms are represented: 1,568 of these are engaged in spring milk production with the balance (186) engaged in winter/ liquid milk production.

The figures contained in this publication can provide useful targets or benchmarks for comparison. Such comparison can raise questions such as: why are others better? How are others better? What can be learnt? How can the farm catch up?

If areas of weakness are identified, then a plan can be formulated to tackle the underlying issues, a forward budget can be set and cash flow monitored throughout the year. This time next year, the Profit Monitor can be completed once again to measure the improvement in both physical and financial performance.

Of course, if you are already matching the performance of the Top 25% of farmers, well then the challenge becomes maintaining that level of performance and avoiding "system creep" over time.

Finally, I would like to acknowledge the work of all Teagasc Dairy Advisers in promoting, completing and using PM and to dairy farmers for providing the data required for analysis. Without their support, this publication would not be possible. I would also like to acknowledge the work of George Ramsbottom and Kevin Connolly in extracting the data necessary for this publication.

Tom O'Dwyer,  
Head of Dairy Knowledge Transfer

## The cost of on-farm family labour

Net margin represents the returns to family labour, management, owned land and capital. It is very difficult to segregate the returns to each of these components with an acceptable level of accuracy. Allowing for an approximation of the value of on-farm family labour input, for instance, based on the Teagasc NFS data for 2016, would place a value on own labour input equivalent to 12 cent per litre or €1,201 per hectare. This estimate is based on the "self-reported" labour input of respondents and an assumed wage of €15 per hour. This figure does not have the accuracy associated with the estimates of costs for other farm inputs. Teagasc is conducting on-going research to establish more accurate estimates. Own labour costs for smaller herds, with low yielding cows, a less desirable farm layout and inferior yard and parlour facilities would be expected to be several cents higher than the average. By contrast the most labour efficient farms would be expected to have substantially lower costs.

# Spring Milk Dairy Farms 2018



Profit Monitor per hectare analysis  
(1,390 farms)

## Profit Monitor per hectare analysis (1,390 farms)

	Top 25% <sup>1</sup>			Average		
<b>Physical</b>						
Herd Size (No. cows)	136			124		
Dairy Hectares	52.9			55.1		
Stocking rate (LU/ha)	2.57			2.25		
Grass used (t DM/ha)	10.2			8.6		
	/ha	/cow		/ha	/cow	
Milk yield (litres)	15,700	6,109		12,843	5,708	
Fat/Protein		4.31/ 3.58			4.25/ 3.55	
Milk solids (kg)	1,275	496		1,031	458	
<b>Financial (€/ha)</b>	<b>€/ha</b>	<b>€/cow</b>	<b>c/litre</b>	<b>€/ha</b>	<b>€/cow</b>	<b>c/litre</b>
Gross Output	5,977	2,326	38.07	4,711	2,094	36.68
Co-op price			37.16			36.27
<b>Variable Costs</b>						
Feed	1,096	426	6.98	922	410	7.18
Fertiliser	339	132	2.16	313	139	2.44
Vet	155	60	0.99	140	62	1.09
AI	74	29	0.47	68	30	0.53
Contractor	245	95	1.56	240	107	1.87
Other Var. Costs	256	100	1.63	238	106	1.85
Total variable costs	2,165	842	13.79	1,921	854	14.96
Gross margin	3,812	1,483	24.28	2,789	1,240	21.72
<b>Fixed costs</b>						
Labour	185	72	1.18	175	78	1.36
Machinery	181	70	1.15	184	82	1.43
Car/ESB/Phone	166	65	1.06	166	74	1.29
Depreciation	278	108	1.77	243	108	1.89
Leases	122	48	0.78	126	56	0.98
Interest	66	26	0.42	76	34	0.59
Other Fixed Costs	262	102	1.67	262	116	2.04
Total fixed costs	1,261	491	8.03	1,230	547	9.58
<b>Net profit</b>	<b>2,551</b>	<b>993</b>	<b>16.25</b>	<b>1,559</b>	<b>693</b>	<b>12.14</b>

<sup>1</sup> Ranked by dairy net profit per hectare.

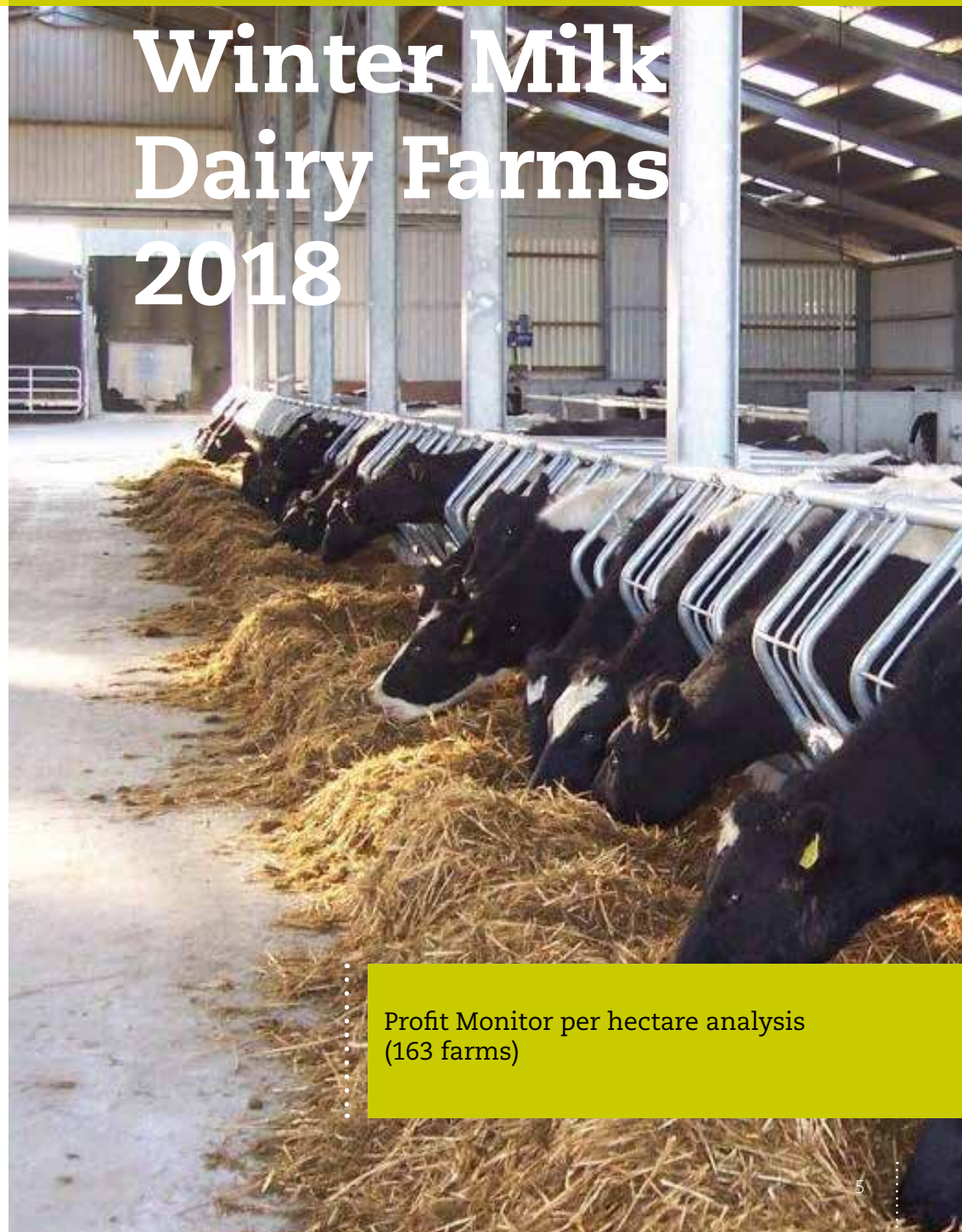
## Spring Milk Producers

- The high profit spring milk producers were larger scale (10% larger herds), more intensively stocked (14% higher stocking rate) and consumed 1.6 t DM/ha more grass (19% more) in what was for many a very dry summer.
- They produced 38 kg more milk solids per cow (8% higher yield) of higher fat and protein content and 244 kg more milk solids per hectare (24% higher) by virtue of their higher milk solids yield per cow and their higher stocking rate.
- Gross output of the top quartile was €1,266/ha greater than the average spring milk producer as a result.
- Variable costs were €11 lower per cow but €244 higher per hectare by virtue of their higher stocking rate. Meal costs were slightly higher on the high profit farms (€16/cow).
- Fixed costs were €56 lower per cow but €30 higher per hectare for the highest profit quartile.
- Overall net profit was €300 higher per cow and €992 higher per hectare (64% higher) than the average spring milk producer who completed Profit Monitor.

## Spring Milk Dairy Farms 2018



## Winter Milk Dairy Farms 2018



Profit Monitor per hectare analysis  
(163 farms)

## Profit Monitor per hectare analysis (163 farms)

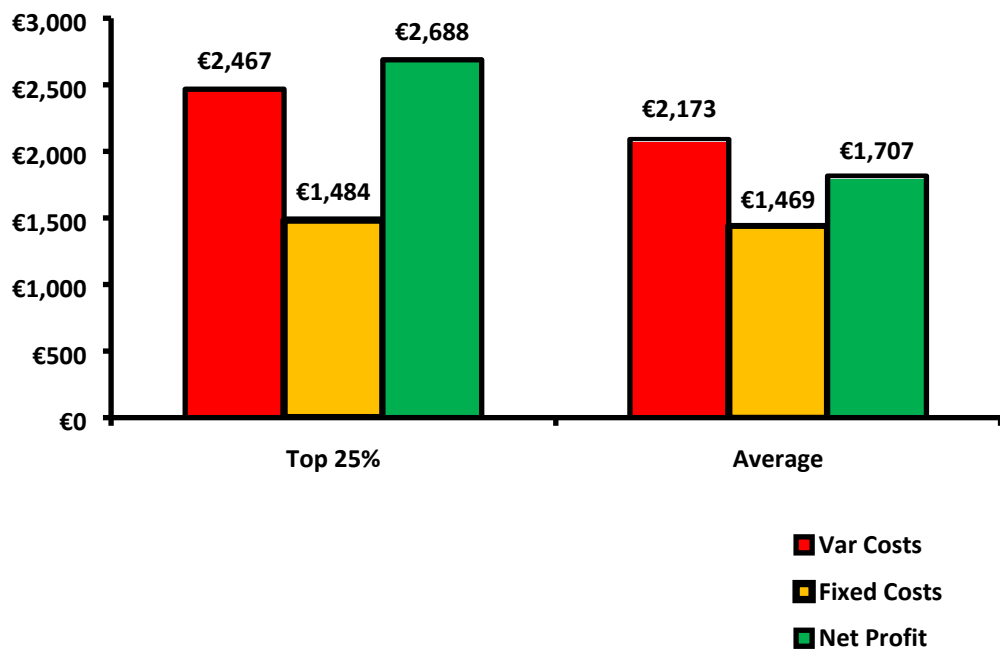
Physical	Top 25% <sup>2</sup>			Average		
	/ha	/cow		/ha	/cow	
Herd size (no. cows)	142			145		
Dairy hectares	55.7			63.6		
Stocking rate (LU/ha)	2.55			2.28		
Grass used (T DM/ha)	9.4			8.3		
Milk yield (litres)	17,434	6,837		14,517	6,367	
Fat / Protein		4.08/ 3.46			4.10/ 3.44	
Milk solids (kg)	1,352	530		1,124	493	
<b>Financial (€)</b>	<b>€/ha</b>	<b>€/cow</b>	<b>c/litre</b>	<b>€/ha</b>	<b>€/cow</b>	<b>c/litre</b>
Gross output	6,639	2,604	38.08	5,351	2,347	36.86
Co-op price			37.13			36.52
<b>Variable costs</b>						
Feed	1,384	543	7.94	1,166	511	8.03
Fertiliser	310	122	1.78	285	125	1.96
Vet	152	59	0.87	142	62	0.98
AI	85	34	0.49	70	31	0.48
Contractor	246	96	1.41	254	111	1.75
Other Var. Costs	289	113	1.66	257	113	1.77
Total variable costs	2,467	967	14.15	2,173	953	14.97
Gross margin	4,172	1,636	23.93	3,178	1,394	21.89
<b>Fixed costs</b>						
Labour	265	104	1.52	257	113	1.77
Machinery	211	83	1.21	234	103	1.61
Car/ESB/Phone	181	71	1.04	184	81	1.27
Depreciation	312	122	1.79	266	117	1.83
Leases	166	65	0.95	145	64	1.00
Interest	61	24	0.35	87	38	0.60
Other Fixed Costs	288	113	1.65	296	130	2.04
Total fixed costs	1,484	582	8.51	1,469	644	10.12
<b>Net profit</b>	<b>2,688</b>	<b>1,054</b>	<b>15.42</b>	<b>1,707</b>	<b>749</b>	<b>11.76</b>

<sup>2</sup> Ranked by net profit per hectare.

- In contrast to their spring milk counterparts, the high profit winter milk producers were similar in scale (2% smaller herds) but more intensively stocked (12% higher stocking rate) and consumed 1.1 t DM/ha more grass (13% greater).
- They produced 37kg more milk solids per cow (8% higher yield) of higher fat and protein content and 228 kg more milk solids per hectare (20% higher) by virtue of their higher milk solids yield per cow and their higher stocking rate.
- Gross output of the top quartile was €1,288/ha higher than that of the average winter milk producer as a result.
- Variable costs were €14 higher per cow and €294 higher per hectare by virtue of their higher stocking rate. Meal costs were marginally higher (€32/cow) on the high profit farms.
- Fixed costs were €63 lower per cow but €15 higher per hectare for the highest profit quartile.
- Overall net profit was €306 higher per cow and €981 higher per hectare (57% higher) than the average winter milk producer who completed Profit Monitor.



## Grass Utilisation and Profit



Profit Monitor per hectare analysis  
(1,390 farms)

## Grass utilisation and profit (spring milk producers, 1,390 farms)

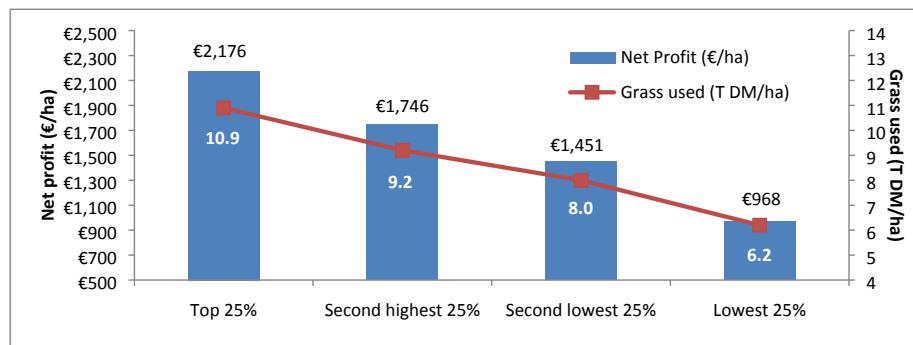
Teagasc advocates maximising the amount of grass used per hectare. The top 25% of farmers ranked by grass utilised per hectare are compared to the average spring milk producers in Profit Monitor in the following table

	Top 25% <sup>3</sup>			Average		
Physical						
Herd size (no. cows)	155			124		
Dairy hectares	57.8			55.1		
Stocking rate (LU/ha)	2.68			2.25		
Grass used (T DM/ha)	10.9			8.6		
	/ha	/cow		/ha	/cow	
Milk yield (litres)	15,573	5,811		12,843	5,708	
Fat / Protein		4.37/ 3.60			4.25/ 3.55	
Milk solids (kg)	1,276	476		1,031	458	
Financial (€)	€/ha	€/cow	c/litre	€/ha	€/cow	c/litre
Gross output	5,849	2,183	37.56	4,711	2,094	36.68
Co-op price			37.27			36.27
<b>Variable costs</b>						
Feed	1,006	375	6.46	922	410	7.18
Fertiliser	364	136	2.34	313	139	2.44
Vet	173	65	1.11	140	62	1.09
AI	83	31	0.53	68	30	0.53
Contractor	274	102	1.76	240	107	1.87
Other Var. Costs	268	100	1.72	238	106	1.85
Total variable costs	2,171	810	13.94	1,921	854	14.96
Gross margin	3,678	1,373	23.62	2,789	1,240	21.72
<b>Fixed costs</b>						
Labour	283	1.06	1.82	175	78	1.36
Machinery	206	77	1.32	184	82	1.43
Car/ESB/Phone	174	65	1.12	166	74	1.29
Depreciation	299	112	1.92	243	108	1.89
Leases	164	61	1.05	126	56	0.98
Interest	93	35	0.60	76	34	0.59
Other Fixed Costs	283	106	1.82	262	116	2.04
Total fixed costs	1,501	560	9.64	1,230	547	9.58
<b>Net profit</b>	<b>2,176</b>	<b>812</b>	<b>13.97</b>	<b>1,559</b>	<b>693</b>	<b>12.14</b>

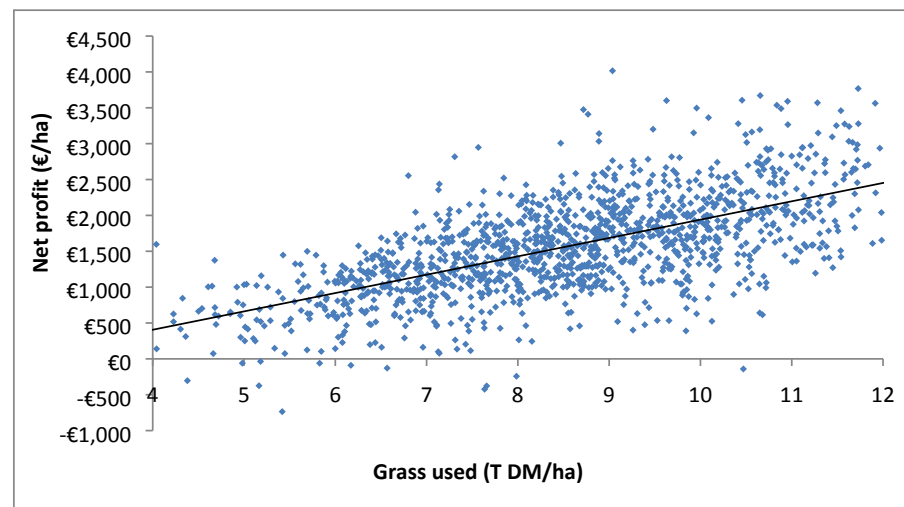
- Compared to the average spring milk producer, the top 25% of producers utilised 2.3 tonnes more grass per hectare (27% more).
- They produced 4% more milk solids per cow (18 kg more) but by virtue of their higher stocking rate produced 24% more milk solids per hectare (245 kg more).
- Purchased feed cost was 8% lower per cow (€34 per cow lower) with 4.1 tonnes grass dry matter used per cow compared to 3.8 tonnes grass dry matter used per cow on the average Profit Monitor farm.
- Overall farm net profit was €616 higher per hectare on the top grass use farms (40% higher).

<sup>3</sup> Ranked by grass utilised

When broken into quartiles by grass used, the stepwise decline in grass utilised and net profit per hectare is evident.



A scatter plot permits the association between grass used per hectare and net profit per hectare to be estimated. Grass utilised explains 44% of the variation in net profit per hectare and each additional tonne of grass utilised per hectare was associated with an increase in profit of €256 in 2018.



# Trends in financial performance between 2017 and 2018



Matched sample of 693 spring calving farms

Data from a matched sample of 693 spring calving farms that completed Profit Monitor in both 2017 and 2018 is presented in the following table.

	2018			2017			Difference (2018-2017)		
Herd size (cows)	137			130			+ 7		
Dairy hectares	59			57			+ 2		
Stocking rate (LU/ha)	2.31			2.29			+ 0.02		
Grass used (T DM/ha)	8.6			10.9			- 2.3		
	/ha	/cow		/ha	/cow		/ha	/cow	
Milk yield (litres)	13,296	5,755		12,754	5,569		+542	+ 186	
Fat / Protein		4.30 /3.57			4.25 /3.57			+0.05 /0.00	
Milk solids (kg)	1,077	466		1,026	448		+ 51	+ 18	
	€/ha	€/cow	c/litre	€/ha	€/cow	c/litre	€/ha	€/cow	c/litre
Gross output	4,898	2,120	36.8	4,933	2,154	38.7	-35	-34	-1.8
Co-op price			36.5			37.8			-1.3
Total costs	3,262	1,412	24.5	2,650	1,157	20.8	613	255	3.8
Including Feed costs	952	412	7.2	529	231	4.1	423	181	3.0
<b>Net profit</b>	<b>1,636</b>	<b>708</b>	<b>12.3</b>	<b>2,283</b>	<b>997</b>	<b>17.9</b>	<b>-648</b>	<b>-289</b>	<b>-5.6</b>

- While cow numbers increased by 5% (seven cows), this group of farmers reported a 10% increase in total milk solids production (achieved through a combination of increased cow numbers and increased production per cow).
- Gross output declined because of the decline in milk price between 2017 and 2018. The large increase in feed costs of €181/cow is reflective of the reduced grass growth of 2018.
- The increase in cost of production (€613/ha) was greater than the change in gross output (€35/ha decline). So while feed usage and milk production increased, the net profit declined by 28% (€648/ha).

# Replacement Heifer Costs

Spring milk (1,192 farms)  
Winter milk (158 farms)

### Cost of rearing replacement heifers in spring and winter milk herds

Physical	Spring (1,192)		Winter (158)	
	€/ha	€/LU	€/ha	€/LU
No. heifers (LU's)	35		45	
Stocking rate (LU/ha)	2.20		2.24	
<b>Variable costs</b>				
Feed	385	175	391	174
Fertiliser	298	136	269	120
Vet	132	60	137	61
AI	35	16	39	17
Contractor	249	113	280	125
Other Var. Costs	127	58	152	68
Total variable costs	1,226	558	1,268	565
<b>Fixed costs</b>				
Labour	70	32	78	35
Machinery	53	24	55	25
Car/ESB/Phone	43	19	37	17
Depreciation	71	32	54	24
Leases	139	63	157	70
Interest	26	12	18	8
Other Fixed Costs	68	32	66	28
Total fixed costs	470	214	465	207

- The guideline costings for replacement heifers on spring and winter milk herds comes from the average 2018 Profit Monitor data for 1,192 spring calving and 158 winter milk herds. The costs are evaluated per livestock unit (LU). Thus one heifer reared to 24 months of age is equal to one LU. Only approximately 60% of spring born replacements calve at 24 months.

#### Not included in the costs are:

- The value of the replacement heifer calf – approximately €300 per head;
- The opportunity cost of the owned land in rearing the heifer. Assuming a value of €500 per hectare, the land cost per replacement is €227 per LU (using a farm stocking rate of 2.20 LU/ha). Of this €63 and €70 per livestock unit are accounted for in leased land for spring and winter milk herds respectively;
- The own labour costs associated with replacement heifer rearing.

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