Animal & Grassland Research and Innovation Programme

Teagasc

e-Profit Monitor Analysis
Dairy Farms 2015

Agriculture and Food Development Authority

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Foreword

The Teagasc eProfit Monitor (ePM) is an online financial analysis tool available to all Teagasc clients. Dairy farmers work with their Teagasc Dairy Adviser to gather the data required. Once the data is entered, a range of reports for each enterprise (dairy, replacements, cattle and tillage) or the overall farm can be produced. If the farmer has carried out an ePM analysis on a yearly basis, multiple year reports tracking performance over a number of years can be generated. In addition, if the farmer is a member of a discussion group, a group report can be produced allowing each individual farmer to benchmark his performance with other group members. This purpose of this publication is to provide a range of benchmarks for both individual farmers and farmer groups.

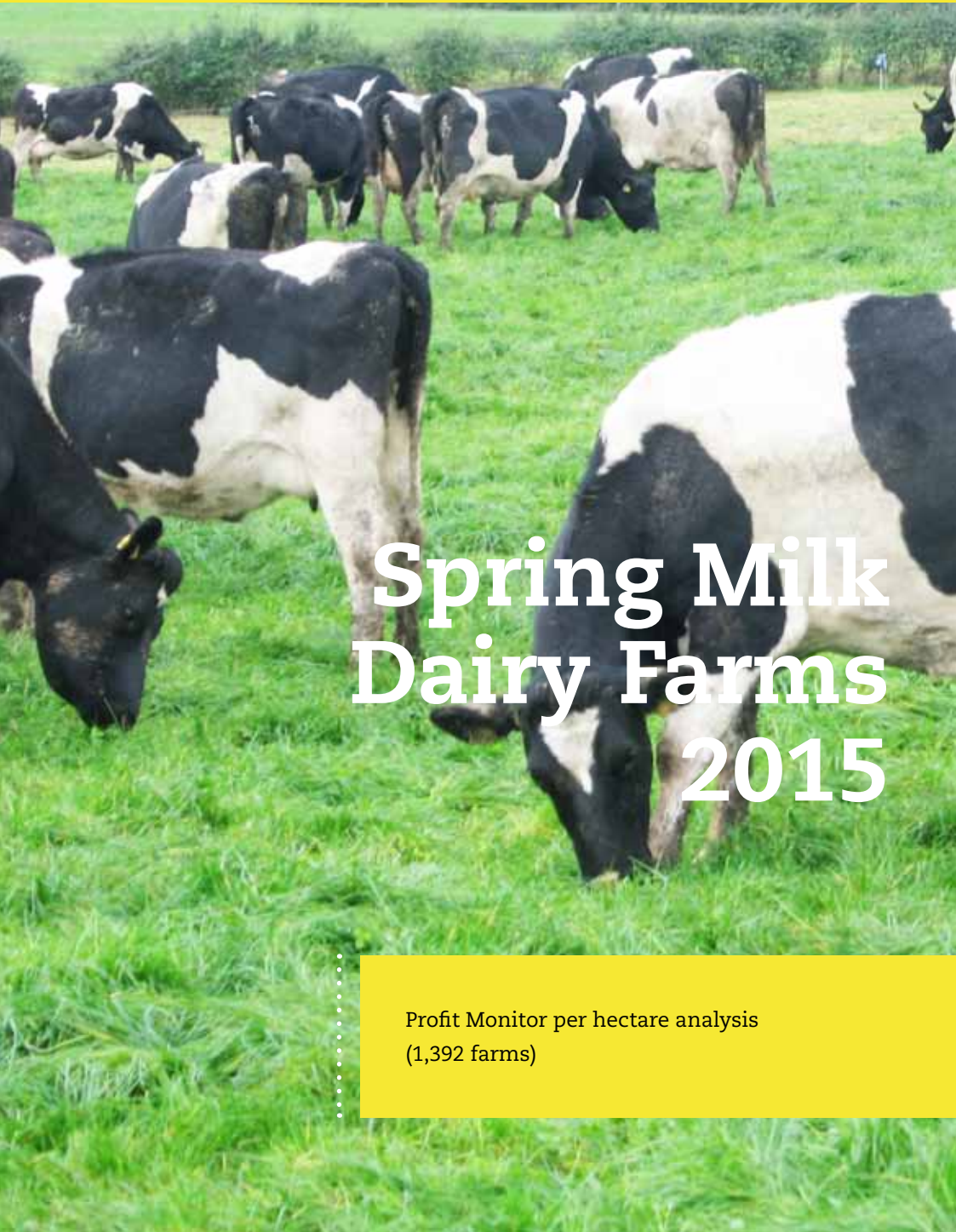
The analyses in this publication are based on data provided by Teagasc dairy farmer clients relating to the 2015 production year and entered onto the ePM system prior to 8th March 2015. In all, 1,562 farms are represented; 1,392 of these are engaged in spring milk production with the balance (170) engaged in winter/ liquid milk production. In addition, a matched sample analysis of 100 farmers who have completed ePM analysis for each year in the period 2008 to 2015 is included.

A range of tables are provided with a summary of the key figures included in the main tables and a more detailed breakdown of costs contained in the later tables. Where 'Top 25%' results are presented, the dataset was initially ranked on the basis of net profit per hectare.

The net profit referred to in this publication refers to the dairy enterprise only and not the whole farm. Other enterprises on the farm may generate some additional profit for the farm business. In addition direct payments, claimed by the majority of dairy farmers, are excluded from this analysis. An article is included which explains the difference between eProfit Monitor and National Farm Survey results. This stresses the differences in the samples for both analyses while recommending the use of eProfit Monitor results for farmer benchmarking and National Farm Survey results for the presentation of national results and especially in issues pertaining to government policy, economic planning and cross-country comparisons.

Finally, I would like to acknowledge the work of all Teagasc Dairy Advisers in promoting, completing and using ePM 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



Spring Milk Dairy Farms 2015

Profit Monitor per hectare analysis
(1,392 farms)

Spring Milk Dairy Farms 2015

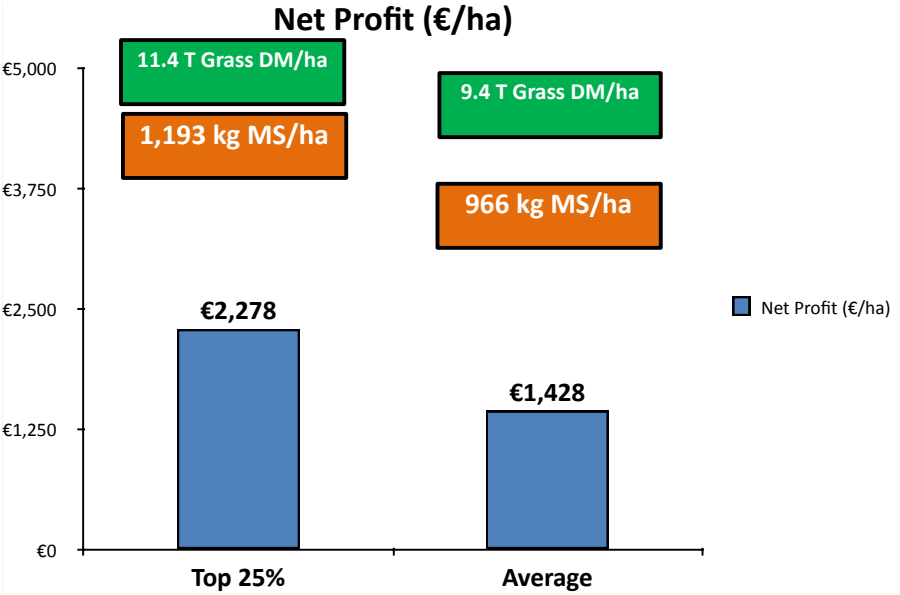
	Top 25%[1]	Average	Top vs Average
Physical			
Herd Size (No. cows)	114	106	8
Dairy Ha	45	48	-3
Stocking rate[2] (LU/ha)	2.54	2.21	0.33
Grass used (t DM/ha)	11.4	9.4	2.0
Grass in diet (% total DM consumed)	86%	84%	2%
Milk yield (litres/cow)	5,832	5,489	343
Milk solids (kg/ha)	1,193	966	227
Financial (€/ha)			
Gross Output	4,937	3,893	1,045
Variable Costs	1,576	1,404	173
Gross Margin	3,362	2,489	872
Fixed Costs	1,084	1,061	22
Net Profit excl. premia	2,278	1,428	850

[1] Ranked by net profit per hectare.

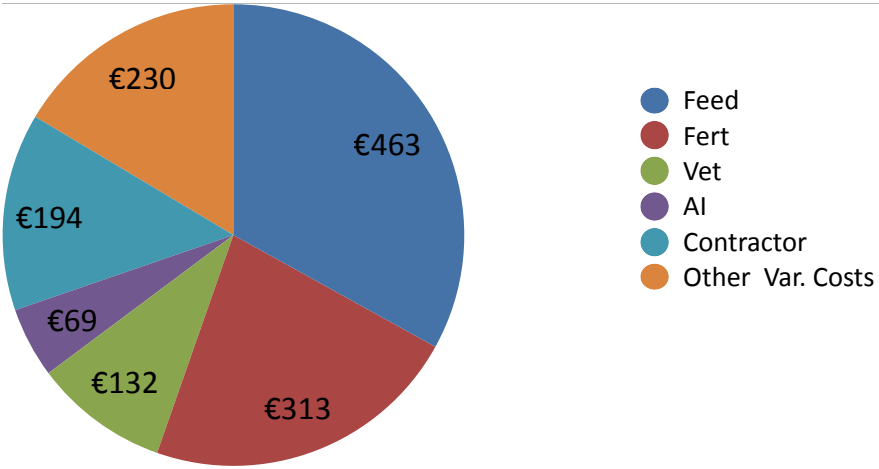
[2] Overall farm stocking rate.

- The top farms generated a gross output of €4,937 per ha compared to €3,893 per ha on the average farms, a difference of 27%.
- Output per ha on the top 25% of farms was 227 kg milk solids per ha or 23% higher than on the average farm (966 kg per ha). This is as a result of a higher stocking rate (+0.33 LU per ha) and higher yield (+ 33 kg milk solids per cow).
- Average spring milk dairy farms had lower variable costs than the top farms at €1,404 per ha versus €1,576 per ha. However, as a percentage of gross output they accounted for 36% on the average farms compared to 32% of the output on the top farms.
- The gross margin was €3,362 per ha on the top spring milk farms which was 35% or €872 per ha higher than those on the average farm.
- The biggest variable cost on spring milk dairy farms in 2015 was purchased concentrates and forage accounting for 33% or €463 per ha of total variable costs.
- The average spring milk dairy farm in 2015 generated a net profit of €1,428 per ha compared to €2,278 per ha on the top 25% of farms.

Spring milk dairy farms net profit per hectare 2015



Average spring milk variable costs per hectare 2015



Winter Milk Dairy Farms 2015

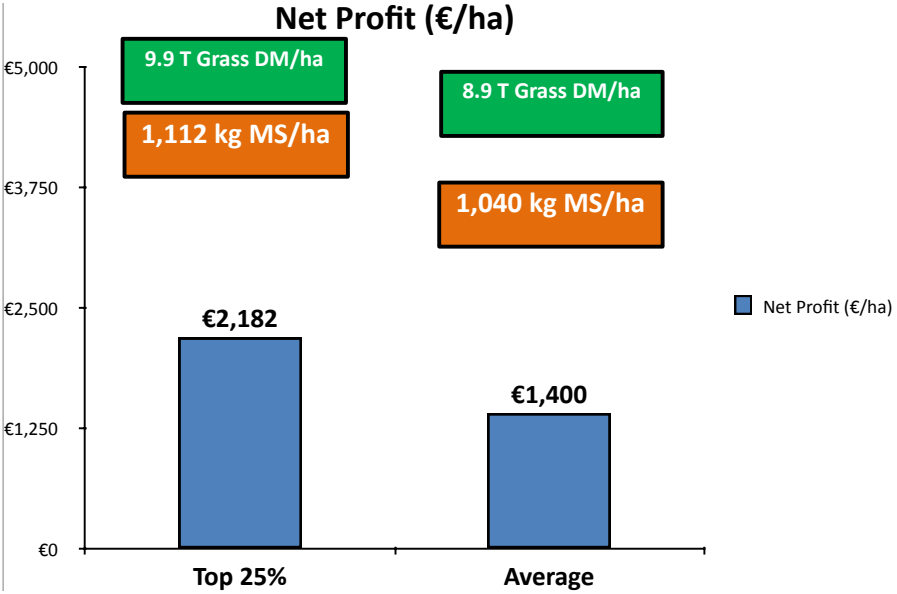
Profit Monitor per hectare analysis
(170 farms)

	Top 25%[3]	Average	Top vs Average
Physical			
Herd Size (No. cows)	137	138	-1
Dairy Ha	58	61	-3
Stocking rate (LU/ha)	2.37	2.27	0.10
Grass used (t DM/ha)	9.9	8.9	0.9
Grass in diet (% total DM consumed)	80%	77%	3%
Milk yield (litres/cow)	6,093	5,960	133
Milk solids (kg/ha)	1,112	1,040	72
Financial (€/ha)			
Gross Output	4,923	4,462	461
Variable Costs	1,564	1,703	-139
Gross Margin	3,359	2,759	600
Fixed Costs	1,177	1,358	-181
Net Profit excl. premia	2,182	1,400	782

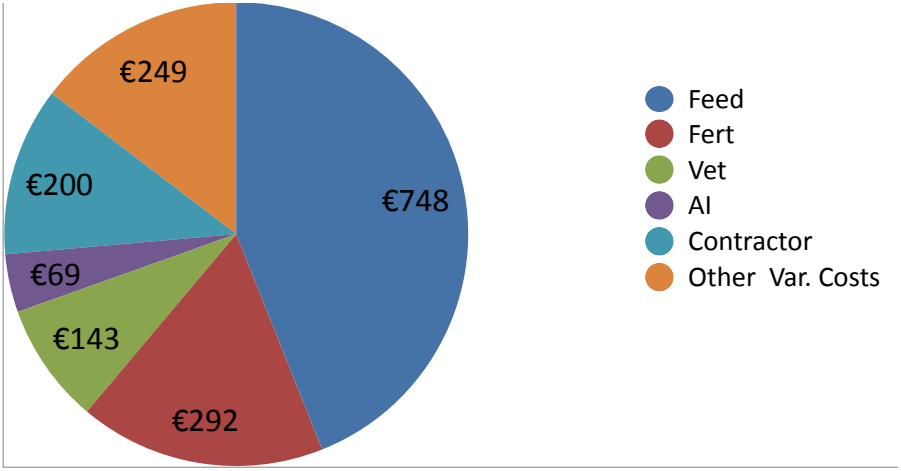
[3] Ranked by net profit per hectare.

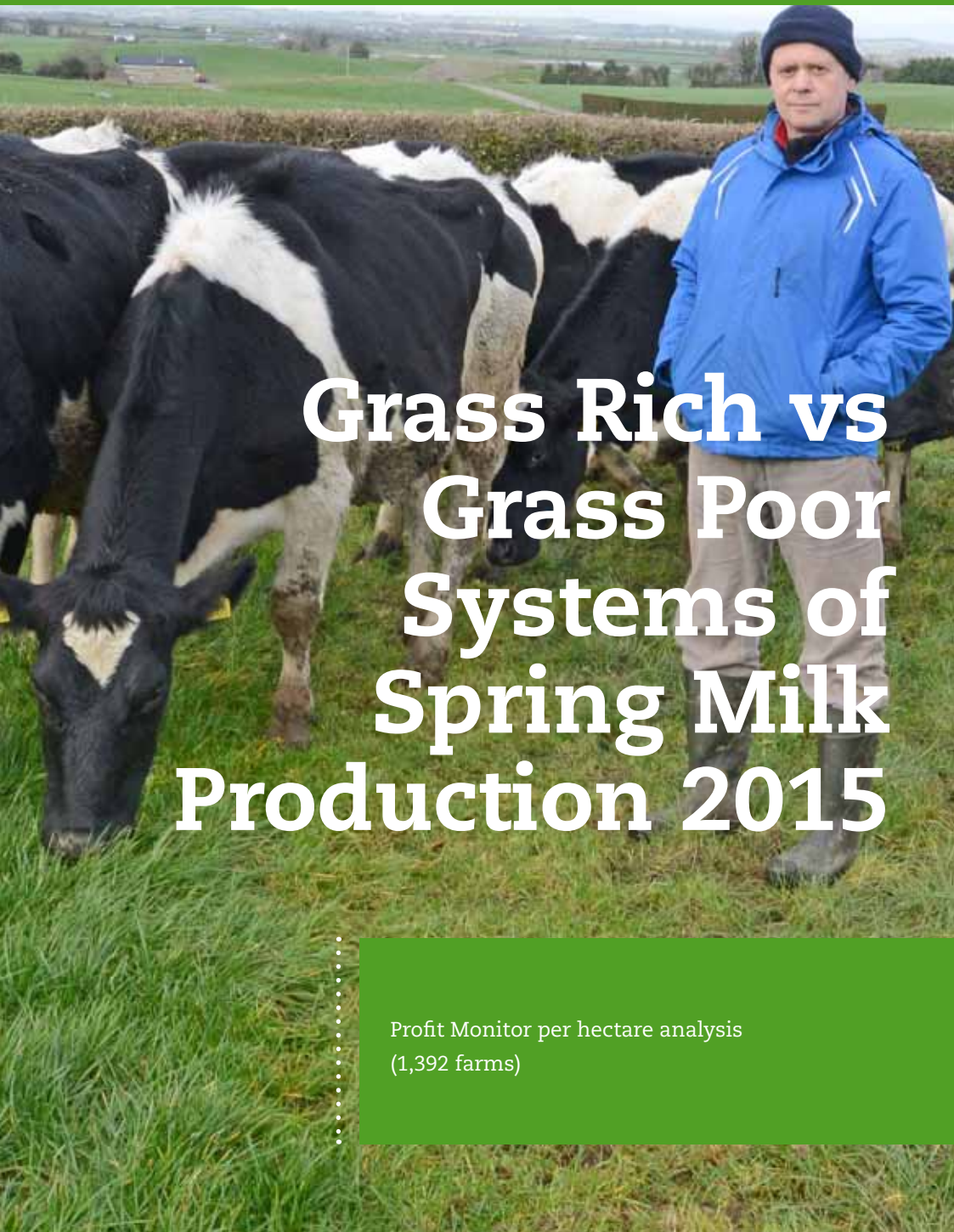
- The top 25% of farms generated a gross output of €4,923 per ha compared to €4,462 per ha on the average farms, a difference of 10%.
- Output per ha on the top 25% of farms was 72 kg milk solids per ha or 7% higher than on the average farm (1,040 kg per ha). This is as a result of a higher stocking rate (+0.10 LU per ha) and higher yield (+ 11 kg milk solids per cow).
- Average winter milk dairy farms had higher variable costs than the top farms at €1,703 per ha versus €1,564 per ha. As a percentage of gross output they accounted for 38% on the average farms compared to 32% of the output on the top farms.
- The gross margin was €3,359 per ha on the top winter milk farms which was 22% or €600 per ha higher than those on the average farm.
- The biggest variable cost on winter milk dairy farms in 2015 was purchased forage and concentrate accounting for 44% or €748 per ha of total variable costs.
- The average winter milk dairy farm in 2015 generated a net profit of €1,400 per ha compared to €2,182 per ha on the top 25% of farms.

Winter milk dairy farms net profit per hectare 2015



Average winter milk variable costs per hectare 2015





Grass Rich vs Grass Poor Systems of Spring Milk Production 2015

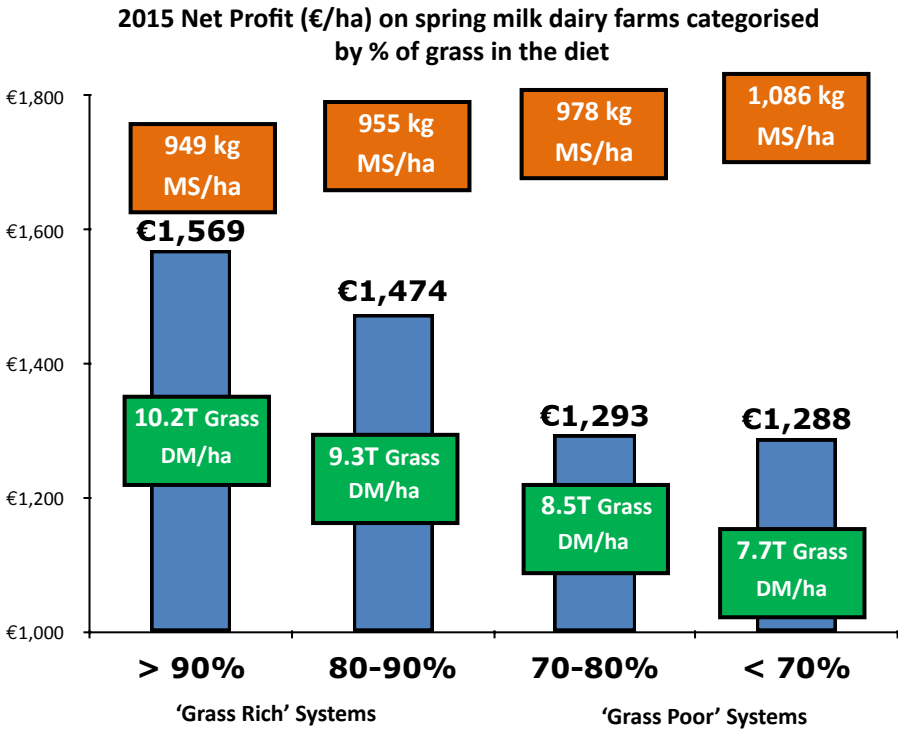
Profit Monitor per hectare analysis
(1,392 farms)

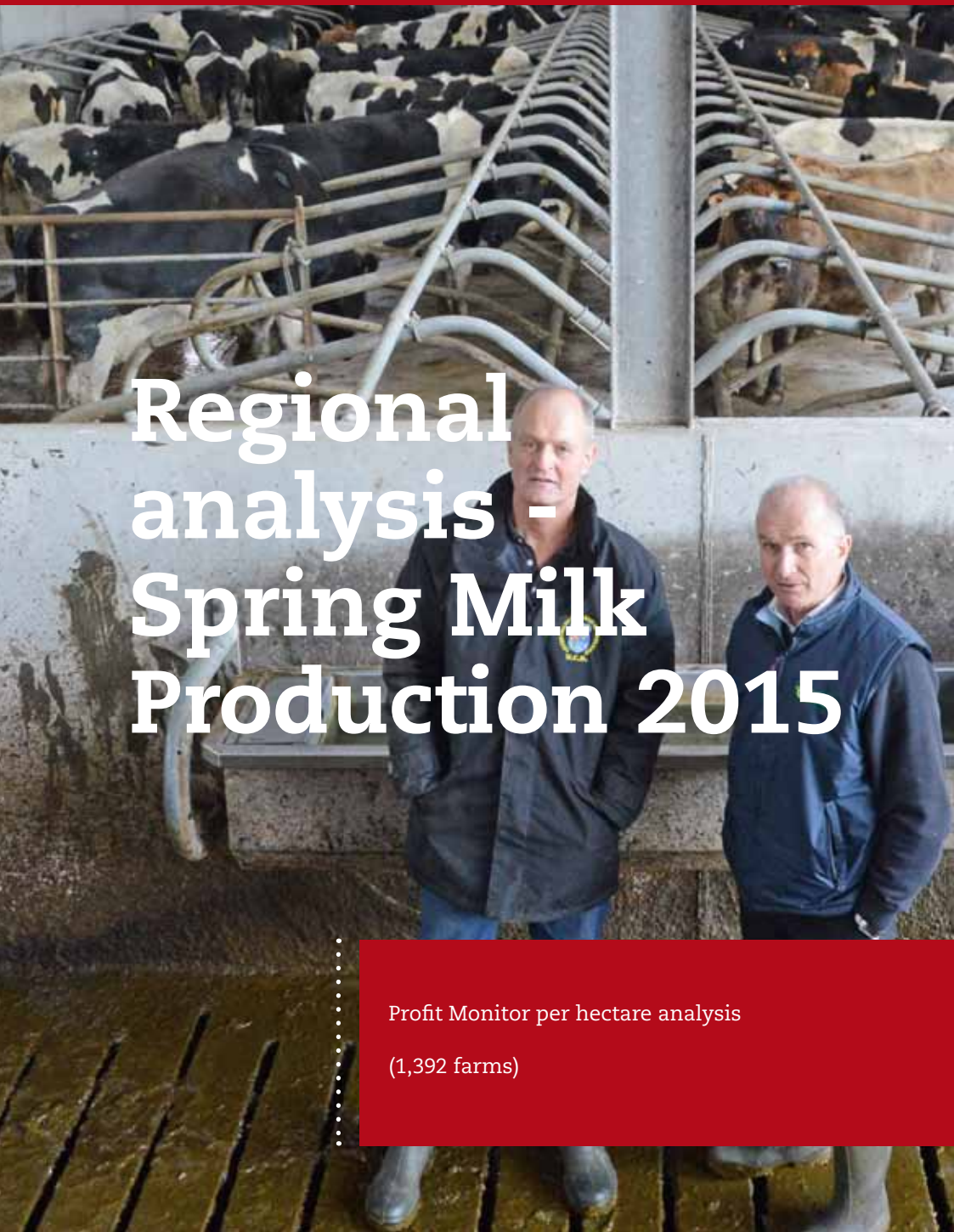
Grass Rich vs Grass Poor Systems of Spring Milk Production 2015

	Grass Rich		Grass Poor	
Proportion of purchased feed in the diet	**<10%**	**10-20%**	**20-30%**	**>30%**
No. of farms	244	831	261	56
Physical				
Stocking rate (LU/ha)	2.2	2.2	2.2	2.3
Grass used (t DM/ha)	10.2	9.3	8.5	7.7
Grass in diet (% total DM consumed)	92%	85%	76%	64%
Milk yield (litres/cow)	5,142	5,477	5,681	6,267
Milk solids (kg/ha)	949	955	978	1,086
Financial (€/ha)				
Gross Output	3,795	3,865	3,954	4,495
Variable Costs	1,173	1,358	1,599	1,990
Gross Margin	2,622	2,507	2,355	2,505
Fixed Costs	1,053	1,033	1,061	1,217
Net Profit excl. premia	1,569	1,474	1,293	1,288

- Dairy farms where more than 80% of the diet is composed of grazed grass or grass silage are termed 'grass rich' systems of milk production. Those farms where less than 80% of the cows' diet is grazed grass or grass silage are termed 'grass poor'.
- The 2015 season was a good grass growing year – over three quarters (77%) of dairy farms included in the system operated grass rich systems of milk production that year.
- The grass rich farms generated an average gross output of €3,830 per ha compared to an average of €4,225 per ha on the grass poor farms, a 10% lower gross output.
- The lower output on the grass rich farms reflected lower output per cow and per hectare.
- Output per ha on the grass rich farms was on average 80 kg milk solids less per ha or 8% lower than on the grass poor farms. This is as a result of a lower average stocking rate (-0.04 LU per ha) and lower yield (- 27 kg milk solids per cow).
- On average the grass rich farms had lower variable costs than the average of the grass poor farms at €1,226 per ha versus €1,795 per ha. However, as a percentage of gross output they accounted for only 33% compared to 42% of total variable costs on average on the grass poor farms.
- The gross margin was an average of 2,564 per ha on the grass rich farms which was 5% or €135 per ha higher than on the grass poor farms.
- The biggest variable cost on both grass rich and grass poor farms was purchased forage and concentrate accounting for 26% and 48% of total variable costs respectively.
- On average the grass rich farms had lower fixed costs than the average of the grass poor farms at €1,043 per ha versus €1,139 per ha.
- The average grass rich farm in 2015 generated a net profit of €1,521 per ha compared to €1,291 per ha on the grass poor farms.

Grass Rich vs Grass Poor Systems of Spring Milk Production 2015





Regional analysis - Spring Milk Production 2015

Profit Monitor per hectare analysis

(1,392 farms)

Regional analysis - Spring Milk Production 2015

Region	Average	Cork	Midlands	North West	South East	South West
No. of farms	1,392	339	274	288	292	199
Physical						
Herd size (Cows)	106	113	119	85	115	92
Dairy Ha	48	49	53	42	51	43
Stocking rate (LU/ha)	2.21	2.33	2.24	2.01	2.25	2.15
Grass used (t DM/ha)	9.4	10.0	9.5	7.9	9.8	8.9
Grass in diet (% total DM consumed)	84%	84%	85%	81%	86%	84%
Milk yield (litres/cow)	5,489	5,657	5,390	5,380	5,545	5,411
Milk solids (kg/ha)	966	1,054	969	847	1,007	917
Financial (€/ha)						
Gross Output	3,893	4,272	3,863	3,421	4,085	3,702
Variable Costs	1,404	1,525	1,331	1,308	1,420	1,360
Gross Margin	2,489	2,748	2,532	2,113	2,665	2,342
Fixed Costs	1,061	1,109	1,111	956	1,083	950
Net Profit excl. premia	1,428	1,638	1,421	1,157	1,582	1,392

Regions

Cork: Cork East and Cork West.

Midlands: Kildare: Laois; Longford; Louth; Meath; Offaly, Tipperary NR; Westmeath and Wicklow.

North West: Cavan; Clare; Donegal; Galway; Leitrim; Mayo; Monaghan; Roscommon and Sligo.

South East: Carlow; Kilkenny; Tipperary SR; Waterford and Wexford.

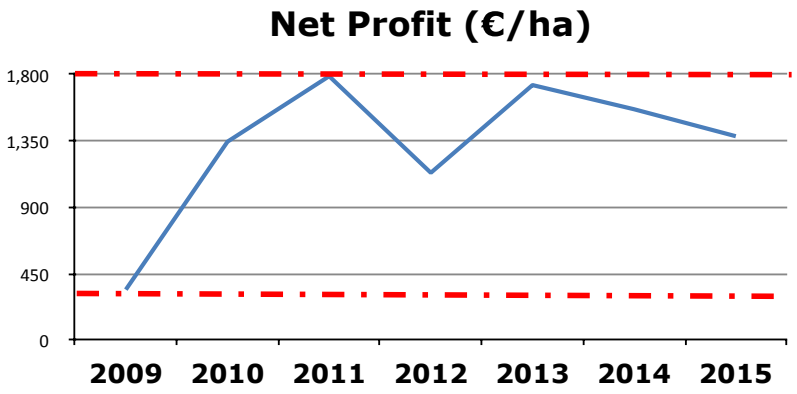
South West: Limerick and Kerry.

- Compared to the overall average, spring milk dairy farms in Cork had this highest gross output of €4,272 per ha compared to an average of €3,893 per ha.
- The higher output in the Cork region reflects the higher output per cow (453 kg MS) and per hectare (1,054 kg MS).
- The North West region had the lowest total variable cost per hectare of €1,308; variable costs accounted for 38% of gross output compared with 36% for the average spring milk producer.
- The Cork region had the highest gross margin per hectare at €2,748 per ha which was €259 per ha higher than the average spring milk producer, because of its higher gross output per hectare.
- The South West region had the lowest fixed costs per hectare at €950 per ha versus €1,061 per ha for the average spring milk producer.
- The average spring milk producer generated a net profit of €1,428 per ha which was €210 less per ha than farmers in the Cork region.

Matched Sample of Winter and Spring Milk Producers 2009-2015 (100 farms)

Matched Sample of Winter and Spring Milk Producers 2009-2015 (n=100)

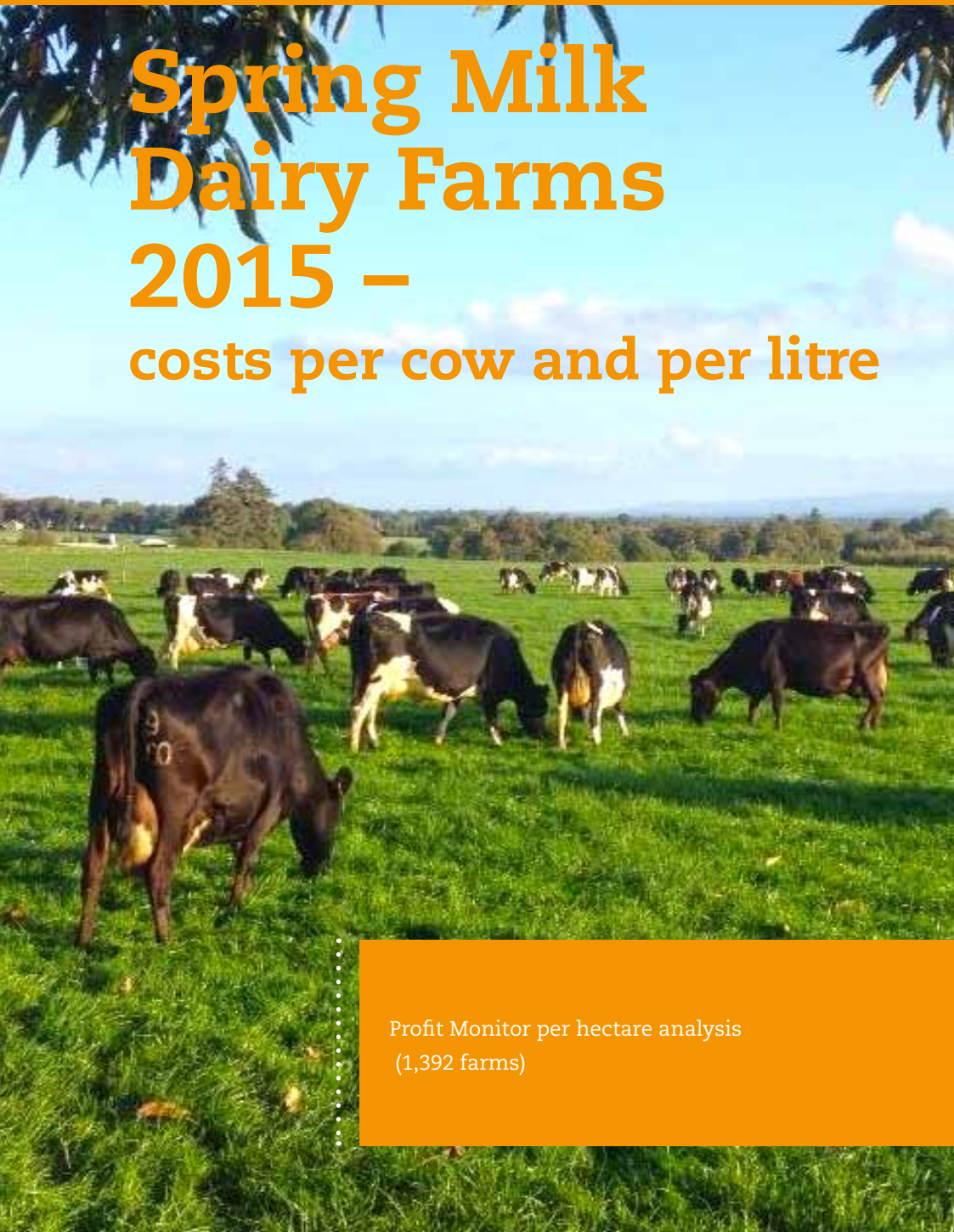
	2009	2010	2011	2012	2013	2014	2015	Change 2009-2015
Physical								
Herd Size (No. cows)	71	74	78	78	81	82	91	20
Dairy Ha	35	36	37	37	38	38	41	6
Stocking rate (LU/ha)	2.06	2.10	2.11	2.12	2.18	2.17	2.23	0.17
Milk yield (litres/cow)	5,411	5,722	5,726	5,611	5,702	5,681	5,914	503
Milk solids (kg/ha)	828	907	912	902	945	947	1,030	203
Financial (€/ha)								
Gross Output	2,663	3,762	4,373	4,054	4,997	4,740	4,235	1,572
Variable Costs	1,336	1,448	1,555	1,803	2,142	1,899	1,706	370
Gross Margin	1,327	2,315	2,818	2,251	2,855	2,841	2,529	1,201
Fixed Costs	1,023	1,119	1,227	1,242	1,318	1,450	1,300	277
Net Profit excl. premia	304	1,196	1,591	1,008	1,537	1,391	1,229	924



- Herd size and dairy land used increased by 28% and 18% respectively over the 2009-2015 period on this matched sample of spring and winter milk dairy farms.
- While the volume of milk produced increased by 9% over the period, milk solids yield per hectare increased by 24% reflecting a combination of higher yield (60 kg milk solids per cow) and higher stocking rate (0.17 LU/ha).
- Gross output per hectare increased by 59% over the period but this was counterbalanced by a 28% increase in variable costs and a 27% rise in fixed costs.
- Net profit per hectare increased by 304% over the period reflecting mainly the increased milk price received in 2015 compared with 2009.

Spring Milk Dairy Farms 2015 –

costs per cow and per litre



Profit Monitor per hectare analysis
(1,392 farms)

Spring Milk Dairy Farms 2015 – costs per cow and per litre

	Top 25%[4]		Average		Difference Top 25% - Average	
Physical						
Stocking rate (LU/ha)	2.54		2.21		0.33	
Grass used (t DM/cow)	4.48		4.24		0.24	
Milk yield (litres/cow)	5,832		5,489		343	
Milk solids Fat (%) / Protein (%) Milk solids (kg/cow)	 4.21 / 3.61 470		 4.17 / 3.57 437		 0.04 / 0.04 33	
Financial						
	c/litre	**€/cow**	**c/litre**	**€/cow**	**c/litre**	**€/cow**
Gross Output Co-op Price	33.33 31.98	1,944	32.09 31.24	1,761	1.24 0.74	182
Variable Costs Feed Fertiliser Vet AI Contractor Other var. costs **Total Variable Costs**	 3.47 2.44 1.03 0.52 1.43 1.74 **10.64**	 202 142 60 30 83 101 **621**	 3.82 2.58 1.09 0.57 1.60 1.90 **11.57**	 210 142 60 31 88 104 **635**	 - 0.35 - 0.14 - 0.06 - 0.05 - 0.17 - 0.16 **- 0.93**	 - 7 1 0 1 - 4 - 3 **- 15**
Gross Margin	22.69	1,662	20.52	1126	2.17	536
Fixed Costs Labour Machinery Cat/ESB/Phone Depreciation Leases Interest Other fixed costs **Total Fixed Costs**	 0.84 1.05 1.06 1.68 0.73 0.56 1.52 **7.31**	 49 61 62 98 43 33 89 **426**	 1.05 1.32 1.23 1.79 0.91 0.61 1.84 **8.75**	 58 72 68 98 50 33 101 **480**	 - 0.21 - 0.27 - 0.17 - 0.11 - 0.18 - 0.05 - 0.32 **- 1.44**	 - 9 - 11 - 6 0 - 7 - 1 - 12 **- 54**
Net Profit excl. premia	15.38	897	11.77	646	3.61	251

[4] Ranked by net profit per hectare.

- Compared with the average farm, the highest net profit farms are more highly stocked (0.33 LU/Ha) and more productive (33 kg milk solids per cow) and higher output (1.24 c and €182 per cow) with 60% of the difference in output per litre coming from higher milk price);
- The highest net profit farms had lower variable costs per litre and per cow (0.93 c and €15 respectively) and lower fixed costs per litre and per cow (1.44 c and €54 respectively);
- Net profit is 39% higher per cow than the average spring milk producer with 73% and 27% of the difference derived from higher output and lower production costs respectively.

Winter Milk Dairy Farms 2015 – costs per cow and per litre

Profit Monitor per hectare analysis
(170 farms)

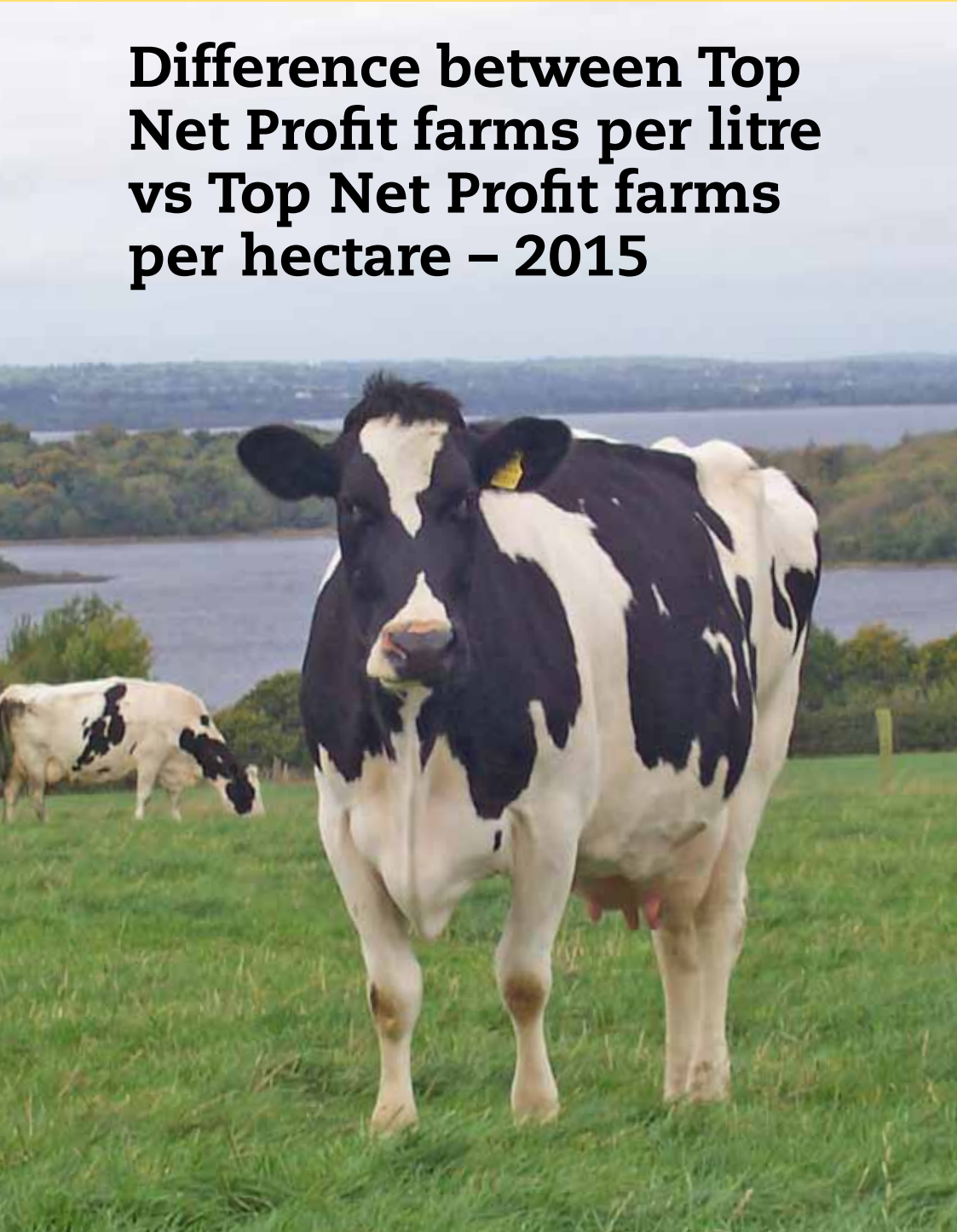
Winter Milk Dairy Farms 2015 – costs per cow and per litre

	Top 25%[5]		Average		Difference Top 25% - Average	
Physical						
Stocking rate (LU/ha)	2.37		2.27		0.10	
Grass used (t DM/cow)	4.16		3.94		0.92	
Milk yield (litres/cow)	6,093		5,960		133	
Milk solids Fat (%) / Protein (%) Milk solids (kg/cow)	 4.05 / 3.49 494		 4.03 / 3.45 458		 0.02 / 0.04 36	
Financial (€/cow)						
	c/litre	**€/ cow**	**c/litre**	**€/ cow**	**c/litre**	**€/cow**
Gross Output	33.96	2,069	32.98	1,966	0.98	104
Co-op Price	33.15		32.26		0.89	
Variable Costs						
Feed	5.28	322	5.53	330	- 0.25	-8
Fertiliser	1.89	115	2.16	129	- 0.27	- 14
Vet	0.91	55	1.06	63	- 0.15	- 8
AI	0.47	29	0.51	30	- 0.04	- 2
Contractor	1.17	71	1.48	88	- 0.31	-17
Other var. costs	1.67	102	1.84	110	- 0.17	- 8
Total Variable Costs	**11.40**	**695**	**12.59**	**750**	**- 1.19**	**- 56**
Gross Margin	22.56	1,374	20.38	1,215	2.18	159
Fixed Costs						
Labour	1.54	94	1.83	109	- 0.29	-15
Machinery	1.31	80	1.65	98	- 0.34	-19
Cat/ESB/Phone	1.02	62	1.24	74	- 0.22	-12
Depreciation	1.64	100	1.94	116	- 0.3	- 16
Leases	0.71	43	0.85	51	- 0.14	- 7
Interest	0.54	33	0.63	38	- 0.09	- 5
Other fixed costs	1.53	93	1.91	114	- 0.38	- 21
Total Fixed Costs	**8.30**	**506**	**10.04**	**598**	**- 1.74**	**- 93**
Net Profit excl. premia	14.26	869	10.35	617	3.91	252

[5] Ranked by net profit per hectare.

- Compared with the average farm, the highest net profit farms are more highly stocked (0.10 LU/Ha) and more productive (36 kg more milk solids per cow); have greater output (0.98 c and €104 per cow) with 91% of the difference in output per litre coming from higher milk price);
- The highest net profit farms had lower variable costs per litre and per cow (1.19 c and €56 respectively) and lower fixed costs per litre and per cow (1.74 c and €93 respectively);
- Net profit is 41% higher per cow than the average winter milk producer with 41% and 59% of the difference derived from higher output and lower production costs respectively.

Difference between Top Net Profit farms per litre vs Top Net Profit farms per hectare – 2015

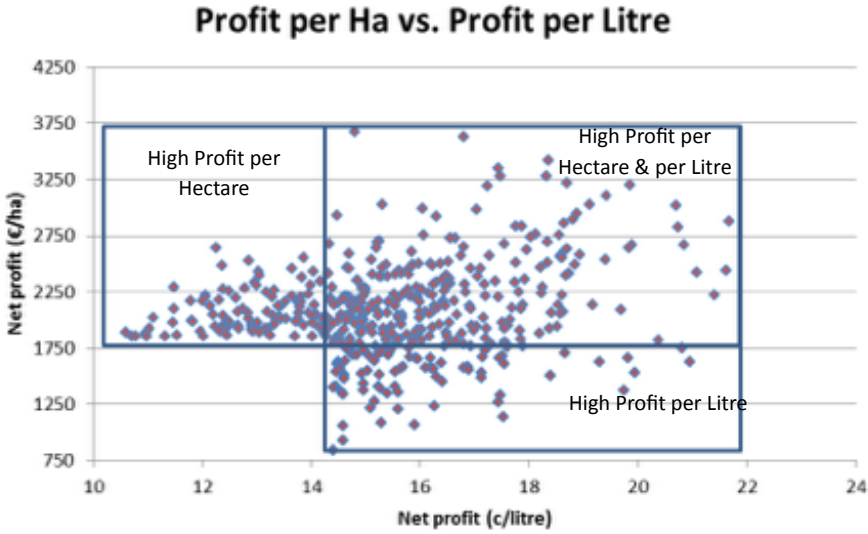


Difference between Top Net Profit farms per litre vs Top Net Profit farms per hectare – 2015

	Top 25% Ranked by Net profit per hectare		Top 25% Ranked by Net Profit per litre		Top 25% per hectare – top 25% per litre	
Physical						
Herd Size (No. cows)	114		105		9	
Dairy Ha	45		44		1	
Stocking rate (LU/ha)	2.54		2.39		0.15	
Grass used (t DM/ha)	11.4		10.6		0.8	
Grass in diet (% total DM consumed)	86		87		-1	
Milk yield (litres/cow)	5,832		5,565		267	
Milk solids Fat (%) / Protein (%) Milk solids (kg/cow [kg/ha))	4.21 / 3.61 470 / 1,194		4.22 / 3.61 449 / 1,073		- 0.01 / - 0.00 21 / 121	
	Per litre	**Per ha**	**Per litre**	**Per ha**	**Per litre**	**Per ha**
Financial (€/ha)						
Gross Output	33.33	4,937	33.69	4,481	-0.36	456
Variable Costs	10.64	1,576	10.22	1,359	0.42	217
Gross Margin	22.69	3,362	23.48	3,123	-0.78	239
Fixed Costs	7.31	1,084	7.10	945	0.21	139
Total Costs	17.95	2,660	17.32	2,304	0.63	356
Net Profit excl. premia	15.38	2,278	16.38	2,178	-1.00	100

Difference between Top Net Profit farms per litre vs Top Net Profit farms per hectare – 2015

- The top profit per hectare farms generated an average gross output of €4,937 per ha which was €456 higher per hectare compared to the top profit per litre farms.
- This higher output was achieved because of their higher yield (21 kg milk solids per cow) and higher stocking rate (0.15 LU/ha).
- Part of the output advantage of the top profit per hectare farms was lost due to their higher variable costs per hectare and per litre (€217 and 0.42 c respectively).
- Gross margin for the category was still €239 higher per hectare but due to a combination of lower gross output and higher variable costs their gross margin per litre was 0.76 c lower per litre.
- The high net profit per hectare farms had higher fixed costs per hectare and per litre (€139 and 0.21 c respectively)
- While net profit per litre was 6% lower (1.00 c) on the high net profit per hectare farms, net profit her hectare was 5% higher (€100).
- The implications of these findings for dairy farming without the restrictions of milk quota are that the more profitable farms are those:
    - Higher stocked farms growing and utilising large quantities of grass;
    - Delivering high output - large quantities of high value milk solids per cow and per hectare (in excess of 440 and 1,150 respectively);
    - Operating at relatively low but not necessarily the lowest cost.



- Approximately 2/3 of farms in the high profit per hectare category were also found in the high net profit per litre category. This indicates that having high profitability per litre is broadly compatible with high profit per hectare.
- By virtue of their higher milk yield per hectare (due to either higher stocking rate or higher yield per cow or both), 1/3 of the farms were in the high per hectare profit category but were below the threshold for the high net profit per litre (14.4c/litre).
- Conversely 1/3 of the farms had high profit per litre but were below the threshold for high net profit per hectare (€1,750/ha).

Replacement Heifer Costs

The guideline costings for spring born dairy replacement heifers on creamery milk farms on comes from the average 2015 Profit Monitor data for 1,374 farms. The costs are evaluated per LU – the average age at calving for spring born and autumn born heifer calves was 28 months on Irish spring calving dairy farms in 2012 – thus 1.2 LU was required per heifer calving on spring milk farms that year. This equates to fixed and variable costs of €823 per heifer before the opportunity costs of the replacement heifer calf, own land used and own labour are accounted for.

	Costs per LU (€)
Stocking rate (LU/ha)	2.21
Variable Costs	
Concentrate Costs	118
Fertiliser and Lime	139
Vet	55
AI/Breeding	15
Contractor	106
Other Variable Costs	45
Total variable costs	**478**
Fixed costs[6]	
Hired Labour	22
Machinery Costs	27
Interest	13
Car/ESB/Phone	25
Depreciation	36
Other Fixed costs	85
Total fixed costs	**208**
Total Fixed & Variable Costs	**686**

Not included in the costs outlined above are:

1) The value of the replacement heifer calf – approximately €300 per head;

2) Leased land cost and the opportunity cost of owned land required for rearing replacement heifers. Assuming a value of €500/ha, the land cost per replacement is €212 per heifer reared (included in the other fixed costs is a €48/LU cost for leased land);

3) The own labour costs associated with replacement heifer rearing – Moorepark Labour Survey estimate approximately €229/LU.

[6] Includes land rental cost of €53/LU.

What is the difference between eProfit Monitor and National Farm Survey results?[7]

The cost of production on dairy farms is an issue of critical importance to the sector especially at a time when farmers may be planning expansion in the aftermath of milk quotas and also given the current weakness in dairy markets. Teagasc produces an analysis of dairy production costs on an annual basis using both the eProfit Monitor (ePM) and the National Farm Survey (NFS). These results tend to vary somewhat, which can be the source of some confusion. The ePM typically reports lower costs of production and higher profits. In this article the two data sources are described and compared.

The National Farm Survey (NFS) involves the collection of data on an annual basis from a random, nationally representative sample of approximately 1,000 farms (of which about 300 are classed as specialist dairy farmers). The NFS is a member of the pan-EU Farm Accountancy Data Network (FADN) which uses a harmonised system to collect national statistics on farming across Europe. Data validation is by the Teagasc data recorder with reference to financial documents.

The Teagasc eProfit Monitor (ePM) is a financial benchmarking tool that is available to all Teagasc clients via the Teagasc website. Data (both technical and financial) are provided by the farmer through the completion of an Input Sheet and can be entered directly by the farmer or (as is more likely) by his/her Teagasc Adviser. Advisers select farmers to complete the benchmarking analysis and users are encouraged to repeat the analysis over a number of years. The results generated are not nationally representative as the farms included in the annual dataset are self-selecting and do not proportionally represent the

entire farming population.

Table 1 summarises the key features of both systems. While there are some differences in the cost headings used and the calculation of depreciation, the results generated for an individual dairy farmer will be similar for both analyses. This suggests that the methodology employed by both systems is similar and that methodological differences do not account for the differing results from the two systems.

Table 1: Summary of key features of National Farm Survey (NFS) and eProfit Monitor (ePM)

	National Farm Survey (NFS)	eProfit Monitor (ePM)
Data collection	Data provided by farmer and verified by Teagasc data recorder with reference to financial documents (invoices etc.)	Data provided by farmer using Input Sheet and verified by Adviser
Calculation of total costs	Costs grouped into 'Direct' and 'Overhead' categories	Costs grouped into 'Variable' and 'Fixed' categories
Apportionment of costs	Similar to ePM except discussion takes place between recorder and farmer re allocation	Variable costs are allocated on the basis of LUs; fixed costs are allocated on the basis of output
Treatment of heifer rearing costs	Similar to ePM except transfer values are agreed between data recorder and farmer (standardised values used in ePM)	Heifer rearing charge included against Gross Output on Dairy Enterprise report; separate Replacement Enterprise report also produced
Treatment of own labour	Own labour charge not included	
Land charge	No land charge included for owned land	
Depreciation	Replacement method used	Straight line method used based on original asset value
Treatment of inventory	Recorded at year end; fodder crop adjustment calculated	Facility to record inventory available but rarely used
Reports	Whole farm and dairy enterprise reports	

[7] The original copy of this article appeared in the Teagasc publication TResearch Winter 2015 p.p. 38-39 http://www.teagasc.ie/publications/view_publication.aspx?publicationID=3788

Given the relatively small differences in the methodologies of the two systems, it is most likely that the difference in the results is due to sample issues. As can be seen, ePM farms are, on average, larger, more intensively managed and more productive than NFS farms (Table 2).

Table 2: Characteristics of the average dairy farm in the Teagasc NFS and the Teagasc ePM: 2014

	NFS	ePM
	(n=318)	(n = 1363)
Herd Size (cows)	68	97
Total Milk production (litres)	351,560	497,901
Stocking Rate	2.07	2.17
Yield Per Cow (litres)	5,170	5,133
Milk Solids per cow (kg)	375	402
Milk Solids per hectare (kg)	775	872
Grass utilised (kgDM/ha)	7.41	8.5

These differences in management and productivity resulted in cost and profit differences between the two samples. Direct and fixed costs were 13 and 8 per cent lower respectively on the average ePM farm in 2014 (Table 3). The difference in financial performance is more apparent when examined on a per cow or a per hectare basis (results not shown) reflecting the higher rates of productivity on the ePM farms.

Table 3: Output, Costs and Profit (cent per litre) for the average dairy farm in the Teagasc NFS and the Teagasc ePM: 2014

	NFS	ePM
	(n=318)	(n = 1363)
Milk Price	39.5	39.26
Gross Output	38.9	39.43
Total Direct Costs	14.74	12.90
Total Fixed Costs	11.16	10.31
Net Margin (cent per litre)	12.97	16.21
Net Margin (€ per cow)	671	832
Net Margin (€ per hectare)	1,386	1,806

Finally, in addition to comparing the average farm in the ePM and NFS, a comparison was made between the top and bottom performing farms. The profit differential between the ePM and the NFS was smaller for the Top one-third of farms in the two samples but was larger for the bottom one-third. This suggests that the "best" farms in the two groups are more comparable than the "poorest" farms, reflecting the fact that the NFS provides a greater representation of poorer performing farms.

Which data to use?

There are clear differences in the two data sources, so which is the appropriate one to use? Given the advisory and farm management focus of the ePM system, this is the most suitable data source for farm advisory events where the demonstration of "best practice" is the focus. On the other hand, the Teagasc NFS provides an insight into all types of farming and given the representative nature of its sample it is the more appropriate source to use in presentation of national results and especially in issues pertaining to government policy, economic planning and cross-country comparisons.

In summary, the average ePM dairy farmer was 30 per cent more profitable on a per hectare basis than the average NFS dairy farmer in 2014. While a small amount of this differential was due to methodological issues, it is more likely that the different samples used in the two systems was the main cause for variation. It is clear that the farmers participating in ePM are larger and more productive than the national average. Furthermore, all of the farms participating in ePM are in active contact with a Teagasc Adviser and are evidently benefitting from that interaction.

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