Teagasc

Profit Monitor Analysis
Dairy Farms 2017

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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 2017 production year and entered onto the PM system prior to 26th March 2018. 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.

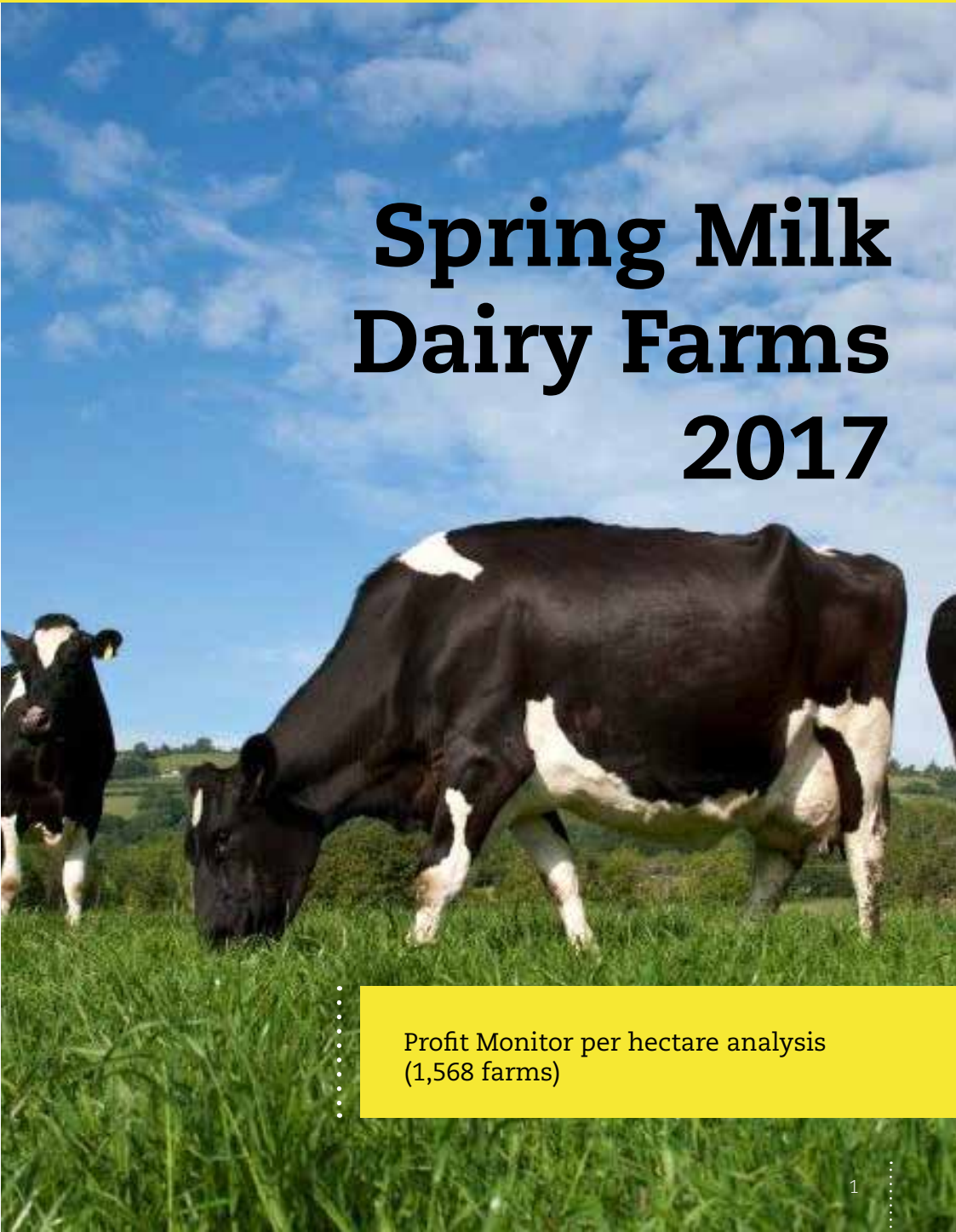
Of course, if you are already matching the performance of the Top 25% of farmers, well then the challenge becomes maintaining that level of performance and avoiding "system creep" over time.

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 2017

Profit Monitor per hectare analysis
(1,568 farms)

Spring Milk Dairy Farms 2017

Profit Monitor per hectare analysis (1,568 farms)

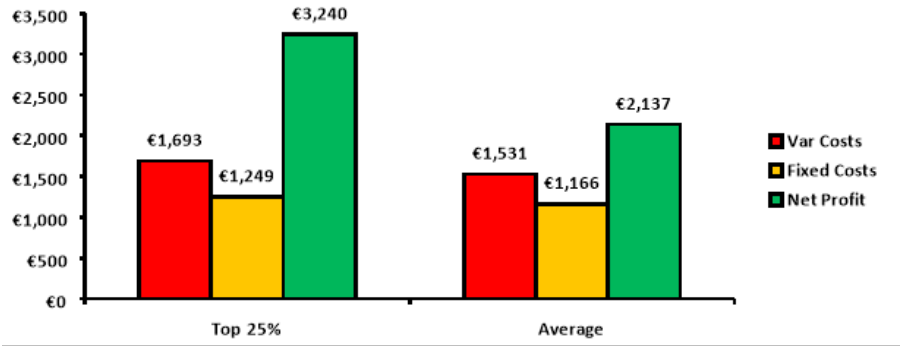
	Top 25%[1]			Average		
Physical						
Herd Size (No. cows)	139			117		
Dairy Hectares	53			52		
Stocking rate (LU/ha)	2.64			2.27		
Grass used (t DM/ha)	11.6			9.3		
	/ha	**/cow**		**/ha**	**/cow**	
Milk yield (litres)	15,658	5,931		12,623	5,561	
Milk solids (kg)	1,270	481		1,008	444	
Fat/Protein		4.28/ 3.61			4.21/ 3.55	
Financial (€/ha)	**/ha**	**/cow**	**c/litre**	**/ha**	**/cow**	**c/litre**
Gross Output	6,182	2,342	39.48	4,831	2,128	38.27
Co-op price			38.42			37.60
Variable Costs						
Feed	628	238	4.01	563	248	4.46
Fertiliser	323	112	2.06	287	126	2.27
Vet	163	62	1.04	143	63	1.13
AI	77	29	0.49	68	30	0.54
Contractor	238	90	1.52	222	98	1.76
Other Var. Costs	265	100	1.69	228	101	1.81
Total variable costs	1,693	641	10.8	1,531	674	12.1
Gross margin	4,489	1,700	28.7	3,304	1,456	26.2
Fixed costs						
Labour	191	72	1.22	151	67	1.20
Machinery	163	62	1.04	170	75	1.35
Car/ESB/Phone	158	60	1.01	157	69	1.24
Depreciation	283	107	1.81	235	103	1.86
Leases	125	47	0.80	121	53	0.96
Interest	72	27	0.46	74	33	0.59
Other Fixed Costs	255	97	1.63	258	113	2.04
Total fixed costs	1,249	473	7.98	1,166	514	9.24
Net profit	**3,240**	**1,227**	**20.7**	**2,137**	**941**	**16.9**

[1] Ranked by dairy net profit per hectare.

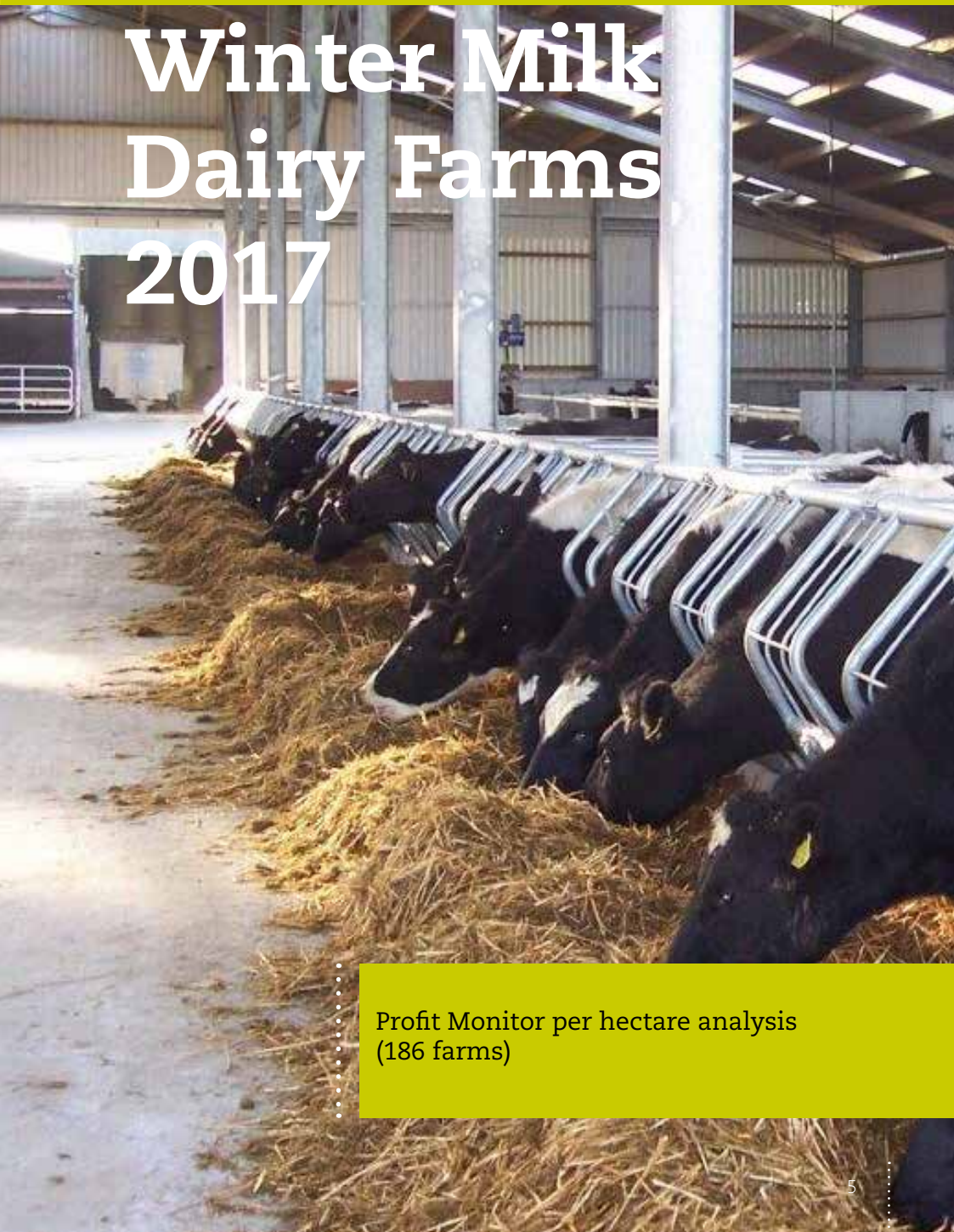
Spring Milk Producers

- The high profit spring milk producers were larger scale (19% larger herds), more intensively stocked (16% higher stocking rate) and consumed 2.3 t DM/ha more grass (25% greater).
- Their produced 37 kg more milk solids per cow (8% higher yield) of higher fat and protein content and 262 kg more milk solids per hectare (26% higher) by virtue of their higher milk solids yield per cow and their higher stocking rate.
- Gross output of the top quartile was €1,351/ha greater than the average spring milk producer as a result.
- Variable costs were €33 lower per cow but €162 higher per hectare by virtue of their higher stocking rate. Meal costs were marginally lower (€10/cow).
- Fixed costs were €41 lower per cow but €83 higher per hectare for the highest profit quartile.
- Overall net profit was €286 higher per cow and €1,103 higher per hectare (51% higher) than the average spring milk producer who completed Profit Monitor.

Spring Milk Dairy Farms 2017



Winter Milk Dairy Farms 2017



Profit Monitor per hectare analysis
(186 farms)

Winter Milk Dairy Farms 2017

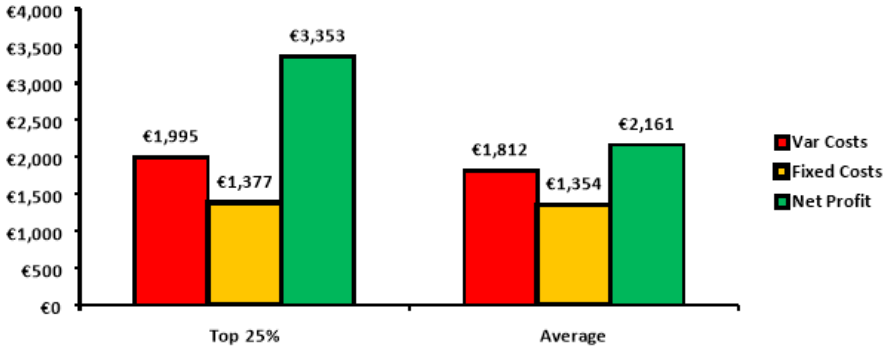
Profit Monitor per hectare analysis (186 farms)

	Top 25%[2]			Average		
Physical						
Herd size (no. cows)	151			133		
Dairy hectares	59			59		
Stocking rate (LU/ha)	2.55			2.27		
Grass used (T DM/ha)	10.4			8.6		
	/ha	**/cow**		**/ha**	**/cow**	
Milk yield (litres)	17,274	6,774		14,026	6,179	
Fat / Protein		4.09/ 3.45			4.07/ 3.43	
Milk solids (kg)	1,339	525		1,081	476	
Financial (€)	**/ha**	**/cow**	**c/litre**	**/ha**	**/cow**	**c/litre**
Gross output	6,725	2,637	38.93	4,831	2,128	37.97
Co-op price			38.08			37.68
Variable costs						
Feed	992	389	5.74	867	382	6.18
Fertiliser	264	104	1.53	254	112	1.81
Vet	157	62	0.91	144	64	1.03
AI	78	30	0.45	70	31	0.50
Contractor	226	89	1.31	224	99	1.60
Other Var. Costs	278	109	1.61	252	111	1.80
Total variable costs	1,995	782	11.55	1,531	674	12.92
Gross margin	4,730	1,855	27.38	3,304	1,456	25.05
Fixed costs						
Labour	245	96	1.42	223	98	1.59
Machinery	211	83	1.22	210	93	1.50
Car/ESB/Phone	169	66	0.98	168	74	1.20
Depreciation	276	108	1.60	241	106	1.72
Leases	126	49	0.73	137	61	0.98
Interest	59	23	0.34	76	33	0.54
Other Fixed Costs	292	114	1.69	296	130	2.11
Total fixed costs	1,377	540	7.97	1,354	596	9.65
Net profit	**3,353**	**1,315**	**19.41**	**2,161**	**952**	**15.41**

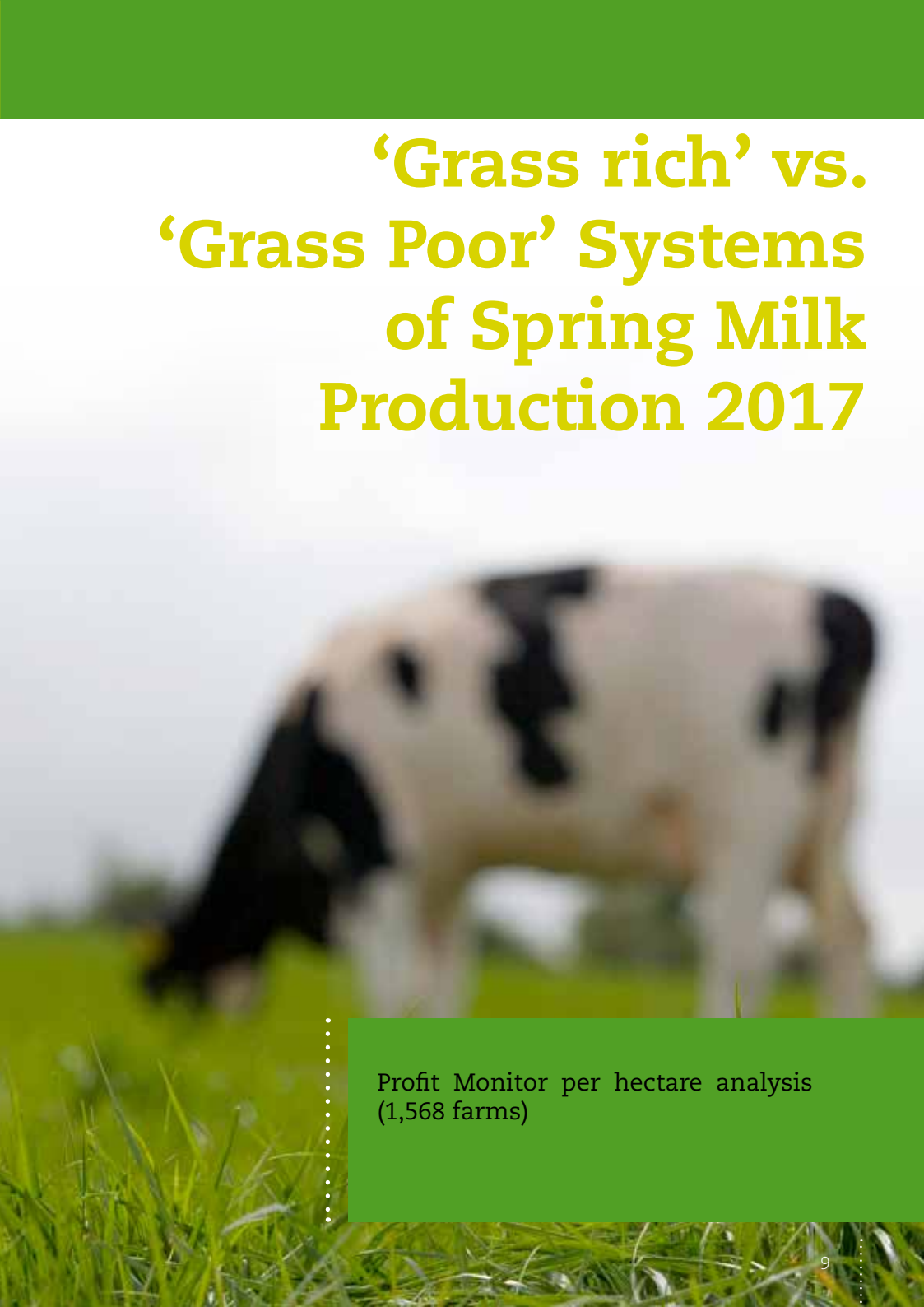
[2] Ranked by net profit per hectare.

- Similar to their spring milk counterparts, the high profit winter milk producers were larger scale (14% larger herds), more intensively stocked (12% higher stocking rate) and consumed 1.8 t DM/ha more grass (21% greater).
- Their produced 49kg more milk solids per cow (10% higher yield) of higher fat and protein content and 258 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 €1,894/ha higher than that of the average winter milk producer as a result.
- Variable costs were €108 lower per cow but €399 higher per hectare by virtue of their higher stocking rate. Meal costs were marginally lower (€7/cow).
- Fixed costs were €56 lower per cow but €23 higher per hectare for the highest profit quartile.
- Overall net profit was €363 higher per cow and €1,192 higher per hectare (55% higher) than the average winter milk producer who completed Profit Monitor.

Winter Milk Dairy Farms 2017



‘Grass rich’ vs. ‘Grass Poor’ Systems of Spring Milk Production 2017



Profit Monitor per hectare analysis (1,568 farms)

Profit Monitor per hectare analysis (1,568 farms)

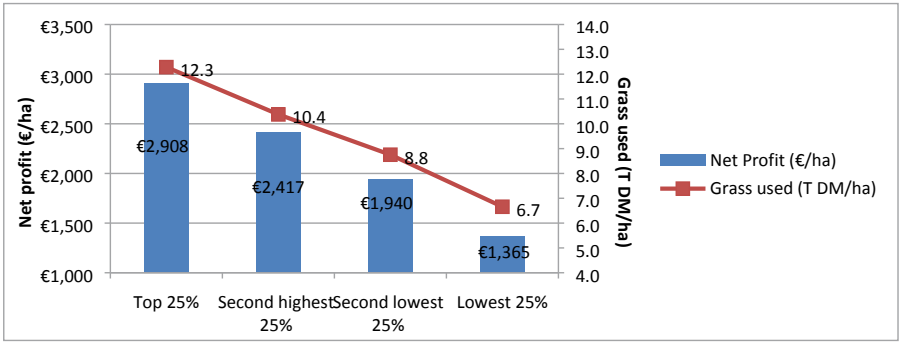
Teagasc advocates maximising the amount of grass used per hectare. The top 25% of farmers ranked by grass utilised per hectare are compared to the average spring milk producers in Profit Monitor in the following table

	Top 25%[3]			Average		
Physical						
Herd size (no. cows)	161			133		
Dairy hectares	59			59		
Stocking rate (LU/ha)	2.75			2.27		
Grass used (T DM/ha)	12.28			8.60		
	/ha	**/cow**		**/ha**	**/cow**	
Milk yield (litres)	15,666	5,701		12,623	5,561	
Fat / Protein		4.37/ 3.65		1,008	4.21/ 3.55	
Milk solids (kg)	1,293	471		1,008	444	
Financial (€)	**/ha**	**/cow**	**c/litre**	**/ha**	**/cow**	**c/litre**
Gross output	6,070	2,207	38.72	4,831	2,128	38.27
Co-op price			38.74			37.60
Variable costs						
Feed	551	200	3.51	563	248	4.46
Fertiliser	351	128	2.24	287	126	2.27
Vet	181	66	1.15	143	63	1.13
AI	84	31	0.54	68	30	0.54
Contractor	265	96	1.69	222	98	1.76
Other Var. Costs	260	95	1.66	228	101	1.81
Total variable costs	1,691	615	10.79	1,531	674	12.10
Gross margin	4,379	1,592	27.93	3,304	1,456	26.20
Fixed costs						
Labour	330	120	2.10	151	67	1.20
Machinery	172	63	1.10	170	75	1.35
Car/ESB/Phone	144	52	0.92	157	69	1.24
Depreciation	295	107	1.88	235	103	1.86
Leases	181	66	1.15	121	53	0.96
Interest	95	35	0.61	74	33	0.59
Other Fixed Costs	433	157	2.76	258	113	2.04
Total fixed costs	1,471	535	9.38	1,166	514	9.24
Net profit	**2,908**	**1,057**	**18.55**	**2,137**	**941**	**16.9**

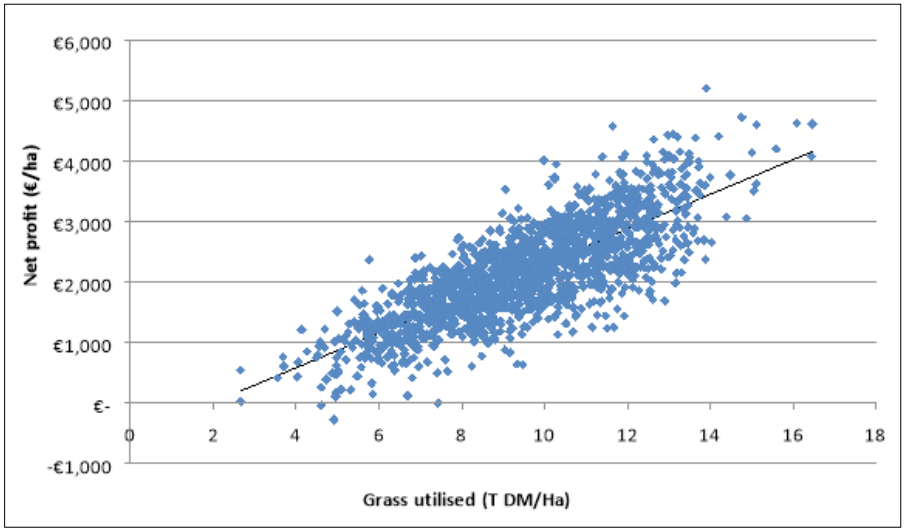
[3] Ranked by grass utilised

- Compared to the average spring milk producer, the top 25% of producers utilised 3.68 tonnes more grass per hectare (42% more).
- They produced 6% more milk solids per cow (27 kg more) but by virtue of their higher stocking rate produced 28% more milk solids per hectare (285 kg).
- Purchased feed was 19% lower per cow (€48 per cow) with 4.5 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 €771 higher per hectare on the top grass use farms (6% higher).

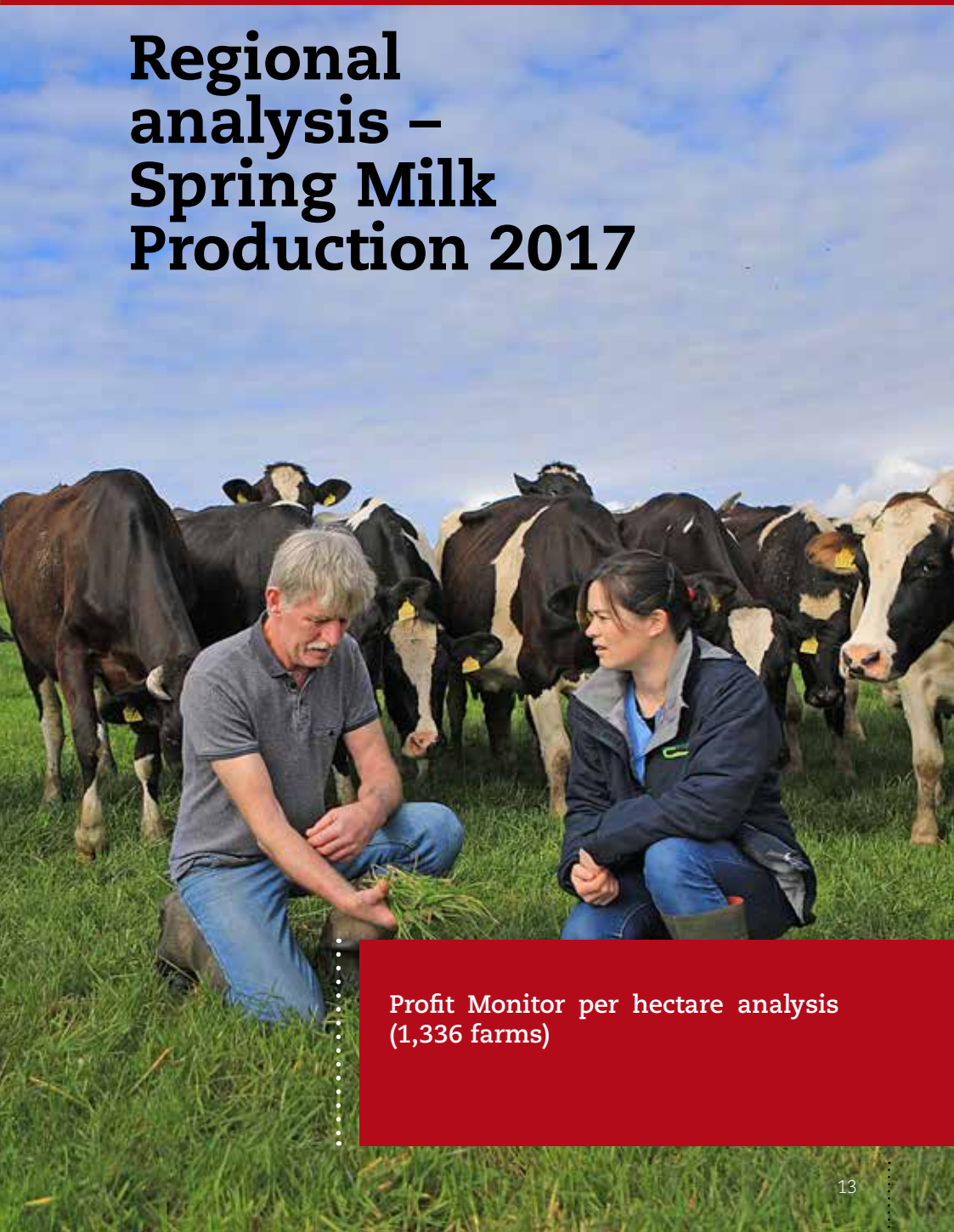
When broken into quartiles by grass used, the stepwise decline in grass utilised and net profit per hectare is evident.



A scatter plot permits the association between grass used per hectare and net profit per hectare to be estimated. Grass utilised explains over 60% 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 €287 in 2017.



Regional analysis – Spring Milk Production 2017



Profit Monitor per hectare analysis (1,336 farms)

Profit Monitor per hectare analysis (1,336 farms)

Region	All	Cork	Midlands	North West	South East	South West
Number	1,336	289	220	366	219	242
Stocking rate (LU/ha)	2.27	2.44	2.35	2.08	2.42	2.17
Grass used (T DM/ha)	9.5	10.4	10.1	8.3	10.7	8.8
% grass in diet	82	81	83	80	84	80
Milk yield (litres/cow)	5,569	5,708	5,580	5,416	5,716	5,494
Milk solids (kg/cow)	444	462	449	426	462	433
	€/ha	**€/ha**	**€/ha**	**€/ha**	**€/ha**	**€/ha**
Gross output	4,859	5,460	4,999	4,259	5,306	4,566
Total variable costs	1,477	1,634	1,443	1,378	1,526	1,487
Gross margin	3,381	3,826	3,556	2,881	3,781	3,079
Total fixed costs	1,192	1,301	1,316	1,055	1,317	1,047
Net profit	**2,189**	**2,525**	**2,240**	**1,827**	**2,464**	**2,032**

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 the highest gross output of €5,460 per hectare.
- The higher output in Cork reflects their high milk solids yield per cow and highest stocking rate.
- The North West had the lowest variable costs per hectare at €1,378 – variable costs accounted for 32% of gross output compared to an average of 30% of gross output for the average spring milk producer.
- By virtue of their higher gross output, gross margin was highest on Cork farms at €3,826 per hectare which was €445 higher per hectare than the average spring milk producer.
- The South West and North West regions had the lowest total fixed costs at €1,047 and €1,055 per hectare respectively compared to the overall average of €1,192 per hectare.
- The average spring milk producer generated a net profit of €2,189 per hectare with the average spring milk producer in the Cork region generating a €336 higher net profit per hectare.

Replacement Heifer Costs

Spring milk (1,334 farms)
Winter milk (190 farms)

Cost of rearing replacement heifers in spring and winter milk herds

	Spring (1,334)		Winter (190)	
Physical				
No. heifers (LU's)	39		49	
Stocking rate (LU/ha)	2.31		2.32	
	€/ha	**€/LU**	**€/ha**	**€/LU**
Gross output	1,547	670	1,356	584
Variable costs				
Feed	272	118	313	135
Fertiliser	288	125	248	107
Vet	134	58	149	64
AI	42	18	39	17
Contractor	238	103	237	102
Other Var. Costs	115	50	123	53
Total variable costs	1,089	472	1,107	477
Gross margin	459	198	249	107
Fixed costs				
Labour	76	33	77	33
Machinery	46	20	53	23
Car/ESB/Phone	42	18	37	16
Depreciation	71	31	58	25
Leases	150	65	149	64
Interest	28	12	21	9
Other Fixed Costs	69	30	67	29
Total fixed costs	482	209	462	199
Net profit	**-25**	**-11**	**-213**	**-92**

The guideline costings for replacement heifers on spring and winter milk herds comes from the average 2017 Profit Monitor data for 1,334 spring calving and 190 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 cost of €500 per hectare, the land cost per replacement is €217 per LU. Of this €65 and €64 are accounted for in leased land costs for spring and winter milk herds respectively in this analysis;
- The own labour costs associated with replacement heifer rearing.

Notes

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