

**Crops
Environment
& Land Use
Programme**

eProfit Monitor Analysis

Tillage Farms 2018



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY



Contents

Foreword	4
Overall performance	5
Rented land	8
Analysis of ePM Crops	11
Winter Wheat	12
Spring Wheat	14
Spring Feed Barley	16
Spring Malting Barley	18
Winter Barley	20
Analysis of Barley Crops (Average)	22
Analysis of Barley Crops (Top 1/3)	24
Winter Oats	26
Spring Oats	28
Winter Oilseed Rape	30
Spring Oilseed Rape	32
Spring Beans	34
Beet (Fodder)	36
Break Crops compared (Average)	38
Break Crops compared (Top 1/3)	40
All Crops (Average)	42
All Crops (top 1/3)	43
Matched Farm Analysis (2016, 2017 and 2018)	44

KEY FIGURES 2018 -EPM



346
Growers
Specialist Tillage
Growers



23,700 Ha



Average
Net margin
€629/ha



Top Five
Crops
Net margin

Fodder Beet €1,271/ha
Winter Barley €874/ha
Winter Wheat €745/ha
Winter Oats €656/ha
S. Malt Barley €527/ha



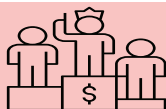
Barley
Net margin

Winter Barley €874/ha
Spring Malting Barley €572/ha
Spring Feed Barley €484/ha



Top Rotational
Crops

Fodder Beet €1,271/ha
Winter Oats €656/ha
Spring Oats €366/ha
Winter Oilseed Rape €305/ha



Top 1/3 Growers

Average Net Margin €950/ha

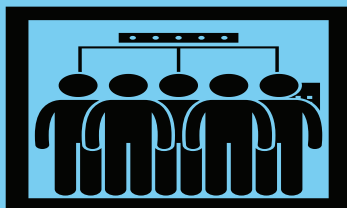
Most Profitable Crops
No. 1. Fodder Beet
No. 2 Winter Barley
No. 3 Winter Wheat

FARM TRENDS 3 YEAR RESULTS

Matched Sample from the ePM

MATCHED FARMS (2016,2017,2018)

No. FARMS IN THE SAMPLE
187 Farmers
farming
13,147 Hectares
(32,486 acres)



NET MARGIN 2016-2018

Average Margins
2018 €572/ha
2017 €353/ha
2016 €132/ha



Total Tillage Net Margin per farmt

151-200ha
€84,800

DOES SIZE MATTER?

Increase Farm Size = Increase total
Margin Returns

but

Farms 151-200ha are
more profitable
than Farms 201ha+



101-150ha
€41,700

LAND RENTED COSTS OVER THE PERIOD

2018 €391/ha
2017 €407/ha
2016 €390/ha

Slight increase in costs



ALL NET MARGIN FIGURES EXCLUDE
BASIC AND GREENING PAYMENTS

Read more at
www.teagasc.ie

Foreword

The Teagasc eProfit Monitor (ePM) is an online financial analysis tool available to all Teagasc clients. Tillage farmers work with their Teagasc Tillage Adviser to gather the data required. Once the data is entered, a range of reports for each enterprise (tillage crops, drystock, dairy) 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 their performance with other group members. 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 Tillage farmer clients relating to the 2018 production year and entered onto the ePM system prior to 20th September 2019.

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 1/3' results are presented, the dataset was initially ranked on the basis of Gross Margin per hectare. The Gross Margin referred to in this publication refers to the tillage enterprise only and not the whole farm. Other enterprises on the farm may generate some additional profit for the farm business. In addition Basic Farm Payments, **other than** Direct Payments (Protein payment), are excluded from this analysis.

Finally, I would like to acknowledge the work of all Teagasc Tillage Advisers in promoting, completing and using ePM and to tillage 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 Teagasc Tillage Specialists and Kevin Connolly in extracting the data necessary for this publication.

Michael Hennessy

Michael Hennessy,

4 Head of Crops Knowledge Transfer

Overall performance

The ePM is filled out by farmers in conjunction with their advisor. All of the farmers are self-selecting with the majority actively participating in Discussion Groups and could be classified as progressive farmers. Of the farmers who filled in data, 346 growers successfully completed all elements of the ePM for the production year 2018. All of the participants were allocated to broad farming type categories as follows:

Table 1: Categories of farms and farmed area

Tillage - Production Type	No. of Farmers	Total Land area in group (hectares)
1. Winter Cereals	28	1,103
2. Spring Cereals	77	991
3. W. + S. Cereals	161	13,341
4. Cereals + Beet	29	2,519
5. Cereals + Potatoes	9	409
6. Cereals + Other	42	4,351
Total	346	23,714

The advisor categorises the farmer depending on the predominance of the crop mix on the farm. For a farmer to be categorised as a Cereals and Beet farmer, the farmer should have a focus on beet production year on year. Similarly, a farmer categorised as a Winter Cereal farmer will have a focus on winter cereals year on year where the majority of the crops sown are winter cereals.

In 2018 the Winter and Spring category of farmer were by far the largest group with 161 farmers. Comparisons of groups with less than 10 farmers should be treated with caution.

Important note

Net Margin figures stated in this publication refers to Net Margin from the tillage enterprise on the farm. Net Margin includes Direct Payments (Protein Payment) but **does not include** Basic Payment or Greening payments.

The overall performances of these groups are as follows:

Table 2: Returns from farmer categories

Tillage - Production Type	Total Tillage area (ha)	Av. Leased Land area (ha)	Average (€/ha)							
			Gross Output	Variable Costs	Machinery Costs*	Gross Margin	Land Lease costs**	Fixed Costs/ha	Other Direct Payments	Net Margin ***
1. Winter Cereals	1103	19	2224	777	405	1042	217	306	4	522
2. Spring Cereals	1991	5	1432	529	303	600	66	191	15	358
3. W. + S. Cereals	13341	35	1930	608	331	991	161	198	14	646
4. Cereals + Beet	2519	36	2013	606	312	1095	181	219	17	712
5. Cereals + Potatoes	409	14	5039	1902	850	2286	217	460	11	1620
6. Cereals + Other	4351	54	2005	610	404	991	199	220	16	587
Average			1978	632	352	994	166	213	14	629

*Average Machinery costs include contractor, machinery running, machinery leases and finance and machinery depreciation, **Average cost of Land Lease (includes conacre and short & long term leased Land) incurred divided over owned and leased land, *** includes Protein Payments only and excludes BPS & Greening

- The ePM average Net Margin for all farmers analysed is €629/ha which is a substantial increase on 2017 ePM figure of €343/ha. The top 1/3 of farms in the ePM averaged a Net Margin of €950/ha

This compared to the Teagasc NFS, specialist tillage farm for Net Margin of €291/ha in 2018 (Dillon et al, 2019).¹ The equivalent Teagasc, NFS figure for the top 1/3 of farmers was €786 per hectare.

- Farmers categorised as predominately winter and spring cereal growers were the most profitable of the cereal categorised farms (€646/ha) with €137/ha higher Net Margins compared to the average of the cereal group.
- Spring Cereal growers had the lowest returns (€358/ha) reflecting the reduced output following the drought in 2018. Winter crops suffered less yield loss from the drought allowing higher margins.
- Cereal farmers with potatoes were €991/ha more profitable than average reflecting the increased potato prices in 2018. However it should be noted this is a small sample size of farmers and does not reflect the variability in output in potatoes from year to year.

¹ <https://www.teagasc.ie/publications/2019/outlook-2020.php>

Table 3. Farm size and profitability

Farm Size (ha)	Number of Farms	Fixed Costs €/ha*	Land lease costs** €/ha	Land leased area as % of total tillage area	Net Margin €/ha
0-100	300	245	179	22%	647
101-200	29	208	302	44%	715
201+	20	200	389	65%	550

*Fixed costs exclude Land Lease and Machinery, **Land leased costs over owned and rented land

- Cereal farmers expect fixed costs to reduce as the farm size increases. In the above table larger farms had an 18% decrease in fixed costs.
- The analysis shows profitability of the 101-200 hectare farms had the highest Net Margins, with the lowest margins with the largest farms.
- The larger growers had lower fixed costs however this was offset by higher total land area rented (the larger group of farms had close to 3 times more land rented than the smaller farms) and a higher costs of land lease.

Rented land

Of the 346 farmers 153 (44%) had leased land (conacre or leased land).

Table 4: Farmer categories – All Farms utilisation of rented land

Tillage - Production Type	All Farms No. of Farmers	No. of Farmers with leased land	No. of Farmers with leased land %	Leased Land (% total) (ha)	Average area of leased land per farmer (ha)	Average Gross Margin €/ha	Average Net Margin excluding leased land Rental €/ha**	Average Cost of leased land €/ha*
1. Winter Cereals	28	8	29%	49%	19	969	740	539
2. Spring Cereals	77	22	29%	18%	5	559	424	694
3. W. + S. Cereals	161	68	42%	42%	35	962	807	592
4. Cereals + Beet	29	18	62%	41%	36	1032	893	659
5. Cereals + Potatoes	9	7	78%	30%	14	2472	1837	1510
6. Cereals + Other	42	30	71%	52%	54	957	787	665
			44%	42%	28	917	7925	628

*Leased land only (owned land not included), **Net Margin excluding land rental

- All groups has a positive differential between Gross Margin and Land Lease (i.e. when land was leased this area made a positive income) with the surplus contributing to the Fixed Costs on these farms.
- The Winter and Spring Cereal groups had the lowest number of farmers with leased land at 29%, however the winter cereal group had a higher proportion of their land rented at 49% compared to 18% of the spring cereal group.
- Spring Cereal group of farmers had the lowest overall profitability and paid a much higher land rental cost.
- Farmers classified as spring cereal are the group with the lowest profitability per hectare (excluding land rental) of the cereals based

groups (Group 1,2,3) at €424/ha, which is €233/ha (35%) lower than the average of this group. This is partly due to the poor yields following the prolonged drought in 2018, however this group also returned the lowest Net Margin figures in the past two years ePM analysis.

Comparison of eProfit Monitor to the National Farm Survey (NFS) data.

Teagasc produces an analysis of tillage 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.

The National Farm Survey (NFS) involves the collection of data on an annual basis from a random, nationally representative sample of approximately 900 farms (of which about 75 are classed as specialist tillage 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 completed by the Teagasc data recorders 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 advisor and can be accessed online. 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. Farmers volunteer are encouraged by their advisor to complete the benchmarking analysis and farmers are also encouraged to repeat the analysis over a number of years to establish trends on the farm. 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.

While there are some differences in the cost headings used and the calculation of depreciation, the results generated for an individual cereal 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. 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.

Analysis of ePM crops

The following section compares the main tillage crops across all farm categories. Comparisons are made between the **Average** of the group and the **Top 1/3** of growers in the group (Top 1/3 ranked on the basis of Gross Margin).

For the purposes of comparison the following is included in each category.

Table 5: Explanation of terms

Term	Included
Gross output	Sales of Grain and Straw (includes all moisture and related bonuses)
Material Costs	Seed, Fertiliser, Agrochemicals, etc
Machinery Costs	Machinery Costs*(Repairs, diesel, depreciation, leases, HP interest) + contractor charges
Other Variable Costs	Levies and Transport
Gross Margin	Gross Output minus (Material Costs + Machinery Costs +other Variable Costs)
Fixed Costs	Land Lease, light, heat, telephone, professional fees, land maintenance, etc.
Net Margin	Gross Margin minus Fixed Costs
Net Margin (inc DP)	Net Margin including Direct Payments (Protein Payments only). <i>Basic Payment Scheme and Greening payments are not included</i>
Land Lease	Land lease costs are the total land lease costs divided over owned and rented land

**Machinery Costs are treated as a variable cost (Strictly speaking some of these costs are Fixed Costs) to help farmers compare costs to the Teagasc Costs and Returns which is published each year*

Fixed costs (including Machinery costs but not Contractor Costs) are automatically calculated by the ePM software based on the relative proportion of gross output for each crop compared to the total output for all crops in the tillage enterprise i.e. winter wheat has a higher output than spring barley therefore it will attract more fixed costs than spring barley

The information from Table 6 onwards outlines the Output and Costs associated with the major crops grown. The tables outline the major cost and key figures for each crop. Comparisons are possible between the average of the group and the top one third of farmers in the group.

Farmers are ranked based on the Gross Margin of each farmer compared to the Gross Margin for all other farmers.

Figures may not match exactly due to rounding.

Winter Wheat

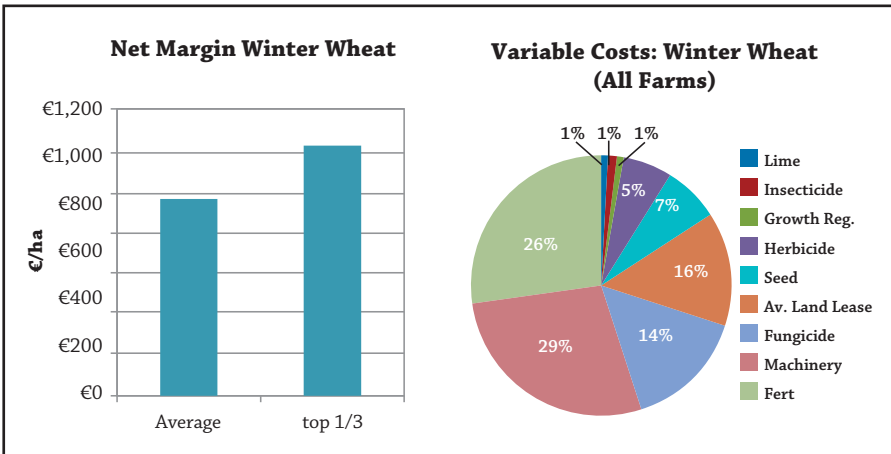
Table 6: Winter Wheat Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	4829		
No. Of Farms	134	45	
Tillage Adj. Ha	36	33	- 3
Yield t/Ha	9.4	9.9	+ 0.54
Financial			
Crop Sales €/tonne	€202	€209	+ 7
Gross Output /ha	€2,333	€2,584	+ 251
<i>of which is straw/ha</i>	€433	€511	+ 78
Material Costs/ha	€706	€668	- 37
Total Machinery Costs/ha	€369	€397	+ 28
<i>of which are contractor/ha</i>	€158	€35	- 123
<i>Other Variable Costs/ha</i>	€44	€8	- 37
Gross Margin / Ha	€1,214	€1,511	+ 297
Fixed Costs / Ha	€469	€504	+ 36
Net Margin/ha	€745	€1,007	+ 262
Key Figures			
Break Even Costs €/ton*	€169	€159	- 10
Land Lease Costs/ha	€206	€165	- 41
<i>Net Margin/ha (exc. Land Rental)</i>	€966	€1,210	+ 244

* Cost per ton excluding straw

- Average yields are 0.5 t/ha (5%) above the CSO national average, with the top 1/3 of farmers producing 1.0 t/ha (11.2%) above the CSO national average
- The top farms grew less area and produced 0.54t/ha more yield than the ePM average which delivered a higher Gross Output of €251/ha or 10.8% higher than the average.

- The average Net Margin was €312/ha higher in 2018 compared to 2017 due to a 23% increase in grain price and €244/ha or 121% increase in straw income and a slight reduction of 2% on material costs
- Despite achieving a higher yield the top group spent marginally less on material costs compared to the average
- Fixed costs are 7% higher on the top group compared to average, which is consistent with other years
- The Net Margin of the top 1/3 was €262/ha (35%) higher than the average group.



Spring Wheat

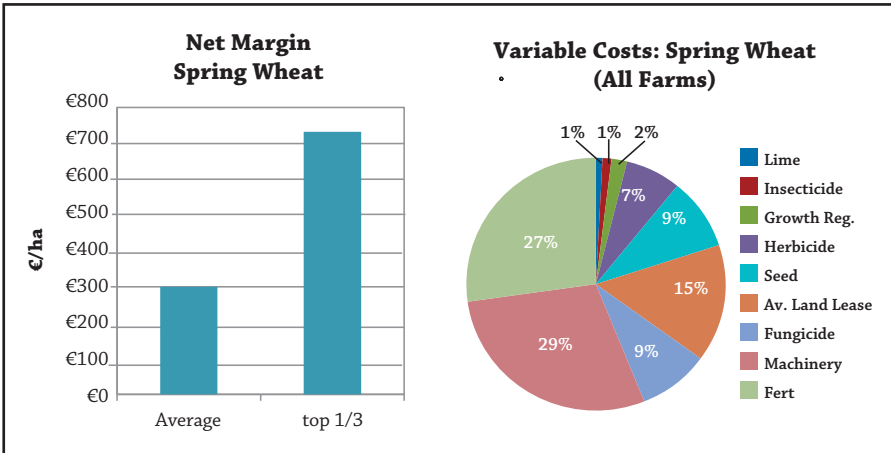
Table 7: Spring Wheat Returns

2018	Average	top 1/3	Top v Average
Physical			
Total No. hectares	186		
No. Of Farms	17	6	
Tillage Adj. Ha	11	8	- 3
Yield t/Ha	6.5	7.5	+ 0.96
Financial			
Crop Sales €/tonne	€ 201	€ 199	- 2
Gross Output /ha	€ 1,626	€ 1,991	+ 365
<i>of which is straw/ha</i>	€ 319	€ 506	+ 187
Material Costs/ha	€ 599	€ 670	+ 71
Total Machinery Costs/ha	€ 316	€ 229	- 87
<i>of which are contractor/ha</i>	€ 204	€ 141	- 63
<i>Other Variable Costs/ha</i>	€ 27	€ 4	- 23
Gross Margin / Ha	€ 685	€ 1,088	+ 404
Fixed Costs / Ha	€ 383	€ 342	- 41
Net Margin/ha	€ 302	€ 746	+ 445
Key Figures			
Break Even Costs €/ton*	€ 203	€ 167	- 37
Land Lease Costs/ha	€ 162	€ 91	- 70
<i>Net Margin/ha (exc. Land Rental)</i>	€ 464	€ 838	+ 373

* Cost per ton excluding straw

- Average yields are 6.5t/ha or 0.3t/ha higher than the CSO average, with the top 1/3 of farmers producing 1.3t/ha (21%) above the CSO national average
- The top group increased gross output by €365/ha compared to average group
- The top 1/3 group incurred marginally higher material cost of €71/ha compared to the average but achieved a higher Gross Margin of €404/ha compared to the average group

- Fixed costs were also lower in the top group with the Net Margin €746/ha which is 150% higher than the average group. Higher grain and straw output were the key difference where many farmers in the average group were adversely affected by the drought in 2018
- The average Net Margin was €35/ha lower in 2018 compared to 2017 again due to effects of the 2018 drought. The lower yields in 2018 were offset by a €38/ton increase in grain price and an increase of €106/ha in straw compared to 2017. Material costs also increased in 2018 by €49/ha or 9%.



Spring Feed Barley

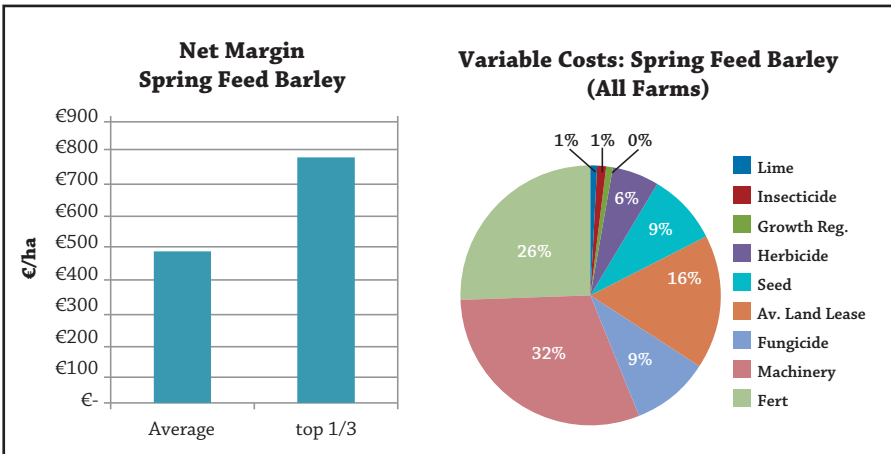
Table 8: Spring Barley Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	5930		
No. Of Farms	203	68	
Tillage Adj. Ha	29	37	+ 8
Yield t/Ha	6.1	6.7	+ 0.63
Financial			
Crop Sales €/tonne	€ 210	€ 216	+ 5
Gross Output /ha	€ 1,601	€ 1,852	+ 251
<i>of which is straw/ha</i>	€ 319	€ 399	+ 81
Material Costs/ha	€ 477	€ 483	+ 6
Total Machinery Costs/ha	€ 300	€ 273	- 27
<i>of which are contractor/ha</i>	€ 128	€ 84	- 44
<i>Other Variable Costs/ha</i>	€ 9	€ 6	- 3
Gross Margin / Ha	€ 815	€ 1,089	+ 275
Fixed Costs / Ha	€ 330	€ 323	- 7
Net Margin/ha	€ 484	€ 766	+ 282
Key Figures			
Break Even Costs €/ton*	€ 183	€ 161	- 22
Land Lease Costs/ha	€ 151	€ 149	- 2
<i>Net Margin/ha (exc. Land Rental)</i>	€ 642	€ 922	+ 281

* Cost per ton excluding straw

- Average yields are 0.5t/ha (9%) above the CSO national average, with the top 1/3 of farmers producing 1.1 t/ha (20%) above the CSO national average.
- The top group grew more area and produced 0.6t/ha more yield and also had a higher gross output of €251 per hectare or 16% higher than the average group.

- Despite achieving a higher yield the top group spent roughly the same on material costs and €27/ha less on machinery costs compared to the average.
- Fixed costs are similar for both groups.
- Net Margins in the top group are €282/ha or 58% higher than the average.
- The average Net Margin was €147/ha higher (43%) in 2018 compared to 2017 due to a €47 (29%) increase in grain price and €106 (49%) increase in straw returns.



Spring Malting Barley

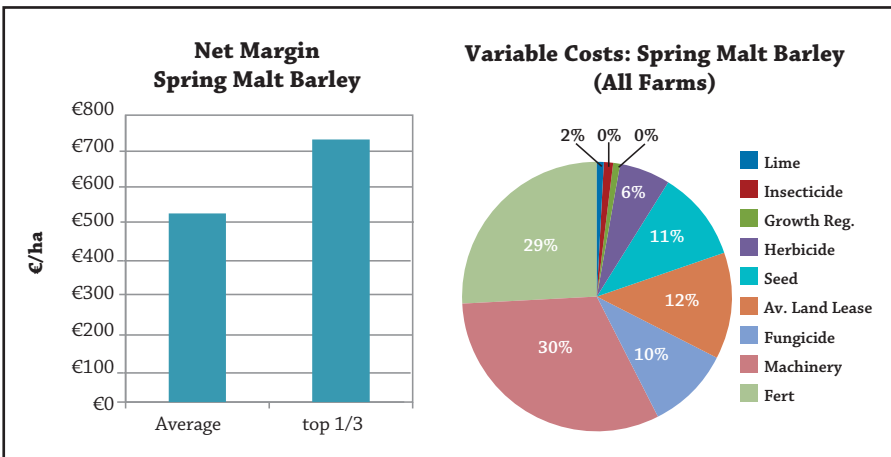
Table 9: Spring Malting Barley Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	3461		
No. Of Farms	104	35	
Tillage Adj. Ha	33	32	- 2
Yield t/Ha	6.0	6.5	+ 0.52
Financial			
Crop Sales €/tonne	€ 215	€ 231	+ 15
Gross Output /ha	€ 1,582	€ 1,858	+ 276
<i>of which is straw/ha</i>	€ 288	€ 352	+ 64
Material Costs/ha	€ 529	€ 510	- 20
<i>Total Machinery Costs/ha</i>	€ 268	€ 289	+ 22
<i>of which are contractor/ha</i>	€ 107	€ 39	- 69
<i>Other Variable Costs/ha</i>	€ 18	€ 0	- 18
Gross Margin / Ha	€ 767	€ 1,059	+ 292
Fixed Costs / Ha	€ 240	€ 309	+ 69
Net Margin/ha	€ 527	€ 750	+ 223
Key Figures			
Break Even Costs €/ton*	€ 175	€ 170	- 6
Land Lease Costs/ha	€ 105	€ 158	+ 54
<i>Net Margin/ha (exc. Land Rental)</i>	€ 637	€ 911	+ 274

* Cost per ton excluding straw

- Average yields are 0.4 t/ha (7%) above the CSO spring barley national average, with the top group of farmers producing 0.9 t/ha (16%) above the CSO national average. Average yields were 1.8t/ha lower than 2016 and 2017 due to the effects of the drought in 2018.
- The top group grew slightly less area but produced 0.52 t/ha (8.6%) more yield than the ePM average. Average yield for feed and malting growers were similar.

- The gross output of the top group was €276/ha higher than the average group resulting in a gross margin of €292 more than average group.
- Fixed costs were €69/ha or 29% higher in the top group compared to average.
- Net Margins were €223/ha (42%) higher in the top group compared to average group.
- Average Net Margin increased by €160/ha (43%) compared to 2017.



Winter Barley

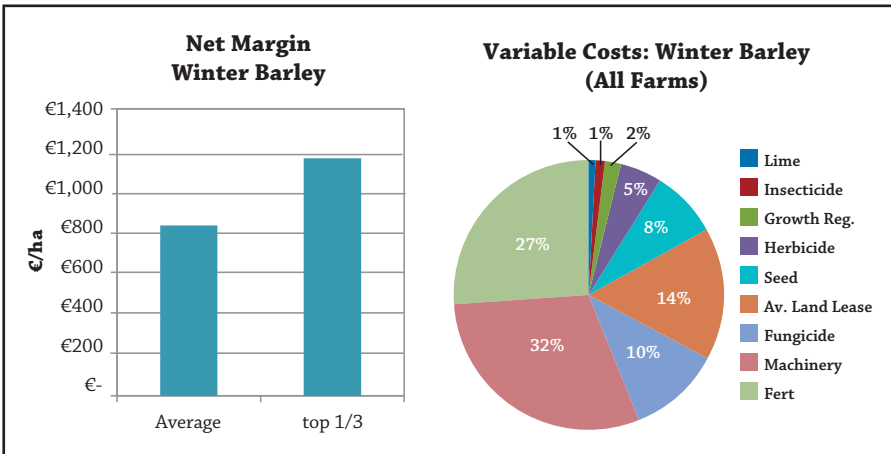
Table 10: Winter Barley Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	4803		
No. Of Farms	200	67	
Tillage Adj. Ha	24	27	+ 3
Yield t/Ha	8.9	9.3	+ 0.41
Financial			
Crop Sales €/tonne	€ 205	€ 211	+ 6
Gross Output /ha	€ 2,352	€ 2,613	+ 261
<i>of which is straw/ha</i>	€ 532	€ 649	+ 116
Material Costs/ha	€ 644	€ 630	- 14
Total Machinery Costs/ha	€ 383	€ 358	- 25
<i>of which are contractor/ha</i>	€ 193	€ 63	- 130
<i>Other Variable Costs/ha</i>	€ 30	€ 10	- 20
Gross Margin / Ha	€ 1,296	€ 1,616	+ 320
Fixed Costs / Ha	€ 421	€ 419	- 2
Net Margin/ha	€ 874	€ 1,196	+ 322
Key Figures			
Break Even Costs €/ton*	€ 166	€ 152	- 14
Land Lease Costs/ha	€ 164	€ 169	+ 5
<i>Net Margin/ha (exc. Land Rental)</i>	€ 1,045	€ 1,374	+ 329

* Cost per ton excluding straw

- Average yields are 0.1 t/ha (1%) above the CSO national average, with the top group of farmers producing 0.5 t/ha (5.6%) above the CSO national average.
- The top farms grew a larger area and produced 0.41t/ha more yield resulting in a higher gross output of €261/ha (11% higher) compared to the average group.

- Despite having higher yield the top group spent €14/ha less on material costs compared to the average group. The contractor costs were significantly lower at €130/ha in the top group compared to the average group
- Fixed costs were similar in both groups.
- Net Margin was €322/ha (36%) higher in the top group compared to the average.
- Average Net Margin was €466/ha (114%) higher than 2017 mainly due to an increased grain price of €56/ton (35%) and increased straw value of €244/ha (84%).



Analysis of Barley Crops (Average)

Table 11: Barley Returns - Average growers summary

Average	Winter Barley	Spring Barley	Spring Malt Barley
Physical			
Total No. hectares	4803	5930	3461
No. Of Farms	200	203	104
Tillage Adj. Ha	24.0	29.2	33.3
Yield t/Ha	8.9	6.1	6.0
Financial			
Crop Sales €/tonne	€205	€210	€215
Gross Output €/ha	€2,352	€1,601	€1,582
<i>of which is straw €/ha</i>	€532	€319	€288
Material Costs €/ha	€644	€477	€529
Total Machinery Costs €/ha	€383	€300	€268
<i>of which are contractor €/ha</i>	€193	€128	€107
<i>Other Variable Costs €/ha</i>	€30	€9	€18
Gross Margin €/ Ha	€1,296	€815	€767
Fixed Costs €/ Ha	€421	€330	€240
Net Margin €/ha	€874	€484	€527
Key Figures			
Break Even Costs €/ton*	€166	€183	€175
Land Lease Costs €/ha	€164	€151	€105
<i>Net Margin/ha (exc. Land Rental) €/ha</i>	€1,045	€642	€637

* Cost per ton excluding straw

- The crop sales figures per ton of each of the barley categories are quite similar, however it would be expected that malting barley would have a much higher grain price differential over the feed categories. There are a number of reasons for this

- As with all spring sown crops, malting barley was planted much later than normal. Research shows late sown crops yield less and tend to have higher grain protein. The summer drought hit malting barley crops hard and reduced yields further. The consequences were a higher grain protein overall, resulting in a lower acceptance rate of malting barley despite malsters increasing the acceptable maximum protein level in the year.
- Where a crop of barley was grown as malting barley (under contract) all the returns are entered under this category (as malting barley) regardless of whether it was sold as malt or feed
- Many of the feed buyers added bonus payments to feed grain narrowing the gap to the malting grain price
- Malting barley costs are €29/ha higher than spring feed barley, narrowing the net margin gap further.
- Once again winter barley Net Margins were greater than either spring malting or spring feed barley. Winter barley maintained the edge due to good yield and straw volume (and value) to increase the difference to €347/ha (65%) over malting barley. Growers are continually weighing each option and this was a contributing factor to the large increase in winter barley acreage in autumn 2018. However, it should be noted winter barley suffered less drought related yield loss than spring crops in 2018 as winter crops were more advanced and had a greater root mass when the drought was at its height.
- There is a large difference in Fixed Costs between Spring Malting barley €240/ha compared to spring feed barley €330/ha. The differential between groups is Spring Feed Barley growers paid more for: +€46/ha for land rental and +€20/ha for other fixed costs (which can include grain drying).
- Malting barley offers the best opportunity to increase profitability for the average spring barley grower with returns from malting barley €43/ha (9%) higher than spring feed barley
- Costs of production of malting barley are €37/ton higher in 2018 than 2017 (€138/t).

Analysis of Barley Crops (Top 1/3)

Table 12: Barley Returns – Top 1/3 growers summary

	Winter Barley	Spring Feed Barley	Spring Malt Barley
Physical			
No. Of Farms	67	68	35
Tillage Adj. Ha	27.0	36.8	31.5
Yield t/Ha	9.3	6.7	6.5
Financial			
Crop Sales €/tonne	€211	€216	€231
Gross Output €/ha	€2,613	€1,852	€1,858
<i>of which is straw €/ha</i>	€649	€399	€352
Material Costs €/ha	€630	€483	€510
Total Machinery Costs €/ha	€358	€273	€289
<i>of which are contractor €/ha</i>	€63	€84	€39
<i>Other Variable Costs €/ha</i>	€10	€6	€0
Gross Margin €/ Ha	€1,616	€1,089	€1,059
Fixed Costs €/ Ha	€419	€323	€309
Net Margin €/ha	€1,196	€766	€750
Key Figures			
Break Even Costs €/ton*	€152	€161	€170
Land Lease Costs €/ha	€169	€149	€158
<i>Net Margin/ha (exc. Land Rental) €/ha</i>	€1,374	€922	€911

* Cost per ton excluding straw

- See the comments in the analysis of barley crops (average) regarding the Crop Sales figures

- It should be noted winter barley suffered less drought related yield loss than spring crops in 2018 as winter crops were more advanced when the drought was at its height.
- Winter barley has a higher Net Margin of 446/ha (59%) compared to spring malting barley
- In the top 1/3 group feed barley returned a higher yield (0.2t/ha) than malting barley growers and had lower material costs but the malting barley growers had lower fixed costs and a higher grain price resulting in similar margins (Feed barley was 2% higher)
- The top malting barley growers spent €27/ha more on material costs than feed barley growers. This is broken down by spring malting barley growers increased spending on: Fertiliser +€12/ha, Seed +€7/ha and lime +€4/ha.
- The top 1/3 of spring feed barley growers returned a higher Net Margin of €239/ha (+45%) compared to the average malting barley grower.

Winter Oats

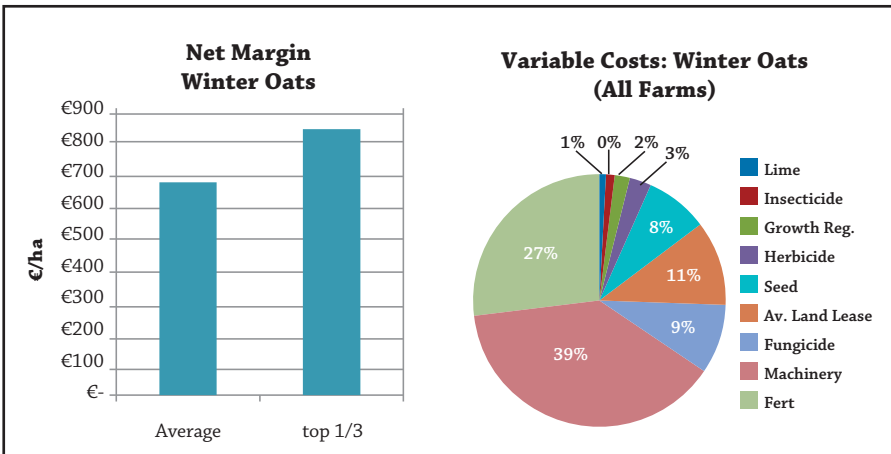
Table 13: Winter Oats Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	535		
No. Of Farms	44	15	
Tillage Adj. Ha	12	12	-
Yield t/Ha	7.9	8.5	+ 0.57
Financial			
Crop Sales €/tonne	€ 197	€ 206	+ 8
Gross Output /ha	€ 1,987	€ 2,207	+ 220
<i>of which is straw/ha</i>	€ 431	€ 468	+ 37
Material Costs/ha	€ 547	€ 537	- 10
Total Machinery Costs/ha	€ 416	€ 397	- 18
<i>of which are contractor/ha</i>	€ 192	€ 96	- 96
<i>Other Variable Costs/ha</i>	€ 17	€ 11	- 6
Gross Margin / Ha	€ 1,007	€ 1,262	+ 255
Fixed Costs / Ha	€ 351	€ 419	+ 68
Net Margin/ha	€ 656	€ 843	+ 187
Key Figures			
Break Even Costs €/ton*	€ 169	€ 161	- 8
Land Lease Costs/ha	€ 116	€ 97	- 19
<i>Net Margin/ha (exc. Land Rental)</i>	€ 779	€ 952	+ 173

* Cost per ton excluding straw

- Average yields were the same as the CSO national average, with the top 1/3 of farmers producing 0.6 t/ha higher than the CSO national average.
- The top farms produced 0.57 t/ha (7%) more yield and achieved €8/t more for grain than the ePM average grower.

- The top group had a higher gross output of €220/ha (11%) higher than the average.
- The gross margin for the top group was €255/ha higher due to increased output combined with lower material and machinery costs.
- The Net Margin of the top growers was €187/ha or 28% higher than the average group.
- Average net margin increased in 2018 by €422/ha (180%) compared to 2017 due to a grain price increase of €52/t (+35%) and an increase in straw value of €256 (+146%)



Spring Oats

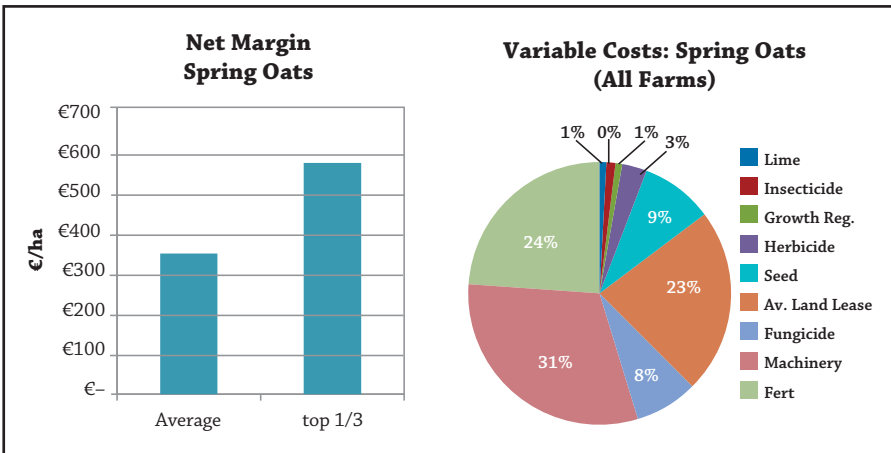
Table 14: Spring Oats Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	569		
No. Of Farms	47	16	
Tillage Adj. Ha	12	10	- 2
Yield t/Ha	5.7	7.1	+ 1.42
Financial			
Crop Sales €/tonne	€ 206	€ 213	+ 7
Gross Output /ha	€ 1,507	€ 1,935	+ 428
<i>of which is straw/ha</i>	€ 335	€ 423	+ 88
Material Costs/ha	€ 425	€ 438	+ 13
Total Machinery Costs/ha	€ 282	€ 300	+ 18
<i>of which are contractor/ha</i>	€ 188	€ 192	+ 3
Other Variable Costs/ha	€ 15	€ 24	+ 10
Gross Margin / Ha	€ 785	€ 1,172	+ 387
Fixed Costs / Ha	€ 420	€ 596	+ 176
Net Margin/ha	€ 366	€ 577	+ 211
Key Figures			
Break Even Costs €/ton*	€ 200	€ 191	- 9
Land Lease Costs/ha	€ 215	€ 231	+ 16
<i>Net Margin/ha (exc. Land Rental)</i>	€ 584	€ 808	+ 224

* Cost per ton excluding straw

- Average yields are 0.1t/ha (2%) above the CSO national average, with the top 1/3 of farmers producing 1.5 t/ha (+26%) above the CSO national average.
- The top farms had 1.42 t/ha more yield and achieved €7/t more for the grain over the average.

- The Gross Margin for the top group was €387/ha (49%) higher than the average.
- The Net Margin of the top 1/3 of farmer was €211 (57%) higher than the average group.
- Average Net Margin of €366 represents a 22% increase over 2017 due to an increased price of €54/ton (+€35%) and an increased straw value of €183/ha (+120%)



Winter Oilseed Rape

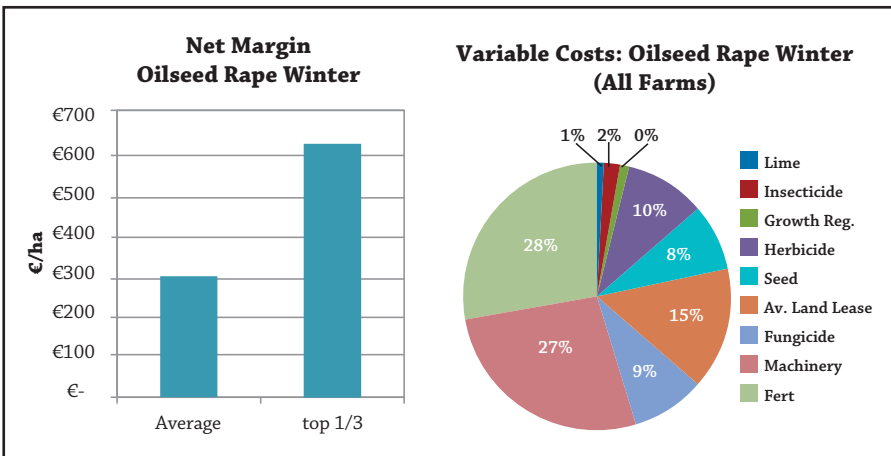
Table 15: Winter Oilseed Rape Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	491		
No. Of Farms	29	10	
Tillage Adj. Ha	17	18	+ 1
Yield t/Ha	4.2	4.4	+ 0.21
Financial			
Crop Sales €/tonne	€ 360	€ 354	- 5
Gross Output /ha	€ 1,604	€ 1,702	+ 99
<i>of which is straw/ha</i>	€ 102	€ 146	+ 44
Material Costs/ha	€ 659	€ 608	- 51
<i>Total Machinery Costs/ha</i>	€ 315	€ 279	- 35
<i>of which are contractor/ha</i>	€ 170	€ 75	- 96
<i>Other Variable Costs/ha</i>	€ 8	€ 7	- 1
Gross Margin / Ha	€ 621	€ 808	+ 186
Fixed Costs / Ha	€ 317	€ 190	- 126
Net Margin/ha	€ 305	€ 617	+ 312
Key Figures			
Break Even Costs €/ton*	€ 311	€ 247	- 64
Land Lease Costs/ha	€ 174	€ 40	- 134
<i>Net Margin/ha (exc. Land Rental)</i>	€ 483	€ 662	+ 179

* Cost per ton excluding straw

- Winter oilseed rape average yields are 0.3 t/ha (7.6%) above the Teagasc Harvest Report average yield of 3.9 t/ha. The top group produced 0.5t/ha over the Teagasc Harvest Report yield.
- The top farms grew more area and produced 0.2 t/ha more yield than the ePM average. This is hugely significant given the relatively low number of tonnes produced from the crop.

- The top group spent €51/ha less on material costs and €35/ha less on machinery costs compared to the average.
- Average Net Margin was €305/ha but the top group achieved a +102% increase returning a Net Margin of €617/ha.
- Average yield decreased by 0.5t/ha compared to 2017 which resulted in substantial change in Net Margin from €511/ha in 2017 to €305 in 2018.



Spring Oilseed Rape

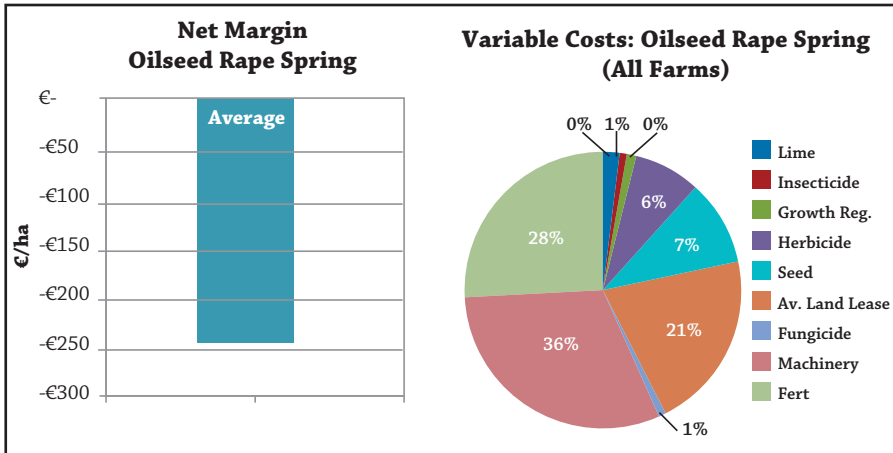
Table 16: Spring Oilseed Rape Returns

	2018 Average	2017 Average
Physical		
Total No. hectares	26	92
No. Of Farms	4	8
Tillage Adj. Ha	6	12
Yield t/Ha	2.2	2.5
Financial		
Crop Sales €/tonne	€ 358	€ 360
Gross Output /ha	€ 823	€ 1,175
<i>of which is straw/ha</i>	€ 36	€ -
Material Costs/ha	€ 439	€ 388
Total Machinery Costs/ha	€ 248	€ 255
<i>of which are contractor/ha</i>	€ 21	€ 33
<i>Other Variable Costs/ha</i>	€ -	€ -
Gross Margin / Ha	€ 136	€ 532
Fixed Costs / Ha	€ 377	€ 364
Net Margin/ha	-€ 242	€ 168
Key Figures		
Break Even Costs €/ton*	€ 418	€ 399
Land Lease Costs/ha	€ 218	€ 168
<i>Net Margin/ha (exc. Land Rental)</i>	-€ 24	€ 336

* Cost per ton excluding straw

- There were relatively small numbers with this crop therefore any comparisons should be treated with caution
- There was insufficient data to compare the average to the top 1/3 growers in 2018. Instead the 2017 average margins are displayed for comparison purposes

- Average Net Margin was -€242/ha compared to €168 in 2017 reflecting the lower yield of 0.3t/ha in 2018 compared to 2017 (2.5t/ha) .



Spring Beans

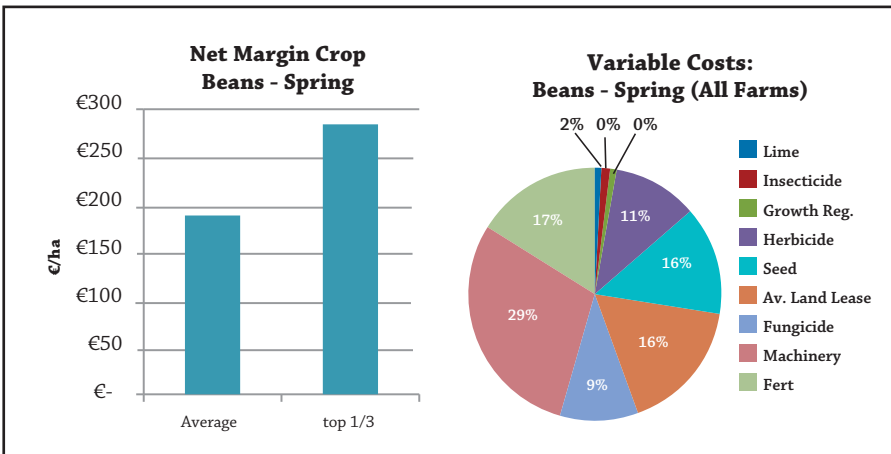
Table 17: Spring Beans Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	893		
No. Of Farms	67	22	
Tillage Adj. Ha	13	11	- 2
Yield t/Ha	3.1	3.9	+ 0.83
Financial			
Crop Sales €/tonne	€ 233	€ 237	+ 4
Gross Output /ha	€ 742	€ 959	+ 216
<i>of which is straw/ha</i>	€ 28	€ 38	+ 9
Material Costs/ha	€ 400	€ 450	+ 50
Total Machinery Costs/ha	€ 214	€ 225	+ 10
<i>of which are contractor/ha</i>	€ 101	€ 118	+ 17
<i>Other Variable Costs/ha</i>	€ 6	€ 8	+ 2
Gross Margin / Ha	€ 122	€ 276	+ 155
Fixed Costs / Ha	€ 212	€ 262	+ 50
Net Margin/ha (inc. Protein Payment)	€ 185	€ 282	+ 96
Key Figures			
Break Even Costs €/ton*	€ 271	€ 242	- 29
Land Lease Costs/ha	€ 119	€ 127	+ 7
<i>Net Margin/ha (exc. Land Rental)</i>	€ 305	€ 423	+ 104

*Costs per ton excluding straw

- Spring beans average yields are 0.6t/ha (24%) above the Teagasc harvest report yield of 2.5t/ha. The top group produced 1.4t/ha (56%) more than the Teagasc Harvest Report average. Yields were severely affected; due to late planting, following a late spring, followed by a severe summer drought

- The average Net Margin from 2017 for beans at €337/ha and in 2016 was €225/ha. Margins were lower in 2018 due to weather related difficulties.
- The top farms produced 0.83t/ha more yield than the average group, which was as much a reflection on the amount of moisture the beans had access to, as the farm location in the country where the beans were grown.
- Despite achieving a higher yield the top group spent more on materials (+€50/ha) again reflecting the growing conditions, and many growers tailored inputs during the season to the crops potential i.e. poor crops received very few inputs.
- Average Net Margin was €185 (which included the protein payment) and the top group achieved a Net Margin including protein payment of €282/ha.
- Average Net Margin decreased by €55/ha compared to 2017 mainly due to a 3.8t/ha drop in yield year on year. An increased grain price (+€73/t) and protein payment offset some of the yield loss.



Beet (Fodder)

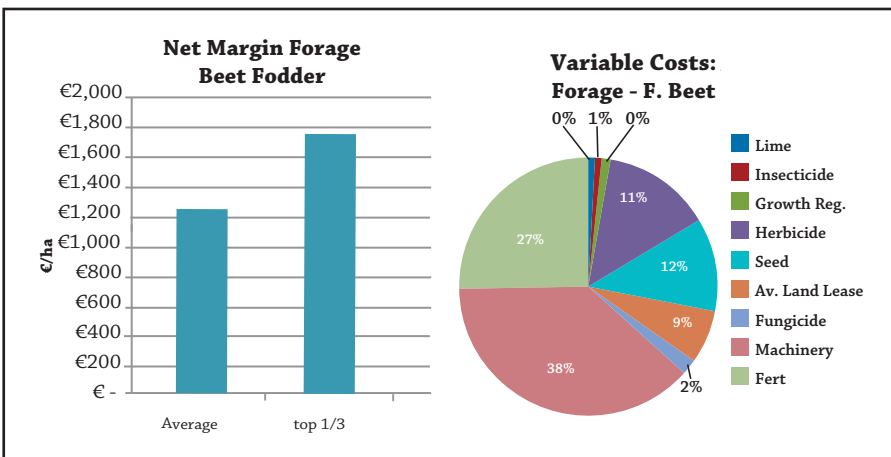
Table 18: Beet Fodder Returns

	Average	top 1/3	Top v Average
Physical			
Total No. hectares	590		
No. Of Farms	56	19	
Tillage Adj. Ha	11	12	+ 2
Yield t/Ha	72.2	79.2	+ 7
Financial			
Crop Sales €/tonne	€ 45	€ 49	+ 3
Gross Output/ha	€ 3,316	€ 3,931	+ 615
<i>of which is straw/ha</i>	€ 42	€ 87	+ 45
Material Costs/ha	€ 891	€ 898	+ 8
<i>Total Machinery Costs/ha</i>	€ 628	€ 667	+ 39
<i>of which are contractor/ha</i>	€ 315	€ 222	- 93
<i>Other Variable Costs/ha</i>	€ 61	€ 65	+ 4
Gross Margin / Ha	€ 1,737	€ 2,301	+ 564
Fixed Costs / Ha	€ 465	€ 556	+ 90
Net Margin/ha	€ 1,271	€ 1,745	+ 474
Key Figures			
Break Even Costs €/ton*	€ 28	€ 28	- 1
Land Lease Costs/ha	€ 151	€ 162	+ 11
<i>Net Margin/ha (exc. Land Rental)</i>	€ 1,426	€ 1,911	+ 486

* Cost per ton excluding tops

- Yields on the top group were 9.6% higher than the average group which combined with a higher price (+€3/t) resulted in a higher gross output per hectare of €615/ha.
- Despite the lower yields the average group spent roughly the same (+€8/ha) on material costs but did spend less on machinery (+€39/ha).

- The average Net Margin was €1,271/ha with the top group achieving a 37% increase in Net Margin to €1,745/ha.
- Average Net Margin increased by 14% compared to 2017 and remains the most profitable crop in this analysis.
- Beet continues to be an excellent break crop with a high Net Margin however growers should secure a market before planting.



Break Crops compared (Average)

Table 19: Break Crops - Average grower returns compared

Average	Winter Oats	Spring Oats	Winter Oilseed Rape	Spring Oilseed Rape	Beans Spring	Beet
Physical						
Total No. hectares	535	569	491	26	893	590
No. Of Farms	44	47	29	4	67	56
Tillage Adj. Ha	12.2	12.1	16.9	6.4	13.3	10.5
Yield t/Ha	7.9	5.7	4.2	2.2	3.1	72.2
Financial						
Crop Sales €/tonne	€197	€206	€360	€358	€233	€45
Gross Output €/ha	€1,987	€1,507	€1,604	€823	€742	€3,316
<i>of which is straw €/ha</i>	€431	€335	€102	€36	€28	€42
Material Costs €/ha	€547	€425	€659	€439	€400	€891
Total Machinery Costs €/ha	€416	€282	€315	€248	€214	€628
<i>of which are contractor €/ha</i>	€192	€188	€170	€21	€101	€315
<i>Other Variable Costs €/ha</i>	€17	€15	€8	€0	€6	€61
Gross Margin €/ Ha	€1,007	€785	€621	€136	€122	€1,737
Fixed Costs €/ Ha	€351	€420	€317	€377	€212	€465
Net Margin €/ha	€656	€366	€305	-€242	€185**	€1,271
Key Figures						
Break Even Costs €/ton*	€169	€200	€311	€418	€271	€28
Land Lease Costs €/ha	€116	€215	€174	€218	€119	€151
<i>Net Margin/ha (exc. Land Rental) €/ha</i>	€779	€584	€483	-€24	€305	€1,426

*Costs per ton excluding straw, **Spring Bean Net Margin also includes the Protein Payment (Direct Payment)

- Most of the spring sown crops had lower yields reflecting the summer drought. However beet preformed well again as it had a chance to recover from the drought as good growing conditions into November allowed the crop to buck up.
- There is a wide variation on land lease costs of €99/ha or 83% from the bottom to the top, however this in many cases reflects the rotation

position of the crop, with differences mostly attributed to the proportion of each crop sown on owned or leased land.

- Break crops should be seen in the context of the margins within the year and also for the following crop i.e. while the margins of beans may seem low this crop supports higher yields of winter wheat in the following year.
- The land lease figure may appear to be small especially for beet growers. This figure is calculated by dividing the total cost of rental by the total tillage area farmed of that crop. The average area of beet rented tends to be quite small thereby resulting in a relatively low cost of rental

Break Crops compared (Top 1/3)

Table 20: Break Crops - Top 1/3 growers returns compared

	Winter Oats	Spring Oats	Winter Oilseed Rape	Spring Beans	Beet
Physical					
Total No. hectares					
No. Of Farms	15	16	10	22	19
Tillage Adj. Ha	11.7	10.3	18.0	11.5	12.3
Yield t/Ha	8.5	7.1	4.4	3.9	79.2
Financial					
Crop Sales €/tonne	€206	€213	€354	€237	€49
Gross Output €/ha	€2,207	€1,935	€1,702	€959	€3,931
<i>of which is straw €/ha</i>	€468	€423	€146	€38	€87
Material Costs €/ha	€537	€438	€608	€450	€898
Total Machinery Costs €/ha	€397	€300	€279	€225	€667
<i>of which are contractor €/ha</i>	€96	€192	€75	€118	€222
<i>Other Variable Costs €/ha</i>	€11	€24	€7	€8	€65
Gross Margin €/ Ha	€1,262	€1,172	€808	€276	€2,301
Fixed Costs €/ Ha	€419	€596	€190	€262	€556
Net Margin €/ha	€843	€577	€617	€282**	€1,745
Key Figures					
Break Even Costs €/ton*	€161	€191	€247	€242	€28
Land Lease Costs €/ha	€97	€231	€40	€127	€162
<i>Net Margin/ha (exc. Land Rental) €/ha</i>	€952	€808	€662	€408	€1,911

*Costs per ton excluding straw, **Spring Bean Net Margin also includes the Protein Payment (Direct Payment)

- Beet is by far the most profitable of these break crops at €1,745/ha. However sales of the crop are on the basis of farm to farm trade. It is generally for a limited/defined quantity and to farms with an existing trading relationship. Growing significant quantities of beet may not be possible for every farmer and a market should be secured before planting

- Winter Oilseed Rape margins of €617/ha was €131 back on last year but is still a good option as a break crop.
- Although spring oats appears to have performed towards the bottom of the pack it has similar to returns to 2016 (€505/ha)
- There was insufficient data to display figures from spring oilseed rape.

All Crops (Average)

Table 21: All Crops: Average grower returns compared

Average	Winter Wheat	Winter Barley	Spring Feed Barley	Spring Making barley	Spring Wheat	Winter Oats	Spring Oats	Winter Oilseed Rape	Spring Oilseed Rape	Beans	Fodder Beet
Physical											
Total No. hectares	4829	4803	5930	3461	186	535	569	491	26	893	590
No. Of Farms	134	200	203	104	17	44	47	29	4	67	56
Tillage Adj: Ha	36.0	24.0	29.2	33.3	11.0	12.2	12.1	16.9	6.4	13.3	10.5
Yield t/Ha	9.4	8.9	6.1	6.0	6.5	7.9	5.7	4.2	2.2	3.1	72.2
Financial											
Crop Sales €/tonne	€202	€205	€210	€215	€201	€197	€206	€360	€358	€233	€45
Gross Output €/ha	€2,333	€2,352	€1,601	€1,582	€1,626	€1,987	€1,507	€1,604	€823	€742	€3,316
<i>of which is straw €/ha</i>	€433	€532	€319	€288	€319	€431	€335	€102	€36	€28	€42
Material Costs €/ha	€706	€644	€477	€529	€599	€547	€425	€659	€439	€400	€891
Total Machinery Costs €/ha	€369	€383	€300	€288	€316	€416	€282	€315	€248	€214	€628
<i>of which are contractor €/ha</i>	€158	€193	€128	€107	€204	€192	€188	€170	€21	€101	€315
Other Variable Costs €/ha	€44	€30	€9	€18	€27	€17	€15	€8	€0	€6	€61
Gross Margin €/ Ha	€1,214	€1,296	€815	€767	€685	€1,007	€785	€621	€136	€122	€1,737
Fixed Costs €/ Ha	€469	€421	€330	€240	€383	€351	€420	€317	€377	€212	€465
Net Margin €/ha	€745	€874	€484	€527	€302	€656	€366	€305	-€242	€185**	€1,271
Key Figures											
Break Even Costs €/ton*	€169	€166	€183	€175	€203	€169	€200	€311	€418	€271	€28
Land Lease Costs €/ha	€206	€164	€151	€105	€162	€116	€215	€174	€218	€119	€151
Net Margin/ha (exc. Land Rental) €/ha	€966	€1,045	€642	€637	€464	€779	€584	€483	-€24	€305	€1,426

*Costs per ton excluding straw, **Spring Bean Net Margin also includes the Protein Payment (Direct Payment)

All Crops (top 1/3)

Table 22: All Crops: Top 1/3 grower returns compared

Top 1/3	Winter Wheat	Winter Barley	Spring Feed Barley	Spring Mating barley	Spring Wheat	Winter Oats	Spring Oats	Winter Oilseed Rape	Beans	Fodder Beet
Physical										
No. Of Farms	45	67	68	35	6	15	16	10	22	19
Tillage Adj. Ha	33.3	27.0	36.8	31.5	8.2	11.7	10.3	18.0	11.5	12.3
Yield t/Ha	9.9	9.3	6.7	6.5	7.5	8.5	7.1	4.4	3.9	79.2
Financial										
Crop Sales €/tonne	€209	€211	€216	€231	€199	€206	€213	€354	€237	€49
Gross Output €/ha	€2,584	€2,613	€1,852	€1,858	€1,991	€2,207	€1,935	€1,702	€959	€3,931
<i>of which is straw €/ha</i>	€511	€649	€399	€352	€506	€468	€423	€146	€38	€87
Material Costs €/ha	€668	€630	€483	€510	€670	€537	€438	€608	€450	€898
Total Machinery Costs €/ha	€397	€358	€273	€289	€229	€397	€300	€279	€225	€667
<i>of which are contractor €/ha</i>	€35	€63	€84	€39	€141	€96	€192	€75	€118	€222
Other Variable Costs €/ha	€8	€10	€6	€0	€4	€11	€24	€7	€8	€65
Gross Margin €/Ha	€1,511	€1,616	€1,089	€1,059	€1,088	€1,262	€1,172	€808	€276	€2,301
Fixed Costs €/Ha	€504	€419	€323	€309	€342	€419	€596	€190	€262	€556
Net Margin €/ha	€1,007	€1,196	€766	€750	€746	€843	€577	€617	€282**	€1,745
Key Figures										
Break Even Costs €/ton*	€159	€152	€161	€170	€167	€161	€191	€247	€242	€28
Land Lease Costs €/ha	€165	€169	€149	€158	€91	€97	€231	€40	€127	€162
Net Margin/ha (exc. Land Rental) €/ha	€1,210	€1,374	€922	€911	€838	€952	€808	€662	€408	€1,911

*Costs per ton excluding straw, **Spring Bean Net Margin also includes the Protein Payment (Direct Payment)

Matched Farm Analysis (2016, 2017 and 2018)

A large group of farmers complete the e-PM each year however as this is voluntary not every farmer opts to complete the figures each year.

For a farmer looking at their own profit monitor figures there is good value in comparing crops within a year however different years suit different crops (2017 was a relatively normal weather year where as 2018 a significant drought badly affected spring crop yields). Therefore it would not be prudent to make many decisions based on one years data for any one crop. The trend on the farm over at least 3 years or ideally 5 years will help the farmer to decide on the best crop or enterprise mix on the farm.

A selected matched group of 187 farms completed the e-PM analysis in 2016, 2017 and 2018. These farms were analysed and compared on the profitability of the tillage enterprise only. Many of these farms had other enterprises on the farm which were not looked at in this analysis. Net margin on any farm is highly influenced by fixed costs, land rental and machinery. Farms were categorised into the overall average and then into top 1/3, middle 1/3 and bottom 1/3 performers (each year) according to Net Margin per hectare.

The next section ranks these matched farms by Net Margin (in each year) and is different to individual crop ranking previously seen in this report, as crop yield is one of the most important drivers of profit therefore ranking on a Gross Margin basis is appropriate at that level.

Important Note

The following section will look at the differences in these farms over the period of 2016, 2017 and 2018. The figures in this section are not directly comparable to the earlier 2018 figures as this sample only contains 187 farms from the 346 farms analysed in the 2018 section.

Calculation of the figures

For the purposes of comparison of farms following calculations are completed on each farm.

Table 23: Explanation of terms

Term	Included
Fixed Costs	Land Lease, light, heat, telephone, professional fees, land maintenance, etc.
Net Margin	Gross Margin minus Fixed Costs
Net Margin (inc DP)	Net Margin including Direct Payments (Protein Payments not Basic Payment Scheme)

**Machinery Costs are treated as a variable cost (Strictly speaking these costs are Fixed Costs) to help farmers compare costs to the Teagasc Costs and Returns which is published each year*

Fixed costs (including Machinery costs but not Contractor Costs) are automatically calculated by the ePM software based on the relative proportion of gross output for each crop compared to the total output for all crops in the tillage enterprise i.e. winter wheat has a higher output than spring barley therefore it will attract more fixed costs than spring barley.

Land Lease (or rental) can be shown as:

- Land Lease (all) which is the land rental costs to the tillage crop spread over owned and leased land of that crop
- Land Leased (only) which is the total cost of land rental for that crop divided over all the leased land for that crop

Overall Farm profitability

The growers were ranked by Net Margins per hectare into top 1/3, middle 1/3 and bottom 1/3 of farms according to Net Margin.

Table 24: Average area farmed by each category of farmer (n=189 representing average area of 13,147 hectares over the period) for 2016, 2017 & 2018

Ranked by Net Margin				
	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Average Tillage area (ha)	70	66	84	37
2017 Average Tillage area (ha)	71	69	70	79
2018 Average Tillage area (ha)	68	70	65	72

- The average size of farms in this e-PM sample is 70 hectares or 89% larger than the average specialist tillage farms used in the NFS Results 2018¹
- With the exception of the bottom 1/3 in 2016, the areas farmed each year is relatively consistent across categories.

Table 25: Net margins for farms in each category

	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Net Margins(All Crops) €/ha	€132	€380	€4	-€390
2017 Net Margins (All Crops) €/ha	€353	€629	€249	-€175
2018 Net Margins (All Crops) €/ha	€572	€950	€412	-€107

Note: The Net Margin figures do not include the Basic Payment or Greening Payment.

- Overall there was a large increase in the Net Margins between 2016, 2017 and 2018 within all categories. The average Net Margin increased by €440/ha (330%) in the period
- The overall increase is a reflection of an increase in outputs (mostly grain price) from almost all crops. The difference between the top and the bottom one third of farmers was €770/ha in 2016 but reduced to €583/ha in 2017 and increased to €1,057 in 2018.
- Although bottom 1/3 of farmers increased Net Margins substantially over the period, on average these farms did not record a profit in this period.

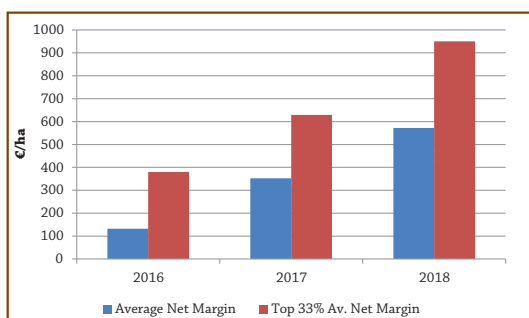


Fig 1: Average and top 1/3 net margins (2016, 2017 & 2018)

¹ https://www.teagasc.ie/media/website/publications/2019/NFS-2018_final_web.pdf

Fixed Costs and other major costs

The differences in Net Margin is down to a number of factors including yield, sales price, input levels/costs and also fixed costs such as machinery, depreciation, interest, etc. Yields, sales prices, input costs, etc. have been discussed at their individual level so far in this document. This next section will look at the Fixed Costs which impact on the Net Margin or bottom line for the tillage enterprise or the matched farms.

The Fixed Costs on farms represent the following

- Fixed costs (light, heat, telephone, professional fees, land maintenance, etc)
- Other costs which must be considered and are largely a fixed cost are
 - Machinery costs (excluding contractor)
 - Land lease (rental)

Table 26: Average Fixed Costs for each farm category (ranked on Net Profit €/ha)

	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Fixed costs (€/ha)	€197	€156	€191	€203
2017 Fixed costs (€/ha)	€181	€140	€180	€312
2018 Fixed costs (€/ha)	€208	€165	€217	€319

Note: Fixed costs exclude Machinery and Land Lease

- The average and top 1/3 of farms fixed costs increase by 5% in period (2016-2018). The middle and bottom performing farms had substantially increased costs of 13% and 57% respectively over the period.
- There is a 81% difference between the fixed costs incurred by the top and bottom performing groups over the period
- The higher fixed costs incurred by the middle and bottom one third of farms adversely affected profitability, hence the lower profitability ranking. However other major costs (land rental both the total area and costs) also have a bearing on the Net Margins of these farms

Machinery Costs Calculator

Teagasc developed a Microsoft Excel based Machinery Cost Calculator (MCC) over the past number of years.

The MCC is filled out by the advisor with the farmer. The farmer lists all machinery on the farm under various headings; owned or leased, purchase price, usage, length of time on the farm, yearly repairs, fuel usage, etc. The resulting output allows a farmer to assess the costs of the machine in that year in cash costs (looking at HP repayments but not depreciation) and also in longer term costs (Depreciation included). Each machine is allocated costs according to the time dedicated to tillage operations, other enterprises and also contracting. This gives a more accurate figure for machinery costs for the tillage enterprise than broad figures used in farm tax accounts where assumptions vary from accountant to accountant.

How it works

The calculator divides the machinery into two categories those with repayments (debt) outstanding and with no debt outstanding.

For machines with repayments outstanding the programme uses the actual repayment figures for the machine each year. When combined with machine running costs (fuel, repairs, etc.) the total figure is used to calculate the cash exposure of the farmer each year and also the cost of financing the machines. The depreciation figure is calculated on a declining balance based on the original cost of each machine, including any trade in as part payment, the length of time the machine is expected to be on the farm and also the predicted residual value of the machine at disposal (at today's value). Repairs, maintenance and diesel are allocated according to the machine usage to the tillage enterprise, other enterprises or contracting.

For machines with no debt outstanding, the same procedures are followed in calculating the depreciation costs and the proportional costs to other enterprises or contracting. Repairs and maintenance can also be associated with each machine or a total figure can be added in at this stage.

Diesel costs are recorded from receipts on the farm. Other costs such as machine insurance, road tax and contractor charges are recorded.

Analysing Results

The results are presented to the farmer under the following headings:

- tillage costs,
- costs to other enterprises, and
- Costs for contracting.

The costs associated with the other enterprises and contracting can then be used to compare against the income from each activity.

The tillage costs are further broken down in cash costs and long term tillage costs.

The cash costs are recorded as all payments made by the farmer in that particular calendar year such as repayments, repairs, diesel, leases and machine hire, it does not include depreciation.

The longer term cost include repairs, diesel, depreciation and interest (but does not include the capital part of the repayment). These costs better reflect the longer term machine costs on the farm and are useful in assessing the replacement strategy on the farm.

Other costs which are recorded are the overall amount invested in machinery on the farm and the residual value of the machinery.

The MCC reflects a one year view of the machinery on the farm and all farmers are encouraged to continually update the figures to establish trends on the farm over time. An alternative program is available which can be used to develop longer term machinery policy on the farm.

The MCC generates a tillage cost output report for farmers to use in the e-Profit Monitor. The key figures are: Machinery running (diesel, repairs, insurance, etc.), Machinery Leases (leases or HP interest) and Machinery Depreciation. The figures are specific to the tillage enterprise on the farm. These figures are classed as a Fixed Cost and are allocated to each crop based on the relative gross output per hectare of the crop compared to the total output per hectare of all the crops. Contractor costs are treated as a variable cost in the e-PM but are added to the total costs to give an overall machinery cost for the tillage enterprise on the farm.

Machinery Costs

The analysis of the machinery costs here are the longer term costs associated with the tillage enterprise. Contractor charges are actual charges incurred on the farms each year.

Table 27: Machinery costs of the different groups 2016, 2017 & 2018 (ranked on Net Profit €/ha)

	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Machinery	€369	€299	€348	€487
<i>of which is Contractor</i>	€181	€89	€141	€261
2017 Machinery	€327	€316	€306	€420
<i>of which is Contractor</i>	€147	€146	€120	€213
2018 Machinery	€350	€345	€358	€388
<i>of which is Contractor</i>	€144	€153	€115	€261

- The average machinery costs over the three years is €348/ha (€141/ac). Costs decreased marginally by €19/ha (5%) over the period. These costs are not directly comparable to contractor costs as the contractor costs include labour, other fixed costs and profit.
- There is a significant difference between the top and bottom performing farms over the period of €83/ha. Almost all of this difference was the increased contractor costs (€88/ha) incurred by the bottom 1/3.

Land Lease

The challenge facing all specialised tillage farmers is to maintain a viable business and in many instances increasing land areas through lease or rental is seen as a way of achieving this.

Land lease is a part of most farms (includes conacre) in this e-PM analysis and is a significant part of their entire acreage on many farms.

Table 28: Total leased land as a percentage of total tillage land farmed in each year (ranked on Net Profit €/ha)

	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Leased land as % total	38%	22%	48%	63%
2017 Leased land as % total	38%	22%	46%	64%
2018 Leased land as % total	42%	35%	44%	63%

- The average land leased area is close to 40% across all farms. However as the percentage of land rental compared to the total tillage area increases, profitability decreases, with growers in the bottom 1/3 having the highest proportion of rented land (Av. 63.3%)
- These figures must take into account that land rental can generate profits as long as the Gross Margin is greater than the costs of land leased. In this scenario the extra margin generated will contribute to fixed costs there by lowering the burden of fixed costs across the farm and increasing profitability.

Costs of Land Leased (conacre and longer term lease) can be expressed over the entire area (owned and leased land) or the costs spread over leased area only. The table overleaf shows the cost of Land Lease spread over the leased area only, reflecting the price paid by the farmer for the land.

Table 29: Cost of land lease per ha of the land lease only (2016, 2017 & 2018)

	Average	Top 1/3	Middle 1/3	Bottom 1/3
2016 Tillage - Land Lease (only)	€390	€401	€340	€431
2017 Tillage - Land Lease	€407	€411	€396	€415
2018 Tillage - Land Lease	€391	€358	€372	€444

- The average cost of leased land costs over the period is €396/ha with all years within 4% of the average. A high proportion (40%) of land is leased on these farms therefore these costs represent a substantial fixed cost commitment to these farms. This fixed commitment substantial increases the risk to the farm business in years where a weather or price shocks occur.
- It's not surprising the bottom 1/3 of farms (due to their profitability) are paying €40/ha (10%) more for land rental. This reflects anecdotal evidence where farms compete for short term rental land in the open market (11 month basis). This land tends to be more expensive and have problems such as lower fertility, increased problematic weeds and may have land drainage issues, all of which can give a lower yield/returns to the renting farmer.
- The costs of land within this period is a short time span to look at the trend, as land can cycle in and out of the systems with can reflect varying costs of land from year to year.

Farm size and Profitability

The matched farms were divided into size categories (see below). There are significant numbers of farms in the smaller categories but a smaller number of farms classified as larger farms.

Table 30 Farm size: Numbers and average farm size in each category

Farm size (ha)	No. Farms	Average area in the category (ha)
0-50	104	30
51-100	54	68
101-150	10	119
151-200	10	175
201+	11	336

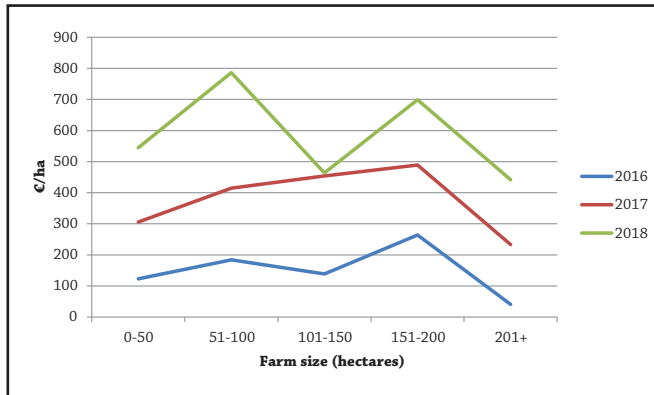


Figure 2. Average Net Margin by Farm size

- The average Net Margin increased in all categories across the years, with the exception of the 101-150 ha category in 2018.
- Larger farms made less Net Margin per hectare than other categories in all years due to the high land rental costs in the system
- Smaller farms also returned relatively low profitability, in part due to higher machinery costs compared to the average (+€67/ha) or 22% higher compared to the largest farmers.

Net Farm Margin on each farm can be analysed to compare the total Net Margin from the various size farms. In general we expect larger farms to be more profitable due to their size as the farm size can dilute fixed costs across a larger area.

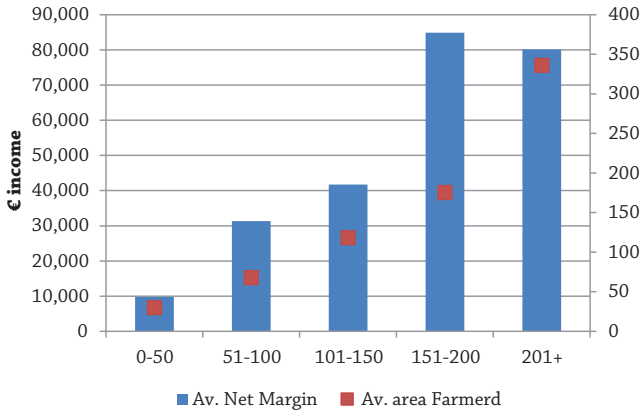


Figure 3. Total income and area farmed per category of farm size

- There is a trend of increasing total incomes as area increases. However larger farms have significantly more land rental as part of their holding. Farms of 0-50 ha have on average 17% of their land rented whereas farms with over 201 ha (and above) have on average 72% of their land rented.
- The farms with between 151ha to 200ha have 36% of their land rented which is similar to the 101-150 ha farms. This group (151-200ha) have an increased income per hectare over the 3 years and attain a higher income from the tillage enterprise than the larger group (201+ ha)

Table 31: Leased land compared to total farmed areas by farm size.

Farm size (ha)	2016	2017	2018	Average
0-50	16%	17%	18%	17%
51-100	25%	22%	27%	25%
101-150	43%	36%	45%	41%
151-200	36%	33%	46%	39%
201+	67%	73%	74%	72%

Notes

Notes





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