Crops, Environment and Land-Use Programme

Oak Park

CROPS COSTS AND RETURNS 2017

Compiled by: **Shay Phelan**, Tillage Crops Specialist

Agriculture and Food Development Authority

Crop Margins

The Teagasc Crops Costs & Returns are intended as an indicative guide to crop margins; however land suitability, rotation, risk avoidance and husbandry skills must also be considered. As well as completing crop margins, all growers are strongly advised to complete a full financial appraisal of their business using the Teagasc Profit Monitor.

There is little difference in margins between the feed cereals. Non-cereal break crops offer benefits in terms of rotation, workload and risk-spreading but the sale of inter-farm produce needs careful planning to ensure profitable crops. In the case of malting barley, food-grade oats and milling wheat, the availability of contracts and fulfillment of specific contract requirements such as specified varieties, quality parameters and input purchases need to be appraised in conjunction with the guideline margins here.

Under the Basic Payment Scheme, payments are decoupled from the crop being grown. Crop changes as a result of Crop Diversification (2/3-Crop Rule) need to be considered over at least a 5-year time frame, to avoid future rotational issues such as pest, weed or disease build-up. The land, on which you claim entitlements, must be maintained in "good agricultural and environmental condition" as heretofore.

Stacking is no longer available under the Basic Payment Scheme. However, leasing and sale of entitlements without land is permitted under the Basic Payment Scheme.

Note: The margins shown here do not include the Basic or Greening payments, however Beans/Peas do include the Protein Crop subsidy (€3 million over 12,000 ha = €250/ha) However this payment will be reduced if the national threshold of 12,000ha is breached.

For more information see **http://www.teagasc.ie/crops/greening/**

Conacre appraisal

The following table will provide a guide for growers and land owners as to the value of conacre.

1	Entitlement Value	
2	Gross Margin achievable	
3	Land issues* e.g. fertility, pH, P, K, trace elements, grass-weeds	
4	Total available for rent + farming	(1+2)-3

* Growers also need to evaluate potential costs due to Greening when considering land rental.

Material Costs

Yield has a major influence on profitability. Decisions on input strategies must be tailored for individual fields and farms. The prices of grain (+ other crop output) and fertilisers may vary considerably from those predicted. The fertiliser strategies contained within are guidelines only, hence growers are advised to complete a nutrient management plan and utilise organic manures where feasible. Timeliness and attention to detail in carrying out all operations are vital to maintaining profitability in crop production. All material costs should be optimised, consistent with good husbandry practices.

Machinery Costs

Investments in machinery require a thorough financial appraisal before a decision is taken. The average machinery cost (incl. repayments, depreciation, fuel and repairs) on 63 tillage farms in 2016 was €291per ha. The machinery costs on these farms was analysed using the Teagasc Machinery Cost Program and is available from your local Teagasc Tillage Advisor.

Machinery costs are presented as machinery hire. This reflects contracting costs which include labour and some fixed costs such as telephone, insurance, etc.

Net Margin

The budgets in this book indicate gross margin. To calculate net margin, which is a more accurate estimate of farm profitability, include land rental and fixed costs such as Insurance, ESB, phone etc. The average National Farm Survey fixed costs for tillage farms is approximately €162/ha.

2017 CEREAL CROP MARGINS

Variable Costs excl. VAT (€/ha)

	WHEAT		FEED BARLEY		MALTING BARLEY	FEED OATS	
	Winter	Spring	Winter	Spring		Winter	Spring
MATERIALS	**692**	**557**	**622**	**479**	**484**	**501**	**446**
Seed	75	85	87	85	94	80	80
Fertilisers	333	282	292	254	246	266	236
Sprays:							
Herbicides	56	45	56	45	45	30	30
Fungicides	190	125	135	90	95	105	80
Insecticides	23	10	32	5	5	5	5
Growth Regulators	15	10	20	0	0	15	15
HIRE MACHINERY	**452**	**433**	**433**	**395**	**395**	**414**	**414**
Plough, One-pass & Roll	170	170	170	170	170	170	170
Spray	95	76	76	57	57	76	76
Fertiliser Spreading	57	57	57	38	38	38	38
Harvesting	130	130	130	130	130	130	130
MISCELLANEOUS	**93**	**68**	**85**	**57**	**57**	**75**	**56**
Interest (6%)	27	14	25	12	12	21	11
Transport (€6/Tonne)	66	54	60	45	45	54	45
TOTAL VARIABLE COSTS	**1237**	**1058**	**1140**	**931**	**937**	**990**	**916**
Break-even yield (grain only)	9.2	7.8	9.1	7.5	6.0	7.9	7.3
Cost per tonne @ target yields*	**112**	**118**	**114**	**116**	**125**	**110**	**122**
Net Price (€/Tonne)	135	135	125	125	155	125	125
AID (SFP) = NOT included	0	0	0	0	0	0	0
Straw (€/ha)	90	80	140	100	100	100	90

Gross Margins (€/hectare)

(Incl. Straw)

	WHEAT		FEED BARLEY		MALTING BARLEY	FEED OATS	
Tonnes/hectare	Winter	Spring	Winter	Spring		Winter	Spring
6.5	**-270**	**-101**	**-188**	**-19**	**171**	**-77**	**-13**
7.5	**-135**	**34**	**-63**	**106**	**326**	**48**	**112**
8.0	**-67**	**102**	**-0**	**169**	**403**	**110**	**174**
9.0	**68**	**237**	**125**	**294**	**558**	**235**	**299**
10.0	**203**	**372**	**250**			**360**	
11.0	**338**		**375**				
12.0	**473**		**500**				

*Crop margins are underlined for the various crop target yields.
Totals may not agree due to rounding.
An online version of this calculator is available at www.teagasc.ie/crops/crops_margins

EXPLANATORY NOTES

Fixed or Overhead Costs per Hectare

Grass weed control (cultural/glyphosate) €18, Lime €20, Maintenance of Land and Fences, Car, Phone, ESB and professional/agronomist fees etc. (Total €162/ha).

Vat is excluded from input costs and outputs

A. INPUT COSTS: CEREAL CROP €/ha

Seed: €500 /t Blue Label (Extra dressings/ton: Deter €170; Latitude: €210 barley, €310 wheat)
Rate: W. Wheat - 150 kg/ha; W. Barley (+ Deter) - 170 kg/ha
W + S Oats - 160 kg/ha; S. Barley & S. Wheat - 170 kg/ha

Fertiliser:	Total Fertiliser (kg/ha)			Fertiliser Bags (No. of 50kg bags/ha)			
	N	P	K	CAN + S	Cmpnd*	50% K	€/ha
W. Wheat	250	37	110	15.8	7.4	1.4	€333
W. Barley	210	37	100	12.8	7.4	1.0	€292
W. Oats	150	37	130	8.4	7.4	2.2	€266
S. Wheat	190	29	110	9.3	9.8	0.5	€282
S. Barley	165	29	100	7.5	9.8	-	€254
Malt Barley	155	29	100	6.8	9.8	-	€246
S. Oats	131	29	111	5.0	9.8	0.5	€236
CAN + S @ €220/t; *__S. Cereals__ 13-6-20 @ €350/t; *__W. Cereals__ 10-10-20 @ €360/t; 50% K @ €360/t							

N = Index 1 + yield bonus; P & K = Index 3 + yield bonus. Based on SI No. 31 of 2014

			€/ha
Herbicides:	W. Wheat & W. Barley €56/ha; S Wheat & S Barley €45/ha; Oats €30/ha		
Fungicides:			
	Winter Wheat:		
	T0:Chlorothalonil (CTL)+/- Morph	€10	€190
	T1: Eyespot + B.S. + CTL @ 3rd last leaf emerged	€60	
	T2: Broad Spectrum (B.S.) + CTL. @ G.S. 39	€70	
	T3: B.S. (incl. triazole) @ G.S. 55-60	€50	
	Spring Wheat:		
	T1: 1/2 rate (B.S. + Morph. + CTL) @ G.S. 30-32	€30	€125
	T2: B.S. + CTL. @ G.S. 37-39	€55	
	T3: B.S. (incl. triazole) @ G.S. 55-60	€40	
	S. Barley: 2 Fungicides (Triazole/SDHI/Strob) G.S. 30, GS 37-49		= €90
	Winter Barley: 3 Fungicides (Triazole/SDHI/Strob) G.S. 30/31, 32-37, 49		= €135
	W. Oats: Triazole + morph at T1+T2, Triazole + Strob at T3		= €105
	S. Oats: Reduced Rates W. Oats		= €80
Insecticides:	Winter wheat: Red. Slug Pellets (€13/ha) + Aphicide (€10/ha) Winter barley: Deter €27/ha + contact €5/ha Other Cereals: Aphicide (€5 - €10/ha)		
	W. Wheat, W & S Oats	=	€15
Growth Regulators:	Spring Wheat	=	€10
	Winter Barley	=	€20
Hire Machinery:	Plough (€85/ha), Till, Sow & Roll (€85/ha)	=	€170
	Spraying (@ €19/ha):		
	W. Wheat: Weeds + Aphids, PGR, Fungicide x 3	=	€95
	S. Wheat: Weeds + Aphids, PGR/Fungicide x 3	=	€76
	W. Barley: Weeds + Aphids, PGR/Fungicide x 3	=	€76
	S. Barley: Weeds + Aphids, Fungicide x 2	=	€57
	W. Oats: Weeds + Aphids, PGR/Fungicide x 3	=	€76
	Fertiliser Spreading (@ €19/ha)	=	€38-57
	Harvesting	=	€130
Interest 6%:	Seed + Fertiliser + 0.5 Sprays; Winter - 10 months; Spring - 6 months		

2017 CEREAL CROP MARGINS

Variable Costs excl. VAT (€/ac)

	WHEAT		FEED BARLEY		MALTING BARLEY	FEED OATS	
	Winter	Spring	Winter	Spring		Winter	Spring
MATERIALS	**280**	**226**	**252**	**194**	**196**	**203**	**180**
Seed	30	34	35	34	38	32	32
Fertilisers	135	114	118	103	99	107	95
Sprays:							
Herbicides	23	18	23	18	18	12	12
Fungicides	77	51	55	36	38	42	32
Insecticides	9	4	13	2	2	2	2
Growth Regulators	6	4	8	0	0	6	6
HIRE MACHINERY	**183**	**175**	**175**	**160**	**160**	**168**	**168**
Plough, One-pass & Roll	69	69	69	69	69	69	69
Spray	38	31	31	23	23	31	31
Fertiliser Spreading	23	23	23	15	15	15	15
Harvesting	53	53	53	53	53	53	53
MISCELLANEOUS	**38**	**27**	**34**	**23**	**23**	**30**	**23**
Interest (6%)	11	6	10	5	5	9	5
Transport (€ 6/Tonne)	27	22	24	18	18	22	18
TOTAL VARIABLE COSTS	**501**	**428**	**461**	**377**	**379**	**401**	**371**
Break-even yield (grain only)	3.7	3.2	3.7	3.0	2.4	3.2	3.0
Cost per tonne @ target yields*	**114**	**119**	**115**	**118**	**126**	**111**	**124**
Net Price (€/Tonne)	135	135	125	125	155	125	125
AID (SFP) = NOT included	0	0	0	0	0	0	0
Straw (€/ha)	36	32	57	40	40	40	36

Gross Margins (€/ac)

(Incl. Straw)

	WHEAT		FEED BARLEY		MALTING BARLEY	FEED OATS	
Tonnes/acre	Winter	Spring	Winter	Spring		Winter	Spring
2.6	**-113**	**-45**	**-80**	**-11**	**64**	**-35**	**-9**
3.0	**-59**	**9**	**-30**	**39**	**126**	**15**	**41**
3.2	**-32**	**36**	**-5**	**64**	**157**	**40**	**66**
3.6	**22**	**90**	**45**	**114**	**219**	**90**	**116**
4.0	**76**	**144**	**95**			**140**	
4.4	**130**		**145**				
4.9	**197**						

*Crop margins are underlined for the various crop target yields

Totals may not agree due to rounding

An online version of this calculator is available at www.teagasc.ie/crops/crops_margins

2017 NON CEREAL CROP MARGINS

Variable Costs excl. VAT (€/acre)

	F. BEET	Potatoes Main Crop	MAIZE	PEAS	BEANS	OILSEED RAPE	
						Winter	Spring
MATERIALS	**372**	**1012**	**273**	**185**	**176**	**240**	**134**
Seed	91	506	81	65	56	32	36
Fertilisers	169	212	147	52	52	119	82
Sprays:							
Herbicides	83	42	45	32	32	40	12
Fungicides	12	202	0	32	32	36	0
Insecticides	16	49	0	3	3	12	3
HIRE MACHINERY	**248**	**945**	**264**	**163**	**159**	**203**	**187**
Plough, Till and Sow	101	314	134	69	69	69	69
Roll	0	0	0	7	7	7	7
Spray/Irrigation	31	123	0	23	23	31	23
Fertiliser Spreading	15	15	15	8	8	23	15
Swathing/Dessication	0	18	0	0	0	20	20
Harvesting (grading into store)	101	476	115	57	53	53	53
MISCELLANEOUS	**53**	**133**	**155**	**22**	**19**	**22**	**11**
Interest (6%)	13	35	10	5	5	8	3
Transport (€6/Tonne)	40	97	40	12	13	11	7
Bird Control	0	0	0	5	0	3	0
Plastic Film	0	0	105	0	0	0	0
TOTAL VARIABLE COSTS	**674**	**2090**	**692**	**370**	**354**	**465**	**332**
Break-even yield	19.3	10.4	15.4	1.5	2.2	1.2	0.9
Net Price (€/Tonne)	35	200	45	240	160	380	380
AID (Protien Crop Subsidy)	0	0	0	101	101	0	0

Gross Margins (€/ac)

Tonnes/acre (Beet, Potatoes & Maize)	Tonnes/acre Pulses/ OSR	F. BEET	Potatoes Main Crop	MAIZE	PEAS	BEANS	OILSEED RAPE	
							Winter	Spring
	1.0							48
12	1.2		310	-152			-9	124
14	1.4		710	-62	67	-29	67	200
16	2.0	-114	1110	28	211	67	295	428
20	2.2	26	1910	208	259	99	371	
22	2.4	96		298	307	131		
26	2.6	236		478	355	163		
28		306						

Totals may not agree due to rounding

* Gross margin does not include storage costs for beet, potatoes or maize

Note: Irrigation costs of approximately €70 /ac per application can be added to growing costs when needed.

GROWER'S OWN CROP BUDGET

Variable Costs excl. VAT (€/Acre)

		WINTER WHEAT		SPRING BARLEY		ANOTHER CROP	
		Your Figures	Teagasc Figures	Your Figures	Teagasc Figures	Your Figures	Teagasc Figures
MATERIALS (**A** =B+C+D+E+F+G)	**A**		**280**		**194**		
Seed	**B**		30		34		
Fertilisers	**C**		135		103		
Sprays:							
Herbicides	**D**		23		18		
Fungicides	**E**		77		36		
Insecticides	**F**		9		2		
Growth Regulators	**G**		6		0		
HIRE MACHINERY (**H** = I+J+K+L)	**H**		**183**		**160**		
Plough, Till and Sow	**I**		69		69		
Spray	**J**		38		23		
Fertiliser Spreading	**K**		23		15		
Harvesting	**L**		53		53		
MISCELLANEOUS (**M** =N+O)	**M**		**38**		**23**		
Interest (6%)	**N**		11		5		
Transport (€6/Tonne)	**O**		27		18		
TOTAL VARIABLE COSTS (**P** = A+H+M)	**P**		**501**		**377**		
Tonnes to cover variable costs (**Q** = P/R)	**Q**		3.7		3.0		
Net Price (€/Tonne)	**R**		135		125		
AID (€/Acre)	**S**		0		0		
Straw (€/Acre)	**T**		36		40		
Projected yield	**U**		4.4		3.2		
Gross Margins (€/Acre) (**V = (R*U)+S+T-P**)	**V**		**130**		**64**		
Gross Margins (€/Acre)							

An excel version of this calculator is available (free) from www.teagasc.ie/crops
Totals may not agree due to rounding

Share Farming Crop Budget

Variable Costs excl. VAT (€/Acre)		Crop Budget (€/ac)	=	Land-owner Share (€/ac)	+	Share Farmer Share (€/ac)
MATERIALS (**A**= B+C+D+E+F+G)	**A**					
Seed	**B**					
Fertilisers	**C**					
Sprays:						
Herbicides	**D**					
Fungicides	**E**					
Insecticides	**F**					
Growth Regulators	**G**					
MACHINERY COSTS (**H** =I+J+K+L)	**H**					
Plough, Till and Sow	**I**					
Spray	**J**					
Fertiliser Spreading	**K**					
Harvesting	**L**					
MISCELLANEOUS COSTS (M =N+O)	**M**					
Interest	**N**					
Transport	**O**					
TOTAL VARIABLE COSTS (**P** =A+H+M)	**P**					
Tonnes to cover variable costs (**Q** =P/R)	**Q**					
Net Price (€/Tonne)	**R**					
AID (€/Acre)	**S**					
GLAS €/Acre)	**T**					
Straw (€/Acre)	**U**					
Projected yield	**V**					
Gross Margins (€/Acre) **(W = (R*V)+S+T+U-P)**	**W**		=		+	

2017 NON CEREAL CROP MARGINS

Variable Costs excl. VAT (€/hectare)

	F. BEET	Potatoes Main Crop	MAIZE	PEAS	BEANS	OILSEED RAPE Winter	OILSEED RAPE Spring
MATERIALS	**919**	**2500**	**674**	**458**	**435**	**594**	**330**
Seed	226	1250	200	162	138	80	90
Fertilisers	418	525	364	130	130	294	202
Sprays:							
Herbicides	205	105	110	80	80	100	30
Fungicides	30	500	0	80	80	90	0
Insecticides	40	120	0	7	7	30	8
HIRE MACHINERY	**614**	**2336**	**653**	**404**	**394**	**501**	**463**
Plough, Till and Sow	250	775	330	170	170	170	170
Roll	0	0	0	18	18	18	18
Spray	76	304	0	57	57	76	57
Fertiliser Spreading	38	38	38	19	19	57	38
Swathing/Dessication	0	44	0	0	0	50	50
Harvesting (grading into store)	250	1175	285	140	130	130	130
MISCELLANEOUS	**132**	**328**	**384**	**53**	**46**	**54**	**26**
Interest (6%)	32	88	24	11	13	21	8
Transport (€6/Tonne)	100	240	100	30	33	27	18
Bird Control	0	0	0	12	0	6	0
Plastic Film	0	0	260	0	0	0	0
TOTAL VARIABLE COSTS	**1665**	**5164**	**1711**	**915**	**875**	**1149**	**819**
Break-even yield (excl. Aid)	47.6	25.8	38.0	3.8	5.5	3.0	2.2
Net Price (€/Tonne)	35	200	45	240	160	380	380
AID (Protein Crops Scheme)	0	0	0	250	250	0	0

Gross Margins (€/ha)

Tonnes/hectare (Maize, beet & potatoes)	Pulse/ OSR	BEET	Potatoes Main Crop	MAIZE	PEAS	BEANS	OILSEED RAPE Winter	OILSEED RAPE Spring
	2.0							-59
	2.5							131
30	3.0		837	-361			-9	321
35	4.0		1837	-136	295	15	371	701
40	4.5	-265	2837	89	415	95	561	891
50	5.0	85	4837	539	535	175	751	
55	5.5	260		764	655	255		
65	6.0	610		1214	775	335		
70		785						

Totals may not agree due to rounding

* Gross margin does not include storage costs for beet, potatoes or maize

Note: Irrigation costs of approximately €175 /ha per application can be added to growing costs when needed.

B. INPUT COSTS: NON CEREAL CROPS					€/ha
Beet:	1,000 kg Beet cmpnd @	€330 /t	=	€330	€418
	400 kg CAN + S @	€220 /t	=	€88	
Maize:	620 kg 0-7-30 @	€350 /t	=	€217	€364
	670 kg CAN	€220 /t	=	€147	
Beans/Peas:	370 kg 0-7-30				€130
Winter OSR:	370 kg 10-10-20 @	€360 /t	=	€133	€294
	250 kg Urea @	€340 /t	=	€85	
	280 kg ASN @	€270 /t	=	€76	
Spring OSR:	370 kg 13-6-20 @	€350 /t	=	€130	€202
	330 kg CAN+S @	€220 /t	=	€73	

Interest 6%: Beet, Maize, WOSR & Potatoes = 7 Months; Beans = 6 Months; SOSR & Peas = 5 Months

2017 FORAGE CROP MARGINS

Variable Costs excl. VAT (€/Hectare)

	F. BEET	SWEDES	KALE	RAPE	STUBBLE TURNIPS	MAIZE
MATERIALS	**919**	**433**	**437**	**217**	**190**	**934**
Seed	226	80	102	30	78	200
Fertilisers	418	188	275	187	112	364
Plastic Film	0	0	0	0	0	260
Sprays:						
Herbicides	205	105	60	0	0	110
Fungicides	30	35	0	0	0	0
Insecticides	40	25	0	0	0	0
HIRE MACHINERY	**664**	**255**	**208**	**189**	**99**	**668**
Seedbed Prep + sow	250	200	170	170	80	330
Spray	76	36	19	0	0	0
Fertiliser Spreading	38	19	19	19	19	38
Harvesting+COVERING	300	0	0	0	0	300
TOTAL VARIABLE COSTS	**1583**	**688**	**645**	**406**	**289**	**1602**
GREEN YIELD (Tonnes/hectare)						
Leaves(+roots)	124	74	37	42	25	55
DRY MATTER (Tonnes/hectare)						
UTILISED	13.0	5.2	6.0	3.5	2.5	15.0
COST (€/Tonne util DM)	122	132	108	116	116	107

Forage crops should be also evaluated on net energy, protein content and feeding system etc to calculate a complete value. Totals may not agree due to rounding.

Comment on Forage Crop Costs

The convenience of growing, storing and feeding as well as animal performance, are important considerations when deciding which fodder crop to grow. As well as costs per ton of dry matter, forage crops should be also evaluated on net energy, protein content and feeding system to discern a more complete value.

The opportunity cost of land needs to be taken into account when making comparisons of fodder and bought in feed. Thus a rental charge of €400/ha may be applied for a full year in the case of grazed grass, maize and whole crop cereals but proportionally less in the case of grass silage and brassicas.

Grazed Grass continues to be the cheapest fodder at about €50/tonne DM utilised. First cut grass silage costs approximately €130/tonne DM utilised while second cut grass silage costs approximately €150/t. The cost of whole crop wheat silage is approximately €130/ton DM. Recent trial work on kale in Moorepark has achieved high yields (8 -10 t DM/ha) with excellent husbandry and early (May) drilling. The same work showed how delayed drilling (start to end August) reduced fodder rape yields by 75%.

Share Farming is an agreement between two individuals (or two businesses) to jointly manage a farming operation. This legal agreement allows both the grower and the landowner to farm as separate legal entities but share in the risks and rewards of growing crops. As both individuals remain separate business entities, they can continue to claim the EU/DAFM payments etc in their own name as normal.
Key points:

- Share Farming is fully compliant with EU/DAFM schemes
- The agreement is **not** land rental or a Partnership agreement
- The output generated from the land are to reward the
  - Landowner for the land, labour and inputs supplied
  - Share farmer for labour, expertise and inputs supplied
- Both parties are separate business entities and must not open or operate joint accounts to run the farming operation
- Share farming is compatible with the Basic Payment Scheme and Greening, subject to conditions.

A template of a Share Farm Agreement is available on (www.teagasc.ie) which also displays example agreements. Contact your local advisor for more details.

GLAS (Green, Low-Carbon, Agri-Environment Scheme)
GLAS is the current agri-environment scheme, part of the Rural Development Programme 2014-2020. Three tranches of applications have now been completed. Up to €7,000 per year for 5 years is available under GLAS.

Some of the more popular measures for tillage farms which can contribute to overall gross margin are as follows;
Catch Crops @ €155 / ha, Minimum Tillage €40 / ha, Wild Bird Cover @ €900 / ha, Environmental Management of Fallow Land @ €750 / ha and Arable Margins @ €1170 / ha. Farmers may also undertake non-tillage measures such as hedgerow rejuvenation, bird, bat and bee boxes.

While some GLAS actions can also count for Greening, in the Basic Payment Scheme there are substantial reductions in GLAS payments if used for this. Further details and updates are available from **www.agriculture.gov.ie/farmerschemespayments/glas/**

January 2017

teagasc
Agriculture and Food Development Authority