Crops, Environment and Land-Use Programme

Kildalton

## CROPS COSTS AND RETURNS 2014

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 $A_{\rm GRICULTURE \ AND} \ Food \ Development \ Authority$ 

### **Crop Margins**

Awareness of crop margins is vitally important since under the decoupled regime the Single Farm Payment (SFP) will be paid irrespective of what crop is grown. Moreover, it makes no sense to produce the crop at a loss. The bottom line is that the land must be maintained in "good agricultural and environmental condition".

Note: The margins shown here do not include the SFP. Prices of grain and fertilisers may vary considerably from those predicted under the present volatile market conditions.

The margins given here should provide a useful guide to profits but land suitability, rotation, risk avoidance and convenience should also be considered. There is little difference in margins between spring and winter feed cereals. Bonuses for quality are important.

In the case of malting barley the availability of contracts and fulfilment of contract requirements may limit the attainment of these margins.

Stacking (consolidation) is a provision where Irish farmers can get their full Single Farm Payment without the need to farm all the land they farmed in the reference years 2000-2002. At least 50% of the allocated entitlements from the reference years must be farmed. Farmers can only stack if they dropped rented or leased land, afforested land since 2000 or lost land due to compulsory acquisition for public good (CPO). Stacking applies to all farming enterprises. As over ½ of arable land farmed is on rented ground this provision has major implications for the price of rented land for tillage.

Stacking is available in 2014. In future years the stacked grower may rent additional land (if profitable) without compromising his stacked (consolidated) entitlements.

#### Conacre appraisal

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

1	Entitlement Value	
2	Gross Margin achievable	
3	Land problems, fertility, pH, P, K, trace elements, weeds, scutch, wild oats, other grass weeds	
4	€ available for rent + farming	(1+2)-3

#### Costs

Level of yield has a major influence on profitability. Decisions on input strategies must be tailored for individual fields and farms.

Timeliness and attention to detail in carrying out all operations are vital to maintaining profitability in crop production. All costs (direct and fixed) need to be kept to a minimum, consistent with good husbandry practices. Fixed costs will need closer attention. In particular, investments in machinery and land/conacre will need thorough financial appraisal before a decision is taken. Labour efficiency must be scrutinised.

The average machinery cost (incl. repayments, depreciation, fuel and repairs) on 38 tillage farms (7,000 ha) in 2013 was €314/ha. The machinery costs on these farms was analysed using the Teagasc Machinery Cost Program and is available from your local Teagasc Tillage Advisor.

### **2014 CEREAL CROP MARGINS**

Variable Costs excl. VAT (€/ha)

	WH	EAT	FEED E	ARLEY	MALTING	FEED	OATS
	Feed Winter	Milling Spring	Winter	Spring	BARLEY	Winter	Spring
MATERIALS	<u>756</u>	<u>597</u>	<u>640</u>	<u>493</u>	<u>498</u>	<u>554</u>	<u>470</u>
Seed Fertilisers	74 403	87 329	85 349	80 283	80 283	82 320	82 261
Sprays: Herbicides Fungicides Insecticides Growth Regulators	56 185 23 15	45 115 10 10	56 120 10 20	45 80 5 0	45 85 5 0	27 105 5 15	27 80 5 15
HIRE MACHINERY	<u>452</u>	<u>433</u>	<u>414</u>	<u>395</u>	<u>395</u>	<u>414</u>	<u>414</u>
Plough, Till, Sow & Roll Spray Fertiliser Spreading Harvesting	170 95 57 130	170 76 57 130	170 76 38 130	170 57 38 130	170 57 38 130	170 76 38 130	170 76 38 130
MISCELLANEOUS	<u>91</u>	<u>69</u>	<u>81</u>	<u>58</u>	<u>58</u>	<u>78</u>	<u>57</u>
Interest (6%) Transport (€6/Tonne)	31 60	15 54	27 54	13 45	13 45	24 54	12 45
TOTAL VARIABLE COSTS	<u>1299</u>	<u>1099</u>	<u>1135</u>	<u>945</u>	<u>950</u>	<u>1046</u>	<u>941</u>
Break-even yield (grain only)	8.7	6.9	8.1	6.8	5.6	7.5	6.7
Cost per tonne @ <u>target yields*</u>	130	122	126	126	127	116	126
Net Price (€/Tonne) AID (SFP) = NOT included Straw (€/ha)	150 0 90	160 0 80	140 0 140	140 0 100	170 0 100	140 0 100	140 0 90

### Gross Margins (€/hectare)

(Incl. Straw)

	WHEAT		FEED E	FEED BARLEY		FEED OATS	
Tonne/hectare	Feed Winter	Milling Spring	Winter	Spring	BARLEY	Winter	Spring
6.0 7.0 7.5 9.0 10.0 10.5	-309 -159 -84 141 291 366	-59 101 181 <u>421</u> 581	-155 -15 55 265 405	-5 135 205 415	170 340 425 680	-106 34 104 <u>314</u> 454	-11 129 199 409

\*Crop margins are underlined for the various crop target yields.

Totals may not agree due to rounding-off.

#### **EXPLANATORY NOTES**

#### Fixed or Overhead Costs per Hectare (not included in Crop Margins)

Scutch Control €17, Lime €17, Maintenance of Land and Fences, Car, Phone, ESB, professional fees and regular hired labour Total (€155/ha). Fixed costs and land land rental should be subtracted from gross margin.

#### Vat is excluded from input costs and outputs

#### A. INPUT COSTS: CEREAL CROPS

#### Seed: €530 /t Blue Label

W. Wheat - 140 kg/ha; W. Barley - 160 kg/ha; W + S Oats - 155 kg/ha S. Barley - 150 kg/ha; S. Wheat - 165 kg/ha

Fertiliser:	Total F	<sup>-</sup> ertiliser (I	(g/ha)	Fertiliser Bags (No. of 50kg bags/ha)					
	N	Р	К	CAN + S	Cmpnd*	50%K	€/ha		
W. Wheat	230	37	110	14.3	7.4	1.4	€403		
W. Barley	190	37	75	11.3	7.4	-	€349		
W. Oats	145	37	130	8.0	7.4	2.2	€320		
S. Wheat	170	29	110	7.8	9.8	0.4	€329		
S. Barley	135	29	85	5.3	9.8	-	€283		
S. Oats	110	29	110	3.4	9.8	0.4	€ <b>261</b>		
CAN + S €310	0/t; * <b>S. Cere</b> a	<b>als</b> 13-6-20	) €410/t; * <b>W.</b>	Cereals 10-	10-20 €420	/t; 50% K €3	70/t		

N = Index 1; P & K = Index 3 based on S.I. 610 of 2010.

Herbicides: \	N. Wheat & W. Barley €56/ha; S Wheat & S Barley €45/ha; Oa	ts €27/ha	€/ha
Fungicides:	T1: Eyespot + B.S. + CTL Growth Stage (G.S.) 31-32	€10 €55 €70 €50	€185
	T1: 1/2 rate (B.S. + Morph. + CTL) GS 30-32 T2: B.S. + CTL. Growth Stage 37-39		€120 = €80 = €120 = €105
	S. Oats: Reduced Rates W. Oats		= €105
Insecticides:	Winter wheat; Red. Slug Pellets ( $\in$ 13/ha) + Aphicide ( $\in$ 10/ha) Other Cereals: Aphicide ( $\in$ 5 - $\in$ 10/ha) +/- Leatherjackets $\in$ 11/h		
Growth Regulators:	W. Wheat, W & S Oats Spring Wheat Winter Barley	= = =	€15 €10 €20
Hire Machinery:	Plough (€80/ha), Till, Sow & Roll (€90/ha) Spraying (@ €19/ha): W. Wheat: Weeds + Aphids, PGR, Fungicide x 3 S. Wheat: Weeds + Aphids, Fungicide x 3 W. Barley: Aphids + Weeds, Fungicide x 3 S. Barley: Weeds + Aphids, Fungicide x 2 W. Oats: Weeds Aphids, Fungicide x 3 Fertiliser Spreading (@€19/ha) Harvesting (€130/ha)		€170 €95 €76 €57 €76 €38-57 €130
Interest 6%:	Seed + Fertiliser + 0.5 Sprays; Winter - 10 months; Spring - 6	months	

€/ha

### 2014 CEREAL CROP MARGINS

Variable Costs excl. VAT (€/ac)

	WH	EAT	FEED B	ARLEY	MALTING	FEED	OATS
	Feed Winter	Milling Spring	Winter	Spring	BARLEY	Winter	Spring
MATERIALS	<u>306</u>	<u>241</u>	<u>259</u>	<u>199</u>	<u>201</u>	<u>224</u>	<u>190</u>
Seed Fertilisers	30 163	35 133	34 141	32 115	32 115	33 130	33 106
Sprays: Herbicides Fungicides Insecticides Growth Regulators	23 75 9 6	18 47 4 4	23 49 4 8	18 32 2 0	18 34 2 0	11 42 2 6	11 32 2 6
HIRE MACHINERY	<u>183</u>	<u>175</u>	<u>168</u>	<u>160</u>	<u>160</u>	<u>168</u>	<u>168</u>
Plough, Till, Sow & Roll Spray Fertiliser Spreading Harvesting	69 38 23 53	69 31 23 53	69 31 15 53	69 23 15 53	69 23 15 53	69 31 15 53	69 31 15 53
MISCELLANEOUS	<u>37</u>	<u>28</u>	<u>33</u>	<u>23</u>	<u>23</u>	<u>32</u>	<u>23</u>
Interest (6%) Transport (€ 6/Tonne)	12 24	6 22	11 22	5 18	5 18	10 22	5 18
TOTAL VARIABLE COSTS	<u>526</u>	<u>445</u>	<u>459</u>	<u>383</u>	<u>385</u>	<u>423</u>	<u>381</u>
Break-even yield (grain only)	3.5	2.8	3.3	2.7	2.3	3.0	2.7
Cost per tonne @ <u>target yields*</u>	131	124	128	128	128	118	127
Net Price (€/Tonne) AID (SFP) = NOT included Straw (€/ha)	150 0 36	160 0 32	140 0 57	140 0 40	170 0 40	140 0 40	140 0 36

# Gross Margins (€/ac) (Incl. Straw)

	WHEAT		FEED BARLEY		MALTING	FEED OATS	
Tonne/acre	Feed Winter	Milling Spring	Winter	Spring	BARLEY	Winter	Spring
2.4 2.8 3.0 3.6 4.0 4.5	-129 -69 -39 51 111 186	-28 36 68 164 228	-67 -11 17 101 157	-6 50 78 162	64 132 166 268	-47 9 37 <u>121</u> 177	-9 47 75 159

\*Crop margins are underlined for the various crop target yields.

Totals may not agree due to rounding-off.

### 2014 NON CEREAL CROP MARGINS

Variable Costs excl. VAT (€/acre)

	F. BEET	Potatoes	MAIZE	PEAS	BEANS	OILSEE	D RAPE
		Main Crop				Winter	Spring
MATERIALS	<u>378</u>	<u>975</u>	<u>281</u>	<u>184</u>	<u>180</u>	<u>244</u>	<u>155</u>
Seed Fertilisers	65 208	421 222	73 182	65 58	61 58	32 139	36 103
Sprays: Herbicides Fungicides Insecticides	77 12 16	57 223 53	26 0 0	28 29 3	28 29 3	38 24 10	12 0 3
HIRE MACHINERY	<u>248</u>	<u>933</u>	<u>225</u>	<u>163</u>	<u>159</u>	<u>203</u>	<u>187</u>
Plough, Till and Sow Roll Spray Fertiliser Spreading Swathing/Dessication Harvesting	101 0 31 15 0 101	304 0 138 15 0 476	101 0 8 15 0 101	69 7 23 8 0 57	69 7 23 8 0 53	69 7 31 23 20 53	69 7 23 15 20 53
MISCELLANEOUS	<u>159</u>	<u>131</u>	<u>131</u>	<u>22</u>	<u>19</u>	<u>22</u>	<u>11</u>
Interest (6%) Transport (€6/Tonne) Bird Control	13 146 0	34 97 0	10 121 0	5 12 5	5 13 0	9 11 3	4 7 0
TOTAL VARIABLE COSTS	<u>785</u>	<u>2039</u>	<u>638</u>	<u>369</u>	<u>358</u>	<u>469</u>	<u>353</u>
Break-even yield	19.6	10.2	14.2	1.5	1.7	1.5	1.1
Net Price (€/Tonne) AID (SFP) = NOT included	40 0	200 0	45 0	250 0	215 0	310 0	310 0

### Gross Margins (€/ac)

Tonnes/acre (Beet, Potatoes & Maize)	Tonnes/acre Pulses/ OSR	F. BEET	Potatoes Main Crop	MAIZE	PEAS	BEANS	OILSEEI Winter	O RAPE Spring
	1.0							-43
12	1.2		361	-98			-97	19
14	1.6		761	-8	31	-14	27	143
16	2.0	-145	1161	82	131	72	151	267
20	2.2	15	1961	262	181	115	213	
24	2.4	175		442	231	158		
26	2.6	255		532	281	201		
28		335						

Totals may not agree due to rounding-off.

### **GROWER'S OWN CROP BUDGET**

Variable Costs excl. VAT (€/Acre)

		WINTER	R WHEAT	SPRING	BARLEY	ANOTHE	R CROP
		Your Figures	Teagasc Figures	Your Figures	Teagasc Figures	Your Figures	Teagasc Figures
MATERIALS							
$(\mathbf{A} = \mathbf{B} + \mathbf{C} + \mathbf{D} + \mathbf{E} + \mathbf{F} + \mathbf{G})$	Α		<u>306</u>		<u>199</u>		
Seed	в		30		32		
Fertilisers	С		163		115		
Sprays:							
Herbicides	D		23		18		
Fungicides	Е		75		32		
Insecticides	F		9		2		
Growth Regulators	G		6		0		
HIRE MACHINERY							
$(\mathbf{H} = \mathbf{I} + \mathbf{J} + \mathbf{K} + \mathbf{L})$	Н		<u>183</u>		<u>160</u>		
Plough, Till and Sow	I		69		69		
Spray	J		38		23		
Fertiliser Spreading	κ		23		15		
Harvesting	L		53		53		
MISCELLANEOUS							
( <b>M</b> =N+O)	М		<u>37</u>		<u>23</u>		
Interest (6%)	N		12		5		
Transport (€6/Tonne)	0		24		18		
TOTAL VARIABLE							
COSTS (P = A+H+M)	Ρ		<u>526</u>		<u>383</u>		
Tonnes to cover variable							
costs ( <b>Q</b> = P/R)	Q		3.5		2.7		
Net Price (€/Tonne)	R		150		140		
AID (€/Acre)	S		0		0		
Straw (€/Acre)	т		36		40		
Projected yield	U		4		3.0		
Gross Margins (€/Acre)							
(V = (R*U)+S+T-P)	V		<u>111</u>		<u>78</u>		
Gross Margins (€/Acre)							

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

## Share Farming Crop Budget

Variable Costs excl. VAT (€/Acre)	г   	Crop Budget (€/ac)	ר ו ו =	г I I	Land- owner Share (€/ac)	+	Share Farmer Share (€/ac)
MATERIALS (A= B+C+D+E+F+G)	,   [		1				
Seed E Fertilisers C Sprays:			i				
HerbicidesEFungicidesEInsecticidesFGrowth RegulatorsG	: :						
MACHINERY COSTS (H =I+J+K+L)	 		I I	1 1 [			
0			 				
MISCELLANEOUS COSTS (M =N+O) N	ן ין[		I I	<b> </b> [			
Interest N Transport C			!	1			
TOTAL VARIABLE COSTS   (P =A+H+M)   Tonnes to cover variable   costs (Q =P/R)	ľ		   				
Net Price ( $\notin$ /Tonne)FAID ( $\notin$ /Acre)SREPS $\notin$ /Acre)TStraw ( $\notin$ /Acre)UProjected yieldVGross Margins ( $\notin$ /Acre)U( $W = (R^*V)+S+T+U-P)$ W	3                     		     			+	

### 2014 NON CEREAL CROP MARGINS

Variable Costs excl. VAT (€/hectare)

	F. BEET	Potatoes	MAIZE	PEAS	BEANS	OILSEE	D RAPE
		Main Crop				Winter	Spring
MATERIALS	<u>934</u>	<u>2408</u>	<u>695</u>	<u>454</u>	<u>445</u>	<u>603</u>	<u>382</u>
Seed Fertilisers	160 514	1040 548	180 450	161 144	152 144	80 343	90 254
Sprays: Herbicides Fungicides Insecticides	190 30 40	140 550 130	65 0 0	70 72 7	70 72 7	95 60 25	30 0 8
HIRE MACHINERY	<u>614</u>	<u>2305</u>	<u>557</u>	<u>404</u>	<u>394</u>	<u>501</u>	<u>463</u>
Plough, Till and Sow Roll Spray Fertiliser Spreading Swathing/Dessication Harvesting(grading into store incl)	250 0 76 38 0 250	750 0 342 38 0 1175	250 0 19 38 0 250	170 18 57 19 0 140	170 18 57 19 0 130	170 18 76 57 50 130	170 18 57 38 50 130
MISCELLANEOUS	<u>393</u>	<u>324</u>	<u>324</u>	<u>53</u>	<u>46</u>	<u>54</u>	<u>28</u>
Interest (6%) Transport (€6/Tonne) Bird Control	33 360 0	84 240 0	24 300 0	11 30 12	13 33 0	21 27 6	10 18 0
TOTAL VARIABLE COSTS	<u>1941</u>	<u>5038</u>	<u>1576</u>	<u>912</u>	<u>885</u>	<u>1158</u>	<u>873</u>
Break-even yield	48.5	25.2	35.0	3.6	4.1	3.7	2.8
Net Price (€/Tonne) AID (SFP) = NOT included	40 0	200 0	45 0	250 0	215 0	310 0	310 0

### Gross Margins (€/ha)

	BEET	Potatoes	MAIZE	PEAS	BEANS	OILSEED RAPE	
Pulse/		Main				Winter	Spring
OSR		Crop					
Tonnes/hectare 2.0							-253
(Maize, beet & potatoes) 2.5							-98
30 3.0		962	-226			-228	57
35 4.0		1962	-1	88	-25	82	367
40 4.5	-341	2962	224	213	82	237	522
50 5.0	59	4962	674	338	190	392	
60 5.5	459		1124	463	297		
65 6.0	659		1349	588	405		
70	859						

Covering Maize with plastic mulch will cost an extra €300/ha but will improve quality and increase yield. Totals may not agree due to rounding-off.

B. INPUT CO	OSTS: NON CEREAL CROPS					€/ha
Beet:	1,000 kg Beet cmpnd @ 400 kg CAN + S @	€390 /t €310 /t	= =	€390 — €124 —		€514
Maize:	620 kg 0-7-30 @ 670 kg CAN	€390 /t	= =	€242 — €208 —		€450
Beans/Peas	: 370 kg 0-7-30					€144
Winter OSR	: 370 kg 10-10-20 @ 250 kg Urea @ 280 kg ASN @	€420 /t €380 /t €330 /t	= = =	€155 → €95 €92 →	]	€343
Spring OSR	: 370 kg 13-6-20 @ 330 kg CAN+S @	€410 /t €310 /t	= =	€152 — €102 —		€254

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

#### **2014 FORAGE CROP MARGINS**

	F. BEET	SWEDES	KALE	RAPE	STUBBLE TURNIPS	MAIZE
MATERIALS	934	478	504	271	214	695
Seed Fertilisers	160 514	80 233	102 342	30 241	78 136	180 450
Sprays: Herbicides Fungicides Insecticides	190 30 40	105 35 25	60 0 0	0 0 0	0 0 0	65 0 0
HIRE MACHINERY	664	255	208	189	99	607
Seedbed Prep + sow Spray Fertiliser Spreading Harvesting+COVERING	250 76 38 300	200 36 19 0	170 19 19 0	170 0 19 0	80 0 19 0	250 19 38 300
TOTAL VARIABLE COSTS	1598	733	712	460	313	1302
GREEN YIELD (Tonnes/hectare) Leaves(+roots) DRY MATTER (Tonnes/hectare)	124	74	37	42	25	55
UTILISED	13.0	5.2	6.0	3.5	2.5	12.5
COST (€/Tonne util DM)	123	141	119	132	125	104

#### Variable Costs excl. VAT (€/Hectare)

Covering Maize with plastic mulch will cost an extra €300/ha but will improve quality and increase yield. Forage crops should be also evaluated on net energy, protein content etc. to discern a more complete value Totals may not agree due to rounding-off.

#### **COMMENT ON FORAGE CROP COSTS**

Grazed Grass is likely to continue to be the cheapest fodder at about €50/tonne DM utilised. It has the advantage of producing very good yields in most locations and of course is extremely convenient to produce and utilise.

**Grass Silage:** First cut grass silage can be produced at reasonable costs – approximately  $\in$ 130/tonne DM utilised. Grass silage costs vary considerably depending on yields. Second and third cut silage are more expensive forms of fodder (circa  $\in$ 150/t). Moreover, the variability in yield and quality of second and third cut silage has forced many farmers to consider alternatives such as maize, whole crop wheat and fodder beet.

**Non Grass Silage:** The cost per tonne dry matter utilised for maize is approximately €104 and whole crop wheat is €130. Fodder Beet roots are estimated to cost €123/tonne DM utilised.

Production from Brassicas such as swedes, kale and stubble turnips will not match the main fodder crops and have a reasonable cost at around €130 per tonne of DM utilised. Recent trial work in Moorepark has achieved high kale yields from excellent husbandry.

Maize produces a high yield of quality feed at lower costs than grass silage giving improved animal performance. It is convenient as sowing and harvesting are done by contractor. Feeding can be done with existing grass silage facilities. Moreover, there are no rotational constraints and it utilises slurry very efficiently.

The convenience of growing, storing and feeding as well as animal performance are important considerations when deciding which fodder crop to grow.

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  $\leq$ 350/ha may be applied for a full year in the case of grazed grass but somewhat less in the case of grass silage and brassicas.

### Share farming

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 land-owner 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 Single Farm Payment, REPS etc in their own name as normal. Key points:

- Share Farming is fully compliant with EU/DAFM schemes (incl. REPS)
- 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

All tillage growers and landowners who are currently involved in land rental should familiarise themselves with this agreement and assess whether it is a viable option for the future.

A template of a Share Farm Agreement is available (www.teagasc.ie) and sets out how an example agreement can operate. Contact your local advisor for more details.

#### **Organic Tillage**

Organic tillage has been a profitable enterprise over the last number of years. A stockless tillage system can be practised; however a mixed stock and tillage organic system is most sustainable due to the availability of slurry and farmyard manure.

Rotations are used to:

- 1. replenish Nitrogen (with clover or other legumes)
- 2. manage weeds and diseases
- 3. build organic matter
- 4. allow diversity and spread financial risk

Crop nutrients include legumes and permissible organic manures and mineral fertilisers. Pests, diseases and weeds are controlled by planting disease resistant varieties, mechanical weeding and false/stale seedbed techniques. There is a strong demand for organic cereals both for livestock and human consumption. The demand for organic cereals is expected to continue for the foreseeable future.

The Organic Farming Scheme (OFS) and organic capital scheme for on and off-farm investment are support payments that may be claimed by organic farmers. At present new schemes are being developed and are due to open in early 2015. Output is lower than conventional units but prices for grain are higher.

Further information on organic farming can be obtained from the Teagasc organic specialist advisers.

January 2014

