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Rural Business Research

Farm Business Survey

2017/2018
Crop Production in England

Ben Lang

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Crop Production in England 2017/2018

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Rural Business Unit
Environmental Economy and Policy Research Group
Department of Land Economy
16-21 Silver Street
Cambridge
CB3 9EP

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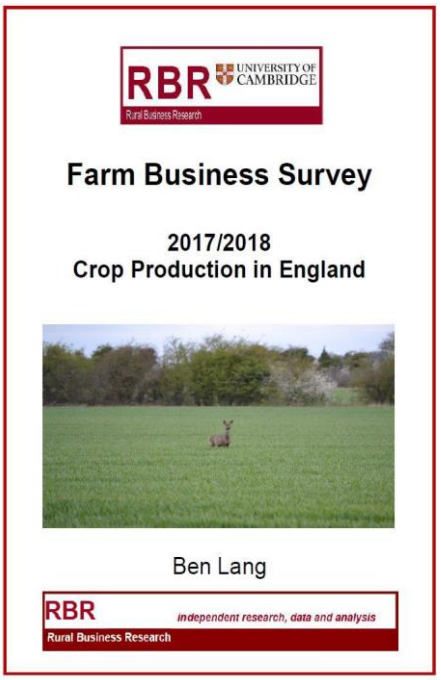
Crop Production in England 2017/2018
The full printed version of the report is now available and comprises:

- Overview of Profitability, Assets and Liabilities
- Agri-environment, Diversification, Basic Payment: excludes agriculture
- Arable Farm Performance: agriculture excluding diversification
- Crop Enterprise Performance
- Net Margin and Cost of Production Estimation
- Organic Arable Performance
- Weather, Economic Context and Policy



Appendix 1 Agricultural Output and Costs Comparison by Farm Type, District, Size and Performance (37 tables)

Appendix 2 Gross Margin Results for Comparison by Farm Type, District, Size and Performance - Non Organic (116 tables)

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This publication can be obtained from Vasiliki Tzortzi

Rural Business Unit
Department of Land Economy
19 Silver Street
Cambridge CB3
9EP

Tel: 01223 337153

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Foreword to the Thirteenth Series

This series of reports on the economics of agriculture and horticulture in England from *Rural Business Research (RBR)* represents the thirteenth series of outputs that focus on providing independent data and analysis to the individual sectors of agriculture and horticulture. As the UK edges closer to an outcome following the EU referendum in June 2016, much uncertainty remains in the sector, the UK and across the EU. At the time of writing the political landscape remains uncertain with the three main outcomes still being possible: i) UK departure from the EU with a deal; ii) UK departure from the EU with no deal; iii) a delay in the UK's departure or a 'no Brexit' outcome. On the assumption that the UK will leave the EU, and that a new UK Agriculture Bill will be passed, then the direction of policy travel for UK agriculture and horticulture has become clearer. The seven year transition deal in subsidy payments based on the Basic Payment demonstrates the plan to transition support to farmers away from this broad land-area based payment structure to one which rewards farmers and land managers more for providing environmental public goods. Reflecting on the likely drivers of success for farm and horticultural business in the future, irrespective of the Brexit outcomes and the future trade deals that may follow, the fundamental business drivers of success remain unchanged. Successful businesses focus on margins by understanding their cost, revenue and market base and they undertake comparative analysis of their business performance against other businesses. These successful businesses look for new business opportunities, and are frequently more diversified in their business base than less successful businesses. Within our reports, RBR aims to provide businesses with the independent data, analysis and interpretation to help them identify their strengths and challenges.

For the 2017/18 year, average Farm Business Income (FBI), derived from our work on the Farm Business Survey (FBS), was £56,500, an increase of 49% on the previous year. While a number of factors led to this increase, the devaluation of the pound, leading to UK commodity prices increasing, played a key role in this income boost. Most farm types witnessed an increase in FBI, with the exception of pig farms who faced an increased cost base at the same time as a decreased closing valuations at the year end from a drop in pig prices at that point in time. Dairy farms witnessed the greatest percentage price increase from 2016/17, as they benefited from both increased milk output and improved milk prices. The influence of currency fluctuation on the performance of agriculture is well recognised. The output of the Brexit scenario on the strength or weakness of sterling alone will have a large influence on business profitability moving forward.

With this thirteenth series of reports on the performance of the different sectors of agriculture and horticulture, our core aim of helping inform agricultural and horticultural businesses about the economics in their sector remains unchanged, and is arguably of even greater importance at this historic point in time. This series of reports, and our work on the FBS more generally, would not be possible without the cooperation of the farmers and growers who participate in the FBS to ensure that the data we provide for policy making, and in our reports and free to use online data services at www.farmbusinesssurvey.co.uk, is truly representative of the sectors. Our sincere thanks therefore go to the farmers and growers for their most valuable contribution.

Professor Paul Wilson
Chief Executive Officer, Rural Business Research
February 2019
www.ruralbusinessresearch.co.uk

ACKNOWLEDGEMENTS

Rural Business Research is very grateful to the farmers who have voluntarily provided records and information on which the FBS and this report are prepared.

Rural Business Research staff across England collected farm data. At the Rural Business Unit, Mark Reader and Richard Dexter designed the reporting system and Hayley Sherlock and Stephen Horsley contributed to the production of the report. Thank you Stephen Horsley who also supplied the cover photograph. Lynne Stretton of Askham Bryan College carried out a quality assurance review of the report.

1.0 Summary of Profitability, Assets and Liabilities

- Cereals, Vegetables and Roots FBI was £309, £430 and £370 per hectare respectively
- New farm classifications introduced to allow more relevant farm comparison
- Reduced expenditure on fertiliser and crop protection on Cereals farms
- Little change to net worth across all arable farm types in 2017
- Low return on capital employed despite improved profitability

The results presented in this chapter relate to the whole farm business and include agriculture, agri environment scheme participation, diversification outside agriculture, and the Basic Payment Scheme. The results in later chapters focus on the contribution from these four cost centres.

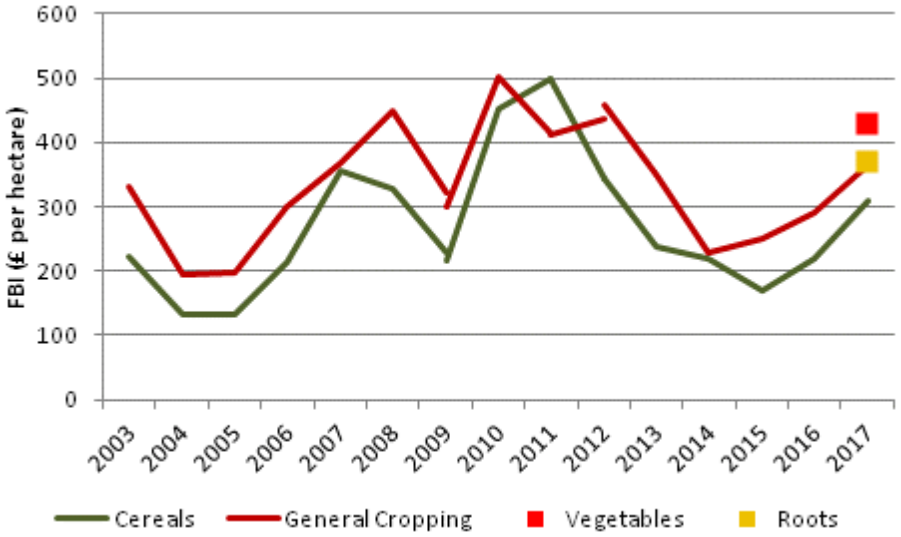
In 2015 and 2016, British Sugar reduced their contracted tonnage of sugar by 20 per cent. This resulted in changes to cropping on farms, and a number of farms in the FBS changed from General Cropping to Cereals. In 2017, sugar demand returned to near usual levels and a number of Cereals farms reverted to the General Cropping classification. As a result of these changes, comparisons of arable farm performance between years should be made with caution.

To allow improved comparison of farm businesses, we have introduced new farm types; Vegetables and Roots. The Vegetables farms are farms that may grow a wide range of crops, these include vegetables crops. Roots farms may grow a wide range of crops, but they do not grow vegetables and most grow potatoes or sugar beet. We excluded vining peas from our classification, because their production rarely uses significant farm resources.

1.1 Time Series Farm Business Income on Cereals and General Cropping Farms

The annual Farm Business Income (FBI) of arable farms is shown in figure 1.1.

Figure 1.1 Time Series FBI for Cereals and General Cropping Farms in England.



The FBI of Cereals, Vegetables and Roots farms were £309, £430 and £370 per hectare respectively. The FBI on Cereals farms was 30 per cent higher than the five year average. The further weakening

of sterling was the main driver of the improved farm incomes, but also of higher commodity prices and higher unit prices of inputs.

Arable farm incomes have recovered since 2015, partially due to the weakening of sterling, which resulted in higher crop prices and higher Basic Payment Scheme receipts.

Higher unit costs, but reduced use resulted in minimal changes to expenditure on fixed costs. One specific area of activity was that farmers worked to ensure that new Farm Business Tenancies (FBTs) would allow for a wide range of scenarios, including changes to the Basic Payment scheme, after the UK leaves the European Union[1].

1.2 Farm Business Income 2017/2018

Table 1.1 shows the profitability of Cereals, Vegetables and Roots Farms in 2017

	Cereals		Vegetables	Roots
	2016	2017	2017	2017
Number of farms	353	335	48	139
Area of farm (ha)	198	208	177	241
Crop output	805	872	3119	1362
Livestock output	39	42	22	73
Agri-environment	24	22	25	42
Other output	272	253	443	217
BPS	198	212	186	206
Total Output	**1,337**	**1399**	**3795**	**1900**
Variable costs	464	461	1503	704
Fixed costs	659	634	1869	828
Total costs	**1,123**	**1095**	**3372**	**1532**
Profit on sale of assets	**3**	**5**	**6**	**2**
Farm Business Income	**218**	**309**	**430**	**370**
Less labour	20	17	35	15
Add interest	29	26	51	32
Less rental costs	116	118	123	124
Net Farm Income	**110**	**201**	**324**	**264**

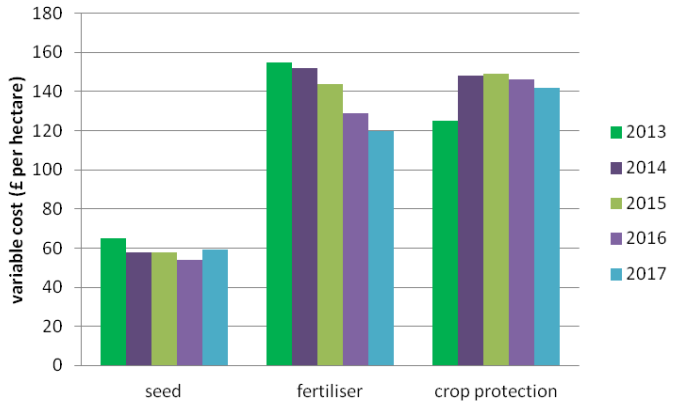
Variable and Fixed Costs

Unit prices of variable and fixed inputs increased, but a further expansion of spring cropping, in place of winter crops, reduced the intensity of arable farming activity. Figure 1.2 shows the recent use of variable costs on cereals farms.

[1] Farmers Weekly, 6 December 2017

Fertiliser prices were low, relative to previous years. Taking advantage of low early season prices, farmers purchased nitrogen earlier and in greater quantities than previous years. As prices increased later in 2017, demand for nitrogen fell.

Figure 1.2 Cereals Farms, Variable Costs 2013/2014 and 2017/18



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1.3 Assets and Liabilities

Table 1.2 summarises the balance sheets of Cereals and General Cropping farms in 2017.

Table 1.2 Assets and Liabilities on Cereals, Vegetables and Roots farms, 2017

	Cereals		Vegetables		Roots	
	Opening 2017	Closing 2017	Opening 2017	Closing 2017	Opening 2017	Closing 2017
Number of farms	335	335	48	48	139	139
Farm area (ha)	208	208	177	177	241	241
Assets						
Land & buildings	12,302	12,280	13,677	13,478	12,160	12,104
Machinery	821	847	1,232	1,232	830	851
BPS Entitlement	189	201	168	177	184	200
Other fixed assets	40	41	37	37	101	97
Current assets	1,124	1,180	1,554	1,594	1,141	1,235
Liabilities	1,112	1,184	2,747	2,812	1,379	1,453
Net Worth	13,364	13,365	13,920	13,705	13,037	13,034

Asset values reduced as a result of the falling value of agricultural land, partially mitigated by property investment on farms of all types. Investment in machinery increased further on Cereals and Roots farms, whilst on Vegetables farms, investment on machinery was equivalent to the depreciation charge resulting in no change in value in the year. Liquidity improved on all farms, as current assets increased in value. However, liabilities also increased. As a result, net worth was virtually unchanged on Cereals and Roots farms, but reduced, by nearly two per cent on Vegetables farms. The balance sheet is analysed further in table 1.3. Our analysis is based on Defra's approach to balance sheet analysis[2].

Table 1.3 Balance sheet analysis of Cereals, Vegetables and Roots farms, 2017

[2] Balance sheet analysis and farming performance, England 2016 /2017, Defra, 23 January 2018

	Cereals Closing 2017	Vegetables Closing 2017	Roots Closing 2017	Performance guideline
Gearing ratio	8%	17%	10%	
Liquidity	207%	7%	151%	>100%
Interest / FBI	7%	10%	7%	
Return on capital	0.08%	1.2%	0.08%	

The gearing ratio provides an indicator of indebtedness of farms. The average gearing of Vegetables farms was particularly high at 17 per cent, with more favourable lower ratios on Cereals and Roots farms.

Liquidity is a measure of the short term financial viability of farms. The Vegetables farms showed especially low levels of liquidity in comparison with the more favourable situation of the average Cereals and Roots farms.

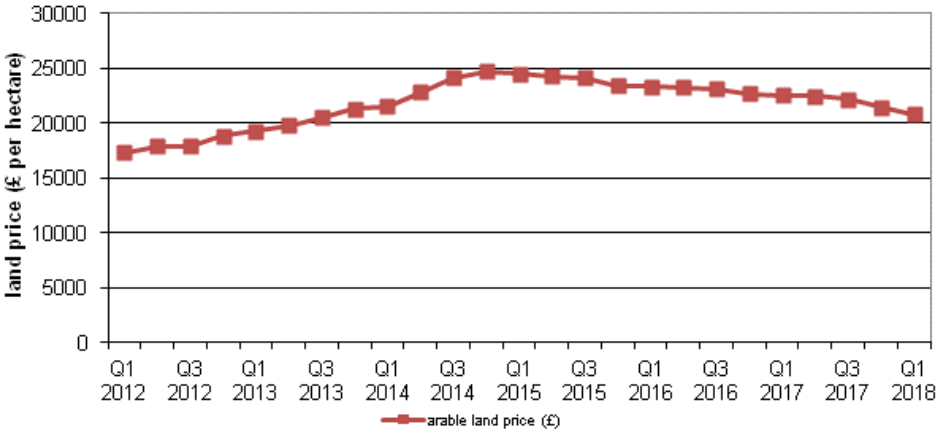
A consequence of the higher indebtedness of Vegetables farms was a higher interest charge. Although the FBI of these farms was also relatively high, the Vegetables farms again stand out as having an above average ratio of interest to FBI.

On average, all farm types returned a low return on capital. This time, the Vegetables farms gave the most favourable performance due to the reduced employment of assets for each unit of output.

Land

Our analysis of farm performance continues with a more detailed look at the balance sheet performance. Figure 1.4 shows the development of arable land prices since 2012.

Figure 1.4 Arable land values from January 2012 to April 2018



Source: Reanalysed from surveyors' industry commentary

Arable land prices fell by about 16 per cent between late 2014 and early 2018, to a price of around £20,800 per hectare. Similar prices were last seen in 2013.

Political and economic uncertainty influenced land trading decisions in 2017, but agents suggested that anticipated changes in the support regime, and the prospect of higher interest rates, tended to reduce land marketing activity. Around 20 per cent fewer holdings were marketed in 2017, relative to 2016 in Great Britain[3]. Purchases driven by the need to secure rollover relief were important drivers of land purchase[4]. Holdings with non agricultural income streams proved to be in particular demand in 2017[5]. Debt was cited as the reason for sale in 21 per cent of cases, up from six per cent in 2007. Farmers were the main group of sellers, accounting for 46 per cent of land sold, for reasons of debt, relocation and investment.

Basic Payment Entitlement

The value of Basic Payment Entitlement on Cereals farms, as calculated in the Farm Business Survey, increased by about seven per cent to £201 per hectare. This compares with a market value of traded entitlement in 2017 of £144 per hectare[6].
The market for entitlement took account of:

- Farmers' expectations of future pillar 1 support
- Expectations for the sterling /euro exchange rate

Machinery

Figures 1.5 and 1.6 shows the net investment in machinery, and closing value of machinery respectively, on Cereals and General Cropping farms.

Figure 1.5 Net Machinery Expenditure on Cereals and General Cropping Farms 2016/2017 and 2017/18

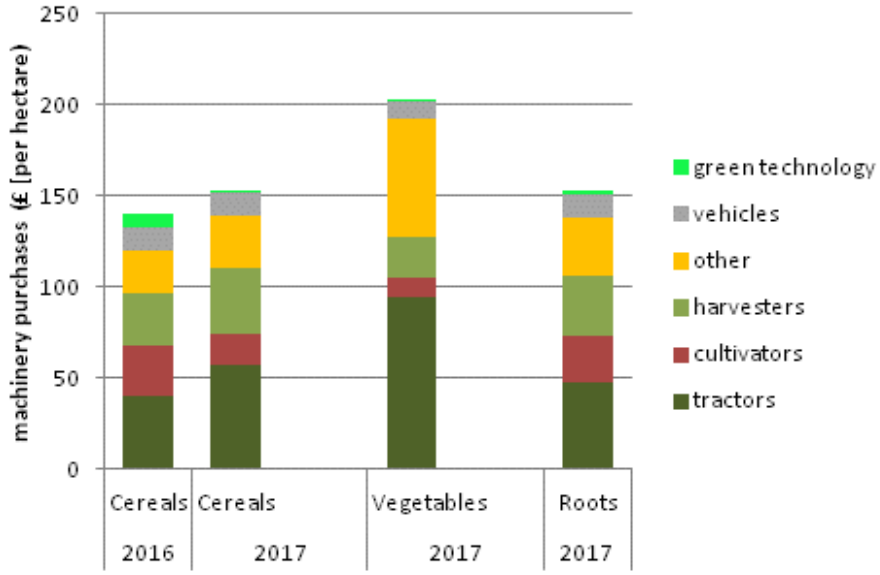
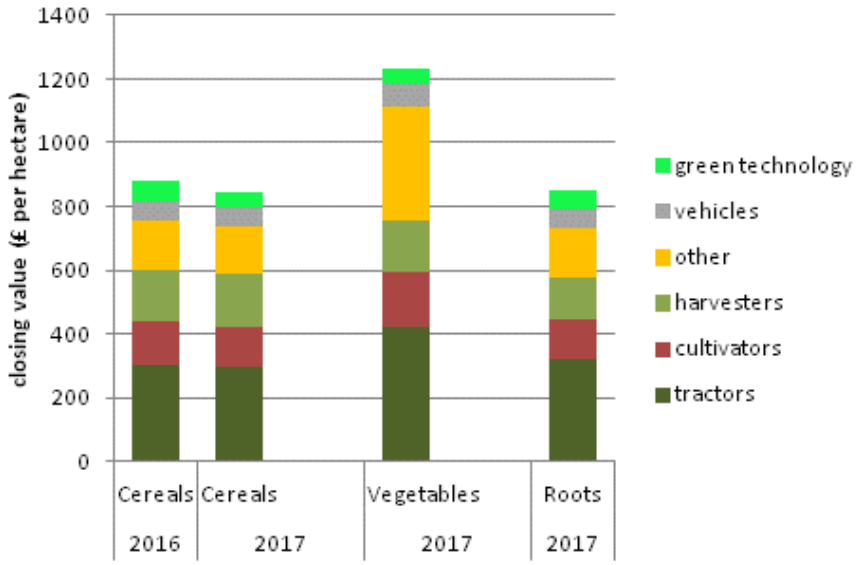


Figure 1.6 Closing Valuation of Machinery on Cereals and General Cropping Farms 2016/2017 and 2017/18

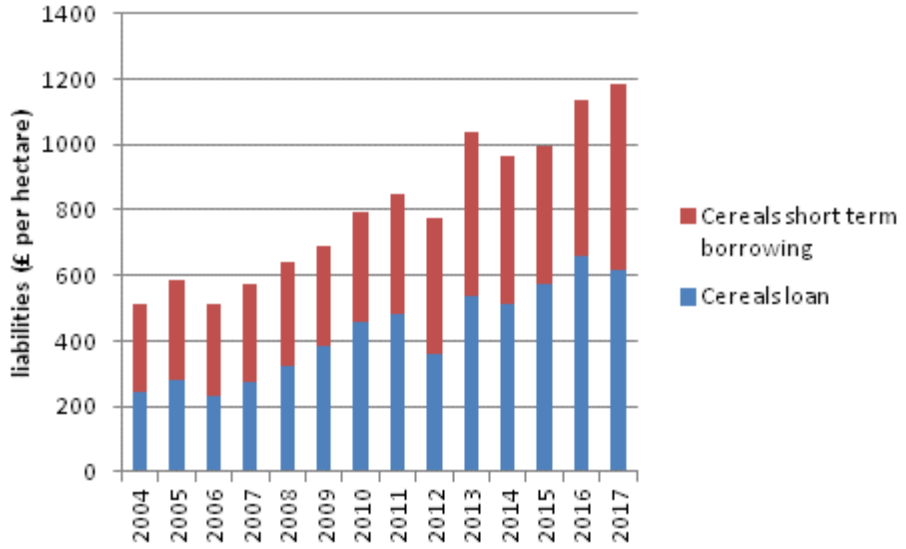
[3] Spotlight 2018, Savills Research, December 2018
[4] Farmers Weekly Interactive, www.fwi.co.uk , 25 August 2017
[5] Farmers Weekly Interactive, www.fwi.co.uk , 27 April 2018
[6] 2017 UK Entitlement Trading Market Report, www.townsendcharteredsurveyors.co.uk , September 2017



Liabilities

Figure 1.7 shows the short and long term closing liabilities on Cereals farms since 2004.

Figure 1.7 Short and Long Term Closing Liabilities on Cereals Farms, 2004 to 2017



In the year to March 2018, 11,941 tractors were sold onto farms of all types in the UK[7]. This was 6.2 per cent higher than in the previous year. The average power of tractors sold in 2017 was 162 horsepower.

Agents reported a rise in the number of dispersal sales as farms restructured their businesses[8]. The weak value of sterling made used UK machinery attractive to overseas buyers and ensured strong demand.

[7] Agricultural Engineers Association, www.aea.uk.com

[8] Farmers Weekly, 12 January 2018

2 Agri-environment, Diversification, Basic Payment: excludes agriculture

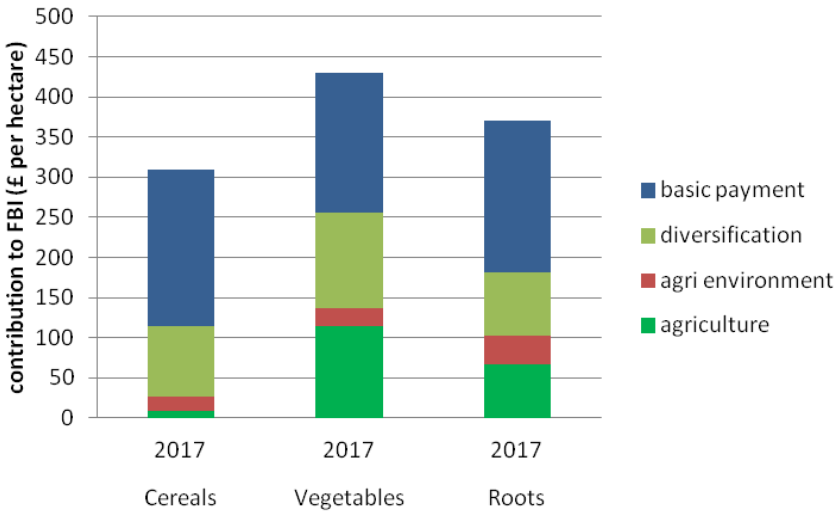
2.0 Agri-environment, Diversification and Basic Payment

- The Basic Payment Scheme remained the main contributor to FBI
- Agri environment activity declined to lowest level since 2004 on Cereals farms
- Rental activity remained the main diversification activity
- Rental activity and food processing were important on some Vegetables farms

The results presented in this chapter relate to **agri-environment scheme participation, diversification outside agriculture and the Basic Payment scheme**. The outputs, costs and net income attributable to these activities can be summed with that from agriculture to give FBI for the whole farm business. Whilst output and variable costs can be readily split between cost centres, some element of estimation is needed in order to share labour, machinery, property and overhead costs. Within the FBS, this is carried out on a consistent basis using an agreed approach[9].

The contribution to whole farm FBI of the four activities is shown in figure 2.1.

Figure 2.1 Agriculture, Agri-environment, Diversification and Basic Payment Contribution to FBI, 2016 and 201



In 2017, all four activities were profitable on the average Cereals, Vegetables and Roots farms. The greatest contribution to farm FBI was again, from the Basic Payment Scheme. The BPS contributed 63 per cent of FBI on Cereals farms FBI and 40 per cent of FBI on Vegetables farms.

2.1 Agri-environment

The output, costs and contribution of agri environment scheme participation to FBI is shown in Table 2.1. On Cereals farms, the contribution of agri environment activity to FBI in 2017 was £18 per hectare. This was 45 per cent of the peak value of £40 per hectare in 2007 and the lowest since 2004. Agri environment scheme participation accounted for six per cent of FBI in 2017.

[9] Appendix 2 (Item VI) Farm Accounts in England 2008/2009 Defra statistics
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/423700/fbs-fixedcostmethod-23apr15.pdf

Table 2.1 Agri-environment Output and Costs, Cereals and General Cropping Farms 2016/2017 and 2017/2018

	Cereals		Vegetable	Roots
	£ per hectare			
	2016	2017	2017	2017
Number of farms	353	335	48	139
Agri environment output	25	22	25	42
Agri environment costs	5	4	3	6
Agri environment FBI	20	18	21	36
Whole business FBI	218	309	430	370

Vegetables farms tend to occupy land of high value, and whilst agri environment scheme participation is compatible with the customer's assurance schemes, producers tend to be reluctant to remove too much land from production. Some Roots farms have the opportunity to participate in HLS and higher tier CSS, so the average agri environment output on this group of farms is higher than the ELS payment which is set at £30 per hectare.

Participation in the Entry Level Stewardship (ELS) peaked in 2013, and participation in Higher Level Stewardship (HLS) peaked in 2014. Participation and scheme receipts have declined steadily since 2014. These legacy schemes were replaced in 2015 by the Mid Tier and Higher Tier of the Countryside Stewardship Scheme (CSS). About 5,000 farmers in England (of all farm types) applied for CSS[10]. Farmers applying for CSS reported considerable delays in the application process. Once accepted onto the scheme, many participants had to wait until 2018 for payments relating to schemes commencing in January 2017. The 18 per cent of applicants who had still not been paid by 21 June 2018 were eligible for bridging payments, of 75 per cent of the scheme value[11].

In response to the problems encountered with CSS, Defra introduced a simplified version of CSS. This featured a simplified menu and the removal of competitive scoring[12]. In April 2018, Severn Trent Water launched its privately funded 'cash for catchments' scheme[13]. The scheme invited land managers to submit innovative ideas for funding. It was available to farms close to the River Trent.

2.2 Diversification

Table 2.2 shows the performance of diversified activities on arable farms in 2015 and 2016. Diversification contributed 29 per cent of FBI on Cereals farms overall. At the industry level, this suggests true diversification and reduced exposure to the economic performance of agriculture. However, levels of participation vary from farm to farm and many farms, including many tenants and those distant from urban areas, have only limited opportunities to diversify.

Rental activity, which includes letting of residential, commercial and agricultural buildings, accounted for 68 per cent of diversification output on Cereals farms. The second most important activity was energy generation, which accounted for 17 per cent of diversification output.

[10] Farmers Weekly, 1 December 2018
[11] Defra, www.gov.uk , 20 June 2018
[12] Farmers Weekly, 1 December 2018
[13] Farmers Weekly Interactive, www.fwi.co.uk , 30 April 2018

Table 2.2 Diversification Output and Costs, Cereals and General Cropping Farms, 2016/2017 and 2017/2018

	Cereals	Vegetable	Roots
	£ per hectare		
	2016	2017	2017	2017
Diversification output	152	147	295	133
Of which:				
Rental	96	91	167	76
Recreation	10	9	19	5
Food processing and retailing	3	6	78	11
Tourism	5	6	6	13
Solar	11	10	17	10
Other energy	8	7	2	11
Other	19	18	6	7
Costs	61	58	175	53
Diversification FBI	91	89	120	79
	218	309	430	370

Since 2011, on average, residential rents have increased by around two per cent per year in most parts of England[14]. In London, the average rate has been nearer to three per cent, but rents have been volatile and have reduced since mid 2015, with the result that rents in the surrounding counties have been relatively high and variable. Rents in Northern regions increased by under two per cent.

2.3 Basic Payment Scheme (BPS)

Table 2.4 shows the output and costs of direct payments on arable farms in 2015 and 2016.

Table 2.4 Basic Payment Output and Costs 2015/2016 and 2016/2017, Cereals and General Cropping Farms

	Cereals		Vegetables	Roots
	£ per hectare			
	2016	2017	2017	2017
Basic Payment	198	212	186	206
Costs	20	18	12	18
Contribution to FBI	178	194	174	188
Whole farm FBI	218	309	430	370

The 2017 Basic Payment rate was confirmed at £230.97 per hectare, including the greening payment, for non SDA land. Financial discipline was levied at about 1.39 per cent. The contribution of BPS to FBI was £194, £174 and £188 per hectare on Cereals, Vegetables and Roots farms respectively. On Cereals farms, BPS accounted for 63 per cent of the total FBI. This reduced to 40 per cent on Vegetables farms.

[14] Index of Private Housing Rental Prices, UK: September 2018, Office for National Statistics, 17 October 2018

3 Arable Farm Performance: agriculture excluding diversification

3.0 Agriculture Performance

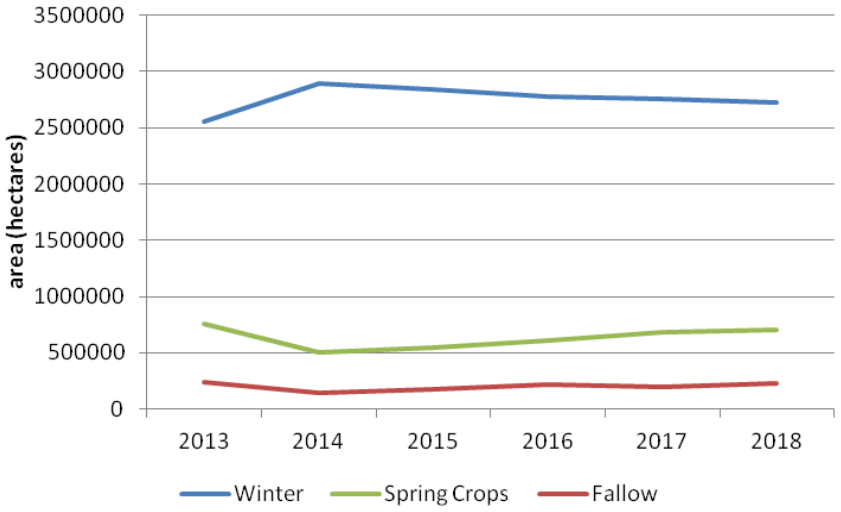
- Farmers grew a record area of field beans, totalling 189,000 hectares
- The area of spring crops expanded to 20 per cent of the crop area
- At 2.66 million hectares, the area of cereal crops was at its highest since 2008
- At 120,900 hectares, the area of oats was at its highest since the 1970s
- The area of maize, grown for AD or combining, reached 65,000 hectares
- Straw use in power stations increased by 30 per cent in 2017

The results presented in this Chapter, and in Appendix 2, relate solely to the activity of agriculture. The outputs, costs and agricultural FBI can be summed with that from agri environment scheme participation, diversification outside agriculture and the Basic Payment Scheme (BPS) to give results for the whole farm business. Whilst output and variable costs can be readily split between cost centres, some element of estimation is needed in order to share labour, machinery, property and overhead costs. Within the FBS, this is carried out on a consistent basis using an agreed approach. Some observations in Appendix 1 are based on sample sizes of less than 15 farms.

3.1 Cropping and Crop Areas

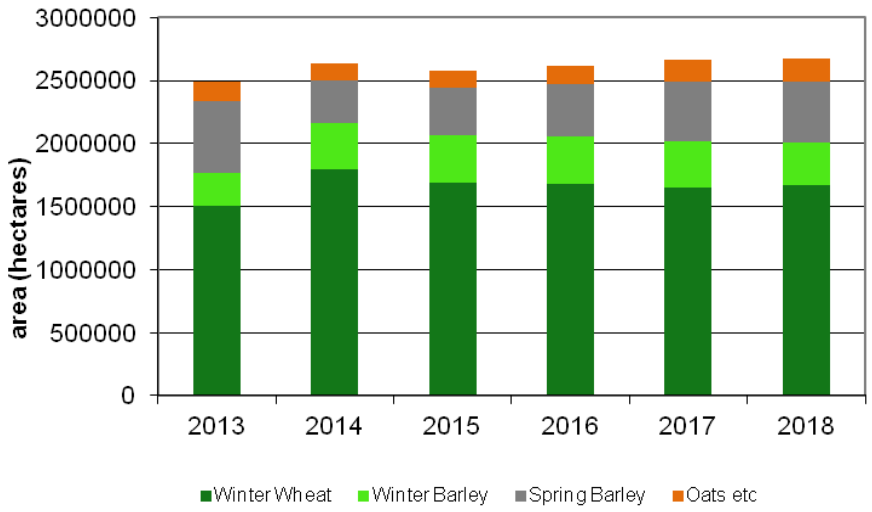
The trend of growing a greater area of spring cropping, at the expense of winter cropping, increased in 2017 and 2018 as shown in figure 3.1.

Figure 3.1 Area of Spring Cropping and Fallow Land in England, 2006 to 2017



Prior to 2013, spring crops accounted for 14 per cent of the total. In exceptionally difficult conditions for crop establishment in 2013, spring crops took a 22 per cent share of the cropping. Between 2014 and 2017, spring cropping rose from 15 to 20 of cent of the total. The fallow area was 200,000 hectares and about nine per cent higher than the five year average. Some growers opted to use fallow to meet Environmental Focus Areas (EFA) in support of their Basic Payments Scheme (BPS) claim. The areas of cereal, break and root crops are shown in figures 3.2 to 3.4 below.

Figure 3.2 Cereal Crop Area, 2013 to 2018 in England



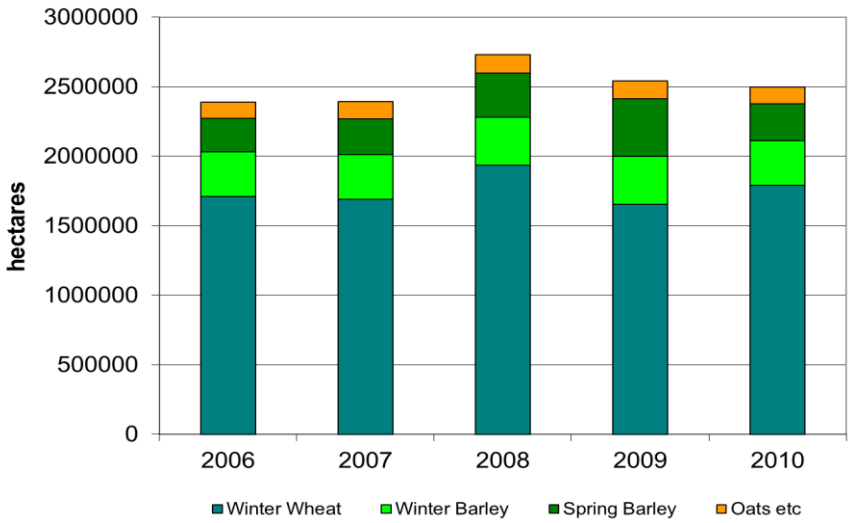
Source: Defra June Survey

At 2.66 million hectares, the area of cereal crops in 2017 was at its highest since 2008. The main reason for the increased area of cereals was an increased area of oats, reflecting demand for a crop associated with healthy eating. At 120,900 hectares, the area of oats was at its highest since the 1970s. But these areas were low in comparison to the area of around 818,000 hectares grown in the 1920s. The area of rye reached about 29,900 hectares, a similar area to that grown in 1950, but much higher than the 3,000 or so hectares grown annually through the 1990's and early 2000s. The increase is partly driven by demand for rye as an AD feedstock.

The wheat area was 1,652,000 hectares and three per cent below the area grown in the previous four years. The reduction in area is at least in part due to difficulties with blackgrass control.

At 843,000 hectares, barley remains a popular crop. In the third successive year of increased spring barley production, 57 per cent of the 2017 was sown to spring varieties.

Figure 3.3 Break Crop Area, 2013 to 2018 in England

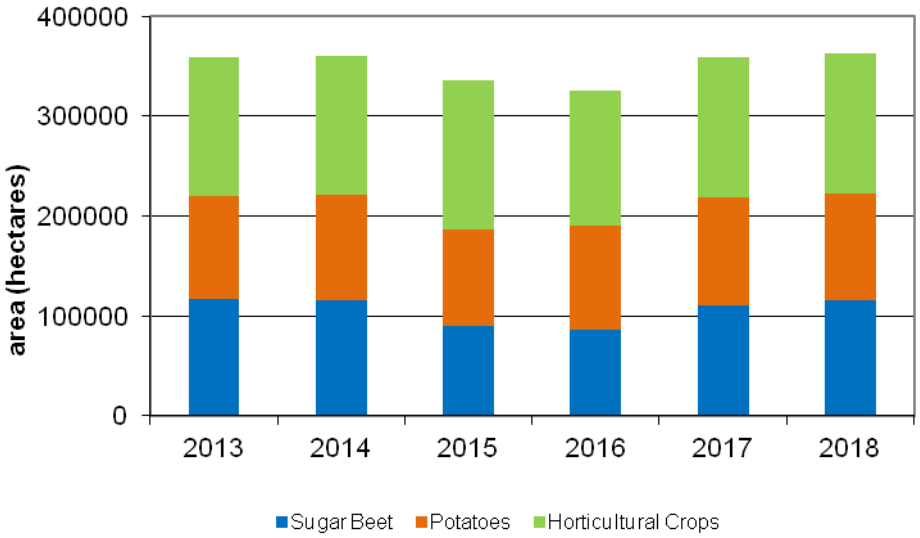


At 550,000 hectares, the oilseed rape area was 13 per cent below the five year average. The crop has recovered a little from a low area of 543,000 hectares grown in 2016, however, individual farmers anticipating difficulties with Cabbage Stem Flea Beetle (CSFB) have greatly reduced the area of oilseed rape on their farms. Across the EU, oilseed rape is estimated to have reduced by 912,000 hectares as

a result of the neonicotinoid ban[15]. In England, an estimated 70,000 hectares of oilseed rape were either lost, or failed to establish, across 18 counties, in autumn 2016[16].

Peas and beans were a popular option among growers seeking to meet EFA requirements in support of their Basic Payments Scheme (BPS) claim. The combined area of 228,000 hectares was the highest area since 2005. The area of field beans was 189,000 hectares. This is believed to be the highest recorded, the next highest area was 180,700 grown in 2005. Farmers facing losses of oilseed rape, due to dry conditions and CSFB, may have chosen to establish replacement pea and bean crops.

Figure 3.4 Sugar Beet, Potato and Horticultural Crop Area 2013 to 2018 in England



The sugar beet area was 111,000 hectares in 2017. British Sugar contracted for 20 per cent less sugar in 2015 and 2016, but increased their requirement in 2017 to former levels. In response, the 2017 area was 26 per cent higher than in 2015 and 2016, but still four per cent lower than in the preceding five years.

Following the favourable financial performance of potato production in 2016, farmers increased their potato area by four per cent in 2017 to 104,000 hectares. The area of horticultural crops decreased, by two per cent, to 142,900 hectares, in 2017.

Energy Crops

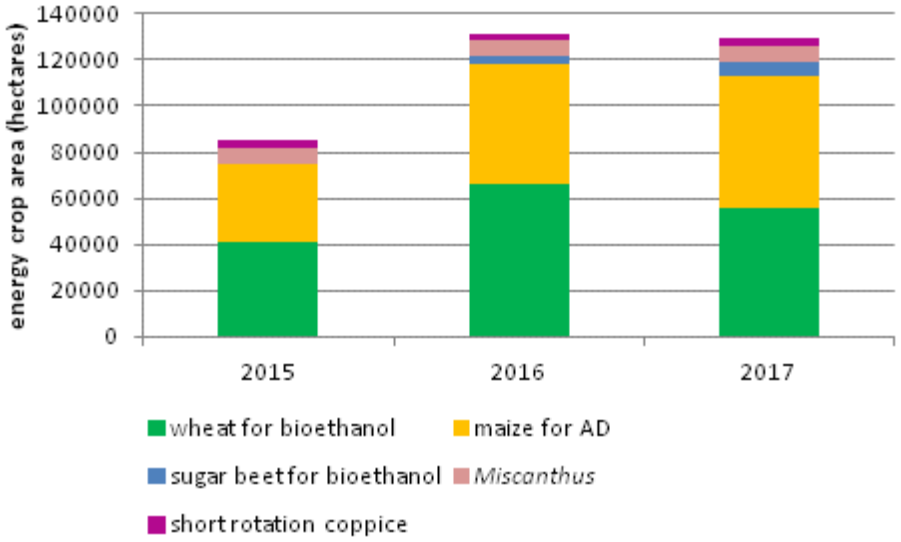
Included within the totals above were energy crops, amounting to just over two per cent of all arable land in the UK. The areas of wheat, maize, sugar beet, *Miscanthus* and short rotation coppice grown for energy in 2015 to 2017 are shown in figure 3.5.

The total area of crops grown for energy in 2017 was 129,000 hectares (131,000 in 2016). The area of maize, grown for anaerobic digestion (AD) or combining, reached 65,000 hectares. Driven by the expansion of AD activity, this represents a near 6 times increase on the 11,000 hectares grown in 2012 1nd 2013. The use of straw in straw burning power stations increased by 30 per cent to 727,000 hectares (560,000 hectares in 2016), as greater generation capacity was made available.

Figure 3.5 Areas of Energy Crops grown in the UK, 2015 to 2017

[15] Farmers Weekly Interactive, www.fwi.co.uk , 17 January 2017

[16] Farmers Weekly Interactive, www.fwi.co.uk , 3 November 2016



Source: Crops Grown for Bioenergy in the UK: 2017

3.2 Cereals Farms Performance (excluding organic farms)

There were 334 Cereals farms in the sample in 2017 (342 in 2016), with an average area of 208 hectares. The average contribution of agriculture to FBI on these farms was £8 per hectare.

Agricultural output, of £1,021 per hectare, was five per cent higher than in 2016 due mainly increased crop output of £872 per hectare. The variable costs on these farms summed to £375 per hectare, to give a gross margin of £646 per hectare.

Labour and machinery costs were very similar to the previous year. A small reduction in depreciation balanced an increase in contract expenditure. Fixed costs summed to £642 per hectare.

Exercising cost control, the mixed tenure Cereals farms achieved an agriculture contribution to FBI of £27 per hectare. The contribution of agriculture to FBI on tenanted farms was -£8 per hectare, after payment of rent of £164 per hectare. However, the owner occupied farms also failed to make a profit from agriculture with a contribution of -£27 per hectare to FBI.

Cereals Farms – County and Character Area (CA)

Among Cereals farms in 2017/ 2018, agriculture was most profitable in Lincolnshire and North Yorkshire where agricultural production contributed £149 per hectare and £143 per hectare to FBI respectively. Farmers in these counties grew relatively large areas of winter wheat and oilseed rape and generated above average crop output. Agriculture was also profitable in Cambridgeshire, Northumberland, Shropshire, Suffolk, Warwickshire and Wiltshire.

Agriculture was profitable on The Fens, the Trent and Belvoir Vales, South Norfolk and High Suffolk Clayland and on the Bedfordshire and Cambridgeshire Clayland, but not profitable on the South Suffolk and North Essex Clayland.

Cereals Farms – Performance Group

For the top quartile group of Cereals farms (by agricultural FBI performance), the average FBI contribution from agriculture was £275 per hectare. These farms grew above average areas of winter crops and had agricultural output from activities such as contracting. In comparison with average farms,

they had greater output in all revenue categories except for livestock, and lower costs in every category except for depreciation and costs relating to contracting.

3.3 Vegetables Farms Performance (excluding organic farms)

The sample of Vegetables farms included 48 farms, defined because they grew vegetable crops. Although some grew vining peas, no account was taken of this crop in the farm classification. The farms averaged 177 hectares of which around 25 per cent was cropped with vegetable crops. The remaining area was mainly in arable production as these farms had minimal involvement in livestock production.

Agriculture output averaged £3,290 per hectare, of which £3,119 was from crop sales. After deduction of variable costs of £1,020 per hectare, the average farm gross margin was £2,269 per hectare.

These farms make significant use of labour, to the value of £824 per hectare in 2017. Machinery and contract costs averaged £605 per hectare. Fixed costs summed to £2,161 per hectare. The average contribution of agriculture to FBI was £115 per hectare.

3.4 Roots Farms Performance (excluding organic farms)

The sample of 139 Roots farms averaged 241 hectares. These farms grew a wide range of arable crops typically including potato and sugar beet crops. Some grew vining peas, but no account was taken of this crop in the farm classification. These farms were more likely to raise livestock and to participate in agri environment schemes than other arable farms.

Agriculture output averaged £1,519 per hectare, of which £1,362 was from crop sales. Variable costs averaged £549 per hectare and the farm gross margin was £970 per hectare.

Of the total fixed costs, which summed to £905 per hectare, labour and machinery cost £569 per hectare (excluding contract charges of £116 per hectare). The average contribution of agriculture to FBI on Roots farms was £67 per hectare.

Before rent, tenanted Roots farms made the greatest contribution of agriculture to FBI, but after rent charges of £245 per hectare, agriculture was unprofitable at -£9 per hectare. With a contribution of £123 of agriculture to FBI, owner occupied farms were the most profitable. The average contribution of agriculture to FBI on mixed tenure roots farms was £60 per hectare. These were larger farms, averaging 282 hectares, and this group had the greatest output per hectare.

On average, agriculture was profitable on Roots farms in all counties with sufficient farms for us to publish results.

Roots Farms – Performance Group

For the top quartile group of Roots farms (by agricultural FBI performance), the average FBI contribution from agriculture was £421 per hectare. These farms grew above average areas of potatoes (nine per cent of farm area) when compared with average farms where potatoes occupied about four per cent of the farm area. No farms in the top quartile group grew sugar beet, but the crop occupied eight per cent of the farm area on average farms.

4.0 Crop Gross Margins

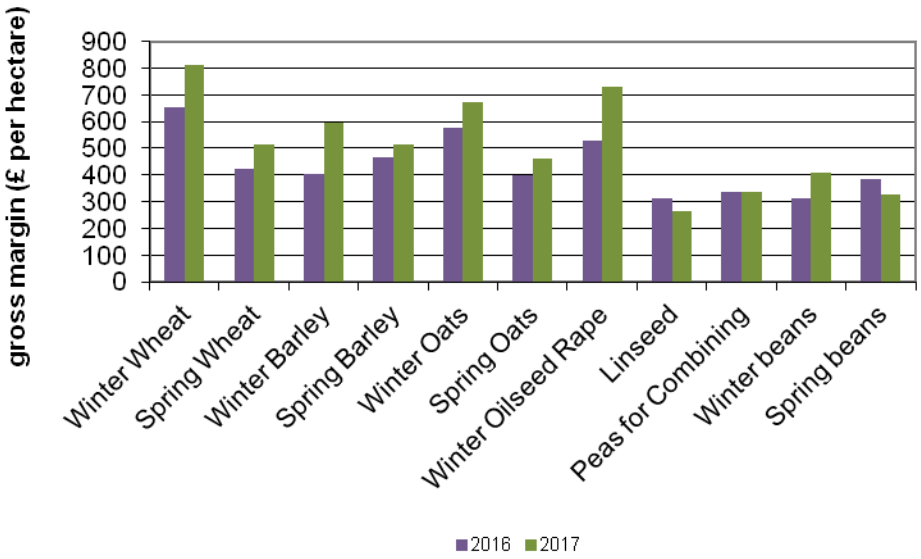
- The yields and gross margins of winter crops were above average
- The yields and gross margins of spring combinable crops were below average
- Fertiliser expenditure on cereals and oilseeds was much lower than in 2016
- High quality milling wheat, grown on 27% of farms, was attractive to millers
- Reduced supply resulted in high prices for straw at harvest and through the year
- Malting barley quality was very poor
- Dry conditions and Cabbage Stem Flea beetle damaged oilseed rape crops
- Peas and beans were over supplied, and quality was poor
- Sugar growers entered new contracts following the end of the EU sugar regime
- The yield of sugar beet reached a new record of 80 clean tonnes per hectare
- Potato prices were the lowest since 2010 and the crop gross margins were low

4.1 Crop Gross Margins (excluding organic crops)

Figure 4.1 shows the gross margin of non-organic crops in 2016 and 2017.

Further gross margins can be found in Appendix 2. Some observations are based on sample sizes of less than 15 farms.

Figure 4.1 Combinable crop gross margins, 2016 and 2017



4 Crop Enterprise Performance

Farmers expressed concerns about low spring rainfall in the East of England

The start of the 2017 cereal harvest was extremely early, but it was a long protracted harvest for many as rain started in mid July and continued to mid August. In the South West, some farmers opted to crimp grain for livestock feed, to avoid drying costs.

4.2 Winter Wheat

The average winter wheat gross margin was £810 per hectare, 13 per cent above the five-year average and the highest since 2013. The main driver of the favourable performance was low variable cost expenditure of £495 per hectare, five per cent below than the five-year average, and the lowest since 2011. The crop yielded 8.7 tonnes per hectare; this was three per cent above the five-year average. The price, of £141 per tonne, was close to the five-year average.

Agronomy and Crop Development

As shown in table 4.1, there was a move towards Group 1 milling wheat production. At 27 per cent of the wheat area, this was virtually twice the scale of production in 2013.

Table 4.1 Percentage Allocation of Wheat area to nabim Group 1 2012 to 2016, Great Britain

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Group 1	14	17	18	24	27
Group 2	12	8	5	7	13
Group 3	15	12	9	5	5
Group 4	56	63	68	58	55

Source: AHDB/HGCA planting and variety survey

Seed expenditure, averaging £72 per hectare, was nine per cent higher than in 2016, a consequence the higher crop price of 2016. Dry conditions in October and early November 2016 delayed the autumn drilling programme[17].

At £217 per hectare, average expenditure on crop protection was unchanged on 2016. Spring conditions were dry, and in April, farmers expressed concerns about the yield of crops on light soils. Dry weather diseases, including rusts and mildew, were apparent in May[18]. The main crop diseases seen in wheat were *Septoria tritici*, powdery mildew and brown rust[19].

At £170 per hectare, fertiliser expenditure fell for the second successive year and was nine per cent lower than in 2016. The long cold dry spell in March and April was one of the reasons for a high prevalence of lodging in 2017[20]. Fertiliser uptake was restricted, and plant growth regulator application programmes were disrupted.

Harvest, Yield, Quality and Marketing

The winter wheat harvest started in the last week of July and progressed in typically unsettled weather in early August. Significant progress was made with harvest in late August[21].

[17] Farmers Weekly Interactive, www.fwi.co.uk , 7 November 2017
[18] Farmers Weekly, 12 May 2017
[19] Crop Monitor, www.cropmonitor.co.uk
[20] Farmers Weekly, 27 October 2017
[21] GB Harvest Progress 2017 Report 4, www.cereals.ahdb.co.uk ,24 August 2017

Table 4.2 shows the quality of wheat crops at the 2016 and 2017 harvests.

Table 4.2 Cereal Quality Survey 2016 and 2017, Great Britain

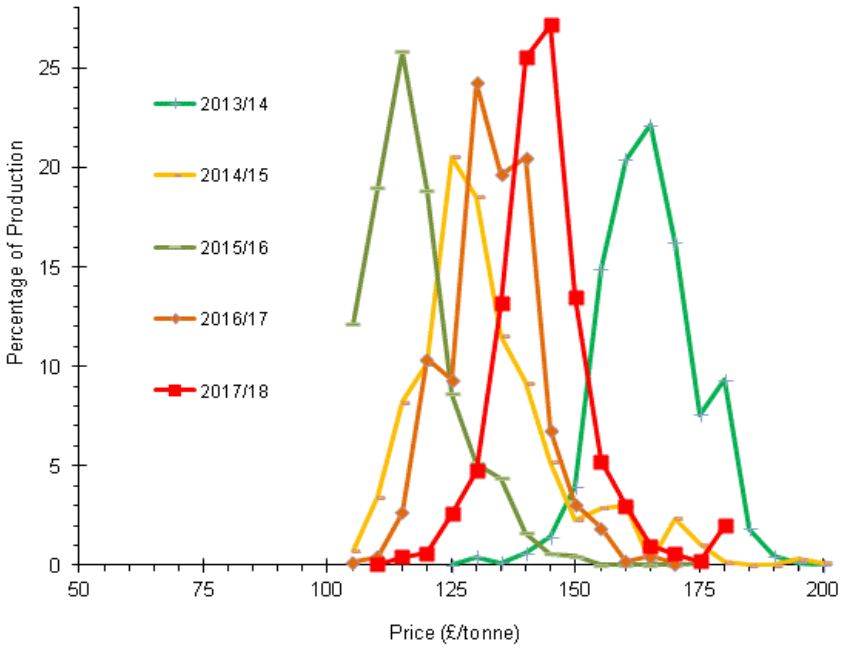
	specific weight kg/hl 2016	specific weight kg/hl 2017	hagbergs 2016	hagbergs 2017	protein % 2016	protein % 2017
Group 1	77.4	76.3	316	254	13.2	13.4
Group 2	77.0	76.1	330	271	12.6	12.5
Group 3	75.6	75.2	288	212	11.8	12.0
Group 4	76.0	75.3	292	231	11.5	11.9
Bread standard		>76.0		>180		>12.5

Source: AHDB/HGCA Cereal Quality Survey Final Results

On the basis of these standards, 24 per cent of the wheat harvest in Great Britain met the quality standards for high quality bread wheat and 53 per cent met the standards for medium quality bread wheat[22].

At harvest, the base wheat price was around £130 per tonne. As sterling weakened, the price rose to £135 per tonne through the autumn to £140 per tonne in April. With prospects of a reduced harvest in 2018, the price was around £150 per tonne in May and £155 in June. The price that farmers received for wheat is summarised in figure 4.3. Although lower than the price achieved in the 2013 /2014 marketing season, prices typically exceeded those of the preceding five years.

Figure 4.3 Wheat Price Achieved 2012/2013 to 2017/2018



Group 1 Milling Wheat Performance

In comparison to the average winter wheat gross margin of £810 per hectare, farms growing only group 1 milling varieties achieved an average gross margin of £852 per hectare. Their crops averaged 8.8 tonnes per hectare and sold at an average price of £146 per tonne. As expected, their fertiliser was above average at £191 per hectare. Most farms grew no group 1 milling wheat and their average gross

[22] Cereals and Oilseeds Quality Survey, AHDB, 1 December 2017

margin was £797 per hectare. Their crops averaged 8.5 tonnes per hectare and sold at an average price of £140 per tonne.

Despite an especially large area of domestically produced milling wheat, the market was not oversupplied and growers were rewarded for favourable milling quality. Weak sterling, and the resulting high cost of imported wheat from Germany, made UK wheat attractive to millers[23]. High milling wheat premiums were available in September, but these declined as the season progressed, from £15 per tonne for autumn delivery. The result was milling premiums that averaged £10 to £12 per tonne through the season.

Straw

The national average winter wheat straw receipt was £74 per hectare, 35 per cent higher than in 2016. Straw baling was hampered by wet weather and farmers reported reduced straw yields. At harvest, wheat straw traded at around £60 per tonne[24]. As the winter approached, it became apparent that demand for straw exceeded supply. At auction in early 2018, straw prices typically reached £90 per tonne, for Heston bales, and some reached as much as £130 per tonne[25]. The highest prices were achieved in counties to the West of England.

Farm Performance

The top quartile crops, by gross margin performance, achieved a gross margin of £1,048 per hectare, growing crops yielding 9.7 tonnes per hectare with a sales price of £146 per tonne. This group had the lowest overall variable costs. However, fertiliser expenditure was similar across all four quartiles. The bottom quartile group achieved a gross margin of £718 per hectare, from crops yielding an average of 7.2 tonnes per hectare with a sale price of £135 per tonne.

The highest gross margin performance of £972 per hectare was achieved by farmers in the Yorkshire Wolds, with an exceptional average price of £151 per tonne and a high yield of 9.2 tonnes per hectare. These farms made the greatest expenditure on fertiliser, at £195 per hectare, but the lowest expenditure on crop protection, of £192 per hectare. The highest yielding crops, at 9.5 tonnes per hectare, were grown in Wiltshire. These farms had the highest variable costs, averaging £580 per hectare, and the highest crop protection costs of £280 per hectare. The average yield exceeded nine tonnes per hectare in Hampshire, Kent, Leicestershire, Lincolnshire, Norfolk, Northumberland.

The lowest yielding crops in our regional sample were in the Culm, with a yield of only 6.8 tonnes per hectare. They achieved the lowest gross margin of £687 per hectare. However, they made considerable use of straw averaging £188 per hectare and fed wheat to livestock on the farm to the value of £215 per hectare. The lowest average price was £134 per tonne, by farmers in Hampshire. The farms with the lowest variable costs were in Herefordshire, where the seed and crop protection was lower than on farms in other counties. The lowest fertiliser expenditure, of £134 per hectare, was made in the Trent and Belvoir Vales JCA and the highest fertiliser expenditure, of £190 per hectare was made in Durham and Kent.

4.3 Spring Wheat

Spring wheat has found a role on some farms following the introduction of the Basic Payment scheme (BPS) 'three crop rule'. The average gross margin for the 2017 spring wheat crop was £513 per hectare. Although four per cent below the five year average, this was the best performance since 2014. The crop averaged 5.9 tonnes per hectare; this was three per cent higher than the five-year average. The sales price of £143 per tonne was nine per cent lower than the five-year average but still the highest since 2014. Variable costs were similar to the previous year.

[23] Market Outlook, Gleadell, Autumn 2017

[24] Farmers Weekly, 20 October 2017

[25] Farmers Weekly, 23 February 2018

4.4 Winter Barley

The average winter barley gross margin was £597 per hectare. This was seven per cent higher than the five-year average, and represented a recovery from the low yielding crop of 2016, when the gross margin averaged £404 per hectare.

The 2017 yield was 7.1 tonnes per hectare; two per cent above the five-year average and the average price was £127 per tonne, three per cent below the five-year average, reflecting the poor quality of winter malting barley in 2017. Levels of lodging in winter barley crops averaged about eight per cent nationally[26]. The hot dry weather in late June and early July hastened grain maturity and the winter barley harvest started early in late June on very sandy soils in Suffolk[27]. For most, in the South and East of England, harvest began in the first week of July, making this as early as the harvests of 2005 and 2009. Unsettled weather then followed. At £417 per hectare, average variable costs were similar to 2016, but fertiliser costs fell by five per cent, having also reduced in 2016. Seed and crop protection costs increased.

The average straw output was £108 per hectare, 14 per cent higher than in 2016. At harvest, straw prices increased by around £20 to £30 per tonne and ranged from £68 per tonne in the North East to £75 per tonne in the South West of England[28].

Performance by Natural England Joint Character Area and County

The highest gross margin crops, averaging £767 per hectare, were grown in the Yorkshire Wolds JCA, the area that also achieved the highest winter wheat gross margins. The highest yielding winter barleys, of 8.1 tonnes per hectare were grown in Essex but made the lowest expenditure on fertiliser. They spent the most on seed. The highest crop price was £140 per tonne, achieved in Norfolk, suggesting reasonable samples of malting quality barley. The lowest crop price, of £121 per tonne was made on farms in Lincolnshire.

In our county sample, the Nottinghamshire farms produced the lowest gross margin, averaging £464 per hectare. They had the lowest crop price, of £121 per tonne, and the lowest equal yield of 6.5 tonnes per hectare. With Nottinghamshire, the lowest yielding winter barley crops, averaging 6.5 tonnes per hectare, were grown in Cornwall and the Isles of Scilly and Norfolk. Durham was the county with the highest variable costs, averaging £483 per hectare, including the highest expenditure on fertiliser of £190 per hectare. Farms in Lincolnshire made the highest expenditure on crop protection of £186 per hectare, whilst farms in neighbouring Norfolk made the lowest expenditure on crop protection of £126 per hectare and achieved the lowest variable cost expenditure of £359 per hectare. Farms in the Culm spent the least on seed, at an average of £65 per hectare.

4.5 Spring Barley

The average spring barley gross margin was £515 per hectare and two per cent lower than the five-year average. The crop yield of 5.7 tonnes per hectare was four per cent below the five-year average.

The spring barley harvest started in the last week of July. Gleadell described the spring malting barley harvest ‘as one of the worst spring malting barleys years on record’[29]. The poor quality crops showed high moisture, high nitrogen, pre-germination and low germination. The resulting average crop price was £135 per tonne and one per cent below the five-year average.

[26] GB Harvest Progress 2017 Report 3, www.cereals.ahdb.co.uk ,18 August 2017
[27] GB Harvest Progress 2017 Report 1, www.cereals.ahdb.co.uk ,21 July 2017
[28] Farmers Weekly, 20 October 2017
[29] Market Outlook, Gleadell, Spring 2018

The variable cost expenditure, of £327, was virtually unchanged on the previous year. In December, there were concerns of a possible shortage of spring barley seed[30]. Seed expenditure increased by 11 per cent to £69 per hectare. At £116 per hectare, fertiliser expenditure was eight per cent lower than in 2016 but the crop protection cost was virtually unchanged.

Performance by Natural England Joint Character Area and County

With a high yield of 6.5 tonnes per hectare and high price of £147 per tonne, farmers in the Yorkshire Wolds grew crops with the highest output value and highest gross margin of £742 per hectare. It is likely that farms in Norfolk also concentrated on malting barley production as they achieved a price of £146 per hectare and fed minimal quantities of crop to livestock on the farm, whilst achieving an average yield of 5.9 tonnes per hectare. Farmers in Suffolk grew crops that yielded 6.1 tonnes per hectare and made minimal use of straw.

Spring barley growers in the Shropshire, Cheshire and Staffordshire JCA grew crops with the lowest gross margin, of just £189 per hectare. They sold their crop at an average price of £145 per hectare, suggesting that they achieved a high quality sample. Their crops yielded only 2.9 tonnes per hectare and fertiliser expenditure was only £64 per hectare, but the crop protection was high at £143 per hectare. The highest expenditure on fertiliser was made on farms in the Cornish Killas, averaging £149 per hectare.

Farms in the Culm made the greatest use of straw and fed 29 per cent of the value of their crop to livestock on the farm. With Shropshire, they incurred the lowest variable cost expenditure, and spent only £57 per hectare on seed. Farms in East Cumbria made the lowest expenditure on crop protection.

4.6 Winter and Spring Oats

The average winter oat gross margin was £673 per hectare, ensuring that this was the second most profitable combinable crop after winter wheat, in 2017. This gross margin was 12 per cent above the five year average and the highest since 2012.

At 6.7 tonnes per hectare, the winter oat yield was unchanged on the previous year and two per cent above the five year average.

Oat quality and yields proved to be variable across England. Many samples had very high levels of screenings. The supply of oats was six per cent higher than in 2016, and this led to reduced prices of free market oats in August and September 2017[31] [32]. Initial fears about the quality of oats proved to be unfounded, so prices for premium quality oats declined as the season progressed. The resulting average winter oat price was £131 per tonne and the highest since 2012. At £116 per hectare, the value of straw was £45 higher than in 2016.

At £325 per hectare, the average variable cost expenditure was nine per cent below the five year average, and the lowest since 2010. Further reductions in fertiliser expenditure were offset by inflationary increases in seed and crop protection.

The average spring oat gross margin was £459 per hectare and eight per cent lower than the five year average.

The yield, of 5.2 tonnes per hectare, was seven per cent below the five year average, and the crop price, averaging £131 per hectare was two per cent below the five year average.

The variable costs were 10 per cent below the five year average at £272 per hectare, but similar to 2016. The fertiliser cost reduced by four per cent to £108 per hectare.

[30] Farmers Weekly Interactive, www.fwi.co.uk , 14 December 2016

[31] Market Outlook, Gleadell, Autumn 2017

[32] Market Outlook, Gleadell, Spring 2018

4.7 Winter Oilseed Rape

In April 2016, ahead of the autumn drilling season, the NFU submitted an emergency application for the use of neonicotinoid insecticides in oilseed rape on 195,000 hectares of the crop[33]. Defra rejected the application in May because of a lack of evidence that the derogation would "be limited only to those areas where there was a danger or threat to crop protection". A second request was rejected in July[34].

Farmers in areas of the East of England, East Midlands and South East experienced high levels, and consequential losses from Cabbage Stem Flea Beetle (CSFB). A survey of farmers, in autumn 2016, revealed particular problems with crop loss due to CSFB and dry conditions. The counties with the greatest losses due to CSFB were Hertfordshire, Bedfordshire, Essex, Cambridgeshire, Northamptonshire, Hampshire and Oxfordshire[35]. The greatest losses due to dry conditions were experienced in Hertfordshire, Essex, Bedfordshire, Northamptonshire, Suffolk, Cambridgeshire and West Sussex[36].

The average gross margin, of £731 per hectare, was 24 per cent higher than the five year average, and at similar levels to the favourable performance of this crop between 2010 and 2012.

Harvest started in the second week of July in the South and East of England[37]. The oilseed rape crop benefitted from a long growing season and gave an average yield of 3.7 tonnes per hectare, but with wide regional variations. This was eight per cent higher than the five year average. The national crop was slightly smaller than the 2016 crop as higher yields mitigated the reduced crop area. The oil content, at 43 to 47 per cent, was around usual levels.

After accounting for oil bonus, the average price was £325 per tonne and two per cent above the five year average. This was similar to the 2016 price of £328 per tonne. At harvest, the price was around £310 per tonne. Crop prices reached £312 per tonne in November 2017, on news of a higher soya price[38]. However, the underlying market was driven by high global supply of oilseeds, and falling demand from crushers[39]. As sterling strengthened against the dollar, the oilseed rape price reduced to £301 per tonne in Mid December[40]. As the 2018 harvest approached, the price fell further to £280 per tonne.

The expenditure on variable costs was the lowest since 2011 at £479 per hectare. In comparison with 2016, the seed price was 13 per cent higher, at £63 per hectare, and the fertiliser expenditure was five per cent lower, at £189 per hectare.

Results by County

The yield of the oilseed rape crop varied widely, and in some cases, yields were greatly reduced by CSFB infestation. Winter oilseed rape performed best in Shropshire, a county with minimal CSFB. Achieving the highest gross margin, of £921 per hectare, these farms grew the highest yielding crops of 4.3 tonnes per hectare.

In contrast, farmers in the South Suffolk and North Essex Clayland JCA, an area with known CSFB problems, grew the lowest average yield of 3.1 tonnes per hectare and produced the lowest gross margin of £552 per hectare. These farms had the lowest variable costs of £439 per hectare, possibly because farmers were reluctant to commit to high expenditure on crops of low potential. Farms in

[33] Farmers Weekly Interactive, www.fwi.co.uk , 28 April 2016
[34] Farmers Weekly Interactive, www.fwi.co.uk , 5 July 2016
[35] Farmers Weekly Interactive, www.fwi.co.uk , 9 November 2016
[36] Farm Business, www.farmbusiness.co.uk , 25 October 2016
[37] GB Harvest Progress 2017 Report 1, www.cereals.ahdb.co.uk ,21 July 2017
[38] Farmers Weekly, 3 November 2017
[39] Market Outlook, Gleadell, Spring 2018
[40] Farmers Weekly, 15 December 2017

Suffolk spent very little on seed, only £41 per hectare, suggesting that a number used home saved seed.

Farms in Northumberland achieved the lowest price, and spent the least on seed. Farmers in North Yorkshire achieved the highest crop price. Crops in Norfolk were grown with the lowest crop protection expenditure, but the highest fertiliser expenditure. Crops in the East Riding of Yorkshire were grown with the highest variable cost expenditure of £547 per hectare and the highest crop protection spend.

4.8 Linseed

Linseed crops gave an average yield of 1.6 tonnes per hectare and the crop sold for an average of £330 per tonne. The resulting gross margin was £264 per hectare.

4.9 Peas for Combining

The average gross margin for the pea crop was £334 per hectare and 42 per cent below the five year average, but similar to the performance of the crop in 2016.

The pea crop shows considerable yield variability. The average yield in 2017 was 3.1 tonnes per hectare, one per cent lower than the five year average.

A world record yield of combining peas, of 6.47 tonnes per hectare, was set by Lincolnshire farmer, Tim Lamyman[41]. The previous yield had been 6.32 tonnes per hectare, grown in Saskatchewan in 2016.

Crop quality was compromised by the delayed and wet harvest, so marketing options were limited. The average price was £221 per tonne, 23 per cent lower than the five year average and the lowest since 2007. The pea harvest was of variable quality; the intermittent harvest conditions resulted in bleaching of marrowfat and large blue peas. The result was reduced supply of human consumption quality peas of only 100,000 tonnes[42]. Feed peas traded at £145 per tonne in October, but marrowfat peas reached prices of £170 to £230 per tonne, depending on quality and market destination. Quality large blues achieved prices of £220 per tonne, but quality was important so sales prices fell in a range down to the feed price.

Variable cost expenditure was seven per cent above the five-year average seed, fertiliser and other crop costs all increased on the previous year.

4.10 Winter and Spring Beans

The winter bean gross margin averaged £409 per hectare. Crops yielding 4.3 tonnes per hectare sold at an average price of £150 per tonne.

With reduced supply of quality pea and bean crops for human consumption, the feed market was oversupplied and an additional 40,000 tonnes had to be exported. The harvest of feed beans was estimated at 500,000 to 600,000 tonnes[43]. Crops in the South experienced heavy attack from Bruchid beetle, whilst crops grown in the North suffered staining during the intermittent harvest. Beans traded at around £145 to £149 per tonne in October 2017. Human consumption beans typically traded at £165 per tonne, up to £185 per tonne into niche export markets.

The average variable cost expenditure was £246 per hectare, similar to the previous year.

[41] Farmers Weekly, 1 September 2017

[42] Pulse Market Update, October 2017, PGRO, www.pgro.org

[43] Pulse Market Update, October 2017, PGRO, www.pgro.org

The average spring bean gross margin was £326 per hectare. Crops averaging 3.9 tonnes per hectare sold at an average price of £157 per tonne. Their average variable costs were £288 per hectare.

4.11 Sugar Beet

The average yield of 80 clean tonnes per hectare set a new national record. It exceeded the previous record yield of 77.3 tonnes per hectare achieved in 2014 and yield was five per cent higher than the five-year average.

The 2017 sugar beet gross margin averaged £1,188 per hectare. Although this was at five-year average levels, in reality, it represented a recovery on the previous two years, but a lower performance than in 2013 and 2014.

The average crop price, of £25 per tonne, was 17 per cent lower than the five year average, but similar to the two preceding years.

Seed, fertiliser and crop protection expenditure were higher than in 2016, but other crop costs, which include haulage to the factory, were lower. Variable cost expenditure of £842 per hectare was five per cent below the five-year average.

Contract and Price

EU sugar production quotas ended on 30 September 2017. For the first time in 2017 /2018, sugar beet contracts were offered with a link to the sugar price in Europe, and with the option of one or three year contracts. Despite a prolonged consultation exercise, farmers reported that they found it difficult to quantify the impact of changes in the price of sugar in Europe to the value of their crop on farm.

The final deal comprised a minimum price of £22 per tonne[44]. Farmers opting for a one-year contract would receive ten per cent of the sugar revenue above an EU sugar price of €475, up to an EU sugar price of €700 per tonne. Farmers opting for a three-year contract would receive 25 per cent of the sugar revenue above an EU sugar price of €475, up to an EU sugar price of €700 per tonne. Some 58 per cent of growers signed up to three-year contracts[45].

Contract Tonnage Entitlement (CTE) was retained and Industrial Contract was converted to CTE.

British Sugar invited new growers to produce sugar beet, on the basis of the standard new one year contract, in 2017[46]. In 2017, there were 140 new sugar beet growers[47].

Agronomy and Crop Development

Although the dry conditions of spring 2017 were ideal for sugar beet drilling, there was insufficient moisture to allow full emergence and the result was many crops with an incomplete plant stand.

Once the crop was established, the conditions of moisture and temperature were ideal for crop development and created the potential for very high yields.

Seed treatments were very effective in controlling aphids, so the incidence of virus yellows was minimal[48]. Downy mildew was present in Norfolk. Generally, comprehensive fungicide programmes

[44] British Sugar Media Release, 15 July 2016, www.britishsugar.co.uk
[45] Farmers Weekly, 26 January 2018
[46] Farmers Weekly Interactive, www.fwi.co.uk , 25 August 2016
[47] Farmers Weekly, 28 July 2017
[48] British Sugar Beet Review, February 2018

reduced the impact of powdery mildew, and later in the season, rust and *Cercospora* leaf spot. The incidence of nematodes was low in 2017. Foliar disease was present in autumn 2017[49].

Yield and Gross Margin Performance

The logistics of the sugar beet harvest proved to be difficult to manage due to the increase in the scale of the harvest. British Sugar's requirement was 20 per cent lower in the two preceding seasons. Harvesting and haulage contractors did not find it easy to accommodate this return to greater scale. One substantial contractor went into administration in October 2017, creating uncertainty for a number of producers[50]. As winter progressed, harvesting was hampered by snow and wet conditions on some farms.

In recent years, there has been a small increase in the proportion of the sugar beet crop harvested by contractors. Contractors harvested 83 per cent of the crop, by area, on 83 per cent of sugar beet farms.

At the start of the season, sugar levels were encouraging; up to 16.5 per cent at Newark in September[51]. Sugar levels at the Bury St Edmunds factory peaked at 19 per cent in December to give a campaign average of around 18 per cent[52].

Yields of over 100 tonnes per hectare were reported in south Lincolnshire and Norfolk[53]. The high yields caused a backlog of deliveries to factories, and the risk of deterioration of harvested crops awaiting delivery[54]. British Sugar reported a record yield of 83.4 tonnes per hectare, up from the previous record of 79.8 tonnes per hectare[55].

The gross margin performance of sugar beet production varies between farms. Whilst yield is the main driver of performance, other crop costs which include haulage, are one component of the classification. The top quartile group, by gross margin, grew an average of 92 tonnes per hectare to give a gross margin of £1,564 per hectare. The bottom quartile group achieved an average gross margin of £708 per hectare, from crops with an average yield of 66.5 tonnes per hectare. Among the quartile groups, there was limited variation in expenditure on seed, fertiliser and crop protection.

The sugar beet gross margin ranged from £1,295 per hectare in Suffolk, to £1,087 per hectare in Lincolnshire. However, gross margin performance was influenced by other crop costs, which include haulage, and ranged from £98 per hectare in Suffolk to £365 per hectare in Cambridgeshire. The highest yielding crops, at 83.5 clean tonnes per hectare, were grown in Norfolk, the county with the lowest expenditure on seed, but the highest expenditure on crop protection and fertiliser. The Norfolk fertiliser cost of £293 per hectare was more than twice the cost, of £136 per hectare, incurred in Cambridgeshire.

[49] BBRO Advisory Bulletin 13, 3 November 2017
[50] Farmers Weekly Interactive, www.fwi.co.uk , 18 October 2017
[51] Farmers Weekly, 22 September 2017
[52] British Sugar Beet Review, February 2018
[53] Farmers Weekly, 26 January 2018
[54] Farmers Weekly Interactive, www.fwi.co.uk , 8 February 2018
[55] Farmers Weekly Interactive, www.fwi.co.uk , 5 April 2018

4.12 Ware Potatoes

The average potato gross margin was £2,596 per hectare and 38 per cent below the five-year average. The crop yielded 42.5 tonnes per hectare, one per cent above the five-year average.

The average price achieved, including crop sold for stockfeed, was £112 per tonne. This was 31 per cent below the five-year average. At harvest, the free market price was around £150 per tonne. Potato sales in autumn were nearly four per ent higher than in 2016, but levels of grade outs were also high[56]. The price reduced to a low of around £125 per tonne in the spring. Prices recovered progressively to £205 per tonne in May 2018.

At £2,163 per hectare, the average expenditure on variable costs was two per cent lower than the five year average.

There was a very wide range in farm performance. The top quartile group, by gross margin performance achieved a gross margin of £4,245 per hectare from crops yielding 47.7 tonnes per hectare at £133 per tonne. The bottom quartile group sold their crop at an average price of £64 per tonne and their crops yielded 32.7 tonnes per hectare. The resulting gross margin of £261 per hectare would not have covered the costs of growing the crop.

4.13 Vining Peas

The vining pea gross margin averaged £788 per hectare, before deduction of contract costs. Crops averaged 2.4 tonnes per hectare and sold at an average price of £480 per tonne. The average variable cost expenditure was £358 per hectare.

The vining pea harvest began at the end of June in Yorkshire. The high temperatures led to crops reaching maturity more quickly than intended. As a result, crops were passed over for vining and harvested dry.

4.14 Maize and Rye for Anaerobic Digestion (AD)

The average AD maize gross margin was £780 per hectare. This was achieved from crops yielding an average of 38 tonnes per hectare, sold at an average price of £32 per tonne.

[56] Agronomist and Arable Farmer, 20 March 2018

5.0 Summary of Net Margin and Cost of Production Estimate

- production of arable crops was unprofitable for most farmers
- sugar beet achieved the highest net margin at £103 per hectare
- cost of production of winter crops slightly lower than in 2016
- slightly improved cereal net margins due to improved yield and price achieved

5.1 Introduction

The allocation and apportionment of costs to individual crops allows us to prepare net margin and cost of production estimates for the main crops grown in England. The methodology for calculation of FBS net margins on a full economic basis is described at Appendix 3, and includes imputed costs for labour and owner occupied land. Organic crops are excluded from the analysis.

5.2 Results for 2016 (excluding organic crops)

Despite profitable average performance of agriculture activities on farms of all types, the production of arable crops was unprofitable for most farmers. Using FBS methodology, apportioned and allocated costs exceeded crop output across all five combinable cereal crops and four combinable oilseed and break crops. Other agricultural activities, which include contracting activity, generated a small positive net margin on most farms.

The crop with the highest net margin was sugar beet at £103 per hectare, followed by potatoes (£58 per hectare) and winter oats (-£109 per hectare). The crop with the lowest net margin was peas (-£471 per hectare), followed by winter beans (-£318 per hectare) and spring wheat (-£300 per hectare).

5.3 Comparison with Previous Years

For combinable crops, the cost of production was at similar levels to previous years. The costs of production of winter crops were slightly lower than in 2016, due to above-average yields and the lower variable costs that resulted from reduced fertiliser expenditure.

Although average net margins of all combinable crops were negative, they all represented an improvement on previous years, with the exception of the pea crop. Sugar beet returned to profitability, which was a strong achievement as the crop was last profitable in 2014, when the price averaged £34 per tonne. The average net margin of the potato crop was positive, but at £58 provided insufficient return for production of a variable and capital intensive crop.

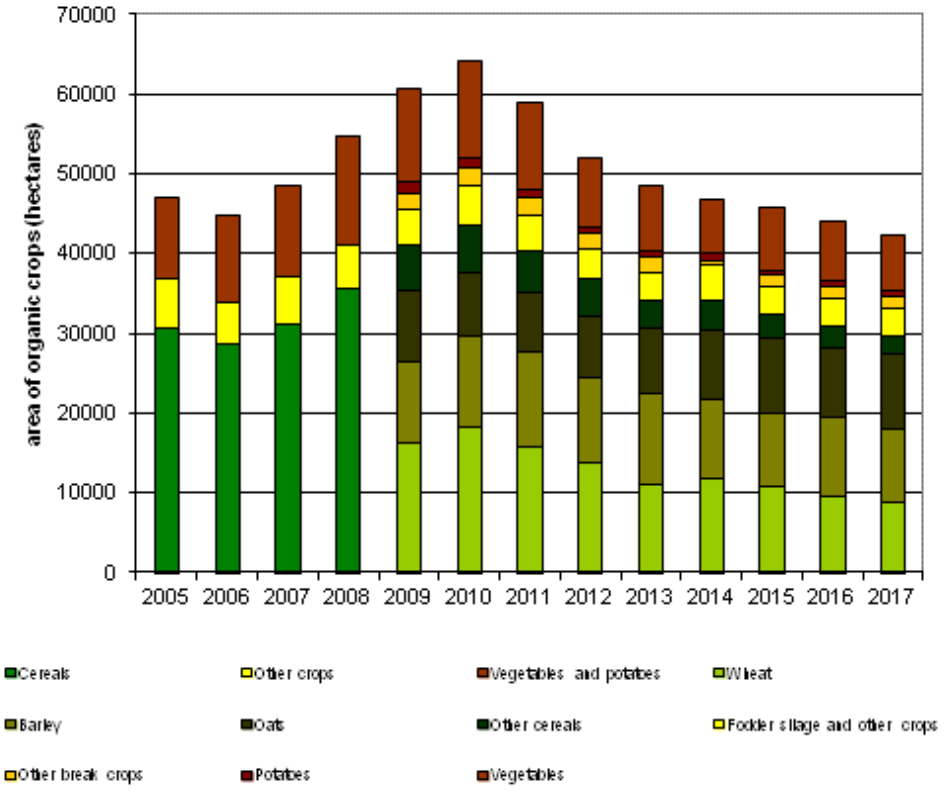
6.0 Organic Arable Performance

- At 42,400 hectares the organic crop area was 11 % below the five year average
- At 9,300 hectares, the organic oat crop was nine % higher than the five year average
- Organic arable production was profitable with a contribution of £201 per hectare to FBI
- High demand for organic milling oats secured premiums exceeding £140 per tonne
- Exceptional gross margins for winter oats, £1,230 and spring oats £842 per hectare
- High premiums for organic beans failed to compensate for low yields

6.1 Market Overview and Organic Crop Areas

Recent changes to the area of organic crops are shown in figure 6.1.

Figure 6.1 Area of Organic Crops in England, 2005 to 2017



Source: Defra

The area of organic crops grown in England in 2017 was 42,400 hectares. The area continued to decline, and was 11 per cent below than the five year average. The oat crop bucked this trend and its area, of 9,300 hectares, was nine per cent higher than the five year average. Organic wheat was once the most prevalent organic crop and occupied over 18,000 hectares in 2010, but its area has halved to 8,700 hectares in 2017.

There were 2,124 organic arable producers in England in 2017. Their numbers have declined by 28 per cent since 2009. The greatest fall in the numbers of producers occurred in Yorkshire and the Humber, the East Midlands and the East of England. These are regions where arable farming predominates.

Meanwhile, the value of sales of organic foods in the UK reached a record £2,218 million in 2017, some 33 per cent higher than in 2011[57]. The result of this imbalance is that the UK is increasingly dependent on imports of organic arable crops.

6.2 The Sample of Organic Farms and Organic Agriculture Performance

The sample of 18 organic arable farms in the Farm Business Survey averaged 110 hectares (113 hectares in 2016), and were 61 per cent owner occupied.

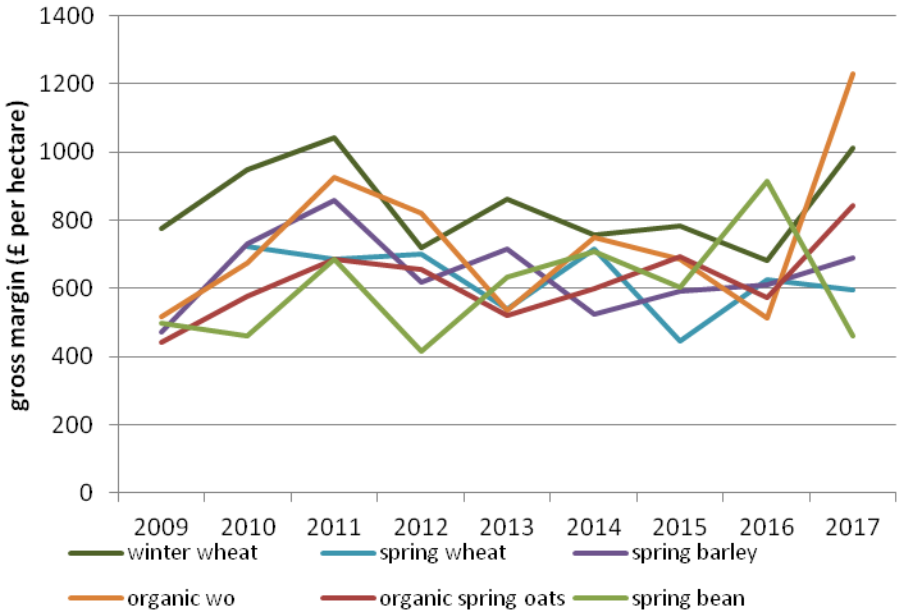
The crop with the greatest area was spring barley, occupying 10 per cent of the farm. Winter oats occupied eight per cent of the farm and spring oats occupied a further six per cent.

The average contribution of agriculture to FBI was £201 per hectare, making 2017 a profitable year for organic arable farms.

6.3 Organic Crop Performance

Figure 6.2 shows the trend in organic gross margins in recent years.

Figure 6.2 Organic Gross Margins 2009 to 2017

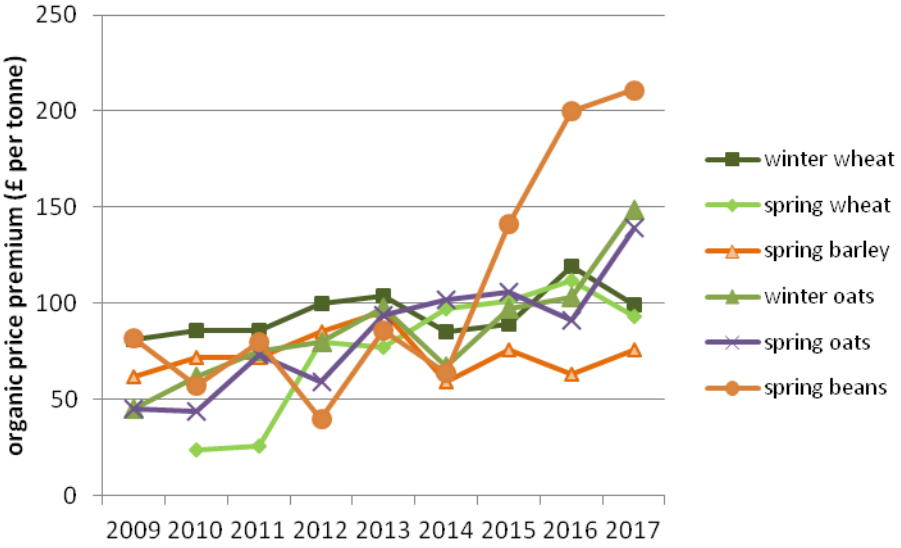


Cereal crops for human consumption performed better than in recent years. Winter and spring organic oats performed better than in the high margin years of 2010 to 2012.
All of the organic crops, with the exception of spring barley, achieved their highest prices since our organic survey commenced in 2009. As the UK is a net importer of cereals, prices were influenced by the price of imports, which was high due to the weakness of sterling[58]. These prices combine the

[57] Rising Demand for Organic Cereals, Soil Association, 2018
[58] Market Outlook, Gleadell, Spring 2018

underlying grain price, with a premium for the organic production system. Figure 6.3 shows the levels of organic price premiums since 2009.

Figure 6.3 Organic Price Premium, Wheat and Oats, 2009 to 2017



Whilst the wheat premium has continued to develop favourably, it has done so slowly. The organic oats premium has developed more rapidly, but increased sharply in 2017. Beans retained their high premium, but it is likely that this was partially due to the low yield of the crop and resulting reduced local supply.

Winter and Spring Wheat

At £1,012 per hectare, the organic winter wheat gross margin was 33 per cent above the five year average and the highest since 2011. Farmers fed about 15 per cent of their organic wheat crop to livestock on the farm.

The organic spring wheat gross margin was £597 and close to average levels. However, the crop generated yields of just 2.4 tonnes per hectare, the lowest since our records began in 2010. The sales value of organic spring wheat averaged £308 per tonne, which was the highest average price of any organic cereal crop in our survey. Minimal quantities of organic spring wheat were fed to livestock on the farm.

Both winter and spring organic wheat achieved organic premiums of around £95 per tonne. At June 2017, the organic feed wheat price, for harvest movement, was around £240 per tonne[59]. In July, the October price was around £250 per tonne and by August, this had strengthened to £260 per tonne. In September, buyers were committing to prices of £270 per tonne for November or December movement. By October, demand was strong and the price for December or January movement was £280 per tonne. Demand weakened by March, and the price fell to £265 per tonne.

The wet harvest weather was deleterious to grain quality, with reports of mixed values for specific weight and protein[60]. In October, the milling premium available for organic wheat was around £30 per tonne, rising to £40 per tonne in November. These milling premiums were sustained through the marketing season.

[59] Saxon Organic Briefing, June 2017

[60] Saxon Organic Briefing, August 2017

Spring Barley

The spring barley gross margin was 13 per cent higher than the five year average with a combination of favourable yields, prices and variable cost expenditure. Despite this improvement, it has become one of the least profitable organic crops in recent years.

Feed barley prices tracked wheat prices closely, rising to £290 per tonne in the Spring[61]. Organic malting barley provided reasonable quality and the premium over the organic seed prices was £30 per tonne for sales in autumn 2017. Organic malting barley traded for £320 per tonne in February 2018. About 14 per cent of organic spring barley was fed to livestock on the farm.

Winter and Spring Oats

Both winter and spring organic oats achieved exceptional gross margins in 2017 as high yielding crops sold for very high prices.

At £1,230 per hectare, the winter organic oat crop achieved the highest organic crop gross margin in this sample of six crops, over nine years. It was 86 per cent above the five year average and represented a significant recovery in comparison with the previous year, when the crop yielded only 2.5 tonnes per hectare. The yield of 4.3 tonnes per hectare was 30 per cent above the five year average and close to the record yield of 4.4 tonnes per hectare in 2014. The average price was £282 per tonne and 27 per cent above the five year average.

Spring oats gave an average gross margin of £842 per hectare, 38 per cent above the five year average. The crop yielded 3.6 tonnes per hectare, 17 per cent higher than the five year average. The average price achieved was £273 per tonne. The favourable performance was achieved despite expenditure on variable costs, of £187 per hectare, 34 per cent above the five year average.

The price achieved by farmers is a combination of milling and feed oats. In November 2017, organic milling oats traded for around £300 per tonne[62]. This price increased, a little, to £305 per tonne in January. As it emerged that UK sourced oats were not plentiful, prices rose to £320 per tonne in January. By February, the price reached £335 in selected locations. Prices dipped later in the season, and organic milling oats traded for £295 per tonne in May.

Spring Beans

High prices were offset by yields of only 1.8 tonnes per hectare. This yield was 32 per cent below the five year average. The resulting gross margin of spring beans was £461 per hectare, and 30 per cent below the five year average.

The average price achieved for beans was £368 per tonne. This was 19 per cent above the five year average.

Initial reports suggested ample supply or organic proteins. In September 2017, organic bean could be sold for £365 per tonne, for September 2017[63]. This weakened to about £350 per tonne for sales made in October. By January, the crop could be sold for £375 per tonne. Into February, this price had risen to £380 per tonne. Demand eased in April, to a price of £365 per tonne, recovering to £370 per tonne in May.

[61] Saxon Organic Briefing, February 2018
[62] Saxon Organic Briefing, November 2017
[63] Saxon Organic Briefing, September 2017

7.0 Weather, Economic Context and Policy Summary

- Defra set out their environmental vision in the 25 Year Environment Plan
- Defra ran the Health and Harmony consultation to inform the new Agriculture Bill
- The value of sterling weakened, against both the euro and the US dollar
- A warm dry and sunny growing season gave way to a wet harvest
- Cefetra Ltd was active in investment in UK agriculture in the year
- The Ensus and Vivergo ethanol plants were mainly shut down in the year

7.1 Government

EU Exit

In January 2018, Defra released its vision of environmental policy in A Green Future: Our 25 Year Plan to Improve the Environment. Some of the policies of relevance to arable farming include:

- Designing a new environmental land management system (ELMS)
- Introducing new farming rules for water
- Protecting crops while reducing the environmental impact of pesticides
- Developing better information on soil health
- Reforming our approach to biosecurity

In February 2018, Defra launched its consultation Health and Harmony: the future for food, farming and the environment in a Green Brexit which concentrated on:

- Moving away from the Common Agricultural Policy in England
- Implementing our new agricultural policy in England
- The framework for our new agricultural policy

Specific aspects of the consultation of relevance to arable farmers included:

- Public money for public goods
- Enhancing our environment
- Changing regulatory culture
- Risk management and resilience
- Protecting crop, tree, plant and bee health
- Ensuring fairness in the supply chain

In September 2018, Defra took the first steps towards enacting the new policy by publishing the first draft of the Agriculture Bill. Key aspects of the Bill include:

- Delinking the receipt of the direct payments from the requirement to farm the land.
- Phasing out and termination of direct payments and delinked payments
- Aid for fruit and vegetable producer organisations
- Collection of data to enable people in agri-food supply chains to increase productivity, manage risks and manage volatility
- Market intervention

- Arrangements to engage with the World Trade Organisation (WTO) Agreement on Agriculture

Farmer response to EU Exit

Many farmers described how a lack of information about policy post Brexit from Government is a concern for their businesses. Comments, actions and concerns most frequently reported, during the year, are summarised below:

- Farmers realised there is the need to make their businesses more financially robust to weather the uncertainty of Brexit negotiations
- The challenge of recruiting staff from Eastern Europe continued to be a great concern, in particular for Horticultural farmers.
- Linked to the staff recruitment challenge, pay rates increased to mitigate some of the exchange rate differences
- Agency labour was generally still available, but the quality of staff was lower than in previous years
- Farmers found it increasingly difficult to plan ahead with little information about longer term support and trade after Brexit; many farmers are delaying plans for change post Brexit in part because the Conservative election manifesto pledged to extend the current level of support for a further two years beyond the UK's departure from the EU, providing short-term certainty, but lacking long term commitment
- Farmers were concerned about whether subsidies will be maintained to the same level post Brexit
- Some farmers looked at diversification / alternative income streams to mitigate expected falls to farm support payments, however this is less feasible for many tenant farmers, giving rise to greater concerns about the potential reduction in support payments
- Farmers were concerned that post EU departure, levels of UK regulations will remain a burden. Farmers continued to explain how they want their views to be heard, for example via Defra fully engaging with the NFU and interacting with farmers directly
- The weaker pound resulted in improving output commodity prices, however imported machinery has become more expensive
- Overall, although some farmers continued to believe that Brexit offers opportunities to create new markets, and that the UK should be able to negotiate a good deal, many farmers were concerned about continued uncertainty regarding support and regulations and the impact of increased volatility due to global exposure to competition and prices.
- Following the announcement and launch of the Defra consultation on 'Health and Harmony: the future for food, farming and the environment in a Green Brexit', initiated in February 2018 a wide range of comments were reported ranging from strongly developed views both positive and negative to those with a neutral response.
- In terms of 'public support for public goods' some farmers were worried that their "run of the mill farms", won't attract new "natural capital funding" if they are outside National Parks, Areas of Outstanding Natural Beauty (AONB) or other designated areas; related to this are concerns about potential distortions in rents that might arise by being the "wrong side" of a designation boundary.
- As farmers are considering their options post Brexit, age and whether or not they have a successor was often noted as an influential factor.
- All sectors of agriculture clearly need a Brexit deal which will allow them to export their produce whilst maintaining and improving margins. Highlighted as areas of interest were the Irish border and deals with USA noting beef production systems, GM modification and use of growth hormones as areas of concern.
- One farmer expressed concern over whether grassroots farmer's views reach the decision makers and are considered in respect of formulation of a post Brexit agricultural policy.

Crop Protection Regulation

From December 2016, the use of triallate (the active ingredient of Avadex) was restricted to use in winter wheat, winter barley and spring barley[64].

In April 2018, European ministers voted for a complete ban on the use of neonicotinoid products on outdoor crops[65]. This extended the ban from oilseed rape to include sugar beet in 2019.

Agri Environment

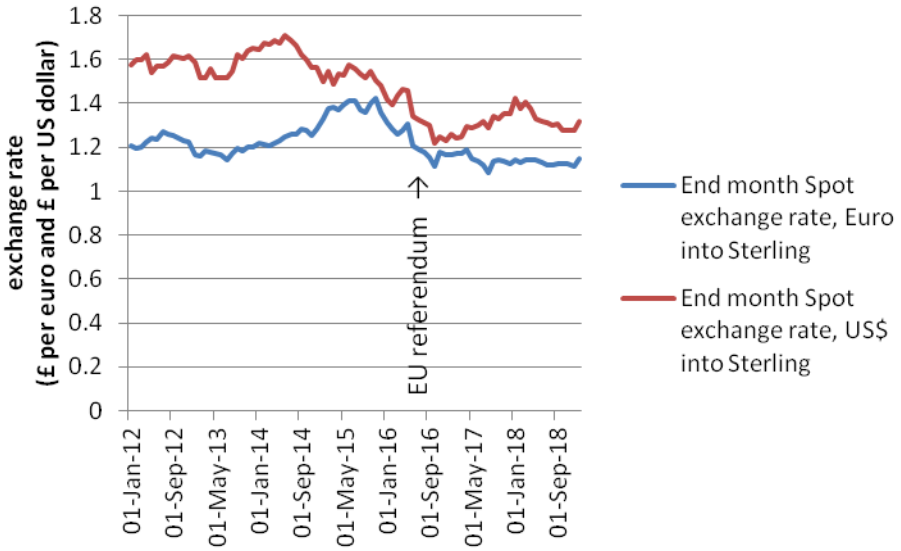
From January 2018, farmers were able to apply for simplified Countryside Stewardship Offers, including the Arable Offer. They were designed to be simpler, and quicker, to apply for and to complement the existing Higher Tier and Mid Tier schemes[66].

Defra committed £5.7 million to a Northern Forest, comprising 50 million trees in a 190 km stretch between Liverpool and Hull[67]. The announcement was made at a time of increasing domestic demand for timber and anticipated increase in the capital value of land for forestry[68].

7.2 Economic Environment

Figure 7.1 shows exchange rate of the euro and US dollar, relative to sterling.

Figure 7.1 Euro/Sterling Exchange Rate 2012 to 2019



The value of sterling weakened, against both the euro and the US dollar following the EU Referendum on 23 June 2016. The result has been that commodity crop prices have increased. Input costs also increased, but the higher prices will generally show as higher input costs to the 2019 crops.

The Bank of England raised the base lending rate from 0.25 per cent to 0.5 per cent in November 2017.

[64] Farmers Weekly Interactive, www.fwi.co.uk , 11 June 2015
[65] Farmers Weekly Interactive, www.fwi.co.uk , 27 April 2018
[66] Defra News Story, 15 January 2018, www.gov.uk
[67] Farmers Weekly Interactive, www.fwi.co.uk , 8 January 2018
[68] Spotlight UK Forestry Market, Savills 2017

7.3 Weather

The conditions in arable areas of England were generally drier and warmer than average in autumn 2016[69]. Conditions were unusually dry between January and April and from February to June, temperatures were above average levels. A hot spell in June saw temperatures exceeding 30°C. However, the harvest was unusually wet. Sunny conditions in November and December were favourable for development of the sugar beet crop.

7.4 Business

Crop marketing

The crop marketing chain saw a number of acquisitions in the year. Canadian business, Richardson International, purchased European Oat Millers from Jordan Brothers in July 2017[70].

Cefetra Ltd, a UK subsidiary of the German business BayWa AG, was active in investment in UK agriculture in the year. In December 2017, the company acquired Premium Crops, a business specialising in the trading of high erucic acid rapeseed, linseed, red wheat, canary seed, millet and naked oats[71]. Then, in February 2018, it took on the grain trading activities of Dalton Grain Ltd. (Dalton Seeds then concentrated on their seeds business in February 2018)[72]. Cefetra also acquired the 45,000 tonne Chilton Grain Store, Suffolk with effect from 1 July 2018[73].

RMCA opened their rapeseed crushing plant at Atherstone on Stour, Warwickshire, in June 2017. The £25 million plant has the capacity to crush 100,000 tonnes of oilseed rape per year[74].

Supply chain

Following approval from the US Department of Justice and other authorities, Bayer's purchased of Monsanto was completed on 7 June 2018[75]. To reduce concerns about competition arising from Bayer's purchase of Monsanto, Bayer agreed to sell significant parts of its seed and non-selective herbicide business to BASF[76]. The vegetable seeds business mostly operated under the brand Nunhems. The sale was completed in August 2018[77].

In the year, CF Fertilisers invested £40 million in an ammonium nitrate plant at its site in Billingham[78].
Professional

French bank, BNP Paribas acquired commercial and residential agents Strutt and Parker in July 2017[79].

[69] Met Office Annual and Monthly reports, www.metoffice.gov.uk
[70] Farmers Weekly Interactive, www.fwi.co.uk , 6 July 2017
[71] Farm Business, www.farmbusiness.co.uk , 18 October 2017
[72] Farm Business, www.farmbusiness.co.uk , 14 February 2017
[73] Farm Business, www.farmbusiness.co.uk , 1 March 2017
[74] RCMA, www.rcma.com , 6 June 2017
[75] Farm Business, www.farmbusiness.co.uk , 14 June 2018
[76] Farm Business, www.farmbusiness.co.uk , 13 October 2017
[77] Farm Business, www.farmbusiness.co.uk , 17 August 2018
[78] Farm Business, www.farmbusiness.co.uk , 9 April 2018
[79] Financial Times, www.ft.com , 31 July 2017

DuPont acquired an agricultural business software business called Granular 'to accelerate digital agricultural strategy and help farmers operate more profitable businesses'[80]. Formed in 2014, Granular currently provides software that is used on about 800,000 hectares in the United States, Canada and Australia.

The National Farmers Union (NFU) purchased energy consultants FEC Energy inn September 2017[81].

Cambridge based technology start up business Yagro launched its agrochemical price comparison tool in December 2017[82].

Operational farming

Farmcare, the farming business that the Welcome Trust bought from the Cooperative Farms in 2014, announced that it would cease operational farming of the 12,827 hectares that it occupied[83]. In September 2018, it confirmed that this transfer was complete[84]. Having ceased operational farming, the business confirmed that it would continue to develop its land and property assets. In January, 2017, Farmcare sold its Carnoustie potato packing business to Morrisons[85].

7.5 Renewable Energy

From April 2018, the Renewable Fuel Transport Obligation was increased to 4.75 per cent, with a target of 9.75 per cent by 2020[86].

The Ensus biofuel plant at Teeside reopened for a trial period in May 2016[87]. This development was not expected and wheat prices increased by ten per cent to meet the increased demand. The Vivergo bioethanol plant, which uses wheat as a feedstock, closed in December 2017 for the foreseeable future[88].

A surge of interest in Renewable Heat Incentive (RHI) boiler installations in 2017 was expected to increase demand for woodchip from 350,000 per year in 2017[89].

In 2018, 3.6 per cent of farms (who had heard of anaerobic digestion) reported that they processed crops for AD[90].

[80] DuPont, www.dupont.com 9 August 2017
[81] Farmers Weekly, 1 September 2017
[82] Farmers Weekly, 1 December 2017
[83] Farmers Weekly, 24 November 2017
[84] Farminguk, www.farminguk.com , 17 September 2018
[85] Agronomist and Arable Farmer, 30 January 2017
[86] Farmers Weekly Interactive, www.fwi.co.uk , 17 May 2016
[87] Farmers Weekly Interactive, www.fwi.co.uk , 17 May 2016
[88] Farmers Weekly Interactive, www.fwi.co.uk , 5 December 2017
[89] Farmers Weekly, 11 August 2017
[90] Farm Practices Survey 2018, Defra, 24 May 2018

Reports in this series

Crop Production in England

Dairying Farming in England

Hill Farming in England

Horticulture Production in England (Horticultural Business Data)

Lowland Grazing Livestock Production in England

Pig Production in England

Poultry Production in England

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