The Scottish Government
Riaghaltas na h-Alba

Statistical Publication

Agriculture Series

A NATIONAL STATISTICS PUBLICATION FOR SCOTLAND

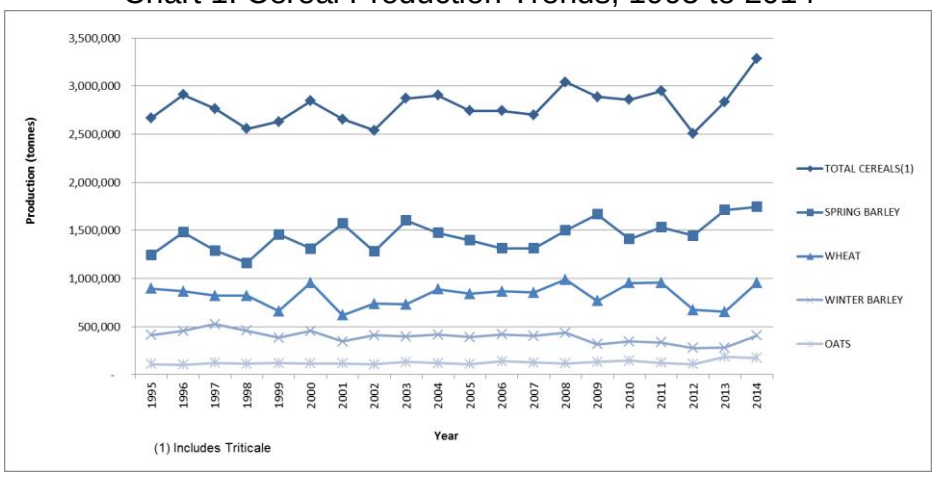
First Estimate of the Cereal and Oilseed Rape Harvest 2014
8th October 2014

Introduction

This publication, released today by Scotland's Chief Statistician, contains provisional estimates of the 2014 cereal and oilseed rape harvest along with commentary and graphics on longer term trends. It also contains a comparison of how historic provisional estimates compare with final results from the Cereal Production Survey.

These provisional statistics, based on industry reports, provide government and stakeholders with early estimates of the size of the harvest. The government also uses these results to meet the requirements of Statistical Regulations of the European Commission. Final estimates of the 2014 cereal harvest are due to be published in December 2014.

Chart 1: Cereal Production Trends, 1995 to 2014



Contents

Relationship Between Area, Yield and Production

Cereal and oilseed rape crop areas represent the amount of area that has been used to grow a particular crop, which is intended for combine harvesting and the production of grain or oilseeds. Area estimates are derived from the June Agricultural Census and specifically exclude any areas of cereals which are not intended for combine harvesting. Whole crop cereals are harvested whole (i.e. without extracting the grain) and are used as a source of animal feed.

Average yields are expressed in tonnes per hectare and represent the amount of cereal grain or oilseed that is extracted from one hectare of combine harvested area. As the moisture content of cereals and oilseeds can vary from year to year and farm to farm, depending on the level of rainfall, average yields are adjusted to a standard moisture content of 14.5 per cent for cereals and nine per cent for oilseeds. This adjustment ensures there is consistency in estimates of the amount of dry matter which can be extracted from cereal grain and oilseeds.

Production estimates are derived by multiplying crop areas (in hectares) and average yields (in tonnes per hectare). They represent the total tonnage of cereal grain and oilseed that is combine harvested from the planted area. This tonnage does not include the weight of straw and other plant material which is produced as a by-product and utilised for other purposes.

When discussing production and area we are referring to estimated totals. When discussing yield we are referring to estimated averages.

Summary

Between 2013 and 2014 production is estimated to have risen by 445,000 tonnes to 3.3 million tonnes. This represents a recovery from the 2012 crop year, when decreased production was caused by poor growing conditions and a wet and prolonged harvest period. The overall increase in cereal production this year is due to a 15 per cent increase in yields, as total area remained largely unchanged.

The recent 10 year average yield is seven per cent above the previous decade's. Long term increases are likely to be due to improved efficiency in practices and development and use of high yielding varieties.

These estimates indicate that, compared with final estimates from the 2013 harvest:

- Spring barley production increased by two per cent to 1.7 million tonnes due to a 10 per cent increase in yield. Planted areas fell by seven per cent.
- Winter barley production increased by 45 per cent to 406,000 tonnes due to a 23 per cent increase in area and 18 per increase in yield.
- Wheat production increased by 46 per cent to 954,000 tonnes due to a 26 per cent increase in area and 16 per cent increase in yield.
- Oat production decreased by seven per cent to 173,000 tonnes due to 21 per cent decreases in area, returning to lower levels following substitution for wheat and oilseed rape in 2013. Yield increased by 17 per cent.
- Oilseed rape production increased by 35 per cent to 151,000 tonnes due to a 10 per cent increase in area and 22 per cent increase in yield.

First estimates of the Scottish cereal and oilseed rape harvest are derived at the annual Crop Report Meeting (CRM) which is attended by a panel of experts from the Scottish cereal industry. This year's results have shown a degree of variability in yields across the country. This high variability introduces additional uncertainty around this year's estimates. Below is a brief assessment of the 2014 harvest from the Crop Report panel.

2014 has been a good year for cropping despite occasionally difficult conditions; harvesting began early and progressed quickly. There's been more consistency this year and less yield variation between regions. There was some disparity between the north and south of the country (roughly from Stonehaven across to Fort William), with the remnants of Hurricane Bertha impacting on the north. While this did not affect quality, yield or grain size too much it did delay the harvest by around seven to ten days compared to the south. The resulting ground conditions are expected to impact on the winter crop in this area.

The figures released today were produced by independent statistical staff free from any political interference, in accordance with professional standards set out in the Code of Practice for Official Statistics.

Commentary
Cereals[1]

Production
Between 2013 and 2014 production is estimated to have risen by 445,000 tonnes to 3.3 million tonnes, the highest level for 20 years. The estimated increase in cereal production in 2014 represents a recovery following reduction in 2012 and 2013, which was caused by poor weather conditions and a prolonged harvest period.

Yield
The total cereal area remained largely unchanged compared to 2013, with the estimated rise in production due to a 15 per cent increase in yields. With the more favourable weather conditions this year is estimated to have the highest yield in 20 years at 7.1 tonnes per hectare.

The long term trend of increasing yields remains, with the recent 10 year average of 6.5 tonnes per hectare seven per cent above the previous 10 year average. This long term increase is likely to be due to an improved efficiency in farming practices as well as development and use of higher yielding crop varieties. These shorter term variations in cereal yields are more likely to be influenced by weather and other conditions during the growing season.

Area
461,000 hectares of cereals were grown this year. Areas have ranged between 395,000 hectares in 1994 and 476,000 hectares in 1997. Cereal plantings have been influenced by various factors, including differing rates of compulsory set-aside between 1994 and 2008, relative competitiveness and profitability of cereals compared to other crops, as well as physical conditions at the time of planting.

Triticale
Triticale is a marginal crop in Scotland, grown on around 500 hectares. Because there are relatively few farms growing triticale it is difficult to provide reliable yield estimates. However, for the same reason, variances in yield have little impact on overall cereal production. Triticale production is not discussed in this release, but is included in the overall cereal estimates.

Cautionary Note
Final estimates of the 2014 cereal and oilseed rape harvest, which will be available in December, are usually within five per cent of the first estimates of production. However, it should be remembered that it is early in the year for estimating harvest production.

[1] Includes triticale.

Charts

Chart 2 shows the areas estimated from the June Agricultural Census as bars and the estimated production and estimated average yield as lines. Area is presented in hundreds of hectares, production in thousands of tonnes and yield in tonnes per hectare.

In the same format as chart 2, chart 3 shows the year-on-year change of areas, total production and average yield. This allows the drivers of fluctuations in production to be more easily distinguished and gives a sense of the typical fluctuations from year to year. In chart 3 all measures are presented as the percentage change compared to the previous year.

In the following sections similar charts are used to display the results for each crop group, though the scales of the chart axes are not the same in every case.

Chart 2 - Total Cereals: Area, Yield and Production (includes triticale)

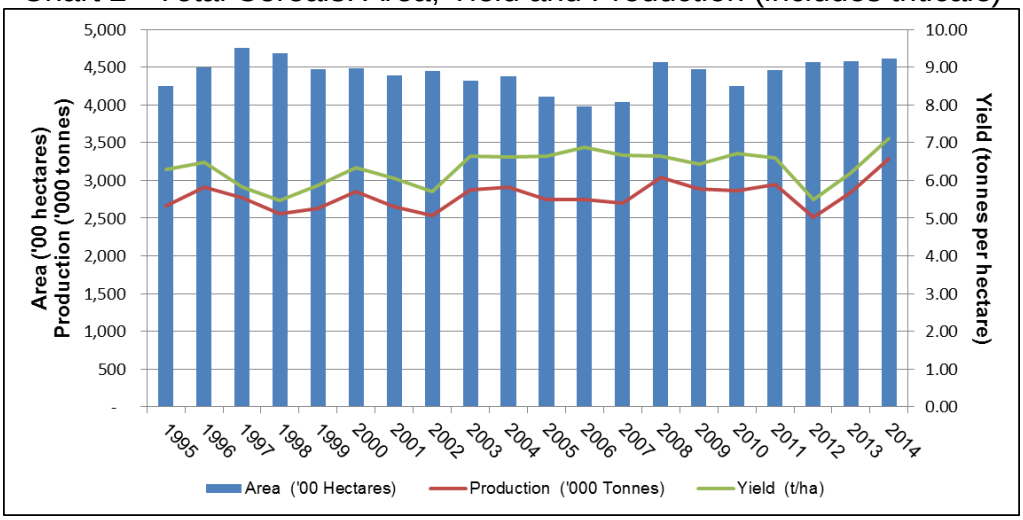
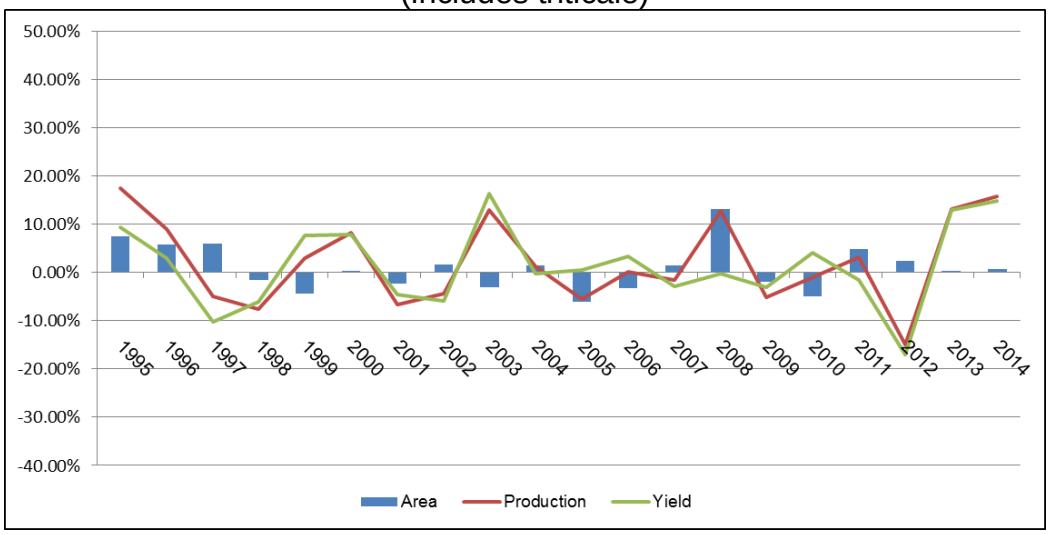


Chart 3 - Total Cereals Year-on-Year Change: Area, Yield and Production (includes triticale)



Barley

Barley is the predominant cereal crop grown in Scotland and, in 2014, contributed around a third of the UK barley area, particularly spring barley which accounted for just under half of the UK total (based on 2013 UK production figures). Despite a strong association with the Scottish whisky industry, as a key ingredient, most Scottish barley is used as animal feed.

Spring Barley Estimates (charts 4 and 5)

Over the last 20 years spring barley production has been following a generally increasing trend. With an estimated two per cent increase in 2014, production is at the highest level over the period, estimated at 1.7 million tonnes (9,000 tonnes behind the 2009 peak). This estimated increase was due to seven per cent decrease in area grown and a 10 per cent increase in yield.

Grown areas decreased to similar levels as 1999, at 274,000 hectares. The average yield for spring barley in 2014 has been estimated at 6.4 tonnes per hectare, the highest level for 20 years. In the last 10 years yields for spring barley remained relatively stable until 2012; when yields experienced the largest change in a decade, with a fall of 14 per cent. This year's yields are estimated to have increased by 9 per cent.

The longer term trend in yield is an increasing one, with the average over the most recent decade nine per cent higher than over the previous 10 years – when yields were both lower and more variable.

Winter Barley Estimates (charts 6 and 7)

2014 production is estimated to have increased by 45 per cent to 406,000 tonnes, approximately the same level of production as in 2002. This year's estimated increase has been driven by a 18 per cent increase in yield and 23 per cent increase in grown area.

With the exception of the most recent year winter barley production follows a similar trend to grown areas; which peaked in 1997 and have been on a general decline since then. 52,000 hectares were grown in Scotland in 2014 which is comparable to those grown in 2007.

The general trend in winter barley yields has been quite different. Relatively large fluctuations in yield gave way in 2001 to a period of steady increases, rising to a peak in 2006. While yields have declined since then, the recent 10 year average is seven per cent higher than that of the previous decade and, similarly to spring barley, also less variable. The average yield for winter barley in 2014 is estimated at 7.7 tonnes per hectare similar to the peak observed in 2006.

Chart 4 - Spring Barley: Area, Yield and Production

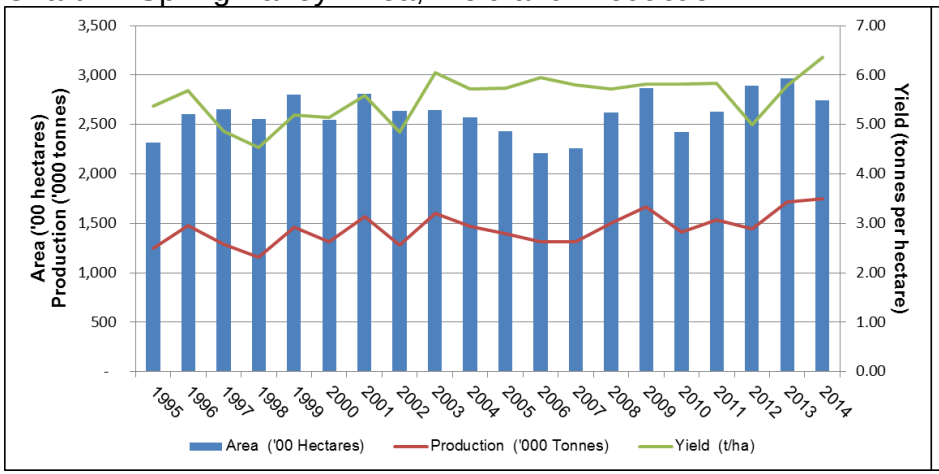


Chart 6 - Winter Barley: Area, Yield and Production

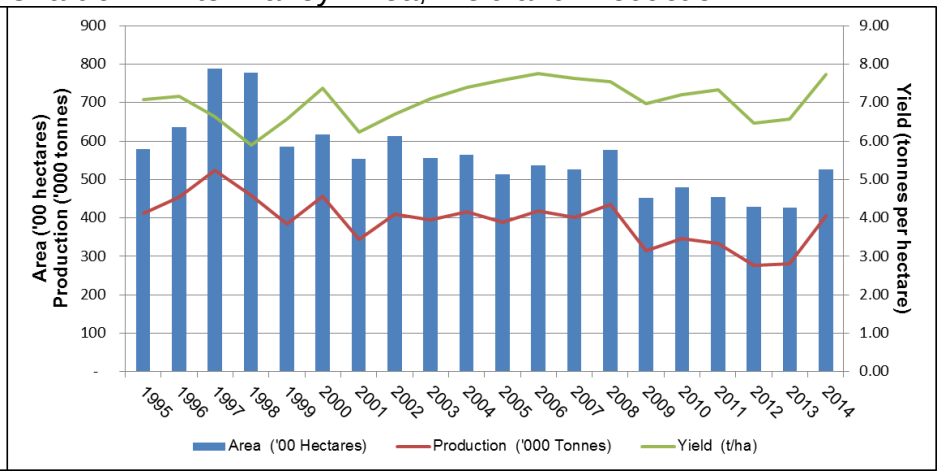


Chart 5 - Spring Barley Year-on-Year Change: Area, Yield and Production

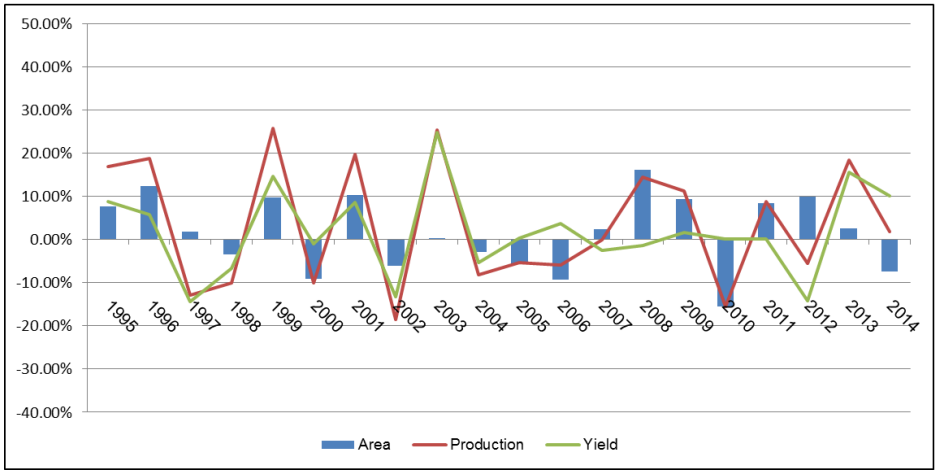
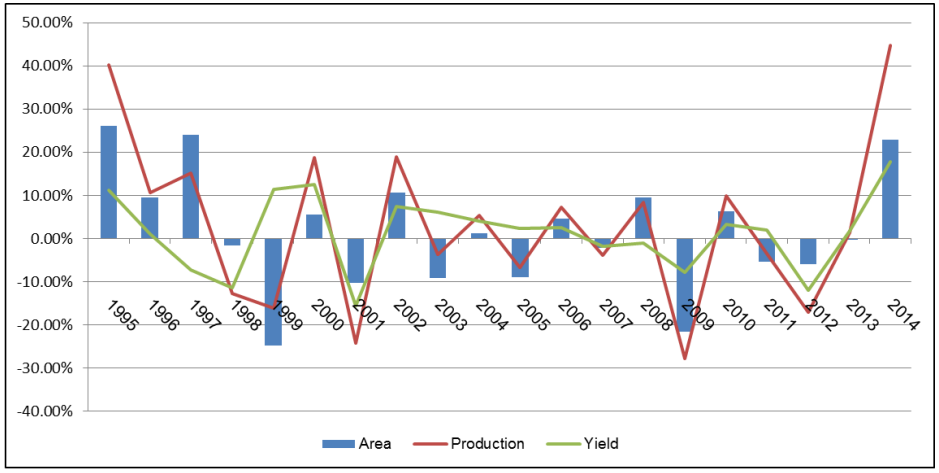


Chart 7 - Winter Barley Year-on-Year Change: Area, Yield and Production



Wheat

Scottish wheat is mostly soft wheats; used predominantly for distilling, but is also used for animal feed. Scotland imports hard wheats for milling (for bread making) as our climate does not suit hard wheat varieties.

Wheat Estimates (charts 8 and 9)

In 2012 and 2013 wheat production was particularly affected by poor growing conditions and fell by almost a third. Estimated production in 2014 has increased to similar levels seen in 2009, to 954,000 tonnes. Wheat yields are estimated to have increased by 16 per cent with grown areas also increasing by 26 per cent are responsible for the increase in production.

109,000 hectares of wheat were grown this year. Areas have fluctuated considerably in the last 20 years, reaching a peak in 2011 with 2014 areas being comparable to that of 2000. Yields do not tend to fluctuate as much and are estimated to have increased to 8.8 tonnes per hectare in 2014.

In general, the higher variability in grown areas of wheat exerts a stronger influence over levels of production than relatively small fluctuations in yield. Areas, yields and production have been higher on average in the last decade than the previous one.

Chart 8 - Wheat: Area, Yield and Production

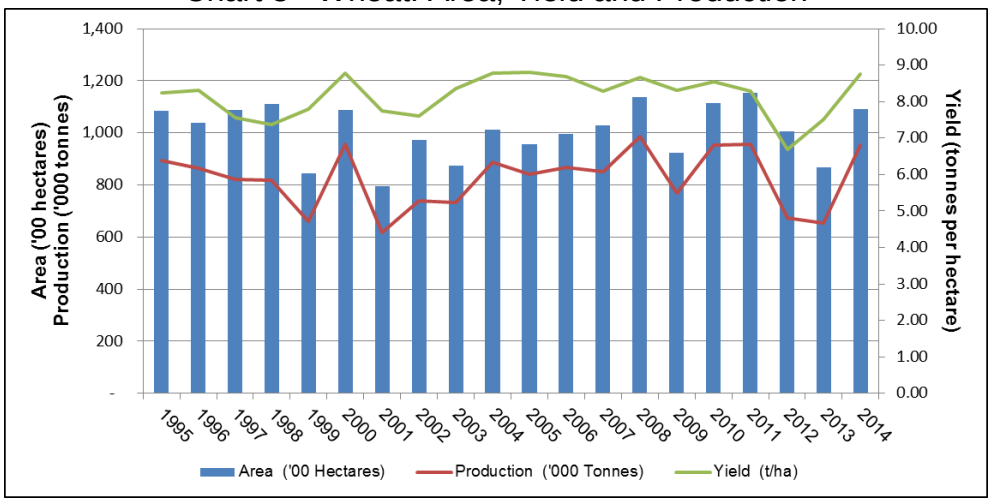
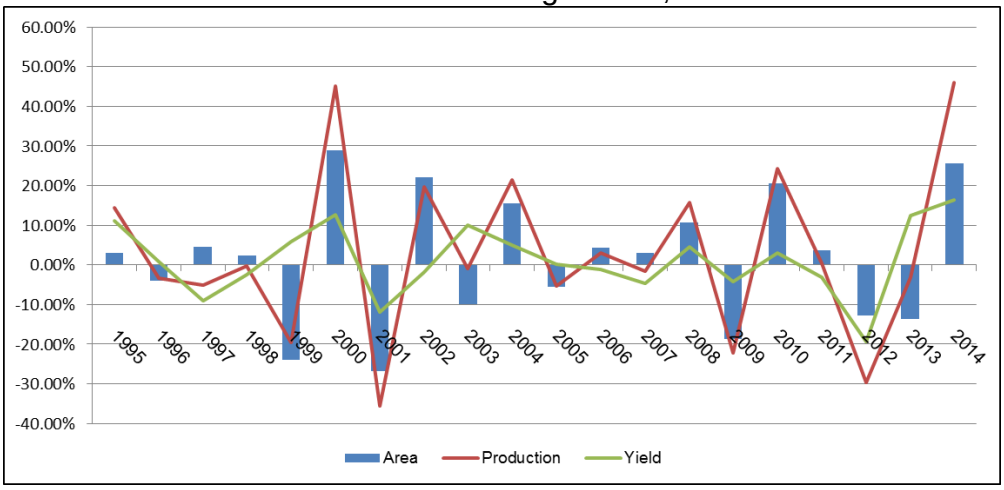


Chart 9 - Wheat Year-on-Year Change: Area, Yield and Production



Oats

The majority of oats grown in Scotland are used for milling and further processing for breakfast cereals, oatcakes, porridge oats and oatmeal for secondary processing outside Scotland. The majority of the remainder is used as specialist feed for horses.

Oats Estimates (charts 10 and 11)

Oat production is estimated to have decreased by 7 per cent this year due to a 21 per cent decrease in grown areas and an increase of 17 per cent for yields. Production has fluctuated considerably in recent years, but particularly so in the few years when it reached the highest level in the last 20 years, at 195,000 tonnes in 2013. The production is estimated to be 173,000 tonnes in 2014. Spring oats make up around 65 per cent of oat production.

This year's average yield is estimated at 6.9 tonnes per hectare, the highest yield in the last 20 years. This is in line with the general increasing trend in oat yields, which has seen a 11 per cent average increase in the last 10 years, compared to the previous decade.

Chart 10 - Oats: Area, Yield and Production

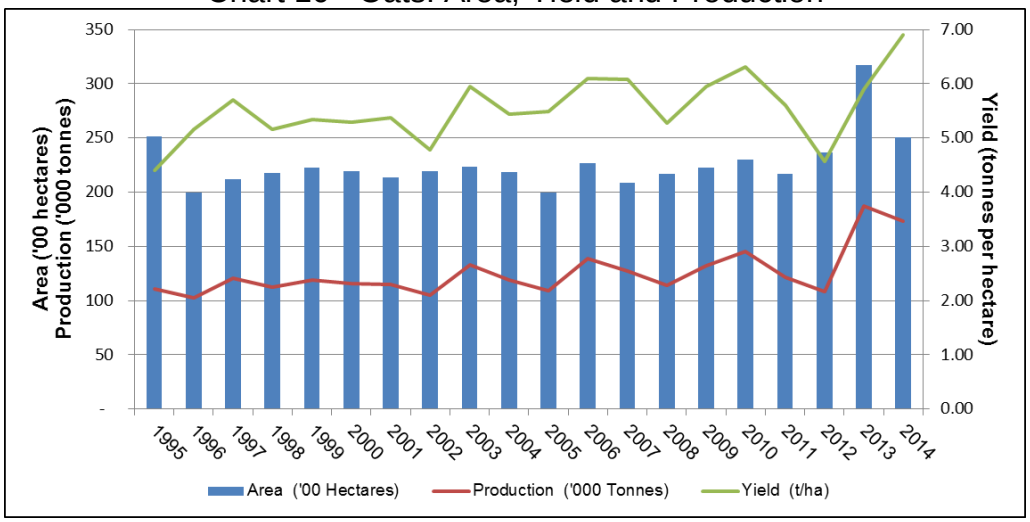
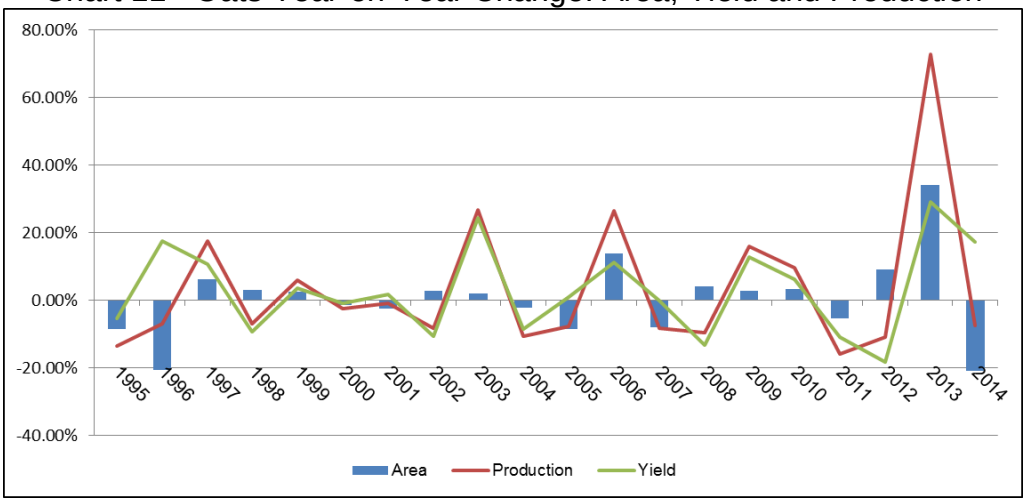


Chart 11 - Oats Year-on-Year Change: Area, Yield and Production



Oilseed Rape

The majority of Scottish oilseed rape is winter oilseed rape and is mainly exported for biofuels, with a very small amount processed in Scotland for edible oil.

Oilseed Rape Estimates (charts 12 and 13)

Estimated oilseed rape production in 2014 increased by 25 per cent to levels seen in 2011, at 151,000 tonnes. This was due to an increase in areas grown, which rose by 10 per cent to 37,000 hectares and an estimated 22 per cent increase in yields.

Over the last 20 years, oilseed rape production has remained relatively stable. This is in part due to a balance between generally decreasing areas grown and general increases in yields achieved. Fluctuations in yield have been more marked in recent years and in particular in 2012, when poor growing conditions saw yields fall by almost a third. In 2014, yields improved to their highest level in 20 years and are estimated at 4.1 tonnes per hectare on average.

Chart 12 – Oilseed Rape: Area, Yield and Production

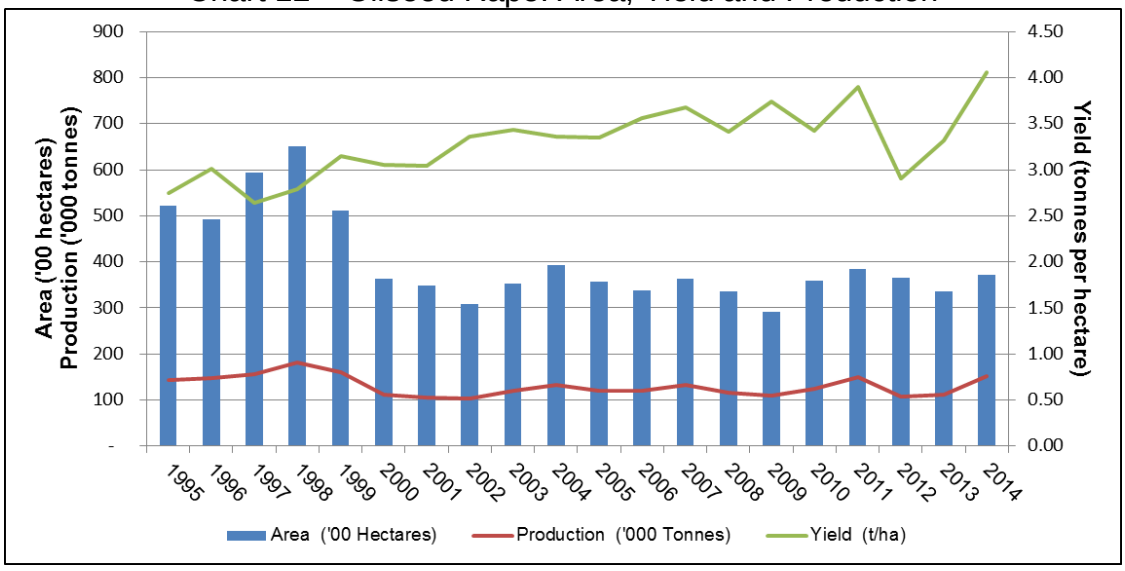
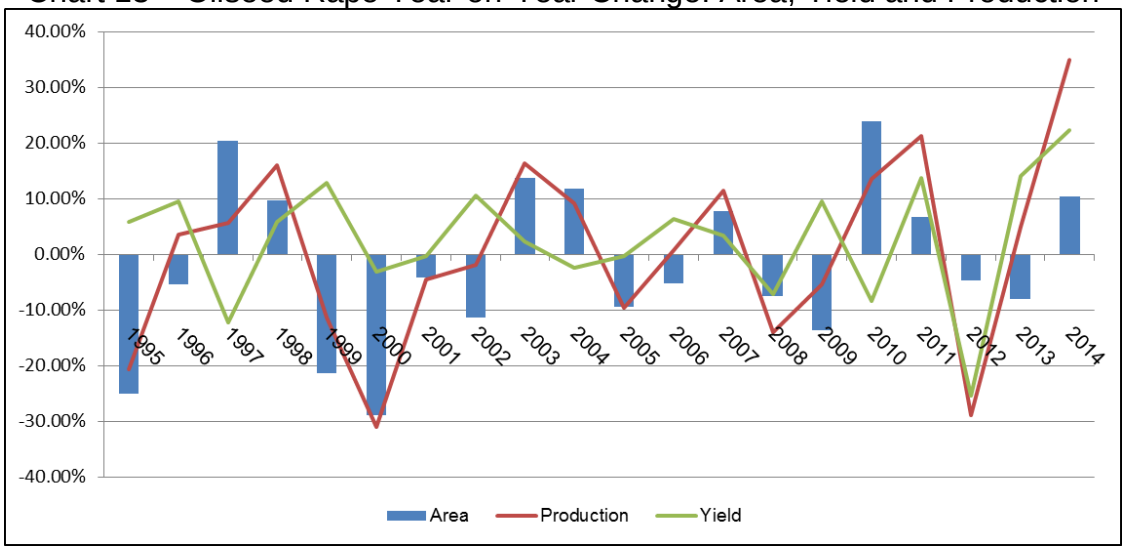


Chart 13 – Oilseed Rape Year-on-Year Change: Area, Yield and Production



Key Statistics: Changes in Cereal Production

2014 Cereal and Oilseed Rape Harvest
Change Over the Year - Estimates

mt = million tonnes	kt = thousand tonnes
k = thousand	t/ha = tonnes per hectare

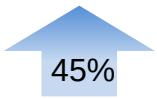
Production

To: 1,746 kt

From: 1,714 kt

Spring Barley
Due to a 7% decrease in area and a 10% increase in yield.
Grown area = 274 k hectares Average yield = 6.4 t/h

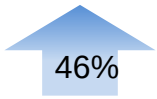
To: 406 kt



From: 281 kt

Winter Barley
Due to a 23% increase in area and a 18% increase in yield.
Grown area = 53 k hectares Average yield = 7.7 t/h

To: 954 kt



From: 653 kt

Wheat
Due to a 26% increase in area and 16% increase in yield.
Grown area = 109 k hectares Average yield = 8.6 t/h

From: 187 kt

To: 173 kt

Oats
Due to a 21% reduction in area and 17% increase in yield.
Grown area = 25 k hectares Average yield = 6.9 t/h

To: 3.3 mt

From: 2.8 mt

Total Cereals
Due to a 15% increase in yield. Area remains relatively unchanged Grown area = 461 k hectares Average yield = 7.1 t/h

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To: 151 kt

From: 112 kt

Oilseed Rape
Due to a 10% increase in area and 22% increase in yield.
Grown area = 37 k hectares Average yield = 4.1 t/h

Reference Tables

Table 1: Cereal Area, Yield and Production 2013 and 2014

Crop	2013			2014			% Change 2013/2014		
	Area (000 ha)	Yield (t/ha)	Production (000 t)	Area[2] (000 ha)	Yield (t/ha)	Production (000 t)	Area	Yield	Production
Wheat	87	7.5	653	109	8.7	954	25.5%	16.4%	46.1%
Winter Barley	43	6.6	281	53	7.7	406	23.0%	17.7%	44.8%
Spring Barley	296	5.8	1,714	274	6.4	1,746	-7.4%	10.1%	1.9%
Total Barley	339	5.9	1,994	327	6.6	2,152	-3.6%	12.0%	7.9%
Oats	32	5.9	187	25	6.9	173	-21.0%	17.2%	-7.5%
Total Cereals[1]	**458**	**6.2**	**2,837**	**461**	**7.1**	**3,282**	**0.7%**	**14.9%**	**15.7%**
Oilseed Rape	34	3.3	112	37	4.1	151	10.4%	22.3%	35.0%

(1) Includes Triticale

Basis of Production Estimates

The 2014 estimates of production are based on final crop areas from the 2014 June Census, along with crop yield estimates from Scottish Government Agricultural Staff, supplemented by discussions with industry experts and trade organisations. The 2013 estimates of production are based on final yield results from the 2013 Cereal Production Survey and final crop areas from the 2013 June Census.

Some caution is advised when comparing these preliminary trends in yield and production estimates between 2013 and 2014 which have been derived from different sources. Final estimates of production from the 2014 harvest will be obtained from the 2014 Cereal Production Survey and published in December 2014.

Table 2: Cereal Area, Yield and Production 1995 to 2014

	TOTAL CEREALS[1]			SPRING BARLEY			WINTER BARLEY			WHEAT			OATS		
Year	Area (Hectare)	Yield (t/ha)	Production (Tonnes)	Area (Hectare)	Yield (t/ha)	Production (Tonnes)	Area (Hectare)	Yield (t/ha)	Production (Tonnes)	Area (Hectare)	Yield (t/ha)	Production (Tonnes)	Area (Hectare)	Yield (t/ha)	Production (Tonnes)
1995	424,720	6.29	2,669,660	231,934	5.37	1,246,109	57,993	7.09	411,105	108,379	8.25	894,324	25,181	4.40	110,713
1996	449,298	6.48	2,909,649	260,726	5.68	1,480,776	63,566	7.16	455,093	103,974	8.32	864,552	19,950	5.16	102,909
1997	475,958	5.81	2,766,710	265,212	4.86	1,289,532	78,893	6.64	523,763	108,655	7.56	820,943	21,185	5.71	120,932
1998	468,154	5.46	2,556,349	255,822	4.54	1,160,886	77,705	5.89	457,320	111,172	7.37	819,316	21,784	5.16	112,470
1999	447,236	5.88	2,629,266	280,546	5.20	1,459,163	58,442	6.56	383,414	84,476	7.80	659,177	22,278	5.34	118,971
2000	448,720	6.34	2,846,939	254,718	5.15	1,311,105	61,678	7.38	455,349	108,853	8.79	956,432	21,927	5.28	115,874
2001	438,623	6.06	2,656,550	280,786	5.59	1,570,617	55,319	6.24	345,045	79,680	7.74	616,970	21,333	5.37	114,630
2002	445,512	5.70	2,540,349	263,914	4.85	1,279,984	61,234	6.70	410,268	97,192	7.60	738,662	21,907	4.79	104,897
2003	431,720	6.63	2,870,410	264,920	6.05	1,603,596	55,649	7.11	395,428	87,498	8.36	731,351	22,340	5.95	132,822
2004	438,039	6.61	2,904,878	257,462	5.72	1,473,709	56,348	7.40	416,719	101,126	8.78	888,156	21,831	5.44	118,688
2005	411,329	6.65	2,742,230	243,298	5.74	1,396,231	51,341	7.58	388,938	95,595	8.81	841,744	19,955	5.49	109,505
2006	398,050	6.87	2,744,088	220,639	5.95	1,313,527	53,762	7.76	417,444	99,681	8.70	867,053	22,682	6.10	138,391
2007	403,493	6.67	2,699,921	226,019	5.80	1,312,003	52,625	7.63	401,377	102,744	8.30	852,603	20,868	6.08	126,887
2008	456,547	6.65	3,043,330	262,322	5.72	1,500,118	57,612	7.55	435,085	113,797	8.68	987,256	21,720	5.27	114,515
2009	447,554	6.44	2,887,132	287,011	5.81	1,668,240	45,149	6.97	314,527	92,482	8.30	767,651	22,299	5.95	132,570
2010	425,496	6.71	2,857,814	242,364	5.82	1,410,270	48,010	7.20	345,615	111,436	8.55	953,239	23,000	6.31	145,117
2011	446,181	6.60	2,948,871	262,948	5.83	1,532,979	45,477	7.34	333,623	115,412	8.29	956,985	21,715	5.61	121,826
2012	456,902	5.48	2,507,016	289,222	5.00	1,446,950	42,816	6.46	276,511	100,637	6.69	673,288	23,672	4.57	108,249
2013	458,219	6.19	2,836,836	296,444	5.78	1,713,548	42,694	6.57	280,511	86,840	7.52	652,933	31,728	5.89	187,021
2014	461,477	7.11	3,282,301	274,377	6.36	1,745,867	52,507	7.74	406,166	109,023	8.75	953,905	25,050	6.91	173,022

(1) Includes Triticale

Table 3: Oilseed rape Area, Yield and Production 1995 to 2014

	OILSEED RAPE		
Year	Area (Hectare)	Yield (t/ha)	Production (Tonnes)
1995	52,121	2.7	143,090
1996	49,290	3.0	148,171
1997	59,341	2.6	156,479
1998	65,117	2.8	181,587
1999	51,173	3.1	161,070
2000	36,406	3.0	110,993
2001	34,850	3.0	105,893
2002	30,901	3.4	103,823
2003	35,163	3.4	120,847
2004	39,316	3.4	131,906
2005	35,591	3.3	119,117
2006	33,743	3.6	120,030
2007	36,334	3.7	133,657
2008	33,623	3.4	114,902
2009	29,043	3.7	108,605
2010	36,002	3.4	123,334
2011	38,388	3.9	149,627
2012	36,611	2.9	106,420
2013	33,653	3.3	111,652
2014	37,140	4.1	150,717

Table 4: Cereals - Comparison of Provisional and Final Estimates 2004 to 2013

(Percentage differences are of Final minus Provisional)

AREA

	TOTAL CEREALS			SPRING BARLEY			WINTER BARLEY			WHEAT			OATS		
Year	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference
2004	441,240	438,039	**-0.7%**	257,660	257,462	**-0.1%**	56,390	56,348	**-0.1%**	103,860	101,126	**-2.6%**	22,100	21,831	**-1.2%**
2005	415,367	411,329	**-1.0%**	245,670	243,298	**-1.0%**	52,180	51,341	**-1.6%**	96,090	95,595	**-0.5%**	20,276	19,955	**-1.6%**
2006	398,330	398,050	**-0.1%**	221,280	220,639	**-0.3%**	53,620	53,762	**0.3%**	99,680	99,681	**0.0%**	22,520	22,682	**0.7%**
2007	401,410	403,493	**0.5%**	224,140	226,019	**0.8%**	52,860	52,625	**-0.4%**	101,790	102,744	**0.9%**	21,520	20,868	**-3.0%**
2008	455,830	456,547	**0.2%**	261,890	262,322	**0.2%**	57,520	57,612	**0.2%**	113,649	113,797	**0.1%**	21,670	21,720	**0.2%**
2009	447,554	447,554	**0.0%**	287,011	287,011	**0.0%**	45,149	45,149	**0.0%**	92,482	92,482	**0.0%**	22,299	22,299	**0.0%**
2010	424,492	425,496	**0.2%**	241,758	242,364	**0.3%**	47,939	48,010	**0.1%**	111,269	111,436	**0.1%**	22,299	23,000	**3.1%**
2011	446,181	446,181	**0.0%**	262,948	262,948	**0.0%**	45,477	45,477	**0.0%**	115,412	115,412	**0.0%**	21,715	21,715	**0.0%**
2012	456,901	456,902	**0.0%**	289,222	289,222	**0.0%**	42,816	42,816	**0.0%**	100,637	100,637	**0.0%**	23,672	23,672	**0.0%**
2013	458,219	458,219	**0.0%**	296,444	296,444	**0.0%**	42,694	42,694	**0.0%**	86,840	86,840	**0.0%**	31,728	31,728	**0.0%**

YIELD

	TOTAL CEREALS			SPRING BARLEY			WINTER BARLEY			WHEAT			OATS		
Year	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference
2004	6.78	6.61	**-2.4%**	5.80	5.72	**-1.3%**	7.63	7.40	**-3.1%**	8.91	8.78	**-1.4%**	5.97	5.44	**-8.9%**
2005	6.64	6.65	**0.2%**	5.72	5.74	**0.3%**	7.29	7.58	**3.9%**	8.72	8.81	**1.0%**	6.34	5.49	**-13.4%**
2006	6.54	6.87	**5.1%**	5.38	5.95	**10.7%**	7.57	7.76	**2.6%**	8.70	8.70	**0.0%**	6.02	6.10	**1.4%**
2007	6.61	6.67	**1.0%**	5.72	5.80	**1.5%**	7.59	7.63	**0.5%**	8.18	8.30	**1.4%**	6.11	6.08	**-0.5%**
2008	6.67	6.65	**-0.3%**	5.63	5.72	**1.6%**	7.79	7.55	**-3.1%**	8.61	8.68	**0.8%**	5.95	5.27	**-11.4%**
2009	6.40	6.44	**0.7%**	5.73	5.81	**1.4%**	7.41	6.97	**-6.0%**	8.07	8.30	**2.9%**	6.10	5.95	**-2.5%**
2010	6.51	6.71	**3.0%**	5.34	5.82	**9.0%**	7.05	7.20	**2.1%**	8.94	8.55	**-4.3%**	6.02	6.31	**4.8%**
2011	6.88	6.60	**-4.0%**	6.16	5.83	**-5.4%**	7.23	7.34	**1.5%**	8.53	8.29	**-2.8%**	6.06	5.61	**-7.5%**
2012	5.48	5.48	**0.1%**	4.87	5.00	**2.8%**	6.51	6.46	**-0.8%**	6.79	6.69	**-1.5%**	5.53	4.57	**-17.4%**
2013	6.07	6.19	**2.0%**	5.60	5.78	**3.3%**	6.88	6.57	**-4.6%**	7.25	7.52	**3.6%**	6.15	5.89	**-4.1%**

PRODUCTION

	TOTAL CEREALS			SPRING BARLEY			WINTER BARLEY			WHEAT			OATS		
Year	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference	Provisional	Final	Percentage Difference
2004	2,989,947	2,904,878	**-2.8%**	1,495,074	1,473,709	**-1.4%**	430,422	416,719	**-3.2%**	925,615	888,156	**-4.0%**	131,822	118,688	**-10.0%**
2005	2,758,037	2,742,230	**-0.6%**	1,405,232	1,396,231	**-0.6%**	380,392	388,938	**2.2%**	837,897	841,744	**0.5%**	128,550	109,505	**-14.8%**
2006	2,605,600	2,744,088	**5.3%**	1,189,393	1,313,527	**10.4%**	406,081	417,444	**2.8%**	867,245	867,053	**0.0%**	135,534	138,391	**2.1%**
2007	2,653,398	2,699,921	**1.8%**	1,281,338	1,312,003	**2.4%**	401,066	401,377	**0.1%**	833,014	852,603	**2.4%**	131,425	126,887	**-3.5%**
2008	3,042,256	3,043,330	**0.0%**	1,474,441	1,500,118	**1.7%**	448,081	435,085	**-2.9%**	978,518	987,256	**0.9%**	128,937	114,515	**-11.2%**
2009	2,872,228	2,887,132	**0.5%**	1,645,541	1,668,240	**1.4%**	334,338	314,527	**-5.9%**	745,969	767,651	**2.9%**	135,970	132,570	**-2.5%**
2010	2,872,228	2,857,814	**-0.5%**	1,289,851	1,410,270	**9.3%**	337,987	345,615	**2.3%**	994,322	953,239	**-4.1%**	137,657	145,117	**5.4%**
2011	3,067,714	2,948,871	**-3.9%**	1,619,867	1,532,979	**-5.4%**	328,803	333,623	**1.5%**	984,421	956,985	**-2.8%**	131,668	121,826	**-7.5%**
2012	2,502,839	2,507,016	**0.2%**	1,407,715	1,446,950	**2.8%**	278,613	276,511	**-0.8%**	683,445	673,288	**-1.5%**	131,009	108,249	**-17.4%**
2013	2,781,049	2,836,836	**2.0%**	1,659,309	1,713,548	**3.3%**	293,944	280,511	**-4.6%**	629,963	652,933	**3.6%**	195,010	187,021	**-4.1%**

Methodology and Quality Note

This section provides a summary of information on these statistics against five dimensions of quality, based on the European Statistical System (ESS) quality framework: Relevance; Accuracy; Timeliness and Punctuality; Accessibility and Clarity; and Comparability. The Scottish Government adheres to the Code of Practice for Official Statistics and the National Statistician's guidance on quality. In addition the Scottish Government provides its own guidance on quality, which is available to view at the Scottish Government's Statistics internet pages.

Further information on quality:

- Code of Practice for Official Statistics
- National Statistician's Guidance on Quality
- Scottish Government's Corporate Policy Statement
- Scottish Government Guide to basic quality assurance
- European Statistics Code of Practice (including quality framework)

Data Providers

The Scottish Government relies on the data collected by industry bodies to produce these statistics and therefore the quality of the data available from these sources impacts significantly on Scottish Government analysis.

The provisional estimates are derived from yield values of individual growers collated by several industry bodies. These industry bodies meet to discuss and quality assure these estimates at the annual Crop Report Meeting, which in 2014 was attended by representatives from:

- Scottish Government, Rural and Environment Science and Analytical Services
- Rural Payments Agency
- Bairds Malt
- Openfield
- East of Scotland Farms
- Scotland's Rural College
- Agricultural Industries Confederation
- National Farmers Union Scotland
- Scottish Agricultural Science Agency
- The Agriculture and Horticulture Development Board (which now includes the Home Grown Cereals Authority)

First estimates from growers are collected by several means, by: area offices of the Scottish Government (SG) Rural Payments and Inspections Directorate (RPID); area offices of Scotland's Rural College (SRUC); agronomists working for commercial bodies; farming co-operatives; the National Farmers Union Scotland (NFUS), using electronic, paper based or telephone surveys.

Average yields from known harvested areas are collected from all regions in Scotland for each individual crop. For consistency, these average yields are adjusted to a standard moisture content of 14.5 per cent for cereals and 9 per cent for oilseed rape.

Once all the yields have been collated, the industry bodies at the Crop Report Meeting carry out additional quality assurance by comparing resulting yields between different crops and regions within Scotland. This results in an agreed set of yield estimates which are then combined with June Agricultural Census area results to derive the harvest production estimates.

Relevance

The degree to which the statistical product meets user needs for both coverage and content.

The cereal estimates are produced for a wide range of purposes. The statistics help the government to form, monitor and evaluate policy, and to assess the economic well-being of the cereal sector. They are also required by law by the Statistical Office of the European Communities, as the information is essential for management of the EU markets. These early provisional estimates are timed to enable provision of data for an EU regulatory deadline. Specific regulations are listed on pages 3 to 5 of our 2009/10 annual statistics plan. An updated plan for 2013-14 is available at, http://www.Scotland.gov.uk/agricstats

The production estimates also feed into the UK cereals balance sheet, which provides an independent, unbiased, timely and comprehensive picture of the supply and demand position of the UK cereal market. The balance sheet is also the prime tool for tracking new developments in the UK cereals industry and determining their impact on the market. The balance sheet is widely used by policy makers, the EU Commission and the wider cereals industry. A link to the balance sheets, published by the Home Grown Cereals Authority (HGCA), is provided here;

User Feedback
Though we are not aware of any unmet user needs in relation to these statistics, the Scottish Government is always interested to here from users about what is most relevant to them and welcomes feedback from users of these statistics. Contact details are available from the Agriculture Statistics contacts webpage.

Details of both current and past user consultations are available on the Agriculture Statistics consultations webpage.

Accuracy
The closeness between an estimated result and the (unknown) true value.

When considering the accuracy of these statistics it is important to note that the collection of estimates prior to the completion of the harvest will lead to a level of inaccuracy. Given the timing of the Crop Report Meeting and the unpredictability of the weather and the knock-on effects this has on production (e.g. poorer yields in later harvested crops which have been subjected to longer periods in unfavourable growing conditions), providing early estimates of cereal yields and production is a challenging task. These estimates are based on the most up-to-date industry reports available at the time of the Crop Report Meeting (this year the meeting was held on the 24th September). As harvest progress continues it is inevitable that these reports will become more reliable. These statistics are provisional estimates and will be followed by final estimates in December 2014.

The minimum estimated coverage of harvested crops accounted for by yield estimates provided to the CRM is estimated at 600,000 tonnes of production. This represents about 24 per cent of harvested cereals. By comparison the Cereal Production Survey covers around 330,000 tonnes of production.
In the last 10 years the provisional estimates of the total cereal harvest has been within five per cent of the final estimate – see chart 14.

The nature of the industry bodies involved in the production of provisional estimates means that the results are likely to be more representative of commercial cropping farms, and less representative of farms growing crops for on farm uses, this is most likely why the provisional estimates tend to overestimate production and yields compared to the final CPS estimates.

Comparison of provisional and final results

This section compares past provisional estimates of the harvest to the final estimates of the harvest. Provisional estimates are derived from averaged yield estimates of growers, collated through the cooperation of several organisations within the agricultural sector, applied to crop area estimates from the June Agricultural Census. Final estimates are derived from average yields from the Cereal Production Survey (CPS). The purpose of this section is to quantify the size and direction of the differences between the two estimates in order to give an indication of the robustness of these provisional estimates.

The Cereal Production Survey is based on a sample of around 400 to 450 farms in Scotland stratified by region and farm size. In 2013, 463 agricultural holdings were surveyed. Although 463 holdings were surveyed, many holdings grow more than one crop. The total number of returns received for all crops combined was 727, this equates to a sampling rate of seven per cent overall.

The results from the CPS have a margin of error associated with them, reflecting the error resulting from sampling. Sampling error is the difference between the estimate derived from a sample survey and the true value that would result if a census of the whole population were taken under the same conditions. The intervals were calculated as 95 per cent confidence intervals, meaning that there was a 95 per cent chance that the true population value was within the resulting interval. The 2013 first estimates of overall production were within these limits – suggesting that the provisional estimates were an accurate assessment of the 2013 harvest. More information on the quality of the final estimates and the differences between first and final estimates are contained in the Final Estimates of the Cereal and Oilseed Rape Harvest 2013 release.

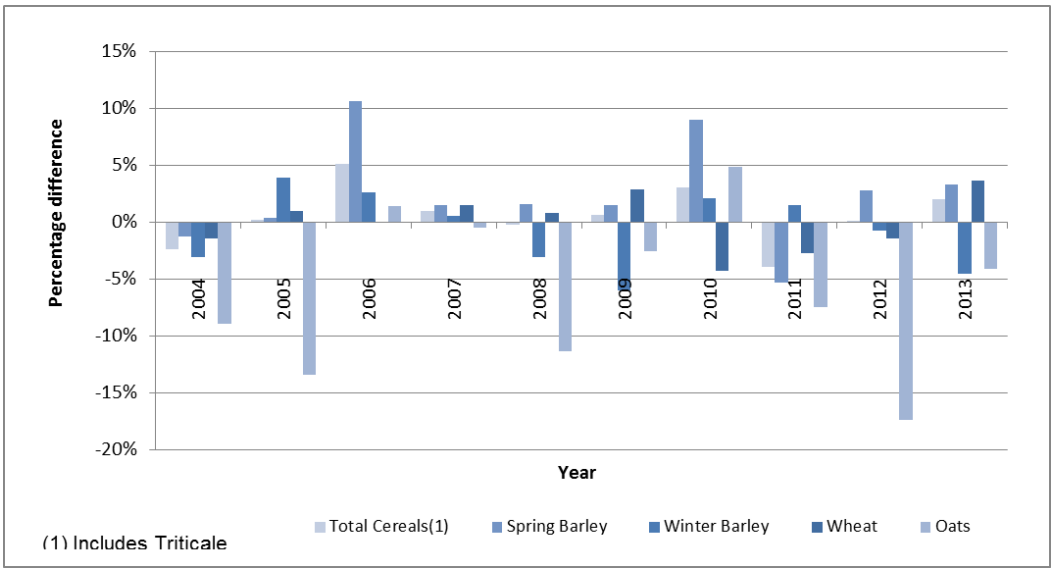
Final estimates undergo several validation processes as follows; (i) checking for any obvious errors on the paper survey forms upon receipt, (ii) cross checking against June Agricultural Census area data and internal validation within survey forms to ensure totals match, (iii) results are standardised to 14.5 per cent moisture content for cereals and nine per cent for oilseed rape (iv) assessing data for any extreme yield values and removing if necessary, (v) if required, area offices are contacted to ensure that data is correct.
Additional quality assurance is provided at the later stages by utilising expert knowledge within the Scottish Government.
Data quality and assurance measures used for June Census area data are contained in Final Results from 2014 June Agricultural Census.

In previous years, the provisional June Agricultural Census area figures used to calculate the provisional production estimates have been slightly different from the final June Agricultural Census areas used to calculate the final production estimates. However, these differences have generally been small (less than one per cent) and are not a main contributor to differences in the production estimates. Furthermore, from 2009, administrative data on land use has been utilised for holdings which claim Single Farm Payments and other schemes through the Single Application Form (SAF). This has made final area figures available in time for the provisional harvest estimates and eliminated any differences due to changes in areas.

The main reason for differences in the provisional and final production estimates are differences in provisional and final yield estimates. Chart 14 shows these differences for the last 10 years. A full breakdown of the differences between the estimates is provided in Table 4 in the appendix.

It can be seen from Chart 14 that in the last 10 years the provisional estimate of the total cereal harvest has been within five per cent of the final estimate. In most years, the largest differences between provisional and final production estimates are for oats, with the largest difference being 17 per cent in 2012.

Chart 14: Cereal Production, Comparison of Provisional v Final Estimates, 2004 to 2013 (final estimates minus first estimates, as percentage difference)



Timeliness and Punctuality
Timeliness refers to the lapse of time between publication and the period to which the data refer.

In order to provide timely estimates of cereal and oilseed rape production the Crop Report Meeting (CRM) is held as early as is practical following data collection by the industry representatives attending the meeting. The progress of the harvest limits how early this meeting can be held. Yield estimates collected before the completion of the harvest are inevitably less reliable than estimates completed after the harvest. The 2014 CRM was held on the 24th September, when the panel agreed sufficient progress of the Scottish harvest had been made. The results were published under National Statistics protocols on the 7th October, after the release of the June Agricultural Census results.

Punctuality refers to the time lag between the actual and planned dates of publication.

When reliable results can be expected, the planned publication date of the first estimates of the cereal and oilseed rape harvest is scheduled no later than the release date of UK harvest estimates, as both feed into the UK cereals balance sheet.

Accessibility and Clarity
Accessibility is the ease with which users are able to access the data. It also relates to the format(s) in which the data are available and the availability of supporting information.
Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

These statistics are made available online at the Scottish Government's statistics website in accessible formats (html and pdf versions are available). Data tables are made available in excel format to allow users to carry out further analysis. Methodological notes and additional notes to tables, identifying specific quality issues, are included in this document, which is available online and linked to from all National Statistics outputs containing cereal production estimates. Links to the Agriculture Statistics series of outputs are available from the Gov.uk website, www.gov.uk.

Comparability
The degree to which data can be compared over time and domain.

The first estimates of the cereal and oilseed rape harvest (from the Crop Report Meeting) contained in this document are compared to final estimates (from the Cereal Production Survey) for previous years.

Due to the typically later harvest period in Scotland compared to the rest of the EC, it is not practical to survey farmers for production and yield estimates at this point in the year. EC regulations governing the collection of cereal and oilseed estimates account for this by allowing early estimates to be collected by other means than a survey. Results for England, Wales and Northern Ireland, also released in October,

are based on provisional results from surveys similar to that of the Scottish Cereal Production Survey. The latest results of the UK cereal and oilseed rape harvest, including Scottish estimates, are available from the Gov.uk website, www.gov.uk.

The EC regularly produces estimates of cereal and oilseed production as both totals of EU-27 countries and individual countries. Further information on EC cereal statistics is available at the following website: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Agricultural_products Typically EC results are published later than Scottish or UK results due to the additional time required to collate, validate and analyse data from several countries. Users interested in comparing results between countries should evaluate the relevant methodologies of sources used.

Related publications

The final estimates of the 2014 Scottish cereal and oilseed rape harvest are due to be published in December and will be accessed here: Agriculture and Fisheries - Publications

Cereal usage figures are published in the Economic Report on Scottish Agriculture (ERSA). These were last published in June 2014, and can be accessed here: Agriculture and Fisheries - Publications

Results from all Scottish Government agricultural surveys can be accessed here: Agriculture, Fisheries and Rural - Publications

Contacts
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The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

Further information about Official and National Statistics can be found on the UK Statistics Authority website at www.statisticsauthority.gov.uk

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To provide relevant and reliable information, analysis and advice that meet the needs of government, business and the people of Scotland.

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