Department
for Environment
Food & Rural Affairs

Basic Horticultural Statistics 2014

United Kingdom areas, production, valuations and trade statistics for fruit and vegetables to 2013 with historic statistics for ornamental plants and flowers

Foreword

Basic Horticultural Statistics 2013 Data

The latest statistics produced by the Department for Environment, Food and Rural Affairs on Horticulture were released on 31 July 2014 according to the arrangements approved by the UK Statistics Authority.

This annual publication provides basic statistics on the United Kingdom's area, production and value of horticulture crops from 1985 to 2013 and external trade of horticulture crops from 1988 to 2013. Around 50 of the main fruit and vegetable crops (excluding potatoes) are covered separately. In addition to this, around 25 types of ornamental plants and flowers are shown with historic data from 1986 to 2004 and value, imports and exports data now up to 2013. Information in this publication will be of interest to policy makers, traders, growers and researchers.

Please note that the 2013 data is provisional and will be finalised when the BHS 2015 publication is produced in July 2015.

A high-level overview of the horticulture sector is available earlier as part of the Agriculture in the United Kingdom publication (publication date 29 May 2014).

The latest version of Basic Horticultural Statistics and datasets can be seen at:
DEFRA Basic Horticultural Statistics

Overall Summary

- The total vegetable area increased slightly in 2013 by 2% at 131 thousand hectares while the total fruit areas remained relatively unchanged at 29 thousand hectares.
- The overall quantity of vegetable production was up by 4% and fruit production was also up by 5% in 2013 compared to 2012.
- The total value of production for vegetables showed an overall increase of 5% in 2013 on 2012. The value of fruit production has remained in line with that for 2012.
- Fruit and vegetables were collectively valued at almost £1.9 billion in 2013, a 4% increase on 2012.
- Home production as a % of total supply for 2013 for all vegetables was 55% compared to an average of 59% for the last five years. (table 2)
- Home production as a % of total supply for all fruit in 2013 remained at 10%, similar to 2012 after reaching 12% in the previous three years. (table 2)

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For general enquiries about National Statistics, contact the National Statistics Public Enquiry Service: tel. 0845 601 3034 email info@ons.gsi.gov.uk. You can also find National Statistics on the internet at http://www.ons.gov.uk

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Due to the large volume of data that is available,
the tables of statistics are presented in a downloadable spreadsheet

Please see the link on the BHS webpage at:
DEFRA Basic Horticultural Statistics

National Statistics accreditation

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.

1. Updates and New Data Collection

- Presentation of the categories of crops listed for the trade tables have been reorganised to allow greater ease of use.

- **Pineapples** are now shown separately from 'Other Exotic Fruit' and in imports and exports. **Lilies** are now shown separately from 'Other Cut Flower's for imports and exports, from 2012.

- Value of production figures are now shown in '£ Millions' rather than '£ Thousands' for increased readability.

- Data for the value of production for ornamentals from 2005 to 2013 has been added, for the broad categories that are available.

- Each year we review the crops for which data are collected and include crops where the production and value is growing and becoming more significant. Equally we would also cease collection for crops where production is consistently declining. As a result of this we have started to collect data for **sweetcorn**. We are still developing the valuation estimates but provisional estimates of area and production based on data collected for 2012 and 2013 are now available. The area of **sweetcorn** for 2012 and 2013 remained the same at 2,250 (ha); production for 2012 was 16,200 tonnes and 18,000 tonnes for 2013.

2. Revisions and Data Cautions

Since the last release, the provisional 2012 figures have been finalised.

Fruit

- There are small changes to the production and valuation figures for '**Other soft fruit**' production back to 2004 due to historic revisions.

- There have been minor refinements to historic import and export figures as a result of internal database auditing processes.

Vegetables

- Area estimates for **peas harvested dry** have been revised back to 2010 and back to 2005 for production estimates. This is due to historic data revisions as new information has come to light.

- There have been minor refinements to historic import and export figures for selected items as a result of internal database auditing processes.

- Prices used to compile the **spring cabbage** valuation have been revised back to 2009 as the previous data source is now unavailable.

- Investigations were introduced during 2012 to enhance the quality assurance measures. This highlighted some discrepancies in area between the different sources used for England and Wales. Work continued into 2013 to reconcile the differences and to improve conformity and consistency of reporting which is challenging because of the range of different types of brassicas grown, the relatively large number of growers and the range of agronomic practice, including multi-cropping.

3. Key Statistics

Area

There were 160 thousand hectares dedicated to fruit and vegetables in the UK in 2013. The overall vegetable area increased slightly in 2013 by 2% to 131 thousand hectares whereas the total fruit area has remained unchanged at 29 thousand hectares.

For vegetables, overall legumes has seen a 2% increase in area on 2012 to 54 thousand hectares. This has been driven by **peas harvested dry** recovering from a poor growing conditions in 2012 with an increase of 21% in 2013 (around 2,700ha) putting them more in line with previous years. Due to the poor drilling conditions in early spring 2013, the area of **green peas,** has fallen by 4%. The area of **carrots**, the other main vegetable crop, increased by 2% to 11 thousand hectares In addition, the area of all brassicas has increased by 2% to nearly 29 thousand hectares due to increased demand. **Rhubarb** has had an increase this year of 31% (133ha); again this is due to resurgence in consumer interest.

For protected vegetables there has been an overall 8% increase in the area 2013 to 818 hectares. This has been driven by an increase in all items with the exception of **cucumbers** down 6% (7ha) which had a poor start to the year due to low light levels.

On the fruit side, the overall area of all orchard fruit has remained very much in line with 2012 at just over 19 thousand hectares. Within this, the area of **Cox** apples has declined by 9% on 2012. This continues the long term trend. The variety is less in demand making it difficult to market. As a result the trend of grubbing **Cox** orchards to plant higher-yielding varieties such as **Gala** is likely to continue. **Other pears** have showed a decrease of 15% on 2012 following a period of 5 or 6 years when planted areas had remained relatively stable.

The total area of all soft fruit is down 1% on 2012 at 9.5 thousand hectares. The area of **strawberries** has continued to remain firm, showing a 1% decrease in 2013 compared to 2012. The area of **raspberries** has shown a more marked decline (9%) in 2013. Some growers reporting dead canes caused by waterlogging the previous summer and winter, causing reduced area.

Table 1: Planted Area in the United Kingdom

(Hectares)

CALENDAR YEAR	2010	2011	2012	2013 Provisional	% Change 2012-13
VEGETABLES:					
Field	133,565	134,443	127,189	130,089	2.3
Protected*	691	687	755	818	8.4
Total Vegetables:*	**134,256**	**135,130**	**127,943**	**130,907**	**2.3**
FRUIT:					
Open	28,616	28,923	28,912	28,782	-0.5
Glasshouse	185	192	202	222	9.9
Total Fruit:	**28,801**	**29,115**	**29,114**	**29,004**	-0.4
GRAND TOTAL:	**163,057**	**164,245**	**157,057**	**159,911**	**1.8**

***Area of mushrooms excluded.**

Planted Area trends in the UK

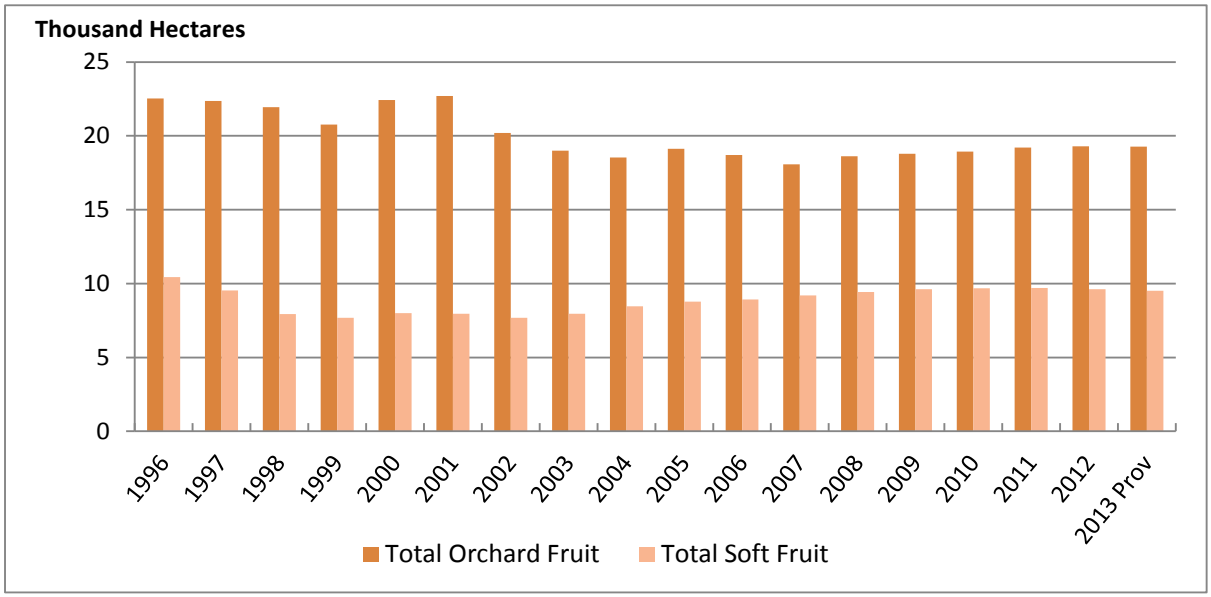
The graph below shows the total area for vegetables from 1996 to 2013. Notable changes over this period are a decrease in total vegetable area from 162 thousand hectares in 1996 to 120 thousand hectares in 2002. Between 2002 and 2008, the total area has remained relatively stable at around 119 thousand hectares with slight increases in 2003. From 2009 to 2011 the areas showed gradual increases. There was a decline in 2012 due to the difficult planting and growing conditions with some recovery in 2013 back to 131 thousand hectares.

Chart 1: Total UK field vegetable area 1996 – 2013

*Area of mushrooms excluded.

The graph below shows the total area for fruit split into orchard and soft fruit from 1996 to 2013. Notable changes are a decrease in orchard fruit area after 2001 when it was nearly 23 thousand hectares with some growth from 2009 with levels stable over the last three years at just over 19 thousand hectares. The area of soft fruit declined between 1996 and 1998 but from 2004 there was a period of growth which has remained more static since 2009 at nearly 10 thousand hectares, similar to that planted in 1997.

Chart 2: Total UK fruit area 1996 – 2013



Production and Total Home Production Marketed as a Percentage of Total Supply

It should be noted that for some crops which are marketed over more than one calendar year, the home production marketed figures reported for a particular calendar year will relate to marketing's from both the previous and current season's harvest, for example apples and carrots.

In contrast to 2012, the weather at the start of 2013 was markedly different with very wet soil conditions due to very high rainfall at the end of 2012. This was followed by the coldest spring in nearly 50 years. Together these factors delayed drilling and growth of many crops, such as **onions** and brassicas. However, from the end of June the weather changed dramatically with warmer and drier than average conditions encouraging rapid crop growth. This brought many delayed crops forward, but this in turn created some oversupply of crops such as headed brassicas at a time when demand was low. Despite this challenging start for establishing drilled crops, growth and marketed yields were similar or better to the previous year and as yields improved later in the year this often offset the poor start to 2013. Marketed yields were also boosted by increased sales as demand improved and better crop utilisation was evident across many field vegetables.

Vegetables

Overall field vegetable production in 2013 was 4% higher than 2012 at 2,330 thousand tonnes. With only a few exceptions of **onions**, **winter cabbage**, **asparagus** and **leeks**, production was up for all vegetable crops. Notably for legumes where there was an overall 27% increase, (see table 12 for a breakdown). **Peas harvested dry** showed a substantial increase in production of 96%. After a very poor harvest in 2012 **peas harvested dry** have recovered well and are now more in line with previous years 2009-2011. **Green peas** have also shown a 21% increase in production. Although areas were lower in 2013, yields were good overall with the warm dry summer.

Despite the very cold and wet conditions of early 2013 which delayed drilling and growth of many crops including brassicas, they still had an overall increase in production of 1% (see table 12 in the dataset). Increases showed across the board with an exception of **winter cabbage** (down 7%) and **cauliflower** (down 2%). Notable increases are **Brussels sprouts** and **summer & autumn cabbage** both up 15%. **Brussels sprouts** yielded well in 2013 with good growing conditions in summer and autumn. There has been little change in demand, but imports have been lower in 2013. **Summer and autumn cabbage** increased yields due to the good summer growing conditions and low disease levels, coupled with increased marketing through discount retailers.

The production of the salad vegetables such as **tomatoes, cucumbers** and **peppers** which are all grown under protection, were all adversely affected by the low light levels at the beginning of 2013. However the summer months proved to be significantly better than 2012, and increased light levels meant **tomato** yields were able to recover, ending the year with overall yields better than 2012. Disease was less of an issue in 2013, **but cucumber** crops were still affected which again impacted production (down 8%). (see table 14 in the dataset)

Home production as a % of total supply for 2013 for all vegetables was 55% compared to an average of 59% for the last five years. Within vegetables (see table 20 in the dataset), the home production marketed as a percentage of home supply declined slightly for **cabbages** from 94% to 91%. There was a small fall for **carrots** but this still remains relatively high at 95%. There was a more marked 14% decrease for **mushrooms** to 41% as a result of a 33%

increase in imports. For **cauliflowers** and **lettuce** the figures have remained relatively stable at 33 and 42% respectively and for **tomatoes** there was a small increase from 17 to 18%.

Fruit

Overall fruit production was down up by 5%. The decreases for **culinary apples**, **pears** and **raspberries** outweighed the increases for the majority of other fruit. Early fruit development of **Bramley apples** was affected by the cool weather and throughout the summer the fruit was small. The weather during August improved and by the end of September the better temperatures and rain promoted good size. Yields were around average, but the reduced area adversely impacted the overall production (down 4%). Production of all **dessert apples** recovered well, up 13%, after a poor 2012 crop. **Cox** produced a 10% increase in 2013. As with other apple crops, the season started and finished late, yields for some of the older varieties (Discovery, Worcester and Egremont Russet) were on average around normal levels. The increased area of the newer variety **Gala**, which is higher yielding, was the main driver of the increased production.

The production of all **pears** was down 15%. **Conference pears** initially looked promising but due to the variable weather after blossom, yields were lower than expected, although quality was good. **Other pears,** mainly **Comice,** did not yield well with a low number of fruit which subsequently developed rapidly through the summer. By harvest fruit were large, with some fruit being too big for marketing, and marketable production was down 21%. Production of both **Victoria** and **other plums** was up 121% after a devastating 2012. With a relatively good start in early May most **plums** flowered in good weather and varieties were able achieved a full crop in 2013 bringing production more in line with previous years. (see table 5 in the dataset).

Strawberry production remained relatively unchanged (down 0.5%) although the prolonged cold spring and early summer weather meant many crops ripened at the same time. As in other recent years there were times when supply exceeded demand. However it was a difficult season for **raspberries** (down 11%); crops emerged late due to the cold spring weather and dead canes caused by waterlogging from the previous summer and winter reduced the productive area. Picking was late and led to early and main season crop supply both coming into production at the same time causing oversupply and heavy discounting.

Home production as a % of total supply for all fruit in 2013 was 10%, similar to 2012 after reaching 12% in the previous three years. Home production as a % of total supply remained fairly stable for **apples** and **strawberries** at around 32% and 67% respectively, but fell for **pears** (17%) and **raspberries** (8%) due to the drop in production (see table 10 in the dataset).

Table 2: Production and Total Home Production Marketed as a Percentage of Total Supply in the United Kingdom

(Thousand Tonnes)

CALENDAR YEAR	2010	2011	2012	2013 Provisional	% Change 2011-12
VEGETABLES:					
Home Production Marketed (HPM)	2,784	2,641	2,511	2,610	3.9
Imports*	1,884	1,988	2,050	2,225	8.6
Exports*	96	90	85	81	-4.3
Total Supply :	**4,572**	**4,539**	**4,476**	**4,754**	6.2
HPM as % of Total Supply	60.9	58.2	56.1	54.9	-2.2
FRUIT:					
Home Production Marketed (HPM)	424	429	370	389	4.9
Imports*	3242	3361	3421	3561	4.1
Exports*	143	150	110	147	33.3
Total Supply :	**3,523**	**3,640**	**3,681**	**3,803**	3.3
HPM as % of Total Supply	12.0	11.8	10.1	10.2	1.5

*** Trade figures relate to fresh produce where distinguishable.**
Excludes mushrooms & potatoes

Value of Home Production Marketed

In 2013 fruit and vegetables were collectively valued at an all-time high of £1.9 billion.

Vegetables

The total value of home production marketed showed an increase of 6% to £1.0 billion for field vegetables and for protected vegetables increased 3% to £319 million, with an overall increase in value of 5% at £1.3 billion.

Notably, brassicas have shown an overall decrease of 9% on 2012. This was driven by a decrease in the value of **cauliflower** by 17% and **broccoli** by 36%. This is against very high figures for 2012 when short supplies were driving higher than normal prices such that the value for 2013 is more in line with other previous years. However a notable increase in value has been seen for **spring cabbage,** up 66%, after a poor couple of years with the 2013 value now more in line with 2009-2010.

Root crops and **onions** have shown an overall rise in value of 17% with increases across all items with the exception of **spring onions,** down 9%. **Dry bulb onions** have shown a 62% increase on 2012 due to several wholesale markets having limited supplies against in high demand which drove prices higher.

Legumes have shown an overall increase in value of 18% with increases across all items with the exception of **runner** and **dwarf beans** (down 3%). With prominent changes for **peas harvested dry**, up 96%, and **green peas**, up by 21%. These increases in value are consistent with recovery in production for both crops after a devastating 2012 harvest.

The value of salad crops showed a small increase in 2013, up 3%, showing notable increases in **tomatoes** (up 8%) and **lettuce** (up 11%), which outweighed smaller falls for **cucumbers** (down 2%) and **sweet peppers** (down 1%).

Fruit

The total value of home production marketed showed little change in fruit grown in the open at £513 million, up 0.5%, although for fruit grown under glass this increased by 9% to £55 million. However the overall total value remained relatively similar to the value as 2012 at £568 million.

Total orchard fruit showed an increase in the value of home production, totalling £162 million; this is an 8% overall increase on 2012. Notable changes were **Conference pears** down 13%; this was mainly due to delayed marketing in 2013 and lower prices. Total **plums** have shown a 47% increase overall. Both **Victoria** and **other plums** had a difficult year in 2012 being badly affected by the weather, but have recovered well in 2013 with increased production and more than double the yield. **Dessert apples** were up 3% with increases across the board with the exception of **Cox** (down 1%) and **early season apples** (down 5%). This decline is mainly price driven.

Outdoor soft fruit has shown an overall decrease in the value of home production of 4% on 2012 at £351 million; combined with glasshouse fruit, the value of production was £368 million, 2% down on 2012. Notable changes for soft fruit were **raspberries** and **strawberries** which decreased by 7% and 3% respectively. Similar to 2012, this was driven by lower prices for both crops; there were occasions during the season where the market

became oversupplied leading to heavy discounting, particularly for raspberries. Unusually, one of the strawberry oversupply periods coincided with Wimbledon, traditionally a time when demand peaks.

Table 3: Value of Home Production Marketed in the United Kingdom

(£ Million)

CALENDAR YEAR	2010	2011	2012	2013 Provisional	% Change 2012-13
VEGETABLES:					
Field	943	926	952	1,009	6.1
Protected	330	308	310	319	2.9
Total Vegetables:	**1,273**	**1,234**	**1,262**	**1,329**	**5.3**
FRUIT:					
Open	534	550	515	513	-0.5
Glasshouse	41	44	50	55	8.9
Total Fruit:	**575**	**594**	**565**	**568**	**0.4**
GRAND TOTAL:	**1,848**	**1,828**	**1,827**	**1,896**	**3.8**

Value of Imports and Exports

Between 2012 and 2013 the value of total imports of fresh fruit and vegetables increased by 10% to £5.0 billion, while exports showed a 19% increase to £183 million. Imports are consistently substantially higher than exports. The key fruit and vegetable items that are imported are **tomatoes**, **peppers**, **mushrooms**, **lettuce** and **onions** plus for fruit **bananas**, **apples**, **oranges**, **small citrus fruit**, **melons** and **grapes**. **Bananas** are the single largest item of imports.

The overall quantity of imports for fresh vegetables was up by 9% on 2012. (see table 16 in the dataset) Overall the total value showed a 12% increase on 2012. In 2013 values increased across all items with the exception of **other brassicas**, **sweetcorn**, **beans** and **tomatoes**. For **dried vegetables** there was an overall increase of 3% in the value of imports.

The total quantity of fresh vegetable exports was down 4%, mainly due to the fall in exports of **onions** and **tomatoes**. The value of exports remains unchanged.

The quantity of imports for fruit showed a 4% (see table 7 in the dataset) increase, with the value of imports also increasing by 9%. Notable changes were decreases in the value of **strawberries** and **cherries** and **other citrus** but an increase in the value of **apples**, **bananas** and **grapes**.

The total quantity of fruit exports was up by 33% mainly due to the increase in re-exports of oranges. The overall value of exports was up 35% on 2012.

Detailed trade statistics are given in Tables 16-19 of the dataset for vegetables and tables 7-9 of the dataset for fruit.

Table 4: Value of Imports and Exports for Fresh Vegetables and Fruit in the United Kingdom

(£ Million)

CALENDAR YEAR	2010	2011	2012	2013 Provisional	% Change 2012-13
TOTAL VEGETABLES:					
Imports*	1,900	1,880	1,867	2,085	11.7
Exports*	75	73	72	72	0.0
TOTAL FRUIT:					
Imports*	2,534	2,673	2,724	2,956	8.5
Exports*	103	102	83	112	35.0
GRAND TOTALS:					
Imports	**4,434**	**4,553**	**4,591**	**5,040**	**9.8**
Exports	**178**	**175**	**154**	**183**	**18.7**

*** Trade figures relate to fresh produce where distinguishable.**
Excludes potatoes

4. Fruit & Vegetable Statistics Available

Due to the large volume of statistics available and to aid their accessibility they are presented in a separate spreadsheet (in .xls format) available on the Basic Horticultural Statistics webpage. The crops for which statistics are available are shown in the tables below and are correct for the latest 2013 data. Due to various category changes over the years there may be some small differences in what is available in previous years. Please see the footnotes on the spreadsheets for further details.

Table 5: List of fruit crops covered by the statistics

Statistics	**Fresh Fruit** • **Planted area** • **Tonnage of home production marketed** • **Value of home production marketed**	**Trade Data** • **Quantity imported** • **Value imported** • **Quantity exported** • **Value exported**
Fruit Items	**Dessert Apples -** Cox's Orange Pippin Worcester Pearmain Discovery Early Season Mid Season Desserts - (Egremont Russet, Red Pippin) Late Season Desserts - (Gala Jonagold, Braeburn, Jazz, Kanzi, Rubens, Zari) **Culinary Apples -** Bramley's Seedling Total Other Culinary **Pears -** Conference Others - (Williams Bon Chretien* and Doyenne Du Comice* and other) *Cider Apples & Perry Pears **Plums -** Victoria Other Plums (Marjorie's Seedling*, Pershore Yellow Egg* and damsons* and other) **Others & Mixed -** (*Cherries) **Soft Fruit -** Strawberries Raspberries Blackcurrants Other Soft Fruit - (Blueberries, Gooseberries, Blackberries, Logan- and hybrid berries, Red and White currants)	Apples Pears Cider Apples and Perry Pears Bananas Grapes Cherries Plums Peaches And Nectarines Other fruit with stones (Apricots, Sloes) Oranges Lemons and Limes Small Citrus Fruit (Clementines, Mandarins, Satsumas) Other Citrus Fruit (Grapefruit etc.) Dates and Figs Avocados Pineapples Melons (inc. Watermelons) Other Exotic fruit (Mango, Pawpaw/Papaya, Kiwifruit, Guava, Persimmon, Durian) Strawberries Raspberries Other Soft Fruit (Blackberries, Blueberries, Cranberries, Blackcurrants, Redcurrants, White currants, Gooseberries) Other Fruit (Quinces and all fresh fruit not covered above)

*Are no longer recorded individually but historic data are available.

Table 6: List of vegetable crops covered by the statistics

Statistics	**Field & Protected Vegetables** • **Planted area** • **Tonnage of home production marketed** • **Value of home production marketed**	**Trade Data** • **Quantity imported** • **Value imported** • **Quantity exported** • **Value exported**
Vegetable Items	**Roots and Onions -** Beetroot Carrots Parsnips Turnips and Swedes Onions, Dry Bulb Onions, Spring **Brassicas -** Brussels Sprouts Cabbage, Spring - (spring greens) Cabbage, Summer and Autumn Cabbage, Winter - (winter white, other winter and Savoy) Cauliflower – (summer, autumn and winter) Broccoli **Legumes -** Beans, Broad Beans, Runner and Dwarf *Peas, Green for Market Peas, Green for Processing Peas, Harvested Dry **Others -** Asparagus Celery Leeks Lettuce - (Iceberg, Cos and Butterhead) Rhubarb - (Forced and Natural) Watercress Others field - (parsley, celery, soup leeks, aubergines, peppers and chillies) **Protected Vegetables -** Tomatoes (round, vine, plum and cherry) Cucumbers Lettuce (indoor) Self Blanching Celery Sweet Peppers Others protected (courgettes, aubergines, chillies) Mushrooms	**Fresh or chilled –** Asparagus Aubergines Beans (fresh or chilled) Cabbages (White and Red) Carrots and Turnips Cauliflowers and Broccoli Celery Courgettes Cucumbers Garlic Other Alliaceous Vegetables (Leeks, Spring Onions, Chives) Lettuce Mushrooms Onions and Shallots Other Brassicas (Brussels Sprouts, Green Cabbage, Kale, Collard, Kohlrabi, Bok Choy) Peas (fresh or chilled) Sweet Peppers Sweetcorn Tomatoes All Other Fresh Vegetables (Celeriac, Chicory, Gherkins, Artichokes, Olives, Spinach, Pumpkins, Squash, Gourds, Horseradish, Chard, Fennel, Capers, Chillies, Arrowroot and all fresh vegetables not covered above) **Dried -** Dried Beans Dried Peas Dried Chickpeas (Garbanzos) Other Dried Vegetables (Lentils, Onions, Carrots, Sweetcorn, Tomatoes, Mushrooms, Mixtures)

*Are no longer recorded individually but historic data are available.

5. Data Sources, Methodology and Quality Assurance

Area, yield and production

Geographic coverage and breakdowns

All statistics presented in Basic Horticulture Statistics are presented at United Kingdom level only.

Data on area, yield and production for England and Wales are collected for Defra under contract by an external provider. These are combined with data for Scotland and Northern Ireland to produce UK figures. The approaches to the data collection for all of the various countries is summarised below.

The approaches to data collection and principles of compilation of data on a calendar year basis are consistent across all countries although there may be some differences in the data sourcing which reflect the size, scale and concentration of the sector and the individual crops which inform the most appropriate approach for sourcing the data. The principles and methodological approaches for estimating volumes of output on a calendar year basis and the use of farm-gate prices to estimate the annual value of production are the same for all countries. The reporting for some crops may be combined where these are not available individually for all commodities for all countries.

Information on agricultural and horticulture for Scotland and Northern Ireland (limited detail published for horticulture) can be found at:

Scotland: Scotland Publications 2013

Northern Ireland: DARD Statistical Review of Agriculture

No further geographic breakdowns are available. Breakdowns to county or Government Office Region cannot be produced due to the method by which the statistics are collated. Other related publications may be able to produce geographic breakdowns for some crops. For these please see Related Publications in Section 7.

Data collection for Scotland

The crop area data for fruit, vegetables and ornamentals are obtained from the annual June Census. The June area data are obtained from data reported under the Single Farm payment plus data from a sample survey of those holdings which do not claim the Single farm payment. Full methodological details including quality assurance is contained within the reports for each year which are available from the following link:

Scotland Final Results June Census

The 2013 edition of the Economic Report on Scottish Agriculture (ERSA) which has been compiled by the Rural and Environmental Science and Analytical Services division (RESAS) in the Scottish Government (SG) includes information on the output and value of horticulture. The report presents an overall picture of Scottish agriculture using data from the various agricultural surveys that RESAS manage. It brings together the information on related subjects from three sets of data

- 2013 June Census and December survey of farms,
- the Farm Accounts Survey 2012-13 - which collects statistics from the business accounts of around 500 farms in Scotland,
- Total Income from Farming 2012 and 2013 - estimates of the output values and associated input costs of Scottish agriculture which underpins the Scottish Agricultural Account which is submitted to the EC every year.

Selected detail is published in Tables A2 & A4 of this Report and there is a separate report on the methodology used to calculate output and value of production. The output is estimated using the June area multiplied by the crop yield. Yield data for key vegetable crops such as carrots, turnips & swedes, cauliflower, broccoli, sprouts, peas and beans are taken from Surveys carried out by the Scottish Rural College (SRuC).

Price data up to 2013 were based on survey data. For 2013, the prices have been estimated using survey data for 2012 adjusted by latest price data taken from the Glasgow Market price data. Yields and price data for strawberries and blackcurrants are derived from a postal survey of horticultural units. Yield data for other vegetables and orchard fruit uses data collected by Defra for crops grown in England and Wales. The reports and methodology document which give further detail are available at:

Economic Report on Scottish Agriculture

Methodology for the Annual Aggregate Agricultural Account in Scotland

Data collection for Northern Ireland

The crop area data are collected under the Agricultural Census which is an annual sample survey of farmers conducted in June. In 2013 just 1.3 per cent of farms were classified as horticultural holdings. Information on methodology is included in the Report which is available from the link:

DARD Agricultural Census

The Statistical Review of Northern Ireland Agriculture has detailed information on output, prices and value of production for fruit (primarily apples), vegetables, mushrooms and ornamental and hardy nursery stock.

Horticulture is a relatively small contributor to the value of agricultural output, typically contributing 3-4 per cent of the total value of output in Northern Ireland. Representative yield and farm-gate price data are obtained through key industry contacts. These are cross compared across sources and against general trends and taking into account wider agronomic and market knowledge of each of the different sectors to ensure the data are credible and representative.

Price data take into account the end use of the produce and any price differentials in order to derive a representative weighted annual average price. The volume of output takes into account marketings in each particular year so for crops such as apples where the crop is marketed over two years, it will take into account marketings from two seasons for each particular calendar year.

Emphasis is placed on data for the main high value items with mushrooms being the main contributor and driver for horticulture. In this case data are obtained directly from industry and represent 75 per cent of total mushroom production. Data are available from the link:

DARD Statistical Review

Data collection for England and Wales

The remainder of this section describes the methodology used to produce the figures for England and Wales. Data are collected from various sources (growers, producer organisations, processors and suppliers etc) for the major fruit and vegetable crops and the crop list is reviewed each year. In some cases the crop category reported may relate to more than one type e.g. winter cabbage includes Savoy, winter white and other winter cabbage; details are provided in the statistics available tables in Section 4.

The nature of horticultural production in England and Wales is such that, for most crops, there are concentrations of production in certain regions. For example apples are largely grown in the South East, the West Midlands and the East of England, carrots in the East Midlands and East of England, with some in the North-West and Yorkshire and Humberside. Therefore intelligence gathering activities are focussed in the main growing regions, although allowance is also made for production of each crop in the other regions.

Estimates are made as the result of impartial intelligence gathering from a wide range of sources and based on the mean value of up to three independent estimates. In the case of fruit, the area and production estimates are mainly sourced via three separate 'Fruit Panels' (consisting of key growers, producer groups, marketing companies and independents) based in the South East, East Anglia and West Midlands. These will meet regularly through the growing season to assess and agree cropping information with suitable input and challenge by the contractor representatives based on their own knowledge and expertise. Post harvest, supplies of apples and pears from storage to retail are quantified from specific survey returns by larger storers, including producer groups, marketing companies and independents.

The panel structure does not lend itself towards data collection for field vegetables due to the relatively large number of vegetable crops, the specialist nature of many producers and commercial sensitivities. Therefore data for the field vegetable sector is collected from a range of key contacts in the course of farm visits, by phone or email rather than through formal committee panels.

A significant proportion of field vegetables in particular, is grown on land which is rented out, both for business and crop rotation purposes. Consequently the specific crops grown on individual parcels of land can alter considerably from year to year. The above approach rather than a formal survey, where it is difficult to maintain complete and accurate register information, offers more flexibility and sensitivity to reflect annual cropping changes, with estimates sourced directly from the industry (growers, consultants and suppliers). Liaison between data coordinators guards against the risk of double-counting of crops grown at a considerable distance from a business's home base, for example across Government Office region boundaries.

The protected crop industry benefits from relative geographical stability and most cropping carried out by larger businesses is usually a long-season monoculture. However changes in glasshouse area (expansion or closure) and crop switching are monitored. Producers are

mostly located on the South Coast, on Humberside and in the Lee valley (Hertfordshire/ Essex) with smaller groupings in the West Midlands, the North-West and South Wales. The focus for data collection is the three main production areas, with contact being maintained with representatives of the two principal Crop Associations in the sector (Tomato and Cucumber Crop Associations).

More emphasis is placed on securing accurate information from the major producers, co-operatives and marketing organisations, who account for the bulk of production, rather than numbers of producers.

In addition to intelligence collected from crop producers and businesses with which they are associated (for example, those who market their produce), data coordinators also liaise with other industry bodies and stakeholders to seek both information on cropping trends and more specific data. The relative importance of each information source varies between regions and the degree of contact and usefulness varies between crops, but these comprise:

- Growers and farming businesses (sole traders)

- Producer organisations responsible for production planning (areas grown, planting and harvesting schedules) for their members. These groups can often represent significant quantities of production although this can also be the case for some sole traders.

- Direct contact with processors and farming groups is made for crops such as vining legumes.

- Agronomists/ independent consultants provide information in some regions.

- Crop associations are potentially a useful source of information and intelligence in some instances. The availability of information varies between associations, as does their coverage of the industry since not all growers of that crop may be members.

- Suppliers: Some of the seed companies and plant propagators can yield broad information on cropping trends. Although this can provide a good indicator of planting intentions, the relationship with crop areas can be complicated by seed and other planting material imported direct by growers (e.g. onion sets, strawberries), as well as seed bought and not drilled.

- Published data: Additional information relating to crops and areas of production is sourced from press articles, the internet etc. to supplement the main methods of acquiring data outlined above.

These sources can provide useful additional intelligence to compare with other information collected. An impartial viewpoint, free from commercial pressures is maintained in assessing all of the data collected and in constructing the final estimates.

Challenges and difficulties can arise where there is a lack of conformity or consistency in approach from different sources. This can relate to categorisation of crops where there is a broader definition covering multiple varieties eg winter cabbage, differences in reporting

basis for example planted or tree area vs field area, exclusion of figures for countries other than England and Wales where a grower or business may operate across all of the UK, differences in approach for dealing with multiple-cropping and where there are a relatively large number of growers.

Additional investigations during 2012 were introduced to enhance the quality assurance measures. This has shown some larger differences in area between the different sources used for England and Wales for winter cabbage. Additional guidance has been put in place which has been combined with additional checks and closer discussion with industry contacts supplying data for 2013 to reconcile these differences and to improve conformity and consistency of reporting which is challenging because of the range of different types of crops grown e.g. brassicas, the relatively large number of growers and the range of agronomic practice, including multi-cropping. The situation will continue to be monitored to ensure the reliability of the data.

It should be noted that for some crops which are marketed over more than one calendar year, the home production marketed figures reported for a particular calendar year will relate to marketings from both the previous and current season's production, for example apples, carrots.

Data quality assurance

The data are collected and collated along sector lines by specialist horticultural consultants, who are knowledgeable of the crops and various production methods for each sector. Standard operating procedures are in place for collecting and recording the data. In addition to the broad method which sources and compares information from different origins, estimates are compared against other official survey data figures where possible e.g. Defra June Survey, Orchard Fruit Survey. The figures are also checked for consistency and trend analysis against historic data. Quality assurance of the data is carried out by the project manager and a dedicated quality control manager. The list of growers and other contacts is regularly reviewed and maintained to ensure that it is kept up to date. Panel membership relevant to fruit data collection is kept under review to assist maintenance of up to date knowledge of the crops being reported.

In addition, an annual narrative highlighting the main factors that have affected crop areas and harvested production is provided to explain and justify the estimates, including any significant variation in yields, production and shifts in cropping area.

Due to the way in which the data are sourced, it is not possible to calculate standard errors or confidence intervals. The general target coverage in terms of area grown is to obtain cropping information based on at least 80% of the latest Defra published figure for horticulture. For crops where production is more dispersed i.e. grown by a relatively large number of smaller growers, this can be challenging, in such cases, greater reliance is placed on information on sources other than just the key growers.

Data coverage in terms of area grown is estimated to be at least around 85% for fruit except for cider apples and other soft fruit where coverage is around 80%. Data coverage in terms of area grown for vegetables is estimated around at least 80% with the following exceptions: asparagus 65%, turnips 70% and onions 75%.

Valuation estimates

For the major fruit crops, monthly output marketed tonnage estimates are supplied by the contractor for the full marketing season each year which is obtained from the same sources described earlier. For some crops, such as apples and pears, the crop is marketed over two calendar years. The valuation estimates for a particular calendar year will relate to marketings in that year from both the previous and the current season's production. In the case of vegetables, monthly output marketed tonnage estimates were provided for the main vegetable crops each year up until 2010. These showed a relatively stable pattern of monthly marketings. Therefore these historic data have been used to derive the typical proportions for each month and these percentages are applied to the annual production figure to estimate the monthly output marketed tonnage for subsequent years. This situation will be kept under review so that if there are major changes to this established pattern, this can be captured.

Price data is widely available for a range of fruit and vegetables from wholesale markets. This is the national average of the most usual prices charged by wholesalers for selected home-grown fruit and vegetables at four leading wholesale markets in England i.e. Birmingham, Bristol, Liverpool and New Spitalfields which is collected each week and reported at:
DEFRA Fruit and vegetable wholesale prices

The wholesale price for each fruit and vegetable is adjusted by a factor which takes into account the relative proportions and values of produce going through the various supply chains to the market (e.g. the supermarkets, processing, direct sales on–farm etc as well as through wholesale markets). These factors were estimated based on a commissioned survey/research in 2003/4 and then updated in 2005/6. This price is further adjusted to take into account commission and handling and carriage costs in order to derive an estimate of the farm-gate price. These factors and the need for more up to date information is kept under review but analysis has shown that the final valuation estimates are not highly sensitive to these factors, especially given wider limitations for the valuation estimates in using wholesale market price data (see below).

The annual value for each crop is calculated by summation of monthly valuations over the calendar year, which in turn are calculated by multiplying the monthly output marketed tonnage by the derived monthly farm-gate price. For some crops which are marketed over more than one calendar year e.g. apples, the estimates are based on crop production from two seasons.

Data limitations

The area, yield and production estimates provide sound, representative and robust estimates based on structured and independent intelligence gathered from a wide variety of sources and which are subject to quality assurance checks as outlined above. Data coverage in terms of the crop areas is typically at least around 85% and 80% for the major items of fruit and vegetables respectively.

The valuation estimates should be treated with more caution because they are derived from wholesale market prices with several factors applied to derive an approximate farm-gate price. It won't capture the full range or complexity of pricing and marketing arrangements but should still provide a reasonable estimate of the broad trend. Despite its limitations, wholesale market price data provides the best available route for deriving farm-gate price/valuation estimates as it is widely available and cost effective to collect, especially given commercial sensitivities concerning the sourcing of reliable and up to date price data.

Trade data

Trade data are sourced by Defra through HM Revenue and Customs import and export records. Detailed commodity codes are used to identify specific categories. Note that BHS includes dried vegetables in the import and export figures, this differs to the Agriculture in the United Kingdom publication which does not include dried vegetables in the trade figures.

6. Historic Datasets (within BHS)

Ornamentals
Information on ornamentals is included in BHS up to 2004 for area, production, and up to 2013 for value imports and exports. These can be seen in the spreadsheet in tables 21-24. More recent ornamental statistics can be seen in table 7.10 of Agriculture in the United Kingdom at:
Agriculture in the United Kingdom

Hops
Information on hops is included in BHS up to 2005. This can be seen in the dataset in table 25.

7. Related Publications

The following related publications may be of use in gaining a wider picture of horticultural statistics:

Agriculture in the United Kingdom
AUK is an annual publication that collates statistics from a wide variety of sources to give a comprehensive overview of the UK's agriculture. This includes **potatoes** (table 7.11), fresh vegetables (table 7.9) and fresh fruit (table 7.12). The latest datasets can be found at:
Agriculture in the United Kingdom

Mushrooms
UK Mushroom statistics are not part of BHS. They are available separately as a Mushroom Area statistical release with data for 2004 - 2010 at:
http://webarchive.nationalarchives.gov.uk/mushrooms/

June Survey
The June Survey of Agriculture and Horticulture gives the UK areas of cereals, other crops, horticulture and grassland. Lower level geographical breakdowns of the data are also available from the associated datasets. The latest results and datasets are available at:
https://www.gov.uk/government/JuneSurvey/

Orchard Fruit Survey
This survey is run every few years to provide information on the tree area of commercial orchards with detailed information for the main varieties of orchard fruit. It also gathers data on the end use of apples ie dessert, culinary, cider.
https://www.gov.uk/orchard-fruit

8. Glossary

- **Major Crops -** This relates to fruit and vegetable items that have been selected due to their higher level of production and/or economical importance.

- **Minor Crops -** This relates to fruit and vegetable items that have a lower production or value in comparison with the major items, but still have a guide value of more than around £5m per annum.

- **Planted Area (hectares) -** This relates to the 'planted' area on which the crops are actually grown - excluding hedgerows etc. In the case of orchards it relates to the 'tree' area rather than the field area (this is in line with the Orchard Fruit Survey).

- **Marketable Yield (tonnes per hectare) -** This relates to the average tonnage actually harvested per planted hectare taking into account any waste losses (post harvest). Wastage relates to any post harvest item for which no income is obtained, such as storage losses, including both weight loss and rots.

- **Marketable Production (tonnes) -** The total figure for the harvested crop is derived from the planted area multiplied by harvested yield taking into account wastage figures (post harvest).

- **Crop Year -** The crop year will vary according to the production pattern of each crop and when the majority of the crop is harvested and marketed. Some crops may mature early, others late; in either case production will be assigned to the crop year in which the majority of the crop was marketed.

- **Multi Cropping -** The cultivation of more than one crop on the same piece of land in one year. Multi-cropping of sequentially planted crops is taken into account when calculating areas (e.g. of lettuce), but in the case of cucumbers, although the long-season crop is planted either once or twice during the season, it is counted as a single crop for area purposes, with each crop yield being totalled through the season to provide a single production figure. This accords with industry practice.

- **Farm-gate prices (in £/tonne) or value based on farm-gate price -** The price the farmer is paid for his produce with no extra delivery or packaging costs.

The below tables show which fruit and vegetable items are included in their respective major and minor categories.

Table 7: Major and minor fruit

	Major fruit	Minor fruit
Fruit Items	**Bramley's Seedling apples** **Cox apples** **Pears (all types)** **Strawberries** **Raspberries**	**Other Dessert Apples:** (main varieties: Discovery, Worcester Pearmain, Egremont, Fiesta (Red Pippin), Gala, Jonagold, plus early, mid and late desserts) **Plums:** (include Victoria plums, other plums and damsons) **Blackcurrants** **Cider apples and Perry pears:** (combined bush and traditional, including Katy apples grown for cider) **Other soft fruit:** (including blueberries, gooseberries, blackberries, red and white currants, logan berries, hybrid berries and cherries)

Table 8: Major and minor vegetables

	Major Vegetables	Minor Vegetables
Vegetable Items	**Carrots** **Onions, dry bulb** **Parsnips** **Broccoli** **Cauliflower** **Field lettuce** (iceberg) (outdoor) **Tomatoes - cherry** **Tomatoes - vine** **Tomatoes** (round, plum and others) **Cabbage** (summer and autumn**)** **Cabbage winter** (winter white, other winter and Savoy) **Cabbage spring greens** **Leeks** **Cucumber**	**Asparagus** **Beans** (Dwarf) **Beans** (Runner) **Beetroot** **Brussels sprouts** **Field Celery** **Lettuce, Speciality** (previously categorised as Butterhead) **Lettuce** (Cos) **Peas** (all types, including for processing, canning and freezing) **Protected Lettuce** **Rhubarb** (forced, natural) **Spring Onions** **Swede** **Sweetcorn** **Sweet peppers** **Turnips** **Watercress**

9. User Statement and Feedback

The information in this document is used by the UK government and the EU as evidence for assessing market conditions and evaluating agricultural and horticultural policy and to meet certain EU legislative requirements. Other users include the food and farming industries, academia and the general public. More detailed information is provided in the separate statement which is published on the Defra website.

We welcome feedback on the survey and the data from all users or information on how the data are used. This will enable us to identify how and why our statistics are being used and hence the value of the statistics to external users and if there are any unmet needs. Contact details are available for you to send feedback or ask questions about the information provided.

10. Revisions Policy

Figures in this document for the latest year reported are provisional and subject to revision. We will provide information about any revisions we make to previously published information in this statistics release, and the associated datasets. Revisions could occur for various reasons, including when data from third parties is unavailable or provisional at the time of publishing. Key revisions are shown in Section 2 of this document.