



Department
for Environment
Food & Rural Affairs



Animal &
Plant Health
Agency



Forestry Commission

Quality and Methodology report: ‘Plant Health – international trade and controlled consignments’

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Introduction

This document is the quality report for the statistical release titled “Plant Health – international trade and controlled consignments”. The release comprises:

1. Analysis of data on international trade in plants and plant related commodities.
2. Analysis of data on controlled consignments that have been notified to plant health authorities.

The quality and methodology report for Plant Health; international trade and controlled; consignments statistics provides information to help users:

- Understand the sources of the data, and the associated strengths and limitations.
- Understand the definitions used in the analysis.
- Decide suitable uses for the data.
- Reduce the risk of misusing data.

This report aims to meet practice 3.1 in the [Code of Practice for Statistics](#) “Statistics should be produced to a level of quality that meets users’ needs. The strengths and limitations of the statistics and data should be considered in relation to different uses, and clearly explained alongside the statistics”

Background

Plants are environmentally, economically, and socially important, providing a vital contribution to our food and timber supply and to the rural economy. Plants also perform an essential ecosystem service in shaping the landscape and supporting biodiversity and have been linked to improved health and wellbeing¹.

The globalisation of trade has facilitated an increase in the volume and diversity of plants and plant commodities which enter the UK and this, along with other factors², has increased the risk of pest and disease.

Plant health legislation³ controls the import and movement of certain plants, trees, seeds, and organic matter - such as soil - and certain plant products, including fruit, potatoes, vegetables, cut flowers, timber, foliage, and grain. The controls are required to prevent the introduction and spread of harmful plant pests and diseases. Inspections are carried out on high-risk products to ensure that they are free of pest and disease when arriving in the UK.

The production of the statistical release comprised three key steps:

1. A list of relevant CN8 codes for plants and plant related commodities was developed and the data extracted from the [HMRC](#) trade data site.

¹ [NHS Forest](#)

² [Plant Biosecurity Strategy for Great Britain](#)

³ [Plant health legislation](#)

2. Data covering controlled consignments of plants and plant commodities were supplied by the Plant Health and Seeds Inspectorate. Data were quality assured prior to analysis.
3. Data covering controlled consignments of wood and timber were supplied by the Forestry Commission. Data were quality assured prior to analysis.

The statistical release takes the form of a commentary, tables, charts, and infographics.

Use and users

This statistical release is a contribution to the narrative around plant health and is designed to provide stakeholders, internal and external to government, with information on the patterns of trade over time for a specific set of commodities. The aim is to facilitate discussion and aid decision making around matters of biosecurity.

The release is not intended for the purpose of drawing inferences as to the effectiveness of plant health and forestry inspectorates.

It is expected that these statistics will be of interest to Government and Government agencies (APHA, FC), trade bodies, organisations and individuals involved in the trade of plants and plant products and those with an interest in biosecurity.

New statistical releases are classified as experimental statistics to secure feedback from users – for example about the long-term need for the information (the user value) and the technical fitness for purpose (the quality).

We welcome feedback on the data from all users including how and why the data are used. This helps us to understand the value of the statistics to external users and identifies any unmet needs. Enquiries and feedback contact details: Sam Grant, Plant and Bee Health, Variety and Seeds, Department for Environment, Food and Rural Affairs, Horizon House, Deanery Rd, Bristol BS1 5TL. Email: sam.grant@defra.gov.uk

Further information on experimental statistics can be accessed here: [Statistics Authority guidance on producing experimental statistics](#)

Revision policy

If revisions to the published release are needed, then the revised data and an explanation of the issue underlying the revision will be published on Gov.uk in a timely manner. More information is provided in Defra's [Statement on Revisions and Errors](#).

Statistical Policy

Defra publishes information on compliance relating to the Code of Practice for Statistics (e.g., pre-release access to statistics and user engagement) which are available on the [Statistics at Defra](#) pages of GOV.UK.

Accessibility

The release is published on GOV.UK as [Plant Health: International trade and controlled consignments](#). The statistical report is published in PDF and HTML format and is accompanied by a dataset (ODS) and this quality and methodology report (PDF).

Data sources, methodology and quality assurance

A. International trade in goods

International trade in goods data are provided by Her Majesty's Revenue and Customs (HMRC) and cover commodities physically leaving and entering the UK. Non-EU trade data are taken from customs declarations collected by the CHIEF (Customs Handling of Import and Export Freight) system. EU trade data is collected via a survey known as Intrastat. Intrastat is linked to the VAT system and is required to cover around 93 per cent of imports and 97 per cent of exports. More information can be accessed in the HMRC [Overseas Trade Statistics Methodology Paper](#).

Commodity information is organised according to the [Combined Nomenclature](#) (CN). CN8 codes are used as they provide a greater level of detail than the Harmonised System (HS) used in other statistics.

The analysis presented in the statistical release is based around a subset of commodities which can be defined as:

- Raw plant products, including plants for planting and cut flowers, and unprocessed commodities such as fresh fruit, fresh vegetables, and cereal seed.
- Simply processed commodities which are those commodities that have undergone some processing but are not processed enough to ensure that they no longer remain capable of being infested with quarantine pests or are not subject to a level of processing that can be considered to have changed the fundamental nature of the commodity. This includes commodities which have been subject to chopping, peeling, and drying. Further information on types of simple processing is provided by [International Standards For Phytosanitary Measures - ISPM No. 32: Categorisation of commodities according to their pest risk](#).

Data aggregations

Commodities are grouped into 'sectors'.

- Plants and planting materials: live or dormant plants, seeds, bulbs or tubers of plants and trees and cut flowers.
- Food and crops: commodities traded for the primary purpose of human consumption and plant crops, for example wheat and wheat seed, vegetables and fruit, forage crops.

- Forestry: timber and wood, wooden commodities such as prefabricated buildings, cases and crates but excluding live trees.

Accuracy and quality assurance

Data are subject to quality assurance by the producer (HMRC) and published as simple aggregations in this release. CN8 codes are mapped from year to year to ensure that the codes used are both available and relevant. Quality assurance of the calculations underlying the tables and charts is undertaken prior to release.

Data limitations

- Data are collected for customs purposes rather than for plant health and as such some CN8 categories include (1) both processed and unprocessed commodities, (2) frozen and fresh produce and (3) mixed commodities. For this reason, it is not appropriate nor possible to provide an analysis solely consisting of trade in 'controlled' plants and plant products. The published data file accompanying the statistical release contains the full list of CN8 codes used in the analysis.
- Variability in trade between years can be substantial and result from factors such as changes in trade policy as well as changes in market conditions, climate events, pest and disease, country instability etc. As such it is often not appropriate to make conclusions about changes in plant products being a result of specific factors.
- Imports refers to the country from which the goods were originally dispatched to the UK without any commercial transaction in any intermediate country (either with or without breaking bulk in the course of transport). This is not necessarily the country of origin, manufacture, or the last country from which the goods were shipped to the UK.
- Exports refers to the country of destination as declared at the time of export. However, where goods can be traded while in transit (e.g., grain and crude oil), this may not necessarily be the final destination of the goods.
- Some commodities are exported out of the UK before being re-imported. An example of such a commodity may be a sapling which is exported to the EU to be grown on before being re-imported for sale. These commodities would be recorded twice in the HMRC data. It is thought that this mainly happens between the UK and the EU rather than the UK and countries outside of the EU.

B. Controlled consignment data – general information

The Plant Health and Seed Inspectorate (PHSI) implements and enforces plant health policy in England and Wales on behalf of the Welsh Government. The Forestry Commission (FC) implements and enforces plant health policy in England, Wales, and Scotland. The controls of such materials differ according to the species - and whether or

not they are classified as quarantine organisms - but include phytosanitary certificates, plant passports and/or inspection.

Under EU legislation plants, fruit, vegetables, and plant material from outside the EU fall into 3 categories: 'unrestricted', 'controlled', and 'prohibited' material. Plant passports facilitate the movement of controlled commodities within the EU area whilst inspections of relevant businesses are carried out 'in field', generally between 2 and 4 times per year⁴.

In December 2019 the EU introduced new legislation pertaining to plants and plant products. Implementing Regulation (EU) 2019/2072⁵ and its Annexes replaced the Annexes of Directive 2000/29/EC. Implementing Regulation (EU) 2019/2072 covers more plants and plant commodities than the previous legislation however the impact of this legislative change will not be seen in full until we have data for 2020.

Now that the UK has left the EU new legislation is in place⁶ and, following the end of the transition period (31 December 2020), there are new processes for importing plants and plant products, including wood and wood products, from the EU. These are detailed in the [Guidance on importing and exporting plants and plant products from 1 January 2021](#).

Under the new UK legislation plants, fruit, vegetables, cut flowers, soil and other regulated objects (for example, machinery) fall into 5 categories of phytosanitary control:

1. 'Prohibited' - Can only bring into Great Britain if a scientific research license or derogation is obtained.
2. 'Prohibited (pending risk assessment)' – material you can only bring into Great Britain if risk assessed by Defra. (Exclusions apply).
3. 'Regulated and notifiable' – material you can only bring into Great Britain if accompanied by a phytosanitary certificate and advanced notification of landing.
4. 'Regulated' – material you can only bring into Great Britain if accompanied by a phytosanitary certificate. After applicants complete a customs entry, a small number of these consignments may need advanced notification on CHIEF (Customs Handling of Import and Export Freight).
5. 'Unregulated' – material you can bring into Great Britain without a phytosanitary certificate or advanced notification.

Great Britain (England, Scotland, and Wales) has adopted a phased approach to plant health controls for plants and plant products imported from the European Union (EU). This phased approach started in January 2021 and will end in March 2022.

Data limitations

- The commodities included in the controlled consignment datasets are a subset of those included in the international trade analysis. The CN8 level of data does not necessarily disaggregate to the level to provide an analysis of only controlled products. One example of this is passion fruit, a controlled commodity which is captured in the Combined Nomenclature as part of a wider group of commodities

⁴ https://ec.europa.eu/food/plants/plant-health-and-biosecurity/legislation/new-eu-plant-health-rules_en

⁵ [New plant health rules](#)

⁶ <https://www.legislation.gov.uk/ukdsi/2020/9780348214901/introduction>

(CN8 code: 08109020) namely 'Tamarinds, cashew apples, lychees, jackfruit, sapodilla plums, passion fruit, carambola and pitahaya'.

- Data is reliant on businesses notifying the inspectorate of trade in controlled products, as required under statutory notifications. The level of trade that goes unreported to inspectorates is unknown.
- The definition of consignment used in the controlled consignments data differs from the ISPM definition of a consignment (a quantity of plants, plant products or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate [a consignment may be composed of one or more commodities or lots]). For data collected by PHSI a consignment is a commodity type declared on a phytosanitary certificate. Some phytosanitary certificates will cover more than one commodity type and so the number of consignments declared will be more than the number of phytosanitary certificates.
- Data on interceptions of material that does not meet EU phytosanitary requirements can be accessed in the [Europhyt Annual Reports](#) published by the EU. Further information on consignments, interceptions and inspections can be accessed in the [Multi Annual National Control Plan](#) annual reports published by the Food Standards Agency.

C. Controlled consignment data – Plant Health and Seed Inspectorate (PHSI)

The Plant Health and Seed Inspectorate (PHSI) inspection data covers notifications of controlled plant commodities imported into England and Wales from outside the EU. The PHSI are notified of any controlled commodities being imported and are required to carry out document checks and/or physical inspections. Information on which commodities are controlled is available on the GOV.UK page [Guidance on importing and exporting plants and plant products from 1 January 2021](#). Responsibility for these actions in Scotland lies with the Scottish Government's Plant Health Service.

The number of controlled consignments is not equivalent to the number of inspections undertaken. This is because some controlled commodities are subject to reduced checks while others are subject to full checks (100%).

Analysis of PHSI data provides users with insight into the volume of controlled commodities being imported and where those commodities are originating from. Data are provided on a calendar year basis while geographies are in line with [United Nations Statistics Division \(UNSD\) groupings](#).

Data aggregations

Commodities are grouped into 'types'.

- Plants and planting materials: live or dormant plants, seeds, bulbs or tubers of plants and trees and cut flowers.

- Fruit: fresh and dried fruit, including simply processed fruits, for human consumption.
- Vegetables: fresh and dried vegetables, including simply processed vegetables, for human consumption.
- Other: plants and parts of plants (including seeds and fruits) used primarily in perfumery or pharmacy or for insecticidal, fungicidal, or similar purposes.

Accuracy and quality assurance

Data are extracted by PHSI and checked for inconsistencies by Defra. A cleansed dataset is produced from which simple aggregations are constructed. Quality assurance of the calculations underlying the tables and charts is undertaken prior to release.

D. Controlled consignment data – Forestry Commission (FC)

Forestry Commission (FC) data covers inspections of timber, including sawn timber, wood shavings, wood chips, sawdust and prefabricated buildings made of wood being imported to England, Scotland, and Wales. FC are notified of any controlled commodities being imported and are required to carry out document checks and/or physical inspections. Information on which commodities are controlled is available on the GOV.UK page [Guidance on importing and exporting plants and plant products from 1 January 2021](#). All controlled forestry commodities are subject to full checks (100%) meaning the number of notifications should equal the number of inspections undertaken.

Analysis of FC data provides users with insight into the volumes of hardwood and softwood being imported and where those commodities are originating from. Data are provided on a financial year basis. [United Nations Statistics Division \(UNSD\) groupings](#).

Data aggregations

- Hardwood: timber from deciduous trees
- Softwood: timber from coniferous trees

Accuracy and quality assurance

Data are extracted by FC and checked for inconsistencies by Defra. A cleansed dataset is produced from which simple aggregations are constructed. Quality assurance of the calculations underlying the tables and charts is undertaken prior to release.

Data processing note:

Seven records were removed from the dataset for the year 2019/2020 due to these records missing one or more of the key fields used for analysis.

Six records were removed from the dataset for the year 2020/2021 due to these records missing one or more of the key fields used for analysis.

Table 1: Comparison of dataset variables used in the statistical release

	International trade (HMRC)	Plant Health notifications (PHSI)	Forestry notifications (FC)
Geography	United Kingdom	England and Wales	England, Scotland, and Wales
Value unit	Pounds Sterling	Not available	Not available
Volume unit	Net mass (kg)	Not available	Volume (m ³)
Consignments	N/A	Consignments	Consignments
Time frame	Calendar year	Calendar year	Financial year
Data presented	Single year	Single year	Single year

Disclosure control

At the level of aggregation presented there are no disclosure issues in the HMRC international trade data.

For PHSI and FC controlled consignments data disclosure was applied at country level where the number of notifications was three or fewer. This data has been removed from the individual line and also from the totals. The reason for not including these low numbers is to prevent the identification of particular businesses and their associated trade.

Where symbols appear in tables in line with the [Government Statistical Service Harmonised Symbols](#). The symbols used are:

C = confidential

Z = not applicable

Related releases

There are no other statistical releases covering trade in plants and plant commodities however there are a number of publications that provide further information on matters of interest to plant health:

Data covering pest and disease notifications and interceptions are available in the following reports:

- [Europhyt Annual Report](#)

- [Multi Annual National Control Plan Annual Report](#)

In theory, the estimated trade flows of each country should match, for example, any countries estimate of imports from the UK should match the UK's estimated exports to that country. In practice however, there are differences known as trade symmetries. For further information please see the [Asymmetries in Trade Data](#) report published by the Office for National Statistics.

Related trade data are available in the following reports:

- [Eurostat: International trade in goods](#)
- [United Nations Commodity Trade Statistics Database](#)
- [International Seed Federation](#)
- [European Commission: The EU fruit and vegetable sector](#)

Other related Government statistics are available:

- [Defra Food, Farming and Bio-security statistics](#) (includes releases covering horticulture, and farming)
- [Forestry Commission](#)

The Forestry Commission produces statistics on the value of imports and exports of wood as shown in Chapter 3 of Forestry Statistics. The values in the tables are different to the values published in the plant health international trade and controlled consignments release for the following reasons:

- The “other wood” category in Forestry Statistics also includes “other agglomerates” (CN code 44013900).
- Veneer sheets are included within the “woodbased panels” category in Forestry Statistics (alongside plywood, particleboard and fibreboard, which are all excluded from the experimental stats).
- The Forestry Statistics tables exclude further processed sawn wood, wooden wrapping and packaging materials and other secondary processed wood.
- [Welsh Government](#) (includes releases covering the Survey of agriculture and horticulture, and Woodland for Wales indicators)
- [Scottish Government](#) (includes releases covering forestry and farmland use - horticulture)
- [Northern Ireland](#) (includes releases covering agriculture and food)

Future plans

If feedback indicates that the statistical release “Plant Health – international trade and controlled consignments statistics” is of use to stakeholders, then it is proposed that:

- (1) Work is undertaken to review and potentially refine the commodities included in the release.
- (2) Work is undertaken to review and potentially refine the types of aggregations and analysis presented to users to ensure that it meets needs.
- (3) An annual edition is published. The release would be published within a reasonable time of the final HMRC trade data being published and be pre-announced on GOV.UK in line with the requirements of the Code of Practice for Statistics.