

Crop Production Statistics

Quality Report

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1 Contact

1.1 Contact organisation

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2 Metadata update

2.1 Metadata last certified

14.2.2024

2.2 Metadata last posted

14.2.2024

2.3 Metadata last update

14.2.2024

3 Statistical presentation

3.1 Data description

The statistics on crop production contain information on the production of the most significant crops in Finland. The statistics describe the production quantities of crops in total and by area. In addition to total production, the statistics are divided into organic and conventional production.

3.2 Classification system

The classification of crops mostly follows international crop classifications.

Crop names follow the names included in the registers of rural administrations (crop codes). Data is available for the whole of Finland and by regions.

3.3 Sector coverage

The statistics cover the production of all significant crops farmed in Finland.

3.4 Statistical concepts and definitions

Mixed crops: mixed cereals (cereals and cereals + oleaginous plants), mixed crops (protein crop + ≥ 50 per cent cereals) and mixture: pea/broad bean/sweet lupin + ≥ 50 per cent cereals)

Cereals harvested green include cereals (barley, oat, wheat, and mixed cereals) harvested after flowering.

Cereals harvested green include cereals (barley, oat, wheat, and mixed cereals) collected by threshing and preserved fresh.

Cereals harvested green total includes total silage and cereals harvested green.

Yield potential means the harvest of a crop per hectare which at most 10% of farms in the region can achieve during the growing season. The yield potential is calculated separately for organic and conventional crop production.

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3.5 Statistical unit

The statistical unit is an agricultural or horticultural enterprise.

3.6 Statistical population

The statistical population includes all agricultural and horticultural enterprises in Finland.

3.7 Reference area

The statistics cover the whole of Finland. The classification of farms into regions is based on the municipality in which a farm's administrative centre is located. The division to areas is the division to areas during the harvest year on the 1st of January. Data is given for the whole of Finland and by regions.

3.8 Time coverage

Information by ELY Centre is available in the statistical database years 1999-2022 and by regions starting from 2023. Information on the main crops is available in the database since 1920.

Information by area is available in disseminations starting from 1910.

3.9 Base period

The statistics are not an index.

4 Unit of measure

Area is given in thousands of hectares (1 ha = 10,000 m²). Area only includes the harvested area; thus, area of damaged crops or other unharvested areas are not included in the production area.

Crop production is given both in kilogrammes per hectare and in total, in millions of kilogrammes. Crop production of cereals, oleaginous plants, and protein crops is the dried crop yield.

5 Reference period

Calendar year

6 Institutional mandate

The duties of the Natural Resources Institute Finland have been defined in the Act on the Natural Resources Institute Finland (561/2014) and the Act on the Food and Natural Resources Statistics (562/2014). The Act on the Food and Natural Resources Statistics defines the duties of the Natural Resources Institute Finland to be compiling and publishing statistics regarding:

- 1) the structure, production methods, and input in production of agriculture; the production of crops, horticulture, and livestock; the environmental effects of production, and the prices of agricultural products,
- 2) commercial utilisation of forests, activity of the wood market, conservation and maintenance of forests,
- 3) fishing, aquaculture, fisheries, the market of fisheries, and
- 4) the safety of food products.

The act gives the Natural Resources Institute Finland extensive permissions to collect information on agriculture, horticulture, aquaculture, processing and trade of agricultural and aquacultural products, forestry, and the processing and trade of wood.

The Statistics Act (The Statistics Act 280/2004, 361/2013) legislates on, including but not limited to, data collection, data processing, and duty of disclosure. In addition to the Statistics Act, the Personal Data Act and the Act on the Openness of Government Activities are applied when processing data for compiling statistics.

The main document guiding our actions is the perennial European statistical programme, approved by the European Parliament and the Council of Europe, based on which the commission produces an annual work programme. The statistics included in the European Statistical Programme are prescribed in the Council Regulation 322/97.

The Statistical Office of the European Union, Eurostat, and the statistical offices of EU countries must apply the EU's Statistics

Act when compiling statistics following the work programme. As a supranational regulation, it surpasses the national Statistics Act but in practice there are no contradictions between the Statistics Acts of the EU and Finland.

6.1 Legal acts and other agreements

The statistics are compiled based on the Act on the Natural Resources Institute Finland (561/2014), the Act on Food and Natural Resource Statistics (562/2014), and the Statistics Act (280/2004). Additionally, the Regulation of the European Parliament and the Council of the European Union concerning crop statistics (543/2009), the Commission Delegated Regulation 2015/1557, and the ESS Agreement mandate compiling these statistics.

6.2 Data sharing

Four disseminations on crop productions are published yearly on the Natural Resources Institute Finland website. A webpage, announcements, news, and blogs regarding the statistics can be found on the website of the Natural Resources Institute Finland. Tables relating to the statistics are available on the statistics database of the Natural Resources Institute Finland.

Data is provided to the Statistical Office of the European Union multiple times a year. Preliminary data is provided in August, September, October, and November of the statistical year. Final data is provided in March and September of the following year. Eurostat publishes data from all its member countries online.

7 Confidentiality

7.1 Confidentiality - policy

Confidentiality is a base principle of statistics and assures the confidential processing of data provided by informants, and the Natural Resources Institute Finland has undertaken to follow this principle. Micro-data is confidential and must never be released for administrative decision-making, investigation, surveillance, legal proceedings, or similar purposes.

7.2 Confidentiality - data treatment

The confidentiality of data collected for statistical purposes is guaranteed according to the Statistics Act (280/2004), the Personal Data Act (523/1999), the Act on the Openness of Government Activities (621/1999), and the EU General Data Protection Regulation (2016/679). Data is protected at all stages of processing using the necessary physical and technological solutions. The staff only has access to information necessary for their duties. Unauthorised people do not have access to spaces in which micro-data is processed. Staff members have signed a non-disclosure agreement when entering duty. Intentional breach of confidentiality will be penalised.

8 Release policy

The disseminations of the Natural Resources Institute Finland are published online on weekdays at 9:00. Data is public after it has been published on the website.

8.1 Release calendar

The publication dates are confirmed in autumn together with the action plans. The release calendar of the following year is published for users in the end of the year. The release calendar holds data on the dates of future publications. The publication dates are published in the calendar at first with an accuracy of one week, and two months prior to the publication date with an accuracy of a day. The calendar also contains direct links to already published statistical publication.

8.2 Release calendar access

[Statistical releases calendar | Natural Resources Institute Finland](#)

9 Frequency of disseminations

Four times a year

10 Dissemination format

10.1 News release

There are four disseminations in a year.

10.2 Publications

Data is published in the e-yearbook of Food and Natural Resources Statistics and in the Statistical Yearbook of Statistics Finland.

The statistical office of the European Union, Eurostat, and the Food and Agriculture Organization of the United Nations, FAO, publish data from the statistics on their websites.

From 1983 to 2014, information was published yearly in the Yearbook of Agricultural Statistics by Statistics Finland, and in 2013 in an online publication. Crop production statistics were published in the Agricultural Statistical Bulletin in 2002–2007 and prior to that in Tietokappa.

10.3 On-line database

[PxWeb - Crop Production Statistics](#)

10.4 Other

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10.5 Documentation of methodology

In the crop production statistics, the sampling method of the sample survey for farms is stratified sampling. The statistical population of sampling is the farms in the register for agricultural and horticultural enterprises (approximately 42,000 farms in 2023). Registered farms include agricultural and horticultural enterprises, the financial size of which is at least EUR 2,000. The financial size is determined by using the Standard Output method. The population has been partitioned by three qualities: location of the farm (regions), production sector, and size. This creates as representative population of the country as possible. Data is collected with a network service and with phone interviews. In 2023 the population included approximately 6,000 farms, out of which 750 were organic

farms. The response rate of the net-sample was approximately 89 %.

Data on harvested area, total yield, and moisture or dry-matter (%) by crop is collected from farms selected to be included in the sample. Data collected with the crop statistics survey is estimated using the normal multiplying factor of stratified sampling.

10.6 Quality documentation

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11 Quality management

11.1 Quality assurance

The Natural Resources Institute Finland follows the Code of Practice and the Quality Assurance Framework of European statistics when compiling statistics. The Code of Practice concern the independence and accountability of statistics authorities, and the quality of processes and published data. The principles are compatible with and supplement the Principles of Official Statistics, agreed upon by the United Nations Statistical Commission. The quality criteria of official statistics in Finland are also compatible with the Code of Practice of European statistics. The principles are also compatible with the European Foundation for Quality Management.

The annual quality assurance of statistics performed by Statistics Finland includes statistics produced by the Natural Resources Institute Finland.

Checks for faulty data in the data collection application mostly prevent accidental mistakes. The data collected is reviewed and edited after data collection.

11.2 Quality assessment

The response material of the statistics is reviewed and edited. Additionally, the non-response is investigated based on variable background information.

12 Relevance

12.1 User needs

The statistics are used both nationally and internationally. The statistics are a part of the European Statistical System (ESS). The statistical office of the European Union, Eurostat, and the Food and Agriculture Organization of the United Nations, FAO, publish data from the statistics on their websites. The statistics are utilised in compiling other statistics, such as Utilised Agricultural Area, Crop Use on Farms, Cereals Balance Sheet, and the Balance Sheet for Food Commodities. Other users include research, administration, agricultural and food establishments, farmers, interest groups, counselling, and media.

12.2 User satisfaction

Feedback is collected from the users of the statistics, especially when revising the statistics. Feedback is also received directly. In addition, we investigated the wishes of users for developing the statistics in the autumn of 2021 and beginning of 2022, when updating the work programme for the Natural Resources Institute Finland. We follow the received feedback and take it into consideration in developing the statistics.

12.3 Completeness

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13 Accuracy and reliability

13.1 Overall accuracy and reliability

The crop estimates describe the state of crops at the time quite well when comparing data to the final crop production statistics published at the beginning of the following year. Exceptionally good or bad weather at the end of the growth season may change the outcome of the crop yield. Most of the crops have not been harvest at the time of compiling crop estimates.

The statistical population is revised yearly, and as a result, the statistics cover nearly 100% of its statistical population. In 2021

the sample size was approximately 6,100 farms, 89% of which responded to the survey.

Harvested area by species is most reliable for crops for which data is collected from the Administration for Rural Affairs. Data on harvested area collected with the harvest survey is used for all crop categories. The harvest survey also collects data on harvested area per crop classification for grasses, cereals, peas, and broad beans. Data on the harvested area of these crops is not quite as accurate as data on other crops.

The harvesting calculations of sugarbeets are different from other crops, as its final total yield is collected from Sucros Oy. The harvest volumes received from them is the cleaned total yield received by the sugarbeet factory.

13.2 Sampling error

The crop production survey is a sample survey; thus, the results are estimated using weighting coefficients. The coefficient for each sample is calculated by dividing the number of farms in the sampling frame by the number of farms that responded. SAS software is used for estimating the results. Error variances are estimated using the CLAN-macro in the SAS software. The relative standard error of estimates of crop yield by hectare varies between 1% and 2% on a national level. Standard error can be larger for crops with smaller sown areas and for estimated yields by area.

13.3 Non-sampling error

13.3.1 Coverage error

Based on the crop production survey, the over-coverage of the sample was 0.5%.

13.3.2 Measurement error

Total yield of each cereal is asked from farms. The given number can be based on weighing, measurement of volume, or a visual estimate. Errors in observation by respondents can weaken the reliability of the statistics.

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13.3.3 Non-response error

In 2021, data was not collected from 10.6% of farms included in the net-sample. The phone interviewer tried to reach farms that did not respond online. Farms that could not be reached by the phone interviewer or did not give them information resulted in non-response.

13.3.4 Processing error

Errors in processing data are plausible.

13.3.5 Model-based error

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14 Timeliness and punctuality

14.1 Timeliness

The statistics on crop production have four disseminations during the statistical year. The first two crop estimates are published during the growth season. The dates of crop estimates are 15.8. and 20.9., or the nearest Monday. The dates of crop estimates until 2021 were 15.7. and 25.8., or the nearest Monday. Information is published on the Friday of the concurrent week. Crop estimates of August are delivered to the EU on 31.8. at latest. The third publication happens in November of the statistical year, and this data is supplied to EU on 30.11. at latest. The final statistics are finished during the first quarter following the statistical year. Data for the whole of Finland is delivered to the EU on 31.3. at latest, and data per region on 30.9. at latest.

14.2 Punctuality

The statistics have been published according to the publishing date declared in advance.

15 Coherence and comparability

15.1 Comparability - geographical

Data between national regions included in the statistics is comparable. The statistical office of the European Union

publishes data from its member countries in comparable forms. The deviations have been described in quality reports by member country.

15.2 Comparability - over time

Statistics on the production of crops have been recorded since 1920. Data on the crop yield by hectare is comparable throughout the statistical period. The statistics on total harvested yield became more accurate in 1995, since when the calculation of harvested yield is based on data on cultivated area collected from the Administration for Rural Affairs. Before 1995 the cultivated area data of all crops was based on a sample survey.

In 2000 the statistical population of the statistics expanded to include farms that did not apply for subsidies. In 2013 the definition of farms included in the statistical population changed to be based on the financial size of the farm. This change slightly reduced the number of farms included in the statistical population. Neither of these changes to the base register significantly affects the results of the statistics.

In 2016 the preliminary crop production statistics, which was separate statistics, was included in the statistics on crop production. Information is now published under crop production statistics with the same information content as before in July and August or September.

In 2020 the statistics on organic crop production were included in the statistics on crop production. Since 2020, the statistics include data on conventional production, in addition to organic and total production.

As a result of the cultivated areas of crops changing, the crop species recorded in the statistics have changed slightly over the years.

Information is published according to the national regional divisions in place during the statistical year. Changes to regional divisions (i.e., consolidation of municipalities or transfer of municipality to another ELY Centre or region) thus affect the comparability of total yield and harvested areas over time.

15.3 Coherence - cross domain

The data is coherent with other statistics based on the register of agricultural and horticultural enterprises.

15.3.1 Coherence between sub annual and annual statistics

Advanced crop production estimates have a separate process that differs from the compiling method of the preliminary and final crop production statistics. The crop estimate describes the state of crops on the day of the estimate for the whole of Finland. Data based on expert estimates in the crop estimate differs from the data in the final statistics when the weather of the growth seasons is abnormal. Exceptionally good or bad weather at the end of the growth season may change the outcome of the crop yield, and as a result the yield estimates might not be accurate. The data in the final crop production statistics is thus more accurate and has more coverage as it is based on data on harvested yield reported by farms.

15.3.2 Coherence with National Accounts

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15.4 Coherence - internal

Data on yield and harvest area by region is not fully comparable due to consolidation of municipalities. Changes to areas have not been revised to older statistics.

16 Cost and burden

The estimated average time of responding online or via phone is approximately 15 minutes. However, there are large differences in the time it takes to respond because there are also large differences in the quantity of data collected from various respondents.

17 Statistical processing

17.1 Source data

In harvest estimates cultivated areas of crops are based on data recorded in the register of the Finnish Food Authority's Administration for Rural Affairs. Hectare yield data per species

used for compiling the statistics are collected as expert estimates from ProAgria.

The final crop statistics are based on a sample survey for farms. Cultivated area per crop species recorded in the register of the Finnish Food Authority's Administration for Rural Affairs are prefilled in the online survey for farms. The area given in the final statistics is the harvested area, meaning that the harvest survey is used to estimate the harvested area per crop species for the statistics. Yield per crop species is also collected from farms.

17.2 Frequency of data collection

There are three data collections yearly.

17.3 Data collection

The expert estimates for each municipality are collected online twice during the growth season. There is an agreement on data collection with ProAgria Association and Svenska Lantbrukssällskapens Forbund (SLF).

Data for the final statistics is collected from farms online and with phone interviews. Data on a farm's cultivated area per crop species, collected from the database of the Finnish Food Authority's Administration for Rural Affairs, is prefilled in the data collection application.

17.4 Data validation

If for example an abnormally large observation is spotted during the data compilation process, the authenticity of data is reviewed.

17.5 Data compilation

In data compilation of the yield estimates, yield per crop species is calculated from the expert estimates by municipality using the area per crop species collected from the database of the Administration for Rural Affairs. Missing crop estimates are imputed using averages from ProAgria Centre, or in case these are missing, the averages for the whole country. An estimate on

the total crop estimate (millions of kilogrammes) is calculated by summing the crop estimates by municipality.

Faulty or abnormal data from the sample survey is either revised or removed from the material. If data distortion the total results is collected from a farm, the farm is deleted from the stratum it represents and a separate stratum is formed from the farm. The statistics give the harvested yield in hectares. This is calculated by dividing the estimated total yield by harvested area.

Until 2015, harvested area for most crops was calculated by subtracting the completely destroyed area, collected from crop damage declarations, from cultivated area. Data on both areas by species were collected from the database of the Administration for Rural Affairs. Since 2016, data on harvested area collected from the sample is used for all crops, as data on damaged crops is no longer available.

Grass fodder area is divided into hay, silage, and mowed fodder area based on the first yield's form of use. Since 2007, the area of oats, barley, spring wheat, and mixed crops has been divided into dry crops and cereals harvested green, based on sample data. Winter wheat and rye have been divided similarly since 2021. This division has been used for feed peas and broad beans since 2017.

The total yield presented in the statistics is calculated by multiplying the estimated production by harvested area.

17.6 Seasonal adjustment

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18 Comment

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