



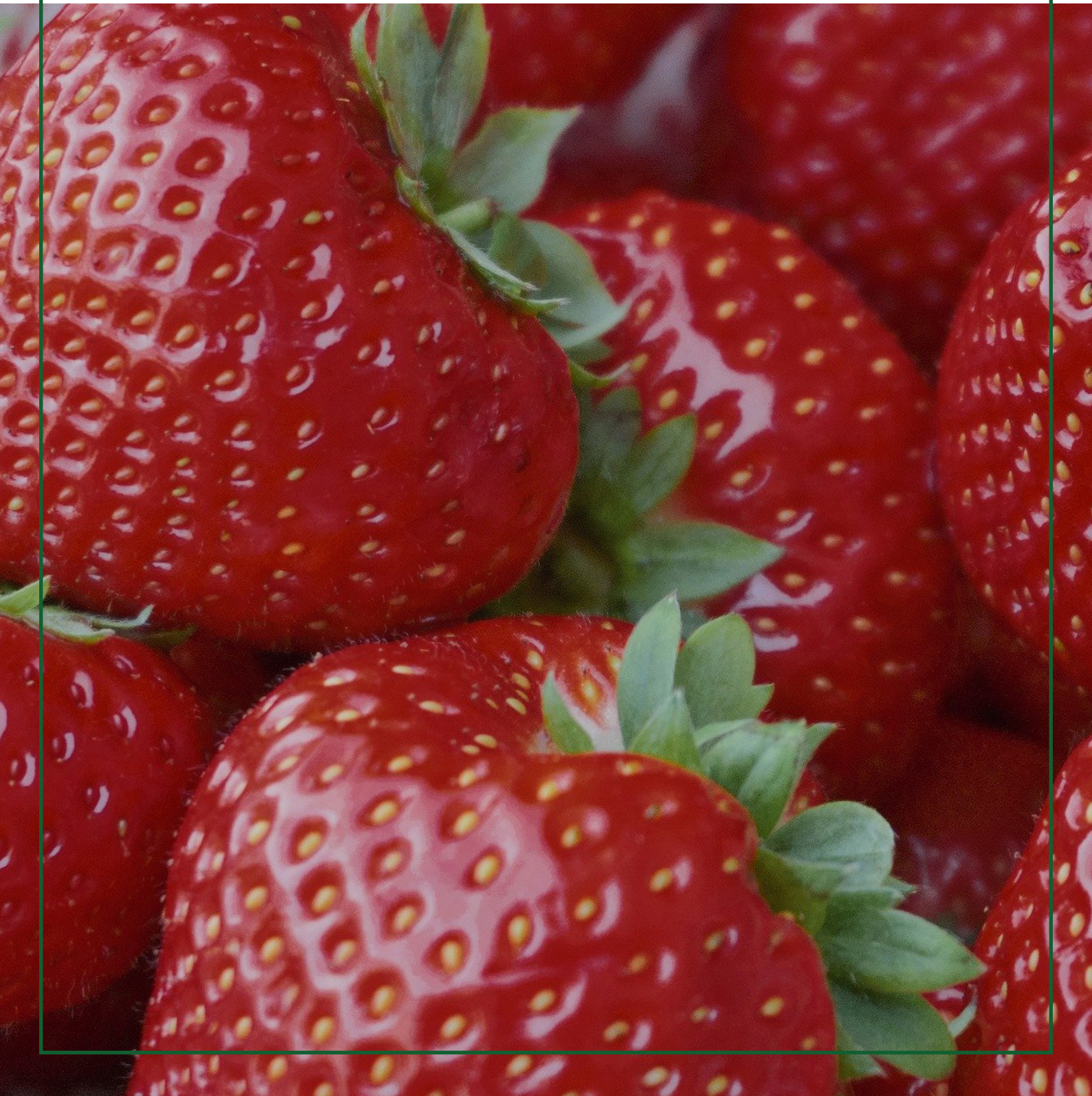
**FINNISH FOOD  
AUTHORITY**

Ruokavirasto • Livsmedelsverket

Publications

**7/2022**

## **Food Safety in Finland 2021**





Finnish Food Authority publications 7/2022

# Food Safety in Finland 2021



**FINNISH FOOD  
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Ruokavirasto • Livsmedelsverket

# Description

<b>Publisher</b>	Finnish Food Authority
<b>Authors</b>	Finnish Food Authority
<b>Title of publication</b>	Food safety in Finland 2021
<b>Series and publication number</b>	Finnish Food Authority publications 7/2022
<b>Publications date</b>	November 2022
<b>ISBN PDF</b>	978-952-358-044-2
<b>ISSN PDF</b>	2669-8307
<b>Pages</b>	93
<b>Language</b>	English
<b>Keywords</b>	Food safety, food control, food products
<b>Publisher</b>	Finnish Food Authority
<b>Layout</b>	Finnish Food Authority
<b>Distributed by</b>	Online version: <a href="http://foodauthority.fi">foodauthority.fi</a>

## Abstract

This report presents the 2021 results of regulatory control related to food safety, official controls and monitoring programmes on food and feed, as well as research and risk assessments. The report also assesses, based on the results, the status of food safety and future needs for regulatory activities in Finland. The report extends the annual report referred to in the EU Control Regulation (EU) No. 2017/625 on official control with respect to food safety; the annual report describes the results of the control in the various sectors of the food supply chain as a whole.

The results of official controls and investigations from 2021 indicate that the control works well and the level of food safety is good. The investigation of epidemics has developed, and the number of epidemics caused by unknown reasons was the smallest in years.

The export controls required by export countries were continued in accordance with the programmes. The number of food recalls has continued to increase dramatically. In 2021, more than 19,000 Oiva reports were published, which is an increase of 19 per cent from the previous year. Control was carried out through prioritised work. The new Food Act and the decrees issued under it entered into force in April 2021.



# Kuvailulehti

<b>Julkaisija</b>	Ruokavirasto
<b>Tekijät</b>	Ruokavirasto
<b>Julkaisun nimi</b>	Elintarviketurvallisuus Suomessa 2021
<b>Julkaisusarjan nimi ja numero</b>	Ruokaviraston julkaisuja 7/2022
<b>Julkaisuaika</b>	Marraskuu 2021
<b>ISBN PDF</b>	978-952-358-044-2
<b>ISSN PDF</b>	2669-8307
<b>Sivuja</b>	93
<b>Kieli</b>	Englanti
<b>Asiasanat</b>	Elintarviketurvallisuus, elintarvikevalvonta, elintarvikkeet
<b>Kustantaja</b>	Ruokavirasto
<b>Taitto</b>	Ruokavirasto
<b>Julkaisun jakaja</b>	Sähköinen versio: ruokavirasto.fi

## Tiivistelmä

Tässä raportissa kerrotaan elintarviketurvallisuuteen liittyvän viranomaisvalvonnan, elintarvikkeiden ja rehujen virallisten valvonta- ja seurantaohjelmien, tutkimusten ja riskinarviointien tuloksista vuodelta 2021, sekä arvioidaan niiden perusteella Suomen elintarviketurvallisuustilannetta ja viranomaistoiminnan tulevaisuuden tarpeita. Raportti syventää elintarviketurvallisuuden osalta EU:n virallista valvontaa koskevan asetuksen (EU) 2017/625 edellyttämää vuosiraporttia, jossa kuvataan valvonnan tulokset koko elintarvikeketjun eri sektoreilla.

Viranomaisvalvonnan ja -tutkimusten tulokset vuodelta 2021 kertovat että valvonta toimii ja elintarviketurvallisuuden taso on hyvä. Epidemioiden selvitystyö on kehittynyt ja tuntemattomasta syystä aiheutuneiden määrä oli pienin vuosiin.

Vientimaiden edellyttämiä vientivalvontoja jatkettiin ohjelmien mukaisesti. Elintarvikkeiden takaisinvetojen määrä on edelleen kasvanut voimakkaasti. Vuonna 2021 julkaistiin kaikkiaan yli 19 000 Oiva-raporttia mikä on 19 % enemmän kuin edellisenä vuonna. Valvontaa toteutettiin painopistetyön kautta. Uusi elintarvikelaki ja sen nojalla annetut asetukset tulivat voimaan huhtikuussa 2021.

# Beskrivning

<b>Utgivare</b>	Livsmedelsverket
<b>Författare</b>	Livsmedelsverket
<b>Publikationens titel</b>	Livsmedelssäkerheten i Finland 2021
<b>Publikationsseriens namn och nummer</b>	Livsmedelsverkets publikationer 7/2022
<b>Utgivningsdatum</b>	November 2022
<b>ISBN PDF</b>	978-952-358-044-2
<b>ISSN PDF</b>	2669-8307
<b>Sidantal</b>	93
<b>Språk</b>	Engelska
<b>Nyckelord</b>	Livsmedelssäkerhet, livsmedelstillsyn, livsmedel
<b>Förläggare</b>	Livsmedelsverket
<b>Layout</b>	Livsmedelsverket
<b>Distribution</b>	Elektronisk version: livsmedelsverket.fi

## Referat

I denna rapport berättas om resultaten av myndighetstillsynen som hänför sig till livsmedelssäkerheten, de officiella tillsyns- och uppföljningsprogrammen gällande livsmedel och foder och undersökningar och riskvärderingar år 2021 och utgående från dem utvärderas livsmedelssäkerhetsläget och de framtida behoven inom myndighetsverksamheten i Finland. Rapporten fördjupar den årliga rapport som EU:s kontrollförordning (EU) nr 2017/625 förutsätter för livsmedelssäkerhetens del. I rapporten beskrivs resultaten av kontrollen i olika sektorer av livsmedelskedjan som helhet.

Resultaten av myndighetstillsynen och -undersökningarna 2021 visar att tillsynen fungerar och livsmedelssäkerhetsnivån är god. Arbetet med att utreda epidemier har utvecklats och antalet epidemier med okänd orsak var det lägsta på många år.

De exportkontroller som exportländerna förutsätter förlängdes i enlighet med programmen. Antalet återkallelser av livsmedel har fortsatt att öka kraftigt. År 2021 publicerades sammanlagt över 19 000 Oiva-rapporter, vilket är en ökning med 19 procent jämfört med året innan. Tillsynen genomfördes via arbete med prioriteringar. Den nya livsmedelslagen och de förordningar som utfärdats med stöd av den trädde i kraft i april 2021.

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## Introduction

This report describes the results of official control related to food safety, official controls and monitoring programmes on food and feed, as well as research and risk assessments in 2021. Based on the results, the report also assesses the status of food safety and future needs for the authorities' activities in Finland. The report extends the annual report referred to in the Official Controls Regulation (EU) No 2017/625 with respect to food safety; the annual report describes the results of control in different sectors of the food chain as a whole. The results for 2015–2020 have been published in similar Food Safety in Finland reports. In addition, previous years' results can be found on the Finnish Food Authority's website ([www.ruokavirasto.fi/en/](http://www.ruokavirasto.fi/en/) and [www.ruokavirasto.fi/en/themes/zoonosis-centre/](http://www.ruokavirasto.fi/en/themes/zoonosis-centre/))

The report also contains a summary of the priorities selected for food control work in 2021.

By carrying out their own check controls, food business operators fulfil their duty to ensure the safety of their products, provide sufficient and correct information regarding their products, and comply with the requirements in their operations. The results of own check controls are not included in this report.

The figures describing control data in this report basically reflect the situation at the time the report was prepared. The data in registers may change, which is why the same data for previous periods may vary from year to year, for example in figures and tables that describe trends.

## Summary

The results of official controls and investigations conducted by the authorities in 2021 show that the control works well, and the level of food safety is good.

There were 46 foodborne outbreaks. The work to investigate outbreaks has taken steps forward, and the number of outbreaks caused by unknown reasons was the smallest in years. In one large salmonella outbreak, more than 700 people were infected.

The export controls required by export countries were continued under the relevant programmes. The USDA/FSIS conducted a remote audit of the Finnish pork production control system. Efforts to get access to the poultry meat market in South Korea reached the audit phase in late 2021. The highly pathogenic avian influenza diagnosed in February 2021 created a high workload for the export sector, in particular, in the form of various reports. The production volumes of both red meats and poultry meat increased somewhat.

The number of food recalls has continued to increase dramatically. In total, 72 of the 309 recalls in 2021 were related to ethylene oxide residues, while 26 were caused by salmonella. Non-EU products were involved in 54% of the recalls. Notification of one third of all cases was received through the EU's Rapid Alert System for Food and Feed (RASFF). While the exact reason for the increase in the number of recalls is not known, it indicates that Finland has an effective food chain. The number of inspections associated with recalls totalled 2,715, and the control chain worked rapidly in urgent recall situations.

In 2022, more than 19,000 Oiva reports were published, which is a 19% increase compared to the previous year. Of all inspections, 85% produced excellent (A) and good (B) results (Figure 1). Products included in the EU's registration of names scheme were inspected 405

times. The focus was on marketing control. The inspections increased twenty-fold and were carried out in connection with the Oiva inspections of one company out of five.

The new Food Act and the decrees issued by virtue of it entered into force in April 2021. The EHEC bacteria control programme for cattle was modified. Samples are now taken at slaughterhouses from carcass surfaces, and the control focuses more broadly on STEC bacteria. The new legislation also brought about some changes to the salmonella control programme.

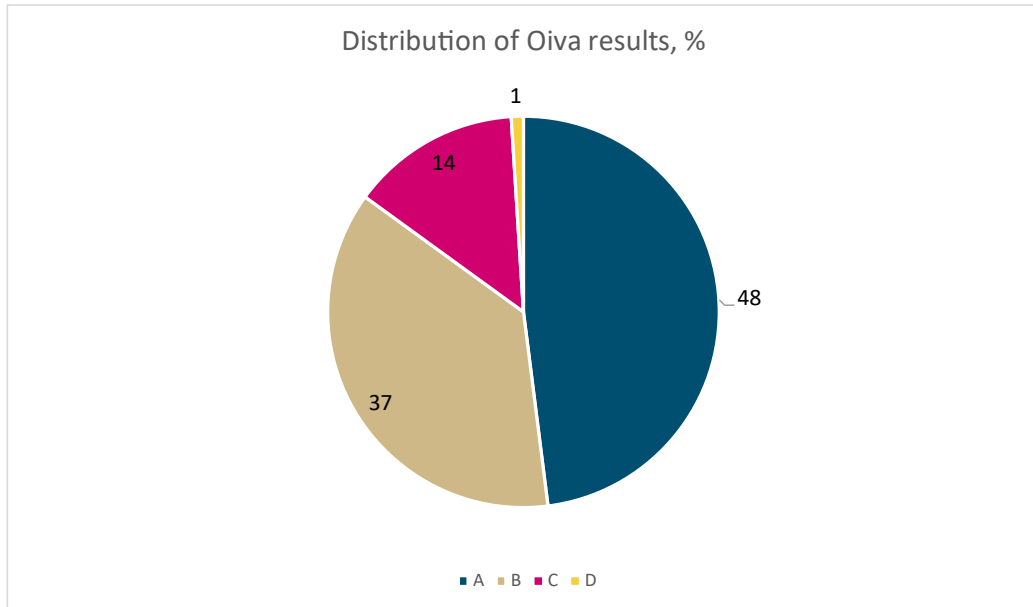


Figure 1. Distribution of Oiva results in 2021

## 1 SYSTEM OF AUTHORITIES RESPONSIBLE FOR FOOD SAFETY

See Table 1 for the human allocated to official control tasks associated with food safety in 2017–2021.

*Table 1. Food, feed and organic product control personnel in full-time equivalents (FTE). The Finnish Food Authority started operating on 1 January 2019, and the personnel worked for the Finnish Food Safety Authority (Evira) until 31 December 2018.*

Authority	2017	2018	2019	2020	2021
Finnish Food Authority	338	338	357	357	372
Regional Centres for Economic Development. Transport and the Environment	25.4	26	28.3	30.8	30.3
Regional State Administrative Agencies	23.8	19	9.6*	9.2	9.8
Municipalities (estimate)	257	270	285	284	280
Customs	30	30	32	32	32
National Supervisory Authority for Welfare and Health	1.6	1.3	1.5	1.7	1.8
Finnish Defence Forces	2.6	2	1.6	1.6	1.4
Åland (estimate)	5.4	5.4	5.4	5.4	5.4
Others. including authorised inspectors (the share of organic control is imputed)	14.3	14.8	26.2	36.9**	38.1**
<b>Total</b>	<b>698</b>	<b>707</b>	<b>747</b>	<b>759</b>	<b>771</b>

\* the calculation basis has changed

\*\*includes hygiene passport examiners

In total, approximately 774 person-years were allocated to food, feed and organic control. There were 62 municipal food control units. The figures do not include reindeer meat inspections conducted by municipal veterinarians under the Regional State Administrative Agency for Lapland, or the work hours of fee-based meat inspection veterinarians working for the Finnish Food Authority. In addition, the figures do not include the contribution of personnel in local laboratories who examine official samples.

Year 2021 was the third year in which the Finnish Food Authority also served as the central agency for food safety control, a task which it took over from its predecessor, the Finnish Food Safety Authority Evira.

## 2 GENERAL INFORMATION ON FOOD SAFETY

### 2.1 Food sector companies

See Figure 2 for the number of food product and food contact material companies registered in the authorities' systems in Finland by sector in 2021.

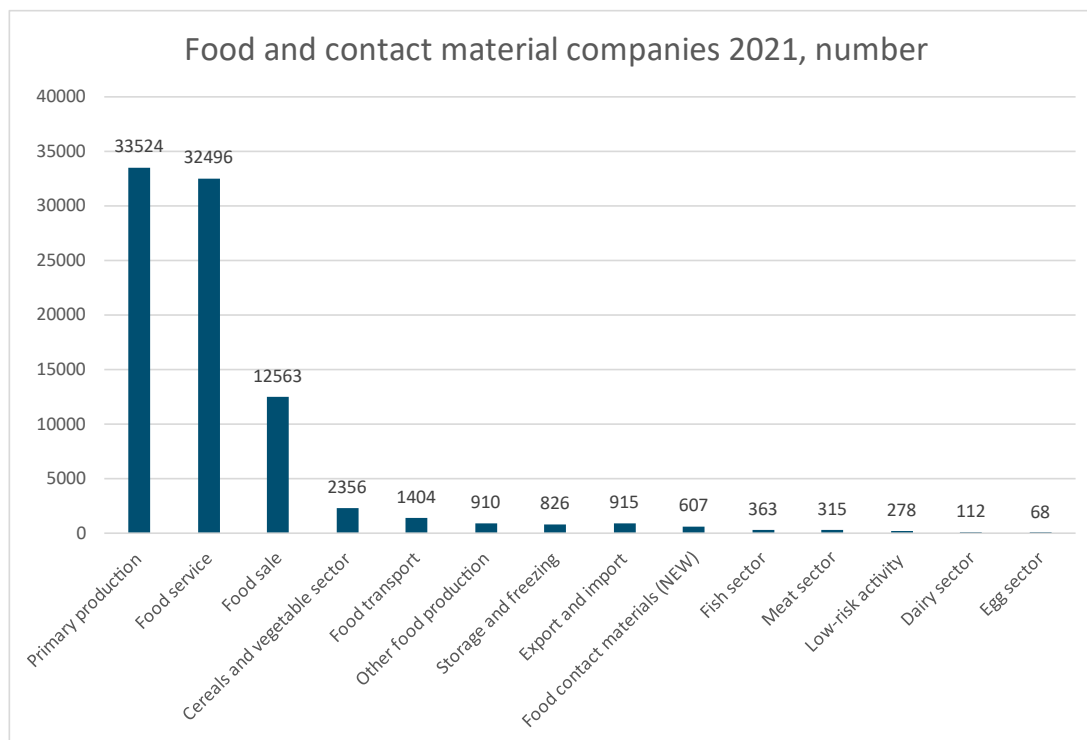


Figure 2. Number of food sector and food contact material companies registered in official systems in 2021

### 2.2 Oiva food control results

Planned food control is carried out using the Oiva system, and Oiva reports also provide consumers with information about the results of food control in companies.

The results of planned food control inspections (Oiva inspection results) are published in the form of Oiva reports, which are public. The results of retail shops and food service establishments have been published since 2013, and those of the food industry since the beginning of 2016.

A smiley face shown in the report indicates the result of the inspection. During the inspections, several different requirements are assessed, each of which is given its own assessment result. The overall result of the inspection is determined on the basis of the poorest result. In addition, the report shows the results of two previous inspections. A general description of observations made during the inspection is included at the end of the report.

Table 2. Oiva control visits in 2021

Activity category	Number of registered control sites	Inspected sites, number	Inspected sites, %	Inspections following the plan incl. follow-up inspections, number	Oiva A, %	Oiva B, %	Oiva C, %	Oiva D, %	Inspections not included in the control plan (excl. Oiva inspections), number
Food transport	1423	151	10	147	86	12	2	0	8
Food sale	12903	3629	28	4039	52	33	14	1	519
Food service	33202	10968	33	12525	47	39	14	1	684
Food storage and freezing	846	174	20	192	63	24	11	2	188
Food productions excl. dairy, meat, fish, egg and cereal and vegetable sectors	936	263	28	300	50	35	14	1	25
Fish sector	373	243	65	493	47	36	16	2	47
Meat sector	331	218	65	751	35	46	17	2	25
Dairy sector	116	89	76	222	59	32	9	0	36
Egg sector	68	48	71	68	71	24	6	0	6
Export and import	936	155	18	190	31	36	28	5	19
Cereals and vegetable sector	2433	723	30	778	47	40	13	1	61
Low-risk activity	284	51	18	52	54	38	8	0	2
TOTAL	50146	16161	20	19510	48	37	14	1	1620

Including follow-up inspections, a total of 19,510 Oiva control visits were conducted in food sector companies, which is around 13% more than in the previous year.

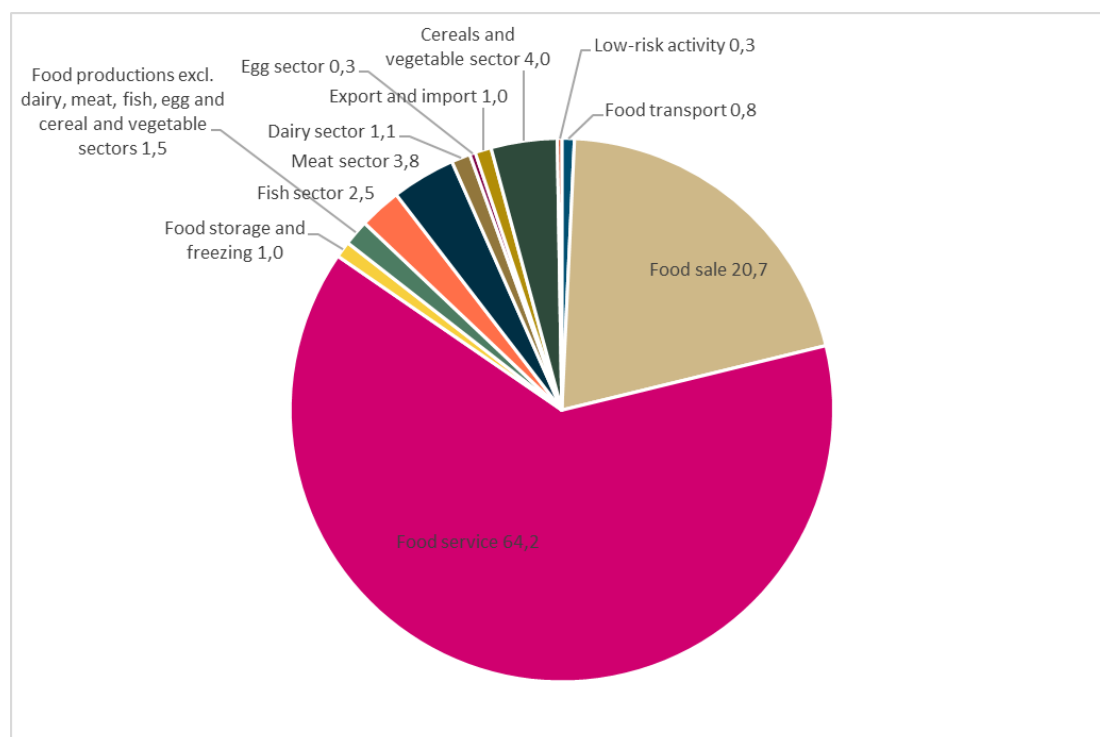


Figure 3. Shares of inspections (%) by company type in 2021.

See Figure 3 for the distribution of inspections by activity category. Service establishments account for more than 60% of all Oiva inspections.

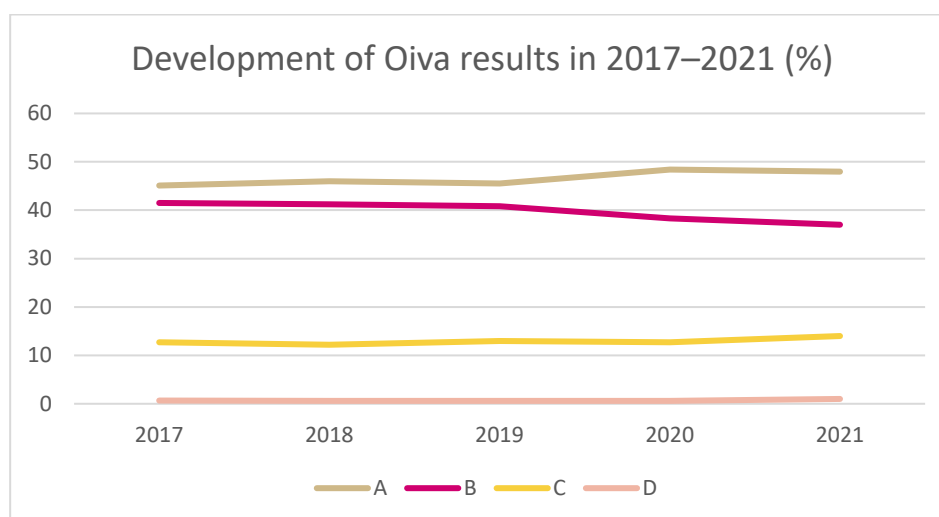


Figure 4. Development of Oiva results in 2017–2021

The results of Oiva inspections have changed little from 2017 to 2021, and excellent and good results are a clear majority (Figure 4). In 2021, they accounted for 85% of all results.

## 2.3 Hygiene proficiency

People who work in the food sector and handle unpacked, readily perishable foods are required to have hygiene passports.

In 2021, the Finnish Food Authority approved 271 new hygiene passport examiners. The total number of examiners was around 1,520. Since 2002, hygiene passport examiners have conducted a total of 225,710 hygiene passport tests in different parts of Finland. In addition to hygiene passport tests, this figure includes hygiene passports granted on the basis of a qualification and renewals of previously granted hygiene passports. By the end of 2021, a total of 1,353,825 hygiene passports had been issued. The annual numbers of both hygiene passport tests and hygiene passports increased compared to 2020, the year in which the COVID-19 pandemic began (Table 3).

Table 3. Hygiene passport tests organised and hygiene passports granted in 2017–2021

Year	Hygiene passport tests (number)	Hygiene passports (number)
2021	9 334	50 029
2020	8 309	45 909
2019	10 493	57 094
2018	11 061	59 248
2017	11 513	61 897
Total	50 710	274 177

On average, 15% of the audits of hygiene passport examiners have resulted in the cancellation of the examiner's rights (Table 4). For several years, the most common errors and shortcomings that led to the issue of notices have been related to the following issues: checking the identity of the persons to be tested, the grounds for granting a hygiene passport, archiving the documents on the basis of which the hygiene passports were issued, handing over the examiner's obligations to third parties and the organisation of special situation tests.



Table 4. Audits of proficiency examiners conducted by the Finnish Food Authority and audit results in 2017–2021

Year	Examiners audited, number	Notice, number	Cancellation of examiner's rights, number	Requests for police investigation, number
2021	20	18	2	0
2020	7	6	1	0
2019	21	21	0	2
2018	17	16	1	0
2017	6	2	4	0
Total	71	63	8	2

See Table 5 for Oiva results related to the verification of hygiene proficiency in 2021. A smaller proportion of food premises were given a B rating, which means that there were minor shortcomings in ensuring employees' hygiene proficiency and record-keeping. A C rating was issued to a very small proportion of the total number. It means that the food establishment has not ensured that the employees have hygiene passports and kept no records. A D rating was issued three times to registered food premises, which is not reflected in the percentage figures, however.

Examined as a whole, the overall Oiva rating distribution in 2017–2021 has remained similar over the years. Registered food premises have had better results than approved food establishments. Compared to 2020, the Oiva results of approved food establishments improved slightly and the ratings of registered food premises remained almost at the same level in 2021.

Examined by sector, the Oiva results have improved in the fish and egg sectors. The Oiva results of food transport, the dairy sector and national facilitations (low-risk activities in food premises) have deteriorated by several percentage points. A D rating was only issued in the food service sector.

Table 5. Oiva results for the verification of hygiene proficiency

Food premises	Number of inspected sites	Number of inspections	A %	B %	C %	D %	Guidance and instruction, number	Notice, number	Coercive measures, number
Approved	207	230	88	9	3	0	23	7	0
Registered	7569	7980	93	5	2	0	493	130	1
<b>Total</b>	<b>7776</b>	<b>8210</b>	<b>93</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>516</b>	<b>137</b>	<b>1</b>

## 2.4 Quality and accountability systems

No applications by individual operators for the national quality system for pork (named Sikava) were submitted to the Finnish Food Authority in 2021. Consequently, the total number of operators, each of whom operates one or more Quality Assurance approved sites, remained at ten. Sikava's national quality management system covers approx. 99% of pigs bred in Finland as well as pork of Finnish origin (Quality Assurance term). In practice, there is no more room for expansion.

## 2.5 Guidelines for good practices

No new guidelines for good practices were submitted for evaluation in 2021. The Natural Resources Institute Finland updated its guideline for companies handling fresh vegetables, which the Finnish Food Authority commented on.

Nine Guidelines for good practices have been evaluated in the food sector and one in the feed sector.

## 2.6 RASFF

In 2020, Finland reported 118 cases of non-compliance related to foods or food contact materials detected in Finland to the EU's RASFF (Rapid Alert System for Food and Feed) system. This number exceeds last year's figure by 48 reports. Of these reports, 88 (75 %) concerned food products and 30 (25 %) contact materials. The number of reports that concerned food products also increased notably from the previous year, whereas the number of notifications concerning contact materials, in particular, was six-fold compared to the year before. The reason for this was the EU's Bamboozling project, which focused control on food contact materials containing non-compliant plant fibres. In addition, nine feed batches were notified to the RASFF system, in each case because of salmonella.

While the number of RASFF notifications concerning food products was significantly higher than in the previous year, their reasons were very similar. Poor microbiological quality (especially salmonella) was the reason for 30 notifications, whereas 23 concerned pesticide residues (especially in teas and oranges) and 10 were related to an unapproved novel food, most commonly in a food supplement.

Border and market control carried out by the Customs was the basis for 57% of the notifications made by Finland. Less than a quarter of all RASFF notifications resulted from observations made by local food control authorities. The share of notifications made by operators as a result of their own checks was 14%, and 6% resulted from consumers' and customer operators' observations. These shares have remained more or less the same compared to the previous year.

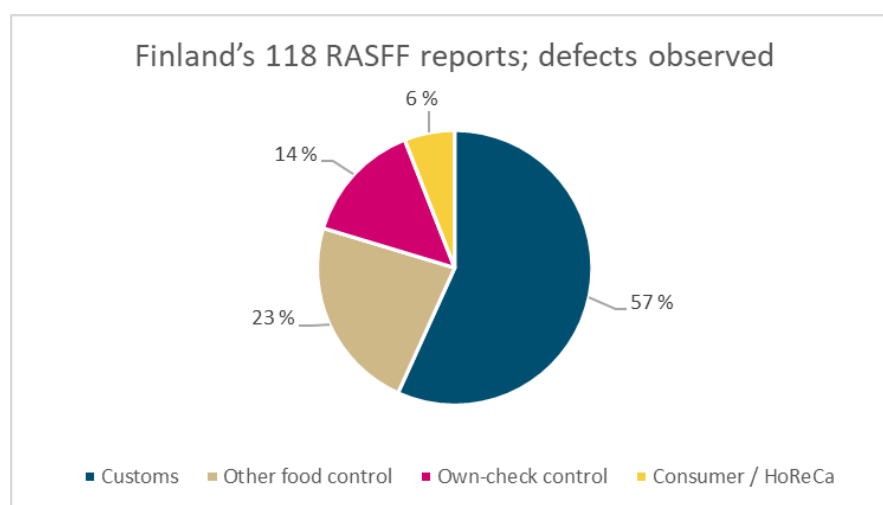


Figure 5. Reports filed by Finland to the RASFF system in 2021

In 2021, a total of 218 cases concerning foods or food contact materials were notified to the RASFF system in which the product in question had been supplied to Finland. In these situations, the products are subjected to food control measures by the food control authorities in the consignee's municipality in Finland. In addition to the level of the health risk posed by the reported food, the measures to be taken depend on whether the product has been made available to consumers and whether it is likely that households still have the product in their possession. In general, an RASFF notification will lead to product recall in Finland, which happened in a total of 104 cases in 2021.

## 2.7 Administrative Assistance and Cooperation System (AAC) between EU Member States

In 2021, Finland filed eight reports to the European Commission's Administrative Assistance and Cooperation System (AAC-AA). Five of these reports concerned a product imported into or exported from Finland that had been found to be non-compliant in this country. As the defect did not lead to a health hazard, it was reported in the AAC-AA rather than the RASFF system. In two of the reports, Finland addressed enquiries to all other Member States about the management of control matters at the level of the principle.

Finland responded to 21 reports concerning foods and contact materials through the AAC-AA system. This number is double the previous year's figure. In most of the reports received (11 reports), a Member State enquired about other Member States' practices in matters concerning food control. Strictly speaking, such questions are not consistent with the AAC system's purpose, as they do not concern a particular product transferred from one country to another, or processed in another country, and any non-compliance related to it. In the interest of reciprocity, however, efforts are also made to respond to them. In the remaining ten reports, another country reported or requested additional information about a defect in a food or contact material detected by it.

Finland filed one request for assistance to another Member State through the ACCFF system to seek help for investigating food fraud. Finland received 39 reports in total, 27 of which were for information and 12 required actions. Finland responded to ten requests for assistance that required actions.

## 2.8 Prevention of crimes in the food chain

A crime prevention team of four was established in the Finnish Food Authority's Food Chain Division. Two of the team members were temporary additional resources provided for a project carried out under the Action plan for tackling the grey economy and economic crime. The additional resources provided as part of this inter-authority cooperation project included in the Action plan were used to develop mechanisms for forming a national situational picture of crime in the food supply chain and to establish a monitoring network for tackling crime related to it. From late spring onwards, the monitoring network had remote meetings focusing on various crime prevention themes every three or four weeks. A wide range of authorities from different branches of administration in the control chain participated in training events: officers from municipal food control units, Regional State Administrative Agencies, Centres for Economic Development, Transport and the Environment, the Finnish Food Authority and the Customs. A joint action plan project of the Finnish Food Authority and the Customs launched in April focused on developing cooperation in the control of cross-border freight traffic.

Training of the control authorities and cooperation within the network brought more cases of suspected offences in the food chain than in earlier years to the Finnish Food Authority's attention. Around one half of the suspected cases resulted in an investigation request made to the pre-trial investigation authority. The proportion of the so-called multisectoral cases grew. The food chain control authorities identified different forms of illegal activities better than before, which led to a diversification of suspected offences and investigation requests and increased cooperation with the Tax Administration and the occupational safety and health authorities.

The Finnish Food Authority was informed of seven court decisions, two of which were rulings by the Court of Appeal. In the so-called game meat case, the managing director of a company was sentenced to seven months' conditional imprisonment for aggravated fraud, a marketing offence, a health offence, a firearms offence and a food offence, and to forfeit EUR 55,000 as criminal proceeds and the instrument of the crime to the State. A prohibition to pursue business was also imposed on the managing director. An employee of the company was sentenced to four months' conditional imprisonment for aiding and abetting aggravated fraud, a marketing offence and a health offence. Police officers investigating economic crime, the prosecutor, the municipal food control authority and the Finnish Food Authority worked in close cooperation in the pre-trial investigation phase of this case. This case is a good example of how cooperation between authorities on fighting crime in the food chain has improved in recent years.

## 2.9 Recalls

The number of food recalls continued to grow for the sixth consecutive year. The number of cases categorised as recalls was 309, which was 42 more than in 2019. The statistics for the different years are not fully comparable due to small variations in recording methods.

However, the statistics give valuable insights into long-term trends (Figure 6).

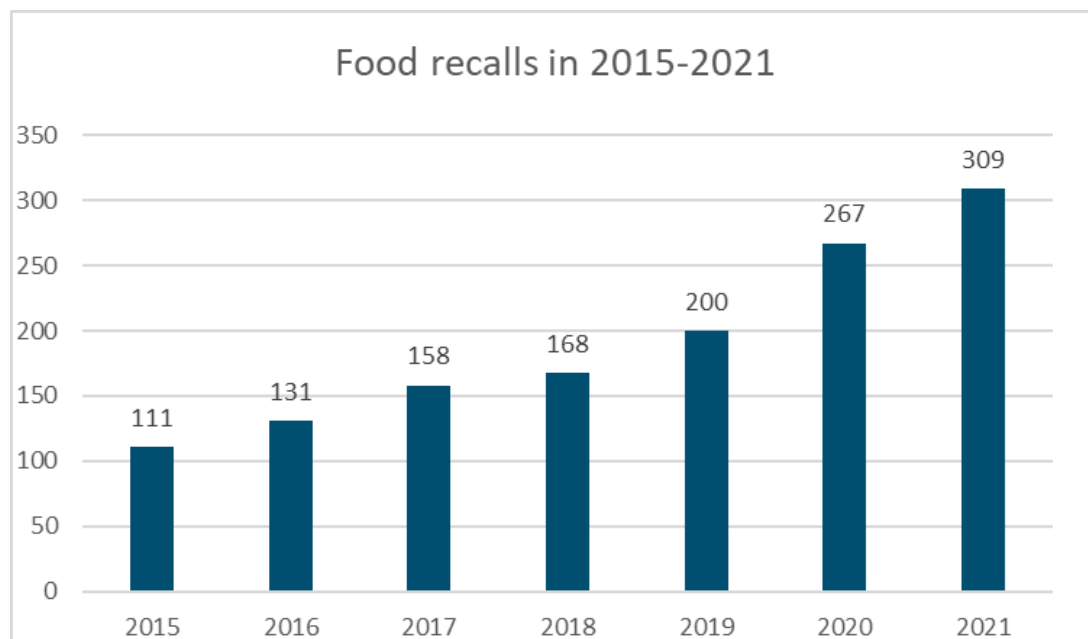


Figure 6. Food recalls in 2015–2021

The statistics include recalls from not only consumers but also from the warehouses of importers, wholesalers or retailers. In these cases the product was not yet available for consumers and, consequently, did not pose a health risk to consumers.

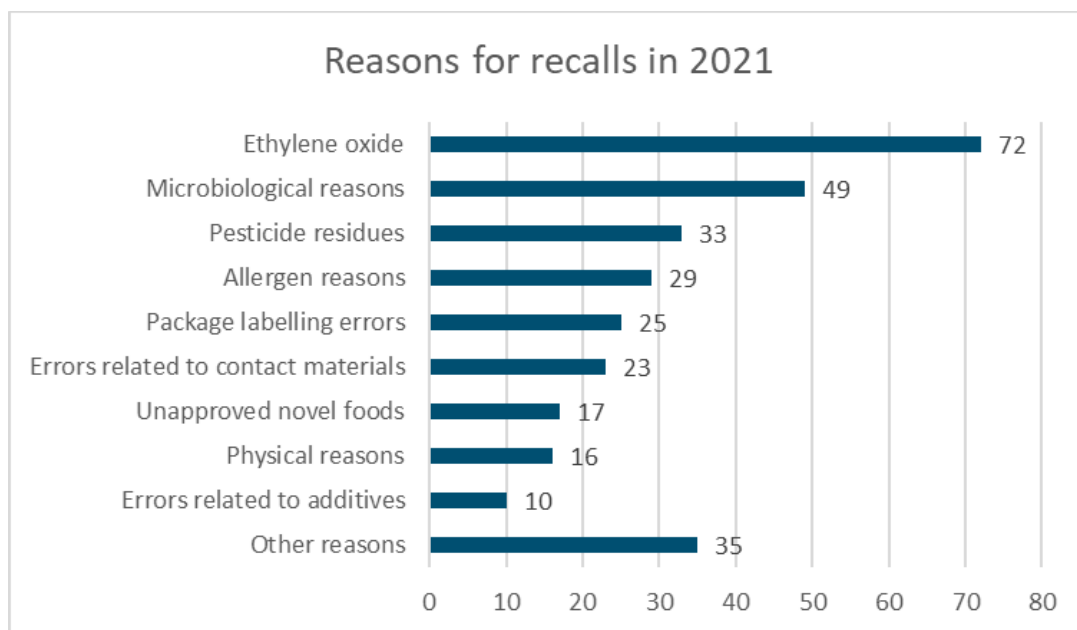


Figure 7. Reasons for recalls 2021

The recalls have been classified by their causes (Figure 7). As in 2020, the specific feature of 2021 was cases of ethylene oxide residues. In 2020, such residues were found in Indian sesame seeds and products containing them. Similar residues were found particularly in food additives, such as xanthan gum, carob flour and psyllium husk powder in 2021. This defect gave rise to 72 recalls.

Different microbiological issues (salmonella, listeria, etc.) were the most common 'conventional' reasons for recalls, accounting for 49 cases (16%). In 2021, 26 products were recalled because of salmonella, which was found in a very large variety of foods, including meat and fish preparations, fresh herbs, dietary supplements etc.

There was a considerable year-on-year increase in the number of recalls made due to residues of pesticides used in plant production. In 33 cases, fruit, vegetables or other foods of plant origin had to be recalled for this reason. In many cases, the limit values were exceeded by such small amounts that the products did not cause an acute risk to consumers. Consequently, it was sufficient to withdraw the batch in question from the market and destroy it to minimise the cumulative risk to consumers.

A large number of recalls also resulted from allergens, or 29 cases (9 % of all recalls). Defects involving allergens were caused by such reasons as contamination during production, labelling errors or a product being packed in the wrong package. The most common causes of recalls were sulphite, gluten, soya and milk protein.

If we look at the country of manufacture or production of the recalled foods and food contact materials, we note that excluding the group of sesame seeds, 38% of the products originated in another EU Member State, while 42% came from non-EU countries, and the remaining 20% were Finnish products. Including the cases involving sesame seeds, the origin of the defective product was outside the EU in 54 % of all recall cases.

The number of recalls that were due to reports made to the EU Rapid Alert System for Food and Feed (RASFF) was 104 (34%). The next most common channels through which a need to recall a product came to light were own check controls by operators and import and market control carried out by the Customs.

The specific reason for the increase in the total number of cases is unknown, but it is an indication of our food control chain being of a high quality and effective and, at least for Finland's part, of the active role all stakeholders in the chain and consumers play in fostering food safety.

In 2021, municipal food control authorities carried out a total of 2,715 inspections related to recalls. This number may be considered reasonable at the very least. An A rating was issued on 98% and a B rating on 2% of these inspections. A C rating was given on two inspections. These results indicate that the level of compliance was good on the control sites. The most common shortcomings recorded by the control authorities were missing documentation of the recall measures taken and lack of written instructions for recall situations which, however, is permitted for small operators. The ability of food control authorities to respond rapidly in urgent recall situations has been commendable at all levels.

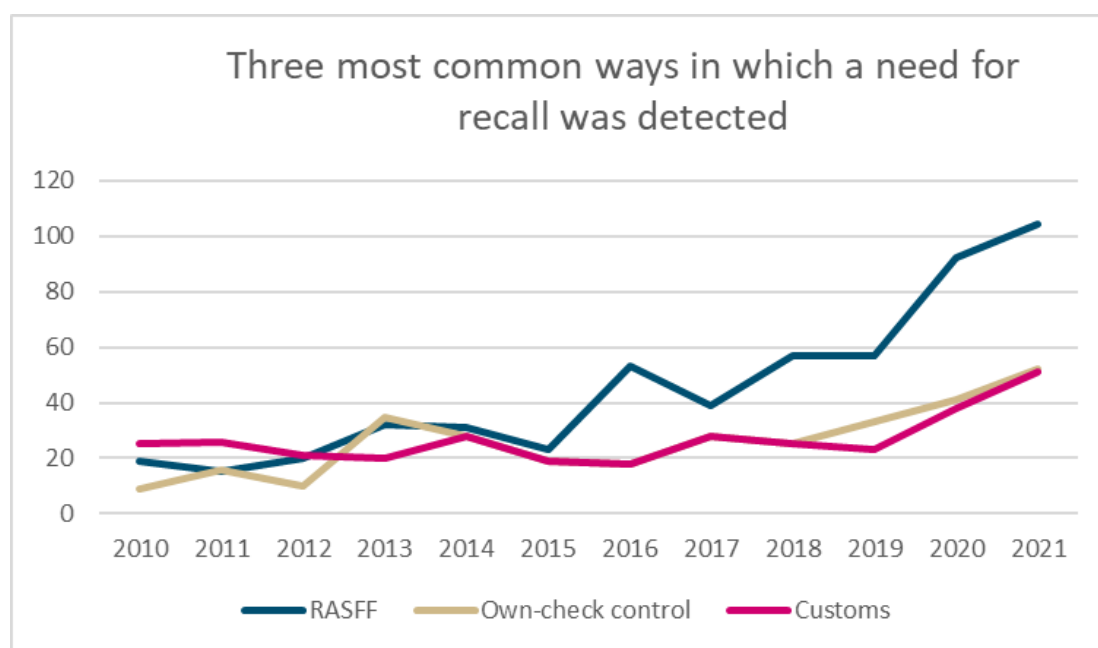


Figure 8. Three most common ways in which the need to recall a product was detected in 2021

## 2.10 Foodborne and domestic water borne outbreaks

The municipalities' outbreak investigation teams referred to in Government Decree 1365/2011 are responsible for examining foodborne and domestic water borne outbreaks in their areas. The Finnish Institute for Health and Welfare and the Finnish Food Authority jointly coordinate the investigation of foodborne outbreaks that have a large geographical scope or are challenging for some other reason. In these cases, the investigations are carried out together with municipal outbreak investigation teams.

The municipal outbreak investigation teams filed 79 reports of suspected cases to the food poisoning outbreak register system (RYMY) on outbreaks that occurred in 2021.



The municipal outbreak investigation teams and the Finnish Food Authority submitted a total of 77 reports on their outbreak investigations to the RYMY system. Some of the investigation reports related to more than one report of suspected cases. An investigation report was also submitted concerning all reports of suspected cases. In addition, the Finnish Food Authority, the Finnish Institute for Health and Welfare and the outbreak investigation teams produced investigation reports which were not preceded by a report of a suspected case. Based on the investigation reports, 48 outbreaks were classified as foodborne or domestic water borne outbreaks. It was found that the remaining 29 outbreaks were caused by something else (for example, human-to-human outbreaks or ones related to bathing water), or only one person was affected and the case was consequently not classified as an outbreak (Figures 9 and 10).

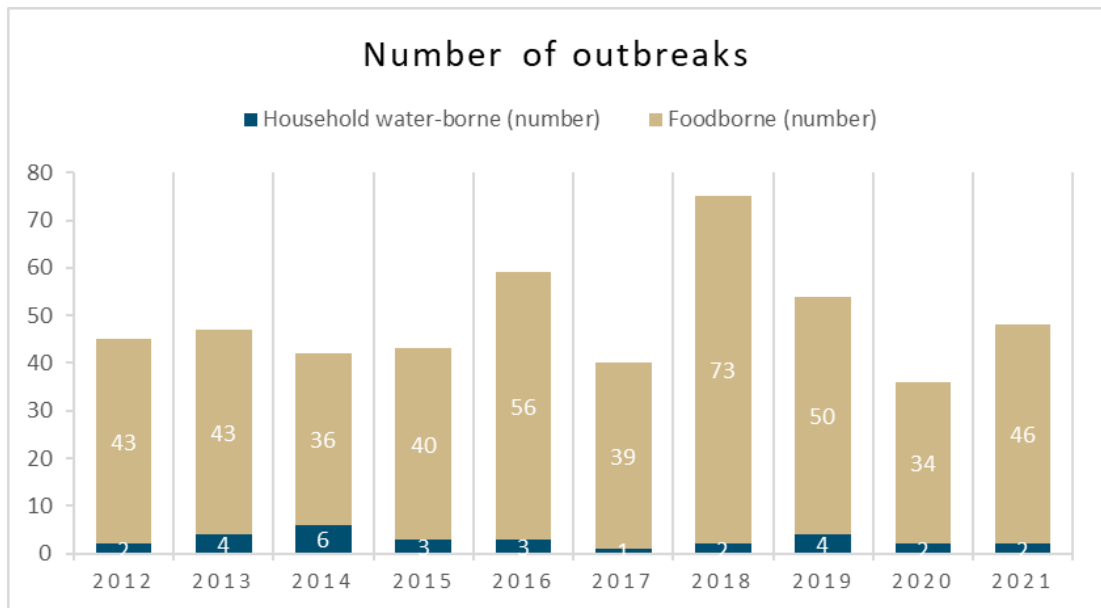


Figure 9. Number of food and domestic water-borne outbreaks in 2012–2021

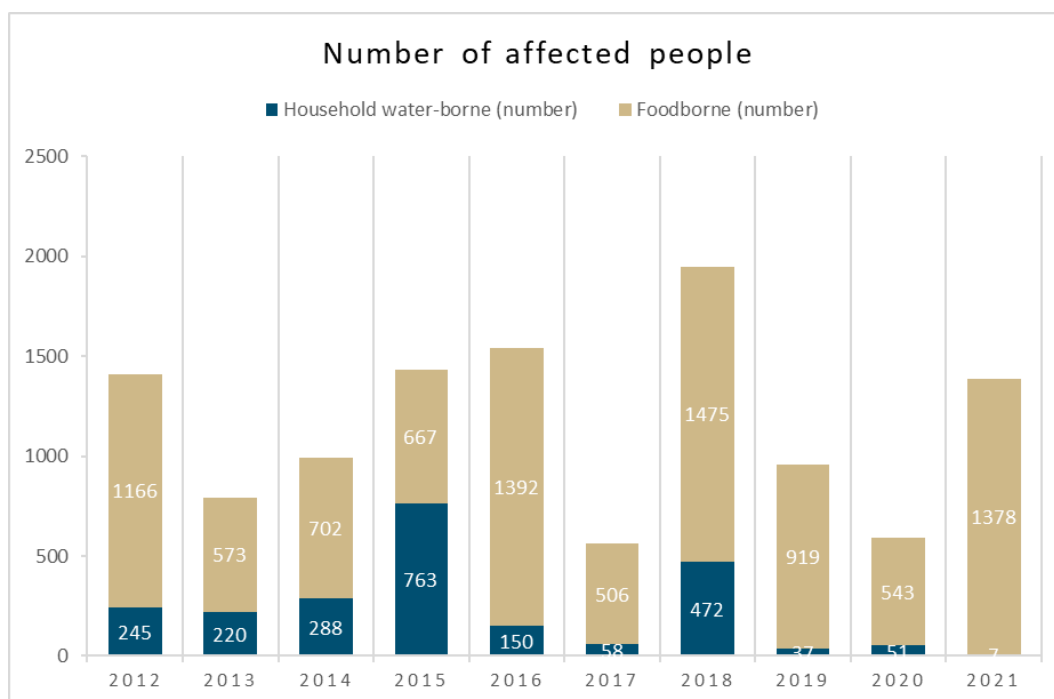


Figure 10. Number of people affected by food and domestic water-borne outbreaks in 2012–2021

The numbers of foodborne (46 outbreaks, 1,378 infected persons) and domestic water-borne outbreaks (2 outbreaks, 7 persons infected) were greater in 2021 than in 2020. The numbers of outbreaks and the people who fall ill fluctuate a great deal from one year to the next. An outbreak is classified as large if more than 100 people have fallen ill, medium if it affects 11 to 100 people, and small if 2 to 10 people are infected.

The only large foodborne outbreak in 2021, which affected more than 700 people, was caused by salmonella. The causative food, from which a strain identical to that found in the patient samples was isolated, was a salad containing several different vegetables. In two medium-sized outbreaks, the causative foods were frozen tomato cubes and grated courgettes. The courgette-related outbreak had already started in 2020.

In outbreaks caused by toxin-producing bacteria (*Clostridium perfringens*, *Staphylococcus aureus* and an unidentified toxin producer) various errors related to temperatures and/or storage times during the storage, cooling and heating of foods were a typical factor (Table 6).

Table 6. Food and domestic water borne outbreaks in Finland in 2021 by cause, number of people infected and scale of the outbreak.

Cause	Number of outbreaks		Number of infected		Number of outbreaks classified by size		
	N = 48	%	N = 1385	%	2-10 N = 31	11-100 N = 16	> 100 N = 1
<b>Food borne</b>							
<i>Clostridium perfringens</i>	1	2	12	1	0	1	0
EHEC	2	4	80	6	1	1	0
ETEC + EAEC	1	2	29	2	0	1	0
Campylobacter	6	13	60	4	4	2	0
<i>Listeria monocytogenes</i>	2	4	6	0	2	0	0
<i>Salmonella</i>	7	15	824	60	3	3	1
<i>Staphylococcus aureus</i>	1	2	4	0	1	0	0
Unknown toxin producer *)	6	13	50	4	5	1	0
<i>Yersinia enterocolitica</i>	2	4	9	1	2	0	0
Hepatitis A virus	1	2	5	0	1	0	0
Norovirus	9	20	260	19	2	7	0
Histamine	1	2	9	1	1	0	0
Unknown	7	15	30	2	7	0	0
<b>Total</b>	<b>46</b>	<b>100</b>	<b>1378</b>	<b>100</b>	<b>29</b>	<b>16</b>	<b>1</b>
<b>%</b>					<b>63</b>	<b>35</b>	<b>2</b>
<b>Domestic water borne</b>							
Norovirus	1	50	5	71	1	0	0
Unknown	1	50	2	29	1	0	0
<b>Total</b>	<b>2</b>	<b>100</b>	<b>7</b>	<b>100</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>%</b>					<b>100</b>	<b>0</b>	<b>0</b>

\*) the toxin producer has been concluded to be the cause based on the symptoms and the incubation period of the disease, although the cause could not be confirmed by laboratory tests

In 2021, the largest number of outbreaks caused by different bacteria was seen in more than ten years, whereas the number of outbreaks caused by unidentified pathogens was the lowest. The thorough work of the municipal investigation teams is at least partly to thank for this. Norovirus continued to be the most frequently identified individual pathogen causing outbreaks (nine outbreaks, 260 affected persons). Similarly to 2020, however, its relative share of outbreaks (20%) in 2021 was clearly lower than in the pre-pandemic period in 2019 (44%). An infected kitchen worker was often identified as the factor that led to foodborne norovirus outbreaks (in at least four outbreaks). When classifying virus outbreaks, determining whether the infection occurred through person-to-person contact, food or surfaces is difficult (Figure 11).

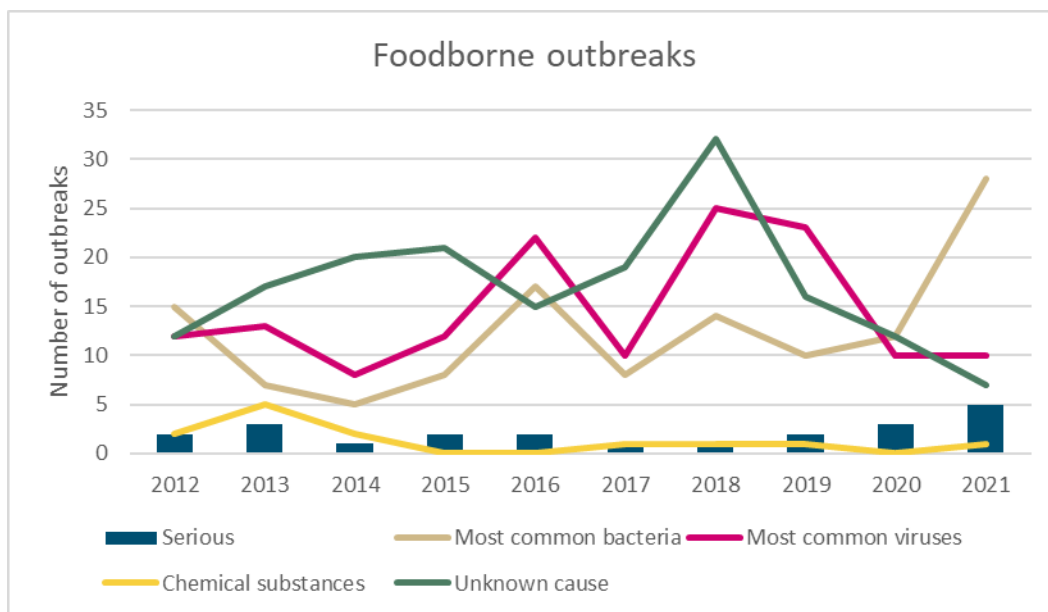


Figure 11. Foodborne outbreaks categorised according to pathogens and severity in 2012–2021. In a severe outbreak, those affected were diagnosed with listeria, EHEC or hepatitis.

## 3 IMPORT OF FOOD PRODUCTS AND CONTACT MATERIALS

### 3.1 Veterinary border control

A total of 666 batches of food derived from animals were imported directly to Finland from outside the EU (in 2020: 613), of which none (0.0%) (in 2020: five, 0.5%) received a written notice and nine (1.4%) (in 2020: zero, 0.0%) were rejected. The reasons for rejection were a missing certificate (3), unapproved establishment (2), deficient identification information (1), unapproved country of import (1), other reason (2). Most of the imported animal-derived foods were fish products. For more information on the results of veterinary border control, see the relevant sectoral report.

### 3.2 Internal market imports of animal-derived food products

Following legislative amendments, internal market control of animal-derived foodstuffs (formerly known as inspections of first point of entry) has been included in the systematic food control carried out by municipalities from 1 January 2020. Issues previously included in the first point of entry inspections, including own checks, traceability and own check studies, have been added to Oiva assessment guidelines. The control data referred to above are included in the sectoral aggregates of the previous sections. This section focuses on compliance with assessment guideline 12.6, 'Special guarantees for salmonella'. The special guarantees for salmonella are based on Regulation (EC) No 1688/2005.

This assessment line was checked in municipalities in connection with a total of 89 inspections (43 inspections in 2020). Of these inspections, 62 targeted registered food premises (25 in 2020) and 27 approved food establishments (18 in 2020). Compared to the total number of inspections in 2020, a significantly higher number of inspections were carried out in 2021 (around 107%).

In total, ten samples were taken by the authorities from products to which special guarantees for salmonella are relevant.

The Oiva ratings for registered food premises were: A 48% (60% in 2020), B 8% (32% in 2020), C 32% (4% in 2020) and D 11% (4% in 2020).

The distribution of Oiva ratings for approved food establishments was the following: A 85% (72% in 2020), B 7% (22% in 2020), C 7% (6% in 2020) and D 0% (0% in 2020).

No reliable conclusions on the coverage of the control can be made based on the control data on internal market imports of animal-derived foods saved to the VATI system. In the future, attention will be paid to saving the control data, which will make it possible to use the control data obtained from the VATI system better for developing and steering control in this area. The issue will be raised in connection with training, among other things.

### 3.3 Imports of other than animal-derived food products and food contact materials

#### **Control of foods and food contact materials**

The control plan was successfully implemented for foods and food contact materials, as a total of 3,083 foods and food contact materials were tested during the year (Table 7).

Approx. 10% of all food control samples were found to be non-compliant, and smaller defects were found in nearly 19%. The most common reasons for the rejection of foods were incorrect labelling, non-compliant use of plant protection products and food improvers. The most common findings related to food contact materials were loose particles or the transfer of substances harmful to health. Shortcomings in compliance documents were also found in a large number of cases.

Based on observations made by the Customs, more than 60 notifications were made to the Commission's databases concerning foods and contact materials causing a serious risk.

#### **Control of organic products**

In 2021, 286 product batches of organic foods were examined, mainly for residues of plant protection products, irradiation and genetic modification. Non-alcoholic organic wines were also analysed for additives, the use of which is restricted under the legislation on organic products. Almost 10% of organic foods were rejected as non-compliant with food or organic product regulations. In addition to plant protection products, such defects as salmonella, mycotoxins and defects in Finnish and Swedish labelling were also found in organic foods. The Customs tested two imported batches of organic feed. Residues of a plant protection product were found in one batch and importing it with a label referring to organic production was prohibited. Non-compliant batches were reported to the OFIS database. Around 10 OFIS notifications were submitted based on observations made by the Customs.

#### **Requirements for the sale of fruit and vegetables**

The control of special requirements for fruit and vegetables targeted 361 batches in total. In addition, a total of 395 batches were inspected on the basis of general requirements. A total of seven batches were rejected as non-compliant based on a physical check. The reasons for the rejections were rot, mould, labelling and, for green bananas, ripening.



Table 7. Foods examined by the Customs in 2021

Product group	Microbiological contamination, number	Other contamination, number	Composition, number	Package labelling, number	Other, number	Number rejected	Total number of samples	Rejected, %
Cereals and cereal products		16	4	2	0	18	157	11 %
Cereal dough based preparations			3	8	0	9	114	8 %
Vegetables and vegetable products	7	4	9	7	0	22	517	4 %
Leguminous seeds and leguminous products			7	13	0	18	58	31 %
Fruit and fruit products	4	19	10	3	0	27	629	4 %
Nuts and nut products		5	1	2	0	7	93	8 %
Oilseeds and oil fruits		3	0	0	0	4	62	6 %
Starch roots and tubers			0	0	0	1	27	4 %
Herbs, spices and similar	5	15	0	2	4	24	217	11 %
Fruit and vegetable juices, beverages, spreads and equivalent			10	10	0	10	64	16 %
Fish and fish products			2	2	0	4	24	17 %
Imitation meat and dairy products			9	1	0	6	39	15 %
Hot beverages (coffee, cocoa and herbal drinks)			0	0	0	0	14	0 %
Water, water-based soft drinks and similar			24	9	0	24	88	27 %
Raw materials for hot and infused beverages	2	8	4	5	0	15	138	11 %
Alcoholic beverages			3	3	0	3	31	10 %
Sweets and chocolate			16	7	0	16	82	20 %
Food products for growing children		1	1	0	0	2	51	4 %
Foods for persons who follow special diets (including food supplements)		4	31	21	0	46	129	36 %
Composite dishes	2	1	9	7	0	12	106	11 %
Spice preparations and sauces	1		5	3	0	8	86	9 %
Cleaned isolated ingredients			2	2	0	2	58	3 %
Food contact materials		3	0	0	0	28	299	9 %
Total number of samples	21	79	150	107	4	306	3083	10 %

## 4 EXPORT OF FOOD AND FEED

### 4.1 Export control systems

China and Russia, which are members of the Eurasian Economic Union, were Finland's most important non-EU export countries for food and feed in 2021.

Additional requirements for exports to China resulting from the COVID-19 pandemic continued to apply. Despite the challenges, export volumes were successfully maintained. The Finnish Food Authority audited nine establishments approved for Chinese exports (two infant formula establishments, five dairy establishments and two pork establishments) as well as organised six training events related to Chinese exports for companies and/or the authorities controlling them.

From 1 January 2022, all companies manufacturing and partly also storing food destined for China are required to register with the Chinese Cifer system. A Finnish Food Authority reference is required for registering high-risk product categories. There are 14 new high-risk categories. In autumn 2021, the Chinese Customs asked for the registration applications of the companies that had placed high-risk products on the Chinese market since 1 January 2017. The Finnish Food Authority submitted companies' registration applications in eight product categories to the Chinese Customs.

The Finnish Food Authority audited 13 establishments approved for the export control system of the Eurasian Economic Union (one fish sector establishment, one meat sector establishment, seven dairy establishments and four storage establishments) and provided training related to the Eurasian Economic Union's export control. The situation regarding counter sanctions related to Russian exports did not change in 2020. A prior notification procedure was put in place for Russian transit products, making it possible to export products subject to counter sanctions to other countries through Russia in the future.

The US authority USDA/FSIS conducted a remote audit of the Finnish pork production control system in September 2021. The audit took four weeks, and no deviations that were recorded in the final report were found in the control of pork establishments. The Finnish Food Authority also audited establishments exporting pork to the USA and their control by the authorities following the audit plan for 2021. Exports of pork from all establishments approved for US exports may continue as usual.

Municipal control authorities and the Finnish Food Authority's meat inspection veterinarians continued to carry out Oiva inspections related to export requirements laid down by China and the Eurasian Economic Union.

### 4.2 Prioritised market access initiatives

The opening of new export markets prioritised by the industry for food chain products was promoted to seek growth in exports. In 2021, market access to South Korea was achieved for day-old chicks and hatching eggs. The Finnish Food Authority hosted an audit related to the market entry of poultry meat conducted by the South Korean authorities in Finland in December 2021.

To facilitate the exportation of the food chain's products, the authorities responded to export questionnaires required by the destination countries. The following market access reports were submitted for assessment to the authorities in the destination countries:

- South Korea: avian influenza regionalisation
- Japan: beef (additional report)
- Japan: avian influenza regionalisation (additional report)
- Singapore: avian influenza regionalisation (additional report)
- Singapore: free range egg production (additional report)
- Singapore: shell eggs (reports from individual farms)
- Thailand: processed bovine protein
- Vietnam: poultry meat (additional reports)
- Vietnam: pork (additional reports)

The following reports related to market access were pending but had not been completed in 2021:

- South Africa: pork (additional reports)
- South Africa: poultry (additional reports)
- China: processed poultry and pig protein and fat
- Taiwan: pork (additional report)

In addition, efforts to advance several other market access projects continued, including in South Korea (ice cream, butter, infant formula, shell eggs and egg products), the Philippines (pork and poultry meat), Indonesia (dairy products) and China (BSE status, fish feed, poultry meat and malt). These projects are being handled by an authority in the export country, or the process for obtaining an export licence has not been completed for some other reason.

## 4.3 Maintenance of export rights and other export promotion activities

### **Finnish or EU official export certificates**

The Finnish Food Authority's eCert system for electronic veterinary health certificates was maintained and developed to meet customer needs with regard to the production, completion and issuance of certificates. In 2021, six new certificate templates were created in the eCert system for exports to Japan (pork, poultry meat, milk and dairy products, shell eggs, egg products and porcine sperm) and three for exports to Singapore (pork, beef and reindeer meat).

A total of 421 certificates were issued in the eCert system in 2021 (in 2020: 296).

In 2021, a total of 3,451 veterinary health certificates printed on security paper were issued based on an agreement between Finland and the destination countries (in 2020: 3,302).

The European Commission has also made agreements on a number of certificates with third countries, including the United Kingdom. These export certificates are predominantly used in TRACES, the European Commission's electronic certificate system. In 2021, the old Classic version of TRACES was replaced by the new NT system for issuing export certificates.

The Finnish Food Authority prepared for the effects of Brexit on animal and food exports in 2021. While certificates for the export of live animals came into use in 2021, the introduction of certificates for foods was postponed.

A total of 635 veterinary health certificates were issued in the TRACES system in 2021 (in 2020: 550).

### **Country and establishment approvals**

A highly pathogenic avian influenza (HPAI) case in poultry diagnosed in February 2021 put a stop to the export of poultry meat into several countries or threatened to do so. As a result of this case, HPAI reports were submitted to the authorities in Ukraine, Russia, Hong Kong, South Korea and Japan to maintain export rights.

In order to prepare for the threat of African swine fever and to enable continued exports if this disease were diagnosed, the regionalisation report required by South Korean authorities was submitted to this country. Regionalisation negotiations are conducted at the EU level. Similar negotiations are also taking place with regard to avian influenza.

Saudi Arabia changed its import requirements in 2021. To maintain exports, applications for the approval of establishments exporting to this country were submitted to Saudi Arabia.

## 5 DOMESTIC FOOD PRODUCTION

### 5.1 Meat inspection

Compared to 2020, the volume of meat approved in meat inspections increased slightly for both red meat and poultry meat (red meat: 261 million kg in 2020 and 263 million kg in 2021; poultry meat: 141 million kg in 2020 and 145 million kg in 2021). In addition, 3,135 wild game animals, 568 farmed game animals and 56,051 reindeer were inspected. In addition to reindeer, some elks, bears, sheep and goats were inspected at reindeer slaughterhouses (Tables 8 to 11).

The most common reasons for pigs being rejected continued to be pleuritis and pericarditis (23.3% and 6.2% of slaughter pigs respectively). The most common reasons for cattle being rejected were contusions and sores (4.1%) and lung infections (2.8%). For poultry, the most common reasons for rejection were skin changes, ascites and slaughter errors. The most common reason for rejecting reindeer was changes caused by parasites.

Finland has the capabilities to carry out visual meat inspections facilitated by EU legislation and to reduce the *Trichinella* testing of pigs from recognised controlled housing conditions. However, the use of these possibilities is still limited, as export countries require traditional meat inspections and comprehensive *Trichinella* testing. There currently only is one pig holding with recognised controlled housing conditions in Finland. Visual meat inspections of pigs have not been introduced to a significant extent.

*Table 8. Meat inspection data for livestock and reindeer; slaughterhouses, low-capacity slaughterhouses and reindeer slaughterhouses*

	Cattle	Slaughter pigs	Sows	Sheep	Goats	Horses	Reindeer	Total
Number of animals brought to slaughterhouse	258 048	1 908 372	34 924	50 424	749	782	56 051	2 309 350
Number of animals dead or put down before ante mortem inspection	305	764	120	16	1	0	8	1 214
Number of animals rejected while alive	63	30	6	3	0	25	6	133
Number of partly rejected carcasses	23 523	150 033	4 969	73	1	0	10 950	189 549
Number of rejected whole carcasses	1 910	10 123	1 044	78	8	29	120	13 312
Number approved in meat inspections	255 770	1 897 455	33 754	50 327	740	728	55 917	2 294 691

*Table 9. Meat inspection data for poultry; poultry slaughterhouses and low-capacity poultry slaughterhouses*

	Broilers	Broiler breeders	Turkeys	Chickens	Ducks	Geese	Mallards	Total
Number of animals brought to slaughterhouse	82 349 840	573 644	923 156	1 008	3 096	4 596	8 787	83 864 128
% of animals that dies spontaneously	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1
% of animals rejected while alive	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
% of partly rejected carcasses	3.8	4.3	8.1	0.0	1.2	0.0	0.0	3.9
% of rejected whole carcasses	3.1	23.4	4.2	4.4	3.7	0.2	0.0	3.3

*Table 10. Meat inspection data for farmed game and lagomorphs (rabbits); slaughterhouses, low-capacity slaughterhouses and reindeer slaughterhouses*

	Cervids	Ostriches and emus	Lagomorphs	Wild boar	Others
Inspected	110	17	151	183	98
Completely rejected	1	0	0	5	0
Partially rejected	1	0	0	0	0

*Table 11. Meat inspections of wild game; game handling establishments and reindeer slaughterhouses*

	Elk	Other cervids	Bears	Wild boar	Others
Inspected	196	2 655	54	0	230
Completely rejected	4	27	1	0	1
Partially rejected	24	268	0	0	1

In reindeer herding areas, reindeer are also traditionally slaughtered elsewhere than in slaughterhouses. This reindeer meat is for the producers' (reindeer owners') household use, and some of it is sold uninspected directly to consumers in the reindeer herding area, or it is used to produce dried reindeer meat sold directly to consumers in this area. Based on the reindeer records and slaughter statistics, the Regional State Administrative Agency for Lapland and the Reindeer Herders' Association estimate that approximately 65% to 70% of all slaughtered reindeer are killed in slaughterhouses and about 25% to 30% elsewhere.

Outside the reindeer herding area, a small number of reindeer are killed in slaughterhouses approved for farmed game and classified as farmed game.

Most hunted game meat is left uninspected and used in the hunters' households. A small quantity of uninspected wild game is sold directly to consumers or delivered to retail without being inspected. No information is available on the volume of uninspected game and game meat sold. In 2021, 42,466 elks, 388 bears (of which 90 in the reindeer herding area) and 1,444 wild boars were hunted according to The Finnish Wildlife Agency. Meat inspections were carried out on 196 elks (0.5% of those shot by hunters) and 54 bears (14 % of those shot by hunters). In addition, 2,655 other cervids were inspected in game handling establishments.

## 5.2 Control of slaughterhouses and establishments connected to them

At the end of 2021, there were 15 slaughterhouses, 47 low-capacity slaughterhouses and 10 game handling plants approved by the Finnish Food Authority. They included five poultry slaughterhouses and five low-capacity slaughterhouses for poultry.

In 2021, one new game handling establishment was approved, and one low-capacity slaughterhouse ceased to operate.

On inspections of slaughterhouses, low-capacity slaughterhouses and game handling establishments and establishments connected to them, an A or B rating was issued to approx. 85% (87% in 2020) and a C or D rating approx. 16% (13% in 2020). A notice for corrective action was issued as a result of 36 inspections, while two led to the use of coercive measures (Table 13).

The highest number of inspections at slaughterhouses, low-capacity slaughterhouses, game handling establishments and establishments connected to them focused on the cleanliness of facilities, surfaces and equipment (151 inspections), maintenance of facilities and equipment (94 inspections) and hygiene of food production (86 inspections). The number of inspections targeting allergens and substances causing intolerances as well as the composition of food was clearly lower than the number of other inspections (Table 13). Inspections focusing on these issues have also been low in numbers in previous years. While the inspections brought up few shortcomings (C or D rating), more control should be targeted at these issues.

The greatest number of shortcomings (C or D ratings) were found in the hygiene of food production (12% of C or D ratings on 86 inspections), packaging and food contact materials (12% of C or D ratings on 17 inspections) and display of the Oiva report (10% of C or D ratings on 20 inspections) (Table 14). Based on these results, control should increasingly be targeted at the hygiene of food production as well as packaging and food contact materials in the future.

The Regional State Administrative Agency for Lapland organised control at 19 reindeer slaughterhouses in 2021. The number of reindeer slaughterhouses has not changed for several years.

On inspections of reindeer slaughterhouses and establishments connected to them, an A or B rating was issued to approx. 82% (91% in 2020) and a C or D rating to approx. 17% (9% in 2020). The greatest number of shortcomings was found in temperature management of food products. In 2021, the Regional State Administrative Agency did not use coercive measures in the control of reindeer slaughterhouses and establishments connected to them (Table 13).

*Table 12. Number of inspections at slaughterhouses, low-capacity slaughterhouses and game handling establishments and establishments connected to them controlled by the Finnish Food Authority and at reindeer slaughterhouses and establishments connected to them controlled by the Regional State Administrative Agency for Lapland in 2021*

	Total samples (number)	Inspected activities (number)	Inspected activities %	Planned inspection visits (number)	Inspections not included in the plan (number)
Slaughterhouses, low-capacity slaughterhouses and game handling establishments and establishments connected to them	259	97	37	192	2
Reindeer slaughterhouses and establishments connected to them	34	16	47	25	0

*Table 13. Control results for slaughterhouses, low-capacity slaughterhouses and game handling establishments and establishments connected to them controlled by the Finnish Food Authority and at reindeer slaughterhouses and establishments connected to them controlled by the Regional State Administrative Agency for Lapland in 2021*

	Inspections following the plan incl. follow-up inspections (number)	A%	B%	C%	D%	Inspections that led to a notice or the use of coercive measures
Slaughterhouses, low-capacity slaughterhouses and game handling establishments and establishments connected to them	194	24	61	14	2	38 (36+2)
Reindeer slaughterhouses and establishments connected to them	23	52	30	17	0	3 (3+0)

*Table 14. C and D ratings given for compliance with requirements at slaughterhouses, low-capacity slaughterhouses, game handling establishments and establishments connected to them controlled by the Finnish Food Authority (number and %) in 2021.*

Issue	Number of inspections	C %	D %
Compliance with approval requirements	45	7%	0%
Maintenance of facilities and equipment	94	5%	3%
Cleanliness of facilities, surfaces and equipment	151	4%	1%
Activities and training of personnel	77	2%	3%
Food production hygiene	86	9%	4%
Temperature management of food products	73	2%	1%
Food production related special requirements	55	1%	2%
Reception of animals and animal-related data	58	2%	1%
Substances that cause allergic reactions and intolerances	4	0%	0%
Food composition	6	0%	0%
Information provided on food products	33	5%	0%
Packaging and food contact materials	17	12%	0%
Food and by-product deliveries	32	2%	0%
Traceability and recalls	36	2%	2%
Food production studies	73	4%	1%
Display of the Oiva report	20	5%	5%

### 5.3 Approved food establishments controlled by municipalities

See Figure 12 for the distribution of Oiva ratings issued to approved food establishments in 2019–2021.



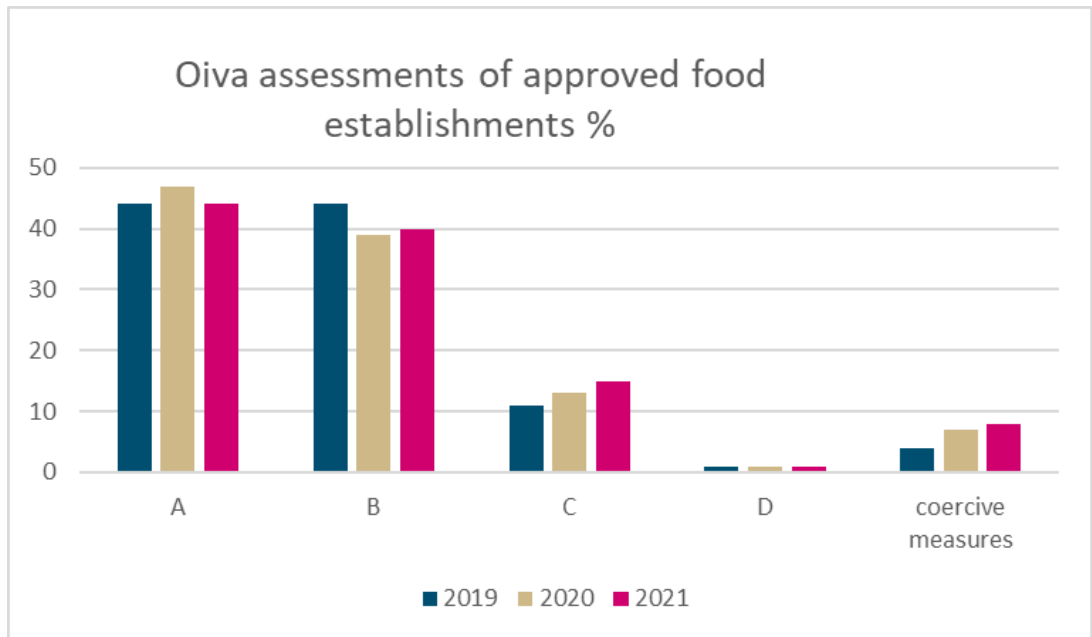


Figure 12. Oiva ratings of approved food establishments in 2019–2021.

See Figure 13 for the number of approved food establishments by sector in 2017–2021.

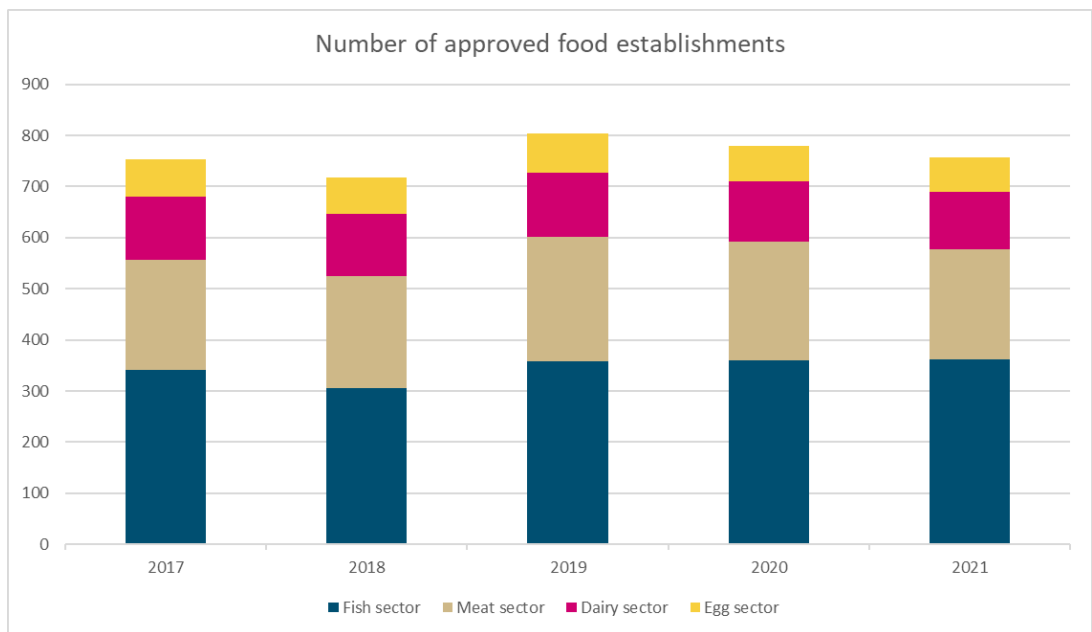


Figure 13. Numbers of approved food establishments in 2017–2021

The number of approved food establishments that produce animal-derived food products (fish, meat, dairy and egg sector establishments) decreased slightly compared to the year before.

*Table 15. Numbers of approved food establishments and inspections carried out in them in 2021*

Approved food establishment	Total number of sites	Inspected, number	Inspected, %	Approval inspections	Inspections not included in the plan, number	Follow-up inspections, number	Total
Fish sector	362	243	67.1	13	47	26	535
Meat sector	216	161	74.5	23	23	34	567
Dairy sector	112	88	78.6	2	36	8	258
Egg sector	68	48	70.6	2	6	0	72

A total of 488 inspections following the control plan were conducted at approved food establishments in the fish sector. Inspections were carried out at 67% of approved food establishments in the fish sector, which is six percentage points more than in the previous year; however, one third of approved food establishments in the fish sector went uninspected in 2021. On average, two inspections were carried out at the inspected food establishments during the year, similarly to the year before. Nine per cent of the inspections were not included in the control plan. The number of follow-up inspections (26) was almost four times higher in 2021 than in 2020.

A total of 544 inspections following the control plan were conducted at approved food establishments in the meat sector. Inspections were carried out at 75% of approved food establishments in the meat sector, which is 13 percentage points more than in the previous year. An average of four control visits were conducted at approved food establishments that were inspected in the meat sector in 2021. Inspections not included in the plan accounted for approx. 4% of the total number. The number of follow-up inspections was slightly lower than in the year before.

At approved food establishments in the dairy sector, 222 inspections following the control plan were carried out, which means that 79% of these establishments were inspected. Compared to previous years, the number of actual inspections conducted has increased. Inspections not included in the plan accounted for 14% of the total number. Eight follow-up inspection visits were conducted.

At approved food establishments in the egg sector, 66 inspections following the control plan were carried out, which means that 71% of these establishments were inspected. Compared to previous years, the number of actual inspections conducted has increased. Around 8% of the inspections were not included in the control plan. No follow-up inspection visits were conducted.

The recommended frequency of inspections at all approved food establishments is at least once a year, depending on the size of the establishment.

Table 16. Ratings and sanctions issued to approved food establishments on individual inspections in 2021

Approved food establishment	Planned inspections, number	A %	B %	C %	D %	Inspections that led to a notice, number	Inspections on which coercive measures were used
Fish sector	493	47	36	16	2	99	4
Meat sector	508	39	42	18	1,6	118	1
Dairy sector	222	59	32	9	0	24	1
Egg sector	68	71	24	6	0	10	0

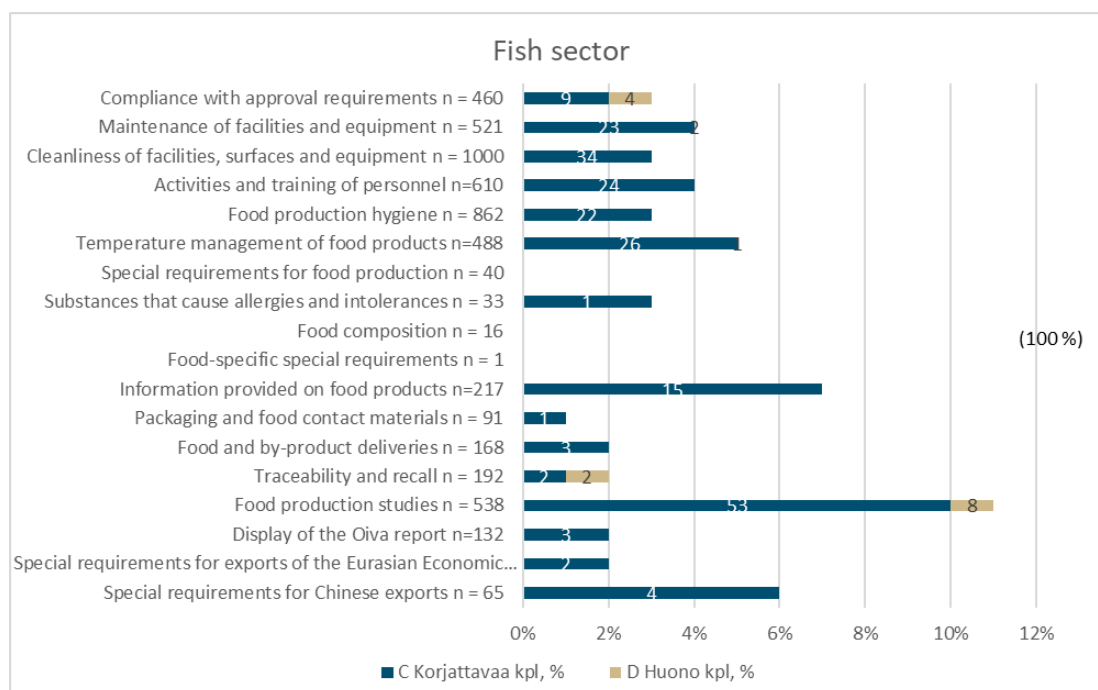
A total of 1,291 planned inspections were carried out at approved food establishments in the fish, meat, dairy and egg sectors, which was slightly more than in 2020. An A or B rating was issued on 84% of the inspections, and a C or D rating on 16%.

Planned inspections carried out at approved food establishments in the fish sector led to an A or B rating given to 83% of the inspected establishments, and a C or D rating to 18%. There has been little change in these proportions compared to the year before. Notices for corrective action were issued on 20% of the inspections, which is a slightly higher proportion than in 2020. Approx. 1% of the inspections led to the use of coercive measures.

Inspections carried out at approved food establishments in the meat sector led to the issue of an A or B rating to 81% of the inspected establishments, and a C or D rating to 19%. The proportion of A and B ratings dropped by one percentage point from the previous year. Notices for corrective action were issued on 23% of the inspections, and coercive measures were imposed on 1%. The number of notices for corrective action and coercive measures changed little from the year before.

On inspections of approved food establishments in the dairy sector, 91% of the establishments received an A or B rating. The number of A or B ratings was similar to the previous years' figures. C ratings were issued on 9% of the inspections. None of the control sites was given a D rating. Notices for corrective action were issued following 11% of the inspections. Coercive measures were used once.

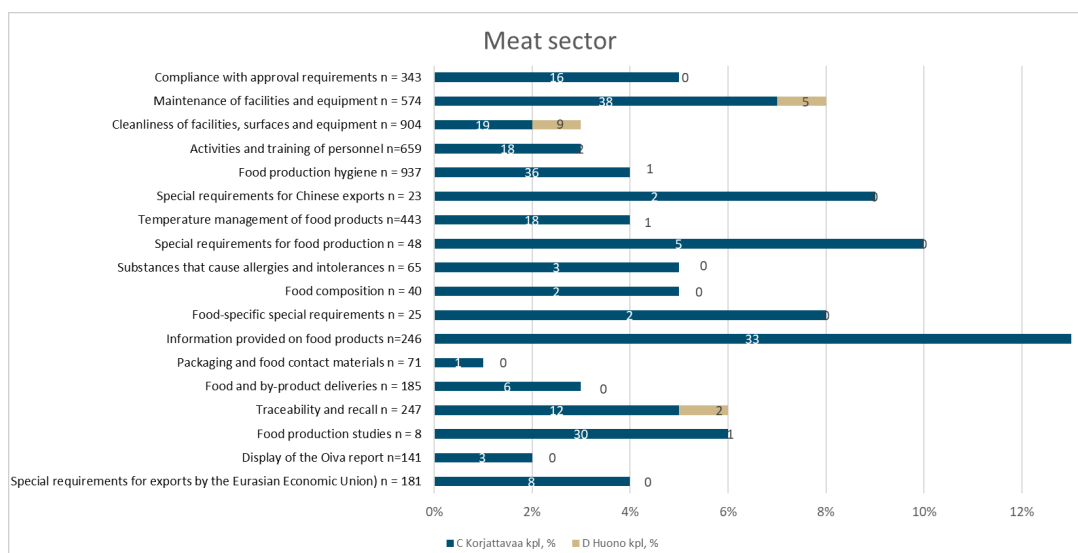
On inspections of approved food establishments in the egg sector, 95% received an A or B rating. The number of A or B ratings remained at a similar level as in previous years. C ratings were issued on 6% of the inspections. Notices for corrective action were given following 15% of the inspections, which is slightly more than in previous years. None of the inspections led to the use of coercive measures.



*Figure 14. C and D ratings given on inspections concerning compliance with various requirements for approved food establishments in the fish sector (number and %) in 2021; n= total number of inspections for the requirement in question.*

In 2021, the greatest number of inspections at approved food establishments in the fish sector focused on hygiene-related issues: cleanliness of facilities, surfaces and equipment (1,000), food production hygiene (862) and activities and training of personnel (610). Special requirements for food production (1 inspection), food composition (16) and substances causing allergies and intolerances (33 inspections) were controlled the least often. The most and the least frequently inspected lines were the same as in the previous year. The very limited number of inspections targeting food composition may be explained by the fact that additives are used less in traditional fish sector manufacturing than in other sectors. However, the control of composition also covers the use of other food improvers, such as smoke flavourings, which is why more attention should probably be paid to the control of food composition in the fish sector (Figure 14).

In relative terms, the greatest number of shortcomings (C or D ratings) were found in food production studies (11%), information provided on food products (7%), temperature management of food products (5%) and compliance with China's special export requirements (6%). Almost one half (8) of the D ratings given in the fish sector were related to food production studies. Own check studies were controlled comprehensively (538 inspections), which indicates that control has been appropriately targeted at an issue in which the most serious shortcomings are found (Figure 14).



*Figure 15. C and D ratings given on inspections concerning compliance with various requirements in the meat sector (number and %) in 2021; n= total number of inspections for the requirement in question.*

In terms of numbers, the largest number of inspections at approved food establishments in the meat sector was related to the hygiene of food production (904), cleanliness of facilities, surfaces and equipment (904), activities and training of personnel (659), and maintenance of facilities and equipment (574). Information provided on food products was inspected clearly less frequently than the listed issues. Food composition and substances that cause allergies and intolerances were rarely inspected.

The highest relative share of shortcomings (C or D ratings) at approved food establishments in the meat sector was found in the areas of information provided on food products (246 inspections), food-specific special requirements (48 inspections) and maintenance of facilities and equipment (574 inspections). The shares of these issues in the shortcomings (C and D ratings) were 13%, 10% and 7% respectively. The results indicate that there is a need for sharper focus on controlling chemical food safety, including information provided on food products and food composition, at approved food establishments in the meat sector. In addition, the control at meat sector establishments should also be targeted more often at the food-specific special requirements and the maintenance of facilities and equipment (Figure 15).

*Table 17. C and D ratings given for compliance with requirements for dairy sector establishments in 2021*

Issue	Number of inspections	C %	D %
Food composition	19	0	0
Special requirements for Chinese exports	199	2	0
Food and by-product deliveries	96	0	0
Special requirements for exports by the Eurasian Economic Union	318	1	0
Food production related special requirements	5	20	0
Activities and training of personnel	307	1	0
Maintenance of facilities and equipment	249	4	0
Compliance with approval requirements	196	1	0
Traceability and recalls	87	0	0
Food production hygiene	401	1	0
Information provided on food products	109	6	0
Cleanliness of facilities, surfaces and equipment	447	1	0
Food production studies	343	3	0
Temperature management of food products	189	1	0
Substances that cause allergic reactions and intolerances	21	0	0
Packaging and food contact materials	37	0	0
Display of the Oiva report	60	0	0
Requirements for sale	5	0	0

In 2021, control of approved food establishments in the dairy sector focused on the cleanliness of facilities, surfaces and equipment (447), food production hygiene (401), and food production studies (343). The special requirements for Eurasian Economic Union exports were also controlled frequently (318). Few shortcomings were detected in inspections at dairy sector establishments. No D ratings were given, whereas some C ratings were issued (Table 17).

In relative terms, the greatest shortcomings at approved food establishments in the dairy sector were found in information provided on food products (6% of C ratings, 109 inspections) and maintenance of facilities and equipment (2% of C ratings, 249 inspections), which should consequently be controlled more intensively in the future.

There was little or no control of packaging and food contact materials, food composition and substances that cause allergic reactions and intolerances. In numeric terms, food-specific special requirements and requirements for marketing were controlled the least often (10 inspections in total) (Table 16). As few inspections focus on these issues, they should be controlled more often than at present.

Table 18. C and D ratings given for compliance with egg sector requirements in 2021

Issue	Number of inspections	C %	D %
Food composition	6	0	0
Reception of animals and animal-related data	6	0	0
Food-specific special requirements	2	0	0
Food and by-product deliveries	58	2	0
Special requirements for exports by the Eurasian Economic Union	4	0	0
Food production related special requirements	5	0	0
Activities and training of personnel	66	0	0
Maintenance of facilities and equipment	88	1	0
Compliance with approval requirements	79	0	0
Traceability and recalls	46	0	0
Food production hygiene	131	0	0
Information provided on food products	51	6	0
Cleanliness of facilities, surfaces and equipment	140	1	0
Food production studies	30	0	0
Temperature management of food products	32	0	0
Substances that cause allergic reactions and intolerances	1	0	0
Packaging and food contact materials	19	0	0
Display of the Oiva report	23	0	0
Requirements for sale	92	7	0

In 2021, control of approved food establishments in the egg sector focused on cleanliness of facilities, surfaces and equipment (140 inspections), food production hygiene (131), requirements for marketing (92), maintenance of facilities and equipment (88) and compliance with approval requirements (79). The lowest number of inspections focused on food composition (6), reception of animals and animal-related data (6), special requirements for Eurasian Economic Union exports (4), food-specific special requirements (2) as well as substances that cause allergies and intolerances (1).

Relatively few shortcomings were found at approved food establishments in the egg sector. No D ratings were given on the inspections, and C ratings were few. Requirements for marketing and information provided on food products were predominant in Improvements required ratings (Table 18) and, consequently, control should be focused on these areas in the future.

## 5.4 Other food establishments

For the number of registered food premises subject to food control where food products are produced or packed, see Figure 16. All types of food premises have increased in number since last year.

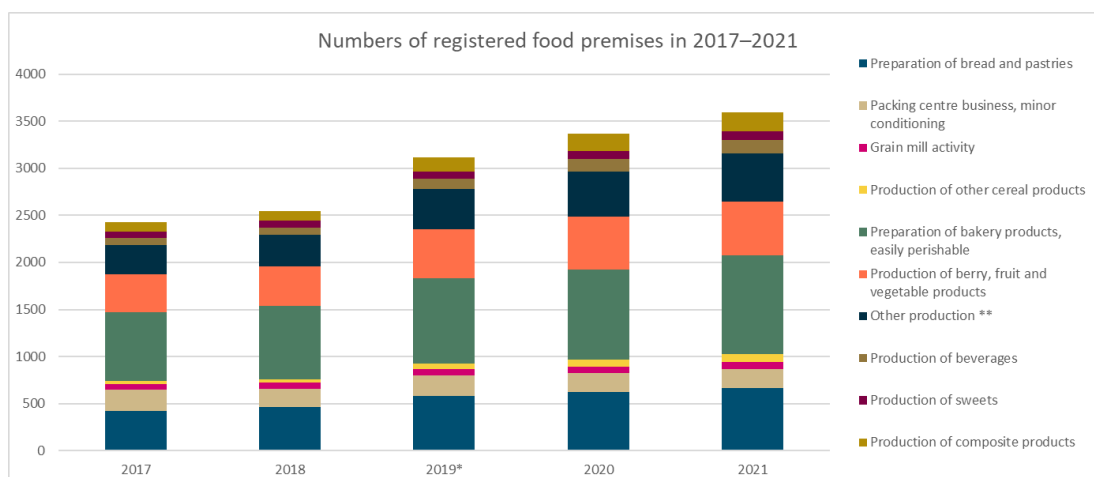


Figure 16. Number of registered food premises in 2015–2021 \* Changes in the data collection system may affect the figures

\*\* Other production, for example dietary supplements, special diet products, coffee roasting

Table 19. Sites that produce food, inspections and sanctions in 2021

Food premises	Total number of sites	Inspected, number	Inspected, %	Inspections included in the control plan, incl. follow-up inspections	Inspections not included in the control plan	Inspections that led to a notice	Inspections that led to the use of coercive measures
Cereal and vegetable sector	2435	722	30.0	778	60	109	3
- Grain mill activity	73	18	25.0	19	3	3	0
- Production of perishable bakery products	1043	335	32.0	373	15	61	2
- Production of bread and pastries	666	193	29.0	199	15	23	0
- Production of other cereal products	85	24	28.0	22	2	0	0
- Production of berry, fruit and vegetable products	573	144	25.0	160	21	22	1
- Packing centre business minor conditioning	204	24	12.0	20	4	1	0
Food production excl. dairy, meat, fish, egg and cereal and vegetable sectors	935	262	28.0	297	24	49	0
-Production of composite products	203	85	42.0	110	4	21	0
-Production of sweets	95	30	31.0	31	3	4	0
-Production of beverages	140	36	26.0	39	3	8	0
-Other production *	514	113	22.0	118	14	17	0

\* Other production, including dietary supplements, special diet products, coffee roasting



Fewer than one out of three (30%) food establishments in the **cereal and vegetable sector** were inspected following the control plan. The proportion of inspected sites was slightly higher than in 2020. The majority of inspections at food establishments in the cereal and vegetable sector were conducted as set out in the control plan (778). Inspections not included in the plan accounted for approx. 7% (60 inspections) of the total number. Approx. 14% of the inspections led to notices for corrective action (109) or the use of administrative coercive measures (3). The numbers of notices for corrective action and administrative coercive measures remained at the same level as in the previous year in proportion to the number of inspections.

An inspection visit included in the plan was conducted at less than one third (28%) of the **sites engaging in the production of other foods (excluding dairy/meat/fish/eggs/vegetables and cereals)**. Most of the inspections were carried out following the plan (297). Inspections not included in the plan accounted for approx. 7% (24 inspections) of the total number. The proportion of inspections that led to notices for corrective action was approx. 15% (49 inspections). No coercive measures were used in 2021 or in 2020.

Less than a half (42%) of sites that produce **composite products** were inspected, which was a slightly larger share than in the year before. The majority (110) of the inspections were conducted following the plan. Approx. 18% (21) of the inspections resulted in notices for corrective action, which is a similar share as in 2020 in proportion to the number of inspections. A composite product is an industrially manufactured food that contains a plant-derived ingredient and a processed animal-derived ingredient, and in which both ingredients have been used for purposes other than food flavouring (such as some convenience foods).

Around one third (31%) of food premises that **produce sweets** were inspected. This proportion is slightly larger than in 2020 (25%). While 31 inspections were carried out following the control plan, three were not included in it. Four inspections (approx. 12%) led to a notice. No coercive measures were used. In the previous two years, no notices were issued or coercive measures imposed for the production of sweets.

Around one out of four (26%) of the sites that **produce beverages** were inspected, which is similar to the number of sites inspected in recent years. While 39 inspections were carried out following the control plan, three were not included in it, which is less than in the previous year (13). The proportion of inspections that led to notices for corrective action was 19% (8 inspections). In proportion to the number of inspections carried out, this is similar to the year before.

Inspections were carried out at one out of five sites (22%) engaged in **other production**, which is slightly more than in 2020. In previous years, inspections have been carried out at one third of the sites. In 2021, the majority of inspections were conducted following the control plan (118), while 14 were not included in the plan. Approx. 13% of the inspections led to a notice for corrective action (17 inspections), which is slightly less than in the previous year. The group of sites engaged in other production includes those producing food supplements and foods for special consumer groups (Table 19).

Table 20. Results of food production inspections in 2021

	Planned inspection visits	Distribution of ratings given to food premises for compliance with requirements on planned inspections				Need for follow-up inspections	Actual follow-up inspections	Distribution of ratings given to food premises for compliance with requirements on follow-up inspections			
	number	A %	B %	C %	D %	number	number	A %	B %	C %	D %
Cereal and vegetable sector	778	47	40	13	1	104	57	33	40	23	4
- Grain mill activity	19	68	16	16	0	3	0	-	-	-	-
- Production of perishable bakery products	371	40	44	15	1	58	35	29	46	23	3
- Production of bread and pastries	201	50	40	10	0	20	9	56	44	0	0
- Production of other cereal products	22	73	27	0	0	0	0	-	-	-	-
- Production of berry, fruit and vegetable products	160	51	36	13	1	22	13	31	23	38	8
- Packing centre business, minor conditioning	20	70	25	5	0	1	0	-	-	-	-
Food production excl. dairy, meat, fish, egg and cereal and vegetable sectors	300	50	35	14	1	45	23	13	65	17	4
-Production of composite products	109	39	42	18	0	20	17	12	65	24	0
-Production of sweets	31	61	35	3	0	1	0	-	-	-	-
-Production of beverages	41	41	39	29	0	8	2	50	50	-	-
-Other production *	120	58	28	13	2	17	4	0	75	0	25

\* Other production, including dietary supplements, special diet products, coffee roasting

A total of 778 Oiva inspections were carried out on sites operating in the cereal and plant sector in 2021, which is 165 more than in 2020. An A or B rating was issued on 87% and a C or D rating on around 14% of these inspections (Table 20).

A total of 300 Oiva inspections of **food production** sites (excluding those in the dairy, meat, fish, egg and cereal and vegetable sectors) were conducted in 2021. An A or B rating was issued on 85% and a C or D rating on approx. 15% of these inspections (Table 20).

The results of the inspections are very similar to those in previous years.

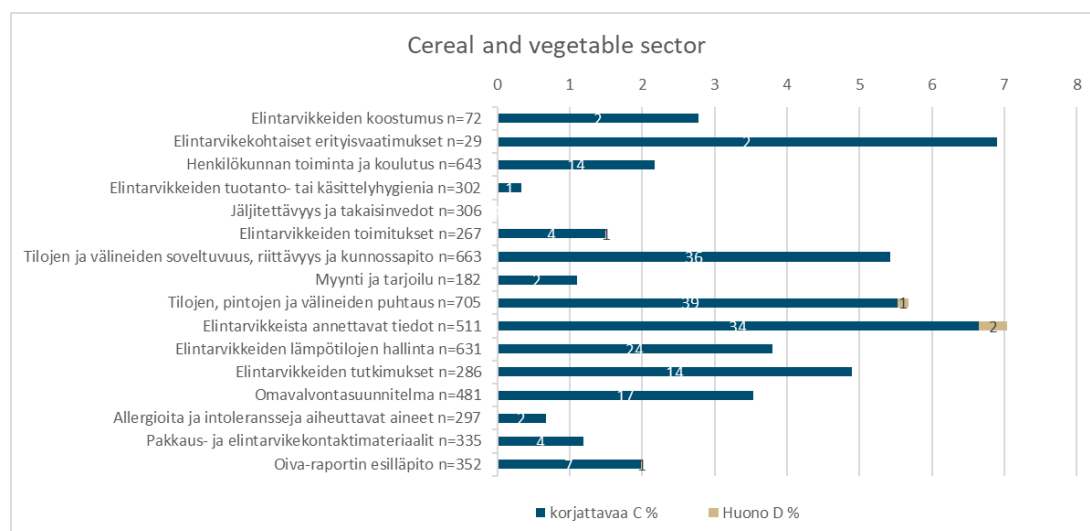


Figure 17. C and D ratings given for compliance with requirements set for vegetable and cereal sector establishments (number and %); n= Number of inspections for the requirement in question

The results of the inspections carried out indicate mainly good compliance with the legislation in the cereal and vegetable sector, as C or D ratings were issued for less than 7% of the inspected Oiva lines. In relative terms, the most shortcomings were found in food-specific special requirements which, however, were controlled very infrequently compared to other issues (6.9% of C ratings, 2 inspections). In addition, the greatest number of shortcomings were observed in information provided on food products (C ratings on 6.7% of the 34 inspections, D ratings on 0.4% of the 2 inspections), cleanliness of facilities, surfaces and equipment (C ratings on 5.5% of the 39 inspections, and D ratings on 0.1% of the 1 inspection) as well as the suitability, adequacy and maintenance of facilities and equipment (C ratings on 5.4% of the 36 inspections) (Figure 17). Intensified control was focused on issues related to cleaning and maintenance last year, as they were a priority in food control.

Table 21. C and D ratings given for compliance with requirements set for composite products, sweets, beverages and other production (e.g. dietary supplements, foods for specific groups, coffee roasting) (%) and number of inspections for the requirement in question.

Issue	Inspections number	C %	D %
Food composition	35	11	0
Food-specific special requirements	20	10	5
Activities and training of personnel	226	3	0
Food production or handling hygiene	139	2	0
Traceability and recalls	128	2	0
Delivery of food products	93	0	0
Suitability, adequacy and maintenance of facilities and equipment	242	1	0
Sales and service	50	1	0
Cleanliness of facilities, surfaces and equipment	252	1	0
Information provided on food products	197	11	1
Temperature management of food products	214	2	0
Food studies	105	1	0
Own checks plan	197	4	0
Substances that cause allergic reactions and intolerances	79	0	0
Packaging and food contact materials	113	1	0
Display of the Oiva report	110	1	0

The inspection results indicate that the standard of facilities, equipment and conditions as well as the activities of personnel also seems to be good in the fields of **composite products, sweets, beverages and other production** (e.g. dietary supplements, foods for specific groups and coffee roasting establishments). In relative terms, the greatest number of shortcomings were observed in food-specific special requirements (C ratings on 10% and D ratings on 5% of the inspections), information provided on food products (C ratings on 11% and D ratings on 1% of the inspections) as well as food composition (C ratings on 11% of the inspections) (Table 21).

## 5.5 Organic production

Control of organic production was carried out in accordance with the control plan. All annual inspections set out in the control plan were successfully carried out, and all samples were taken as required by the legislation on organic production. Due to the COVID-19 pandemic, the plan was adapted in compliance with the Commission regulation on exceptional arrangements. Operators were notified of unannounced inspections no more than 24 hours in advance, and some of them were still carried out using telecommunication devices.

More than 98% of operators registered in the control system complied with production-related terms and conditions. Consequently, the targeted impact was achieved, and Finnish consumers can trust the accuracy of organic labelling (Table 22).

Fraud prevention, which was selected as a common priority in the control of organic production for a three-year period, was continued by assessing organic operators'

documentation. The control results indicate a need to further stress to organic operators the importance of record-keeping and entries to verify the trustworthiness of organic labelling.

*Table 22. Indicators for impact in organic production*

Percentage of operators issued with marketing bans	2019	2020	2021
Plant production	0.7	0.6	0.4
Livestock production	1.4	1.5	1.6
Feed manufacturing and importation	-	5.0 (2)	0
Food manufacturing and importation	1	0.5	0.5
Production and sale of alcoholic beverages	0.6	-	0.5

### Market control of organic products

Market control of organic products takes place in retail stores in connection with Oiva inspections. In 2021, municipal food inspectors conducted 200 Oiva inspections focusing on the labelling and authenticity of organic products. It is essential to, by controlling the authenticity of organic products in retail outlets, ensure that consumers are not misled and that they do not incorrectly assume that they are buying an organic product when this is not the case.

Shortcomings (B and C ratings) were found on 7% of market control inspections of organic products. As in previous years, the most common reason for deviations was placing organic products too close to conventional products, resulting in a risk of consumers confusing the two product types. Despite amendments to regulations, there will be no changes to the control of organic production by municipal authorities. The Finnish Food Authority intends to provide instructions for municipal control authorities and retailers regarding future changes applicable to retailers.

*Table 23. Results of marketing control inspections in 2019–2021*

Results on a scale		Corrective measure	2019	2020	2021
A	All conditions met	No action	91.7	90.5	93
B	Small defect	Guidance and advice	6.4	8.8	6
C	Misleading activities	Request to correct a defect by a deadline	1.9	0.7	1
D	Serious misleading activities	Coercive measures or prohibitions, the defect must be corrected immediately	0	0	0

A [Report on organic production control in 2021](#) has been published on the Finnish Food Authority's website (in Finnish).

## 5.6 Alcoholic beverages

In 2021, the National Supervisory Authority for Welfare and Health Valvira supervised a total of 530 operators (Table 24), 193 of which were producers and 337 wholesalers of alcoholic beverages, while the control system of organic production covered 176 operators. The operators are supervised by Valvira under the Alcohol Act, Food Act and Act on Organic Production.

Table 24. Alcoholic beverage production and wholesale control sites, inspections and sanctions in 2021

Year	Registered sites, number	Inspected sites, number	Inspected sites, %	Planned inspections, number	Actual number of planned inspections	Plan implementation rate %	Inspections not included in the plan, number	Total number of inspections	Number of notices issued	Administrative coercive measures, number
2021	530	72	14	105	71	68	1	72	31	5
2020	529	78	15	150	78	52	0	78	8	1
2019	516	109	21	135	106	79	3	109	16	6
2018	482	102	21	135	112	83	3	112	14	14
2017	448	134	30	150	146	97	3	149	18	9

The COVID-19 pandemic and the restrictions imposed as its consequence had an impact on activities, and particularly inspection activities, in 2021. Control of organic production was prioritised. The reform of the Alcohol Trade Register, which was initiated at Valvira in 2019, took up a major share of the resources available for control activities.

### Control under the Food Act

In the control of alcoholic beverages, inspections of producers are prioritised. The implementation rate of the inspection plan was 68% in 2021. The coverage of inspections was approx. 33% of producers and 2% of wholesalers. As a rule, the shortcomings found in the inspections were related to own check plans, inadequate record-keeping and incorrect labelling of products. The shortcomings were similar to those in previous years, and no serious defects were observed.

While 48 samples were taken, the implementation rate of the sampling plan was 46%, which was slightly lower than in 2020. In five samples, deviations were observed concerning alcohol content (3) and additives (2). In inspections of labelling, shortcomings were found regarding alcohol content. Shortcomings in mandatory labelling included problems related to translations of allergens into Finnish and Swedish as well as highlighting allergens and providing the producer's address.

### Control under the Act on Organic Production

Physical inspections were carried out on producers within the organic system (23), whereas the inspections of wholesalers (48) were carried out remotely. On these inspections, operators were given notices about missing or expired documents or shortcomings in record-keeping or organic labelling. In the case of wholesalers, the notices were typically related to missing or expired documents.

No marketing bans were issued to organic products in 2021. In 2021, samples were taken from 13 organic alcoholic beverages. No pesticide residues were found in the products, and their sulphur dioxide (SO<sub>2</sub>) concentrations were below the maximum values permitted under organic legislation.

## 5.7 Food contact materials

### Control of food contact material manufacturers, importers and wholesalers

In 2021, the total number of registered control sites in the food contact material sector was 612. See Table 25 for the distribution of food contact material activities by activity category.

Table 25. Food contact material sites and their activity types

Activity type	number	% of all sites
Manufacturers	290	47.4
Importers	220	35.9
Wholesalers	226	36.9

\* Some operators may engage in several types of activities, which is why the total amount calculated by activity category (736) is greater than the total number of contact material sites (612).

A total of 107 inspection visits were conducted on contact material sites. For the numbers of sites inspected and the control results, see Table 26. While the number of inspected sites was at the same level as in previous years, the coverage of inspections was nevertheless lower than in the previous two years. This was partly due to an increase in the number of control sites. The target for the coverage of inspections is 33%.

Table 26. Planned inspections of food contact material sites in 2019–2021 and the distribution of ratings issued

Year	Total number of inspected sites		Rating			
	number	%	A%	B%	C%	D%
2021	101	16.5	67.3	23.1	9.2	0.4
2020	109	22.6	61	28	11	0
2019	110	29	67.1	23.8	8.8	0.4

Contact material operators are obliged to have a quality management system compliant with EU Regulation 2023/2006. The implementation of this system is assessed in seven different areas on the inspections. The distribution of ratings has remained more or less similar over the past three years. Operators were issued with 21 notices which, however, is considerably more than the ten issued in 2020. The largest number of notices was issued to producers (10). For the distribution of C and D ratings between the issues inspected, see Table 27. Regarding the use of coercive measures, the situation remained similar to previous years: no coercive measures were used, as notices were sufficient to rectify the situation.

Table 27. Reasons for notices issued to contact material sites

Issue	C	D
General information on the quality management system	9	1
Composition management	8	0
Studies	5	0
Conformity documents	15	0
Package labelling	3	0
Traceability	3	1
Processing methods / processes	4	0

In the context of contact material control, the Finnish authorities (the Finnish Food Authority, the Customs and municipal food control authorities) participated in the European Commission's Bamboozling anti-fraud project in 2021, which looked for plastic contact materials containing bamboo powder sold in online shops. Bamboo powder is not a permissible raw material for plastic contact materials. The project found 44 websites selling manifestly illegal products. Fifteen of these websites were Finnish. During the project, twenty recall notifications made by Finnish importers were processed, and 25 RASFF reports were submitted. Clear hallmarks of fraud were found in one of the cases, as an operator based in another Member State had changed the information on product composition on the website afterwards. An RASFF notification was made of this, which was followed by an extensive recall of the products in question by the operator.

As part of contact material control, a sampling project was also carried out with the Finnish Safety and Chemicals Agency Tukes to investigate the safety of plastic drinking bottles intended for young children. A total of ten different samples were taken and tested at the Customs Laboratory. The Finnish Food Authority commissioned studies to determine the overall migration in drinking bottles and the specific migration of bisphenol A. All the tested bottles were chemically safe regarding the studied aspects. In connection with sampling, the municipal food control authorities checked the traceability of drinking bottles and their declarations of conformity. While the track record for traceability was good, many shortcomings were detected in the declarations of conformity.

Separate reports have been produced on both projects.

### **Control of contact material use in food establishments**

The use and compliance of contact materials in food establishments were inspected 5,642 times following Oiva guideline 14.1. This number significantly exceeds the previous year's 4,609 inspections, the lowest figure in six years. The compliance of contact materials must be controlled once every three years at almost all food establishments, as food is always in contact with some material or accessory. The compliance of contact materials was checked on 28.6% of all Oiva inspections (19,700). This number is slightly higher than the previous years' figures (2020 26.6%; 2019 24.7%).

The numbers of sites to be inspected have varied from year to year. Last year, the compliance of contact materials was inspected at 5,425 food establishments.



See Table 28 for the distributions of the numbers of contact material inspections carried out in food establishments and of the Oiva ratings given in them between 2016 and 2021.

*Table 28. Contact material inspections (Oiva guideline 14.1) at food establishments in 2016–2021 and the distribution of ratings given*

Year	Number of inspected sites	Rating			
		A%	B%	C%	D%
2021	5425	92.7	6.0	1.3	0
2020	4522	92.7	6.4	1	0
2019	5599	91.2	7.9	0.9	0
2018	6747	91.7	7.5	0.8	0
2017	6415	92.8	6.5	0.7	0.1
2016	5882	92.2	7.1	0.7	0

The number of notices has increased slightly each year. In 2021, a notice related to contact materials was issued on 1.2% (70) of the inspections carried out. These figures were 1.1% in 2020 and 1.0% in 2019.

Based on the comments included in the inspection reports, the following shortcomings were found at food establishments: re-use of old packaging for food storage, incorrect storage conditions for packaging materials, and deficient declarations of conformity. The instructions for use of accessories were also not always followed; for example, a contact material was used at a higher temperature than instructed, and the manufacturer's instructions were not followed when cleaning the accessories, which had resulted in damage to the material. The safety of contact materials had not always been addressed in own checks, or it had been done inadequately. Contact materials with worn or damaged surfaces were also used, and fatty foods were handled using disposable gloves unsuitable for this purpose.

See Table 29 for the distribution of contact material inspections (Oiva guideline 14.1) in the activity categories of different food establishments and the distribution of ratings.

Table 29. Distribution of contact material inspections (Oiva guideline 14.1) in the activity categories of different food establishments and the distribution of ratings

ACTIVITY CATEGORY	Number of control sites	Inspected sites	Total inspections	% of all Oiva inspections	A %	B %	C %	D %	Number of notices issued
Transport	1398	4	4	3	100	0	0	0	0
Sales	12564	836	870	22	94	5	2	0	15
Service	32564	3967	4084	33	93	6	1	0	43
Storage, freezing	827	27	27	14	96	4	0	0	0
Other production*	910	111	113	38	90	9	1	0	1
Fish	362	83	91	18	80	19	1	0	3
Meat	315	82	94	13	77	20	3	0	5*
Milk	112	33	37	17	86	14	0	0	0
Egg	68	17	19	28	95	5	0	0	0
Export and import	920	21	21	11	86	14	0	0	0
Cereal and vegetable	2386	327	335	43	92	6	2	0	4

\* Four notices, one coercive measure

## 5.8 Food transport

Table 30. Food transport control sites, inspections and sanctions

Transport	Total number	Inspected sites, number	Inspected sites, %	Planned inspections incl. follow-up inspections, number	Inspections not included in the plan, number	Inspections that led to a notice, number	Inspections on which coercive measures were used, number
Total food transports	1423	151	10.6	149	8	3	0
Transport	819	71	8.7	70	5	3	0
Cooled transportation	596	70	11.7	69	2	0	0
Warm transportation	157	6	3.8	6	0	0	0
Frozen transportations	259	18	6.9	17	1	0	0

As we can see in Table 30, the coverage of food transport controls remains low. The low number of inspections is partly due to the difficulty of accessing transport fleet. The consignee typically sets high requirements for transport temperatures, and in this respect, the standard of reception practices and own checks has been found to be good. Key areas checked on inspections have included own check plans and their adequacy, the cleanliness and general suitability of the facilities for transport operations, and the activities of the personnel. Another area to which attention has been paid is conditions during transport, depending on the type of transport in question.

Table 31. Inspection-specific results for food transport

Transport	Planned inspections incl. follow-up inspections, number	A %	B %	C %	D %
Food transport	147	86.4	11.6	2.0	0
Transport	68	89.7	5.9	4.4	0
Cooled transportation	69	81.1	18.8	0	0
Warm transportation	6	100	0	0	0
Frozen transportations	17	88.2	11.8	0	0

Table 32. C and D ratings given for compliance with food transport requirements (%)

Issue	Number of inspections	C %	D %
Food composition	0	0	0
Food-specific special requirements	0	0	0
Activities and training of personnel	118	0	0
Food production or handling hygiene	9	0	0
Traceability and recalls	35	0	0
Delivery of food products	126	1.6	0
Suitability, adequacy and maintenance of facilities and equipment	122	0	0
Sales and service	4	0	0
Cleanliness of facilities, surfaces and equipment	126	0	0
Information provided on food products	15	6.7	0
Temperature management of food products	36	0	0
Food studies	2	0	0
Own checks plan	133	0.8	0
Substances that cause allergic reactions and intolerances	4	0	0
Packaging and food contact materials	4	0	0
Display of the Oiva report	28	0	0

### Inspections of international transport of perishable food products and special fleet used for such transport

A total of 51 inspections of ATP classified means of transport were carried out by control units. A total of 29 control sites were inspected. No notices were issued in connection with the inspections. Slightly more ATP vehicle inspections were conducted than in 2020. As ATP vehicles are certified and also monitored as part of the certification system, it would not make sense to target food control more extensively at supervising the technical properties of the vehicles.

## 5.9 Wholesale and storage of food

*Table 33. Controlled sites, inspections and sanctions in the wholesale and storage sectors in 2021*

Food premises	Total number	Inspected sites, number	Inspected sites, %	Inspections following the plan incl. follow-up inspections, number	Unplanned inspections, number	Inspections that led to a notice, number	Inspections on which coercive measures were used, number
Food wholesale	665	120	18	131	8	33	1
Food storage and freezing	847	174	20	190	188	29	2
- Storage of animal-derived foods	135	60	44	77	165	13	1
- Storage of other foods	656	99	15	97	22	17	1
- Freezing of food products	65	13	20	13	1	2	0
- Packing of food products	72	8	11	8	0	0	0

Compared to the 2020 report, the number of both wholesale (10%) and storage and freezing (5%) sites had increased somewhat (Table 32). Inspections covered 18% of the wholesale sites. The number of inspections remained at a similar level as in the previous year, and 94% of them were those included in the control plan. Notices were issued as a result of 33 inspections, which is one more than in 2020.

Inspections covered 20% of control sites involved in the storage and freezing of food products, and while 50% of them were included in the control plan, 50% were not. Inspections not included in the control plan mainly concerned loading inspections of export batches. On the basis of the inspections, 29 notices were issued, which is the same number as in 2020, and administrative coercive measures were taken twice.

Table 34. Inspection-specific results of food product wholesale and storage in 2021

Food premises	Planned incl. Follow-up inspections, number	A %	B %	C %	D %
Food wholesale	134	46	30	21	3
Food storage and freezing total	192	63	24	11	2
storage of animal-derived foods	77	62	25	10	3
storage of other foods	99	59	24	15	2
freezing of food products	13	69	15	15	0
packing of food products	8	75	25	0	0

Of **wholesale sites**, 76% received an A or B rating, 21% a C rating, and 3% a D rating. Of the sites involved in the **storage and freezing of foods**, 87% received an A or B rating, 11% a C rating, and 2% a D rating. While the results have improved slightly compared to 2020, the share of D ratings issued on inspections has not changed.

Table 35. C and D ratings given for compliance with requirements for the wholesale of food products (%); n= number of inspections for the requirement in question

Issue	Number of inspections	C %	D %
Food composition	12	8	0
Food-specific special requirements	25	24	4
Activities and training of personnel	55	2	0
Food production or handling hygiene	8	0	0
Traceability and recalls	76	3	0
Delivery of food products	44	3	0
Suitability, adequacy and maintenance of facilities and equipment	78	2	0
Sales and service	23	0	0
Cleanliness of facilities, surfaces and equipment	79	1	0
Information provided on food products	111	18	2
Temperature management of food products	73	4	0
Food studies	10	10	0
Own checks plan	86	5	0
Substances that cause allergic reactions and intolerances	4	0	0
Packaging and food contact materials	18	6	0
Display of the Oiva report	40	3	0

In proportion to the number of inspections focusing on wholesale trade in foods, the highest number of shortcomings (C or D rating) was found in compliance with food-specific special requirements, information provided on food products and food studies (Figure 35). The issues associated with the greatest number of shortcomings were also the same in 2020.

*Table 36. C and D ratings given to registered sites involved in the storage and freezing of foods for compliance with requirements for the storage and freezing of food products (%) and the number of inspections for the requirement in question.*

Issue	Number of inspections	C %	D %
Food composition	1	0	0
Food-specific special requirements	6	17	0
Activities and training of personnel	69	0	0
Food production or handling hygiene	18	0	0
Traceability and recalls	66	1	0
Delivery of food products	63	4	0
Suitability, adequacy and maintenance of facilities and equipment	97	1	0
Sales and service	11	0	0
Cleanliness of facilities, surfaces and equipment	99	2	0
Information provided on food products	47	9	5
Temperature management of food products	87	3	1
Food studies	10	10	0
Own checks plan	89	4	0
Substances that cause allergic reactions and intolerances	10	0	0
Packaging and food contact materials	22	0	0
Display of the Oiva report	13	0	0

*Table 37. C and D ratings given to approved sites involved in the storage and freezing of foods for compliance with set requirements for the storage and freezing of food products (%) and the number of inspections for the requirement in question.*

Issue	Number of inspections	C %	D %
Food composition	1	2	1
Food-specific special requirements	3	0	0
Activities and training of personnel	46	1	0
Food production hygiene	68	3	3
Traceability and recalls	45	0	0
Food and by-product deliveries	37	0	0
Maintenance of facilities and equipment	69	4	0
Cleanliness of facilities, surfaces and equipment	81	1	0
Information provided on food products	9	12	6
Temperature management of food products	60	1	0
Food studies	12	6	0
Substances that cause allergic reactions and intolerances	3	0	0
Packaging and food contact materials	5	0	0
Display of the Oiva report	16	0	0
Compliance with approval requirements	54	3	3
Food production related special requirements	4	25	0

On sites involved in the **storage and freezing of foods**, the Oiva lines related to maintenance, cleanliness and temperature management were inspected the most often.

On both registered and approved sites involved in the storage and freezing of foods, the highest number of shortcomings (C or D rating) was observed in information provided on food products (Table 37).

As a challenge in the control of food storage has been identified situations where a warehouse is located in the area of one control authority unit, while the company owning the stored foods is based in the area of another unit. When the food in storage is non-compliant with legislation (for example, out of date or with shortcomings in traceability), determining which unit is competent to order the disposal of the foods or take other measures is often a challenge.

## 5.10 Food retail sale

*Table 38. Food retail control sites, inspections and sanctions, all inspections in 2021*

Food premises	Total number	Inspected sites, number	Inspected sites, %	Inspections included in control plan incl. follow-up inspections, number	Inspections not included in the plan, number	Inspections that led to a notice, number	Inspections on which coercive measures were used, number
Food retail trade	11941	3483	29	3848	489	573	14

There were 11,941 retail sites in 2021, of which one out of three was inspected. Compared to 2020, the number of sites increased by approx. 4% (11,519 in 2020), and the number of inspected sites also grew somewhat (approx. 7%, as 3,261 sites were inspected in 2020).

Some 9% more inspections were conducted in retail stores in 2021 than in 2020, or a total of 4,337, and administrative coercive measures were imposed on 14 (approx. 0.3%) of them.

*Table 39. Inspection-specific Oiva results for food retail in 2017–2021*

Food retail trade	Planned inspections incl. follow-up inspections, number	A %	B %	C %	D %
2021	3 848	52	34	14	1
2020	3 275	53	34	12.2	0.8
2019	3 500	48	38	12	1.1
2018	3 870	47	39	13	1.4
2017	4 087	45	40	14	1.1

As an exception to the previous years' trend, the number of inspections carried out at retail sites increased. The inspection results are similar to those in 2020, however. As a rule, activities were compliant with the requirements, or only minor shortcomings were observed in them. The best possible ratings of A and B were given on 86% of the inspections, while 15 % resulted in the poorest ratings of C or D.

Table 40. Distribution of the results of inspections included in the control plan for food retail sale and food service and later follow-up inspections by item in 2021

Food premises	Planned inspections	Distribution of results issued to food premises for compliance with requirements on planned inspections				Need for follow-up inspections	Actual follow-up inspections	Distribution of results issued to food premises for compliance with requirements on follow-up inspections			
		number	A %	B %	C %			D %	number	number	A
Retail trade	3846	90	8	2	0,1	418	309	65	21	11	3
Service	12410	90	8	2	0,4	1307	954	68	23	8	1

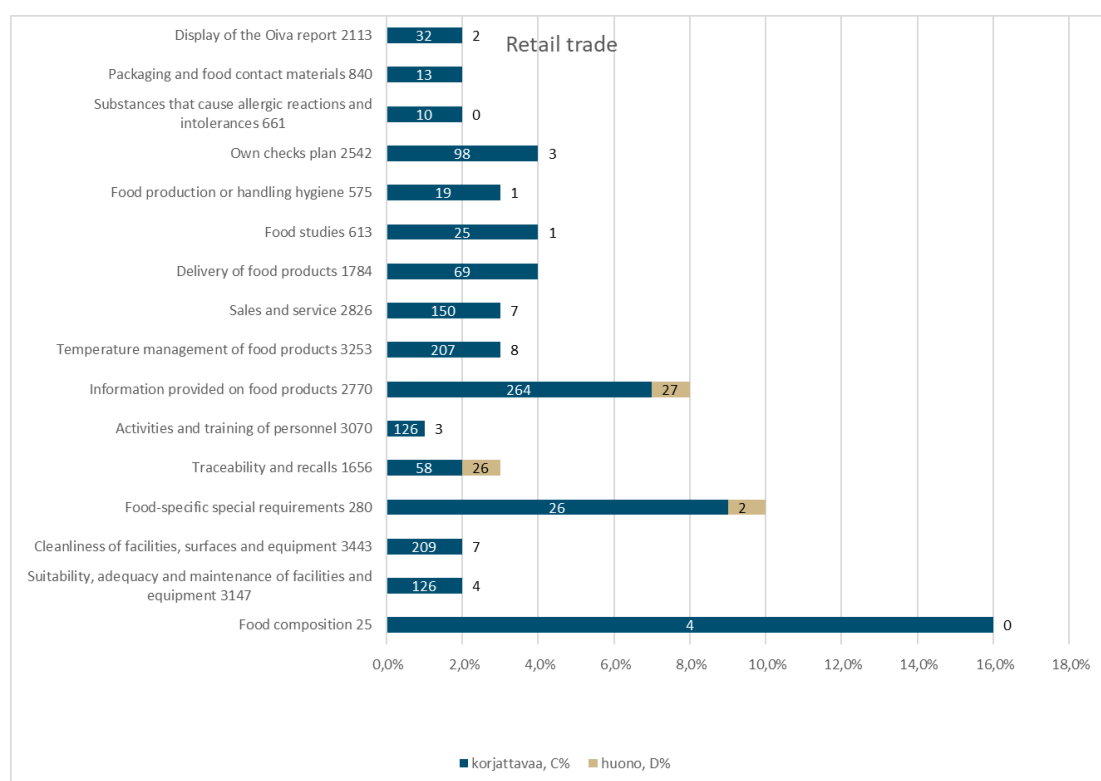


Figure 18. C and D ratings given for compliance with the set requirements for retail sale of food (number and %); n= number of inspections for the requirement in question in 2021

The results for different issues were mainly good: As or Bs accounted on average for 98% of all ratings (Table 40). On average, the lowest number of good ratings was issued for information provided on food products (92%), food-specific special requirements (90%) and food composition (84%). Food composition was only inspected 25 times, however, as it is rarely relevant to retail sales.

The greatest number of shortcomings in retail sale of foods (C or D ratings) were related to the same issues, in other words information provided on food products, food composition and food-related specific requirements (Figure 18).



Table 41. Control sites, inspections and sanctions for low-risk activities involving food in 2021

Food premises	Total number	Inspected sites, number	Inspected sites, %	Inspections included in control plan including follow-up inspections, number	Unplanned inspections, number	Inspections that led to a notice, number	Inspections on which coercive measures were used, number
Low-risk activity	284	51	18	52	2	4	0

Table 42. Inspection-specific results for low-risk activities involving food products in 2021

Food premises	Inspections following the plan incl. follow-up inspections, number	A %	B %	C %	D %
Low-risk activity	52	54	38	4	0

Low-risk activities are those referred to in sections 32 to 34 of the Ministry of Agriculture and Forestry Decree 318/2021 on Food Hygiene. In 2021, 18% of such operators engaging in meat handling were inspected. The inspections were conducted following the plan (Table 41). As a rule, low-risk activities have been compliant with the requirements, and only a few shortcomings have been identified.

## 5.11 Food service

See Figure 19 for the numbers of food service establishments.

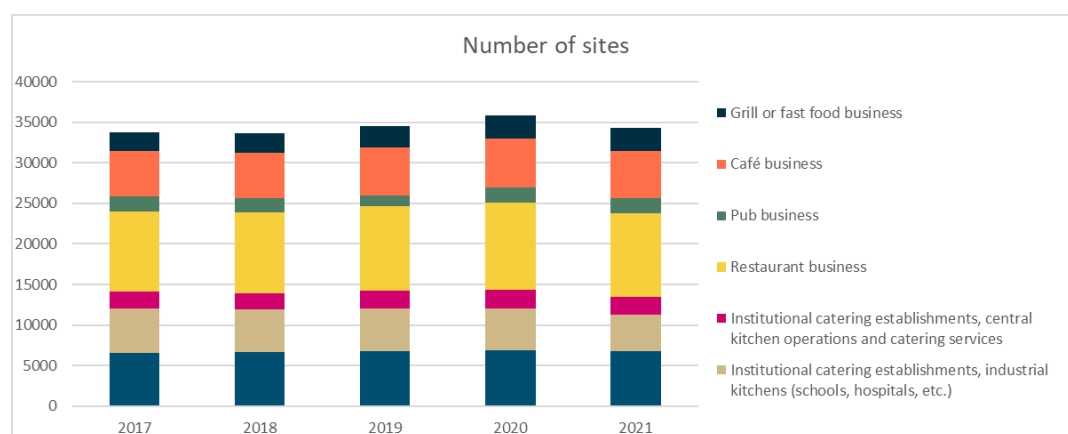


Figure 19. Number of food service establishments in 2017–2021

There were a total of 33,140 food service establishments in 2021 (Table 43).

Table 43. Food service control sites, inspections and sanctions in 2021

Food activity	Total number	Inspected sites, number	Inspected sites, %	Inspections included in control plan including follow-up inspections, number	Unplanned inspections, number	Inspections that led to a notice, number	Inspections on which coercive measures were used, number
Actual control	33140	10950	33	12395	684	1951	28
- Grill or fast food business	2914	874	30	960	86	173	8
- Café business	6064	1359	22	1439	93	205	2
- Pub business	1849	128	7	111	25	8	0
- Restaurant business	10636	4532	43	5363	365	1224	18
- Institutional catering, central kitchen	2242	1024	45	1199	33	104	2
- Institutional catering, industrial kitchen	4770	1538	32	1583	36	86	0
- Institutional catering, kitchens that prepare precooked food products for service	6959	1703	24	1788	46	130	0

The largest proportion of food service establishments are restaurants and institutional catering establishments, the biggest share of which are central kitchens (Figure 19 and Table 43).

In relative terms, the largest number of inspections at food service establishments was carried out at restaurants and institutional catering establishments (central kitchens), while the smallest number focused on cafés and pubs. The number of inspection visits conducted at food service establishments totalled 13,255. Inspections not included in the control plan (5.2% of all inspections) were generally related to complaints made by consumers, including suspected food poisonings, or other suspicions. If two inspectors work together on an inspection, it may be recorded as an inspection not included in the control plan for one of them. The results demonstrate that food service establishments were usually well managed, especially institutional catering establishments, as inspections led to few notices and coercive measures. Notices were given and coercive measures undertaken in connection with inspections at restaurants, grill and fast food businesses, café business and two central kitchens (Table 43).

An Oiva rating of A or B was given to 85% of food service establishments, whereas 16% received a C or D rating (Table 44). Few D ratings were given on inspections of food service establishments. In an itemised examination of food service establishments, we notice that pubs and institutional catering establishments have obtained better Oiva results than other operator types.

Table 44. Inspection-specific Oiva results of food service establishments in 2021

Food premises	Inspections following the plan incl. follow-up inspections, number	A %	B %	C %	D %
Total food service	12410	45	40	15	1
Grill or fast food business	960	42	40	16	2
Café business	1438	44	42	13	1
Pub business	111	65	28	8	0
Restaurant business	5361	34	44	21	1
Institutional catering establishment					
- central kitchen	1200	55	37	8	0
- industrial kitchen	1582	64	31	5	0
- kitchen that prepares precooked food products for service	1789	58	35	7	0

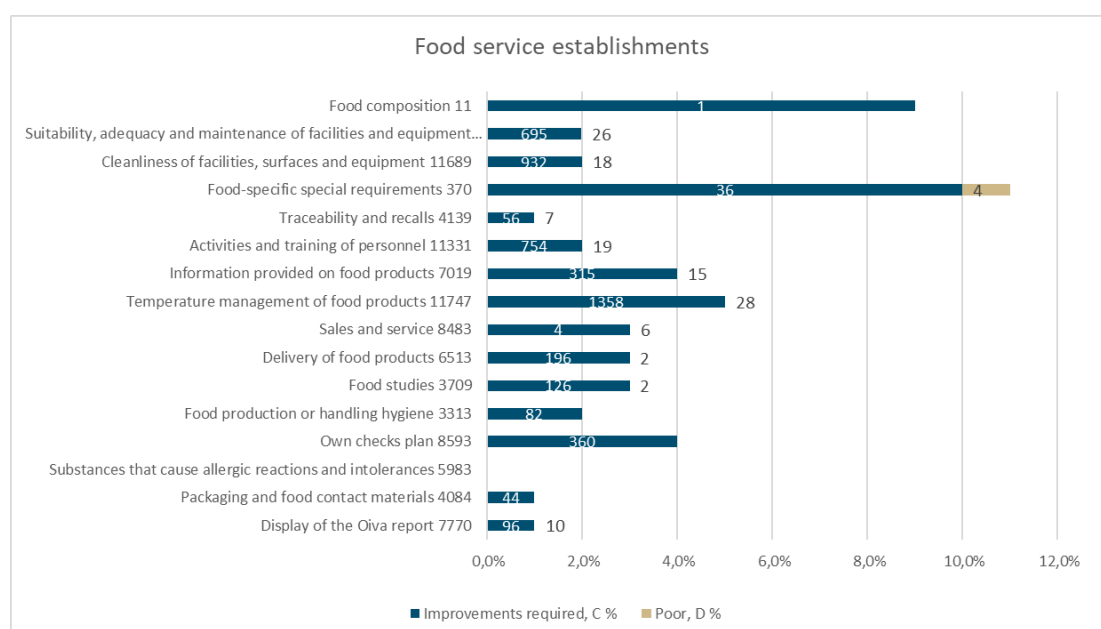


Figure 20. C and D ratings given for compliance with requirements for food service establishments (number and %)

Activities at food service establishments were as a rule compliant with the requirements, or only minor shortcomings were observed, as 95% of the results for different issues were excellent or good (Table 44).

In numerical terms, the greatest number of shortcomings (C or D rating) found at food service establishments were related to temperature management of food products (1,386 times, 5%), cleanliness of facilities, surfaces and equipment (950 times, 2%) and activities and training of personnel (773 times, 2%).

Temperature management of food products refers to temperatures during the storage of food products. Temperature management during serving is inspected as part of the item focusing on food sales and service.

### **Food control by the Finnish Defence Forces**

The Finnish Defence Forces managed its food control reasonably well during the second pandemic year. The sites not inspected were mainly low-risk food premises. The implementation rate of control targeting field kitchen services, which is the priority area of the Defence Forces' control activities, was good.

Systematic food control only brought up minor shortcomings at the control sites. These shortcomings were not expected to put food safety at risk.

An internal audit was conducted in the Finnish Defence Forces' Environmental Health Control Unit in 2021. This audit focused on the unit's internal processes. Based on the audit feedback, the control unit has striven to respond to the challenges of continuous improvement by updating its quality system and starting efforts to update its guidelines. No external audit of the Finnish Defence Forces' food control was carried out in 2021.

The Finnish Defence Forces' Environmental Health Control Unit develops its control system by updating the unit's internal guidelines through internal and external audits. The situational picture of control is monitored by means of the unit's quarterly internal summaries and reports on the results and progress of control.

Such parties as the Finnish Food Authority, the Regional State Administrative Agencies (AVI) and municipal authorities have engaged in inter-authority cooperation.

## 6 SALE OF FOOD PRODUCTS

### 6.1 Products with registered names

The EU scheme for the protection of names refers to protected designations of origin (PDO), protected geographical indications (PGI) and traditional specialities guaranteed (TSG). The number of inspections carried out on the production, sale and marketing of food products with registered names was 405, or 36 more than in 2020. For the numbers of inspections by activity category in 2018–2021, see Figure 21.

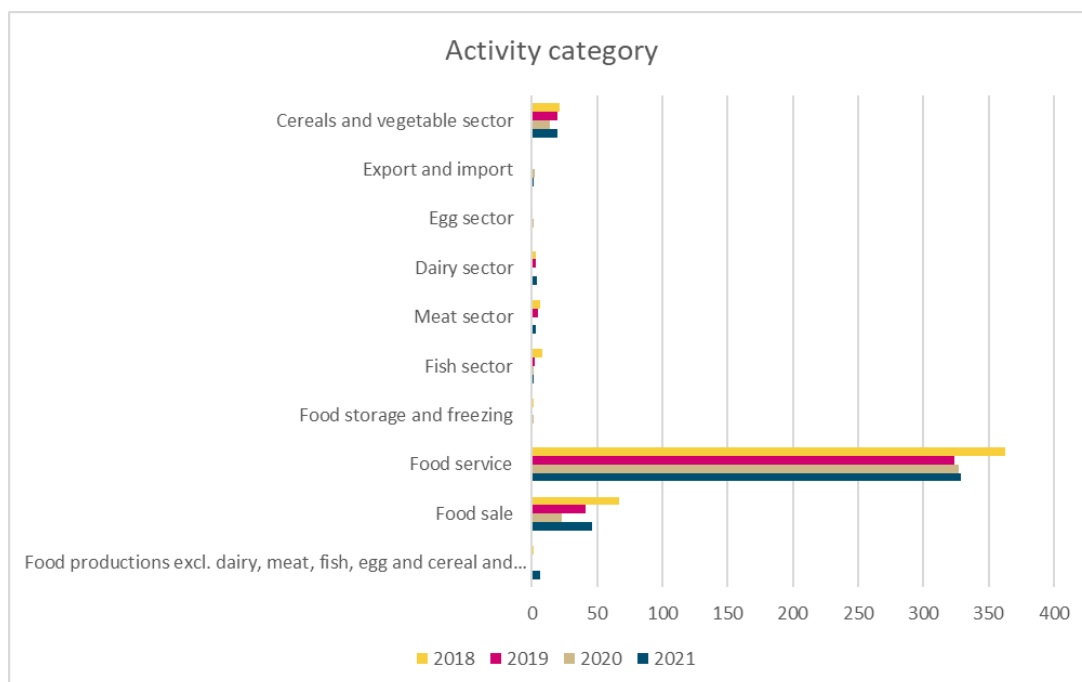


Figure 21. Distribution of inspections focusing on products with registered names in different activity categories in 2018–2021.

Food service establishments accounted for the highest number of inspections by far (81%; institutional catering establishments, cafés, grill and fast food businesses). Food sales accounted for 11% of the inspections, and sites producing baked goods, for example Karelian pasties, accounted for 5%. Of all inspected sites, 73% received an A rating, 18% a B rating, and 9% a C rating. For the distribution of inspections and Oiva ratings in 2018–2021, see Figure 22.

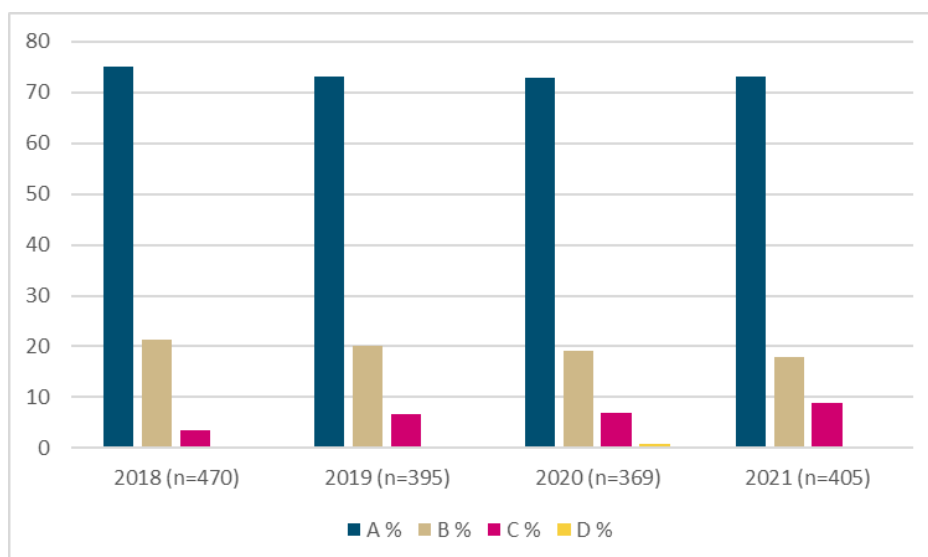


Figure 22. Distribution of inspections of food products with registered names and Oiva ratings in 2018–2021.

Valvira carried out one inspection on a producer of products with registered names (sahti) in connection with an inspection included in the plan.

## 6.2 Requirements for the sale of fruit and vegetables

Five inspections of packing plants targeting a total of 28 product batches were conducted to control compliance with the requirements for the sale of fruit and vegetables. A total of 23 inspection visits to fruit and vegetable wholesale operators were conducted, and the number of batches inspected was 147 in total. No inspections of retail stores were conducted. After a decline during a year marked by the pandemic in 2020, the number of fruit and vegetable batches inspected annually at wholesalers and packing centres has returned to normal figures (Figure 23).

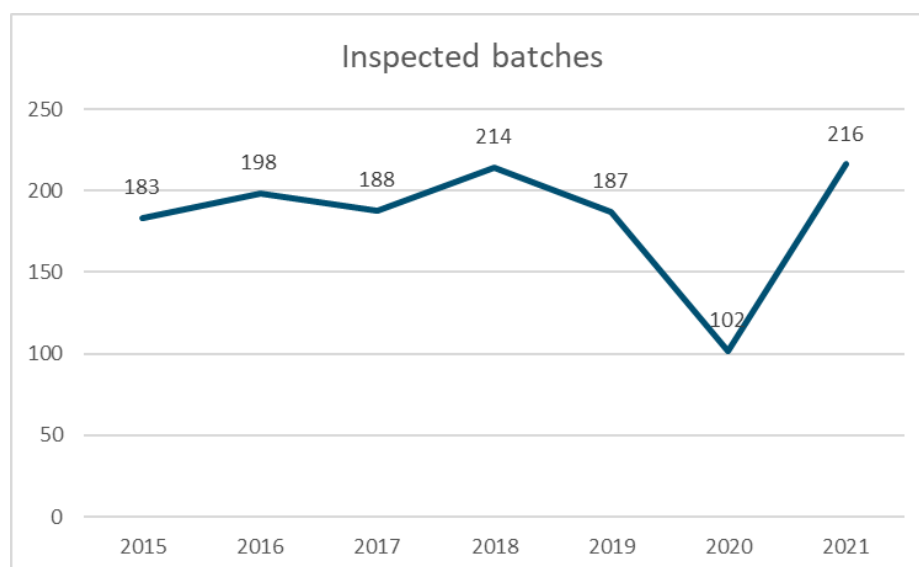


Figure 23. Number of fruit and vegetable batches subjected to compliance checks at fruit and vegetable wholesalers and packing plants in 2015–2021.

The highest numbers of compliance checks targeted tomatoes, apples, salads, peppers and citrus fruit, whereas the highest numbers of non-compliant batches among the inspected products comprised tomatoes, apples, peppers, kiwis and salads. The largest number of inspections was carried out on fruit and vegetables cultivated in Finland, followed by fruit and vegetable batches declared as originating in the Netherlands, Spain, Italy and South Africa. The highest number of non-compliant batches came from Finland (48%), the Netherlands (12%), Chile (12%) and Spain (12%). The most important reason for non-compliance was spoilage (18 batches), followed by labelling errors (five batches) and surface defects (four batches).

The Customs carried out compliance checks on fruit and vegetables, both on imported batches and those sold in internal EU trade. In addition to products subject to special requirements, the inspections also focused on fulfilment of general quality requirements. The control of special requirements targeted a total of 361 batches of fruit and vegetables transported on the internal EU market. In addition, a total of 395 batches of fruit and vegetables imported from third countries were inspected. A total of seven batches were rejected based on a physical check. The reasons for the rejections were spoilage (rot, mould), labelling and, for green bananas, ripening. The largest number of non-compliant batches came from Chile (4 batches).

## 6.3 Requirements for the sale of eggs

### Farms producing eggs

All new poultry farms producing free range and barn eggs are inspected, and potentially also poultry farms in which changes have been made after the most recent inspection. In 2021, 24 inspections were carried out (Table 45). Of these inspections, 22 consisted of measuring new barn egg farms, while two were conducted on free range egg farms to approve the site as a barn egg production farm or free range egg farm before it starts operating.

Table 45. Inspection visits to egg production farms

Inspected site	Number of inspections					Total number of barn egg farms in the Finnish Food Authority's register				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Barn egg farms	5	6	4	13	22	187	124 *	127	131	144
Free range egg farms	1	3	0	2	2	10	11	11	12	14

\* The decrease in the number of registered poultry farms producing barn eggs from 187 in 2017 to 124 in 2018 is the result of a register update in 2018 and the removal from the register of 63 farms that had either ceased to operate or switched to another production sector.

The inspections of production farms are approval inspections, in which egg farms are approved for the barn egg or free range egg production systems pursuant to the legislation. The number of inspections conducted increased in 2021 compared to the period between 2017 and 2020. In 2021, many egg producers converted from enriched cage production to barn egg production. The likely reason for this is that the central trade organisations have announced their intention to cease selling eggs produced in enriched cage systems from 2024 on. Most of the inspected new farms were multi-tiered systems.

## Egg packing centres

In 2021, there were 68 egg packing centres in Finland, and the requirements for sale were assessed in them on 92 inspections. Of these inspections, 30 concerned the quality and weight grading of eggs, 34 the labelling and packaging of eggs, and 28 the records kept of eggs at egg packing centres.

An A rating was awarded on 78.3% (72) of the inspections at egg packing centres for compliance with the requirements for sale, while 15.2% (14) of the inspections resulted in a B rating and 6.5% (6) in a C rating. No inspection resulted in a D rating.

At egg packing centres, 93.3% of inspections that looked into compliance with the requirements for quality and weight grading of eggs resulted in an A or B rating, while 6.7% resulted in a C rating. 94.1% of the inspections that checked compliance with the requirements for stamping eggs and package labelling resulted in an A or B rating, while 5.9% resulted in a C rating. An A or B rating was given on 92.9% and a C rating on 7.1% of the inspections focusing on records kept on eggs (Table 46). Six inspections at egg packing centres on which compliance with requirements for the sale of eggs was checked resulted in a C rating. No D ratings were given on these inspections.

On inspections of requirements for sale, A and B accounted for the majority of ratings (over 90%).

An A or B rating was awarded on more than 90% of the inspections of sales requirements at egg packing centres for the lines Quality and weight grading of eggs, Stamping and labelling of eggs and Egg-related record keeping at egg packing centres in 2021.

Eleven inspections related to compliance with the requirements for sale of eggs carried out at egg packing centres led to sanctions. Guidance and advice were provided in 13 cases. Seven notices were issued on inspections of requirements for sale. Notices were given on three inspections relating to the quality and weight grading of eggs, on two inspections relating to the stamping and labelling of eggs, and on two inspections of egg-related record keeping at egg packing centres.

Guidance and advice have been provided, and notices issued, regarding the quality and weight grading of eggs. Inspectors have found that candling was not effective enough to detect possible defects in eggs. Excessive numbers of underweight eggs among weight-graded eggs have also been found on inspections.

Guidance, advice and notices were given regarding the stamping of eggs. Unclear and illegible stamps were pointed out to operators.

Guidance and advice were provided and a notice was issued regarding the labelling of egg cartons on inspections concerning compliance with requirements for sale of eggs. Shortcomings in labelling were observed as the packing centre's ID and production method were missing on the labels of egg cartons.

In egg-related record keeping at egg packing centres, shortcomings were found that resulted in guidance, advice and notices.



Rather than causing a major risk to food safety, non-compliance with the provisions regarding requirements for sale may, for example, mislead the consumer and hamper the traceability of eggs.

*Table 46. Inspection-specific results of inspections relating to compliance with requirements for sale at egg packing centres in 2021*

Control of compliance with requirements for sale at egg packing centres	Inspections following the plan incl. follow-up inspections, number	A %	B %	C %	D %
Egg quality and weight grading	26	84	8	8	0
Stamping of eggs and labelling of egg cartons	28	82	11	7	0
Records kept on eggs by egg packing centres	23	83	4	13	0

## 6.4 Marketing of food products

The majority of food sector businesses market their products or strive to promote their sales by some other means. In 2017–2019, however, as few as around 1% of Oiva inspections have focused on marketing (Table 47). Marketing control was selected as one of the national priorities of food control in 2020 and 2021 (see section 10.1, Food control priorities related to Oiva lines). This increased the number of inspections to the extent that in 2021, the marketing of food products was controlled on the Oiva inspections of one company out of five. The number of inspections increased especially in the areas of food service and sales (Figure 24).

*Table 47. Number of sites inspected for marketing of food products and the share of Oiva inspections that included marketing control in 2017–2021*

Year	Sites where an Oiva inspection has been carried out	Sites where marketing has been inspected	Share of marketing control in completed Oiva inspections %
2017	19866	178	0.9 %
2018	20409	236	1.2 %
2019	17438	251	1.4 %
2020	14658	1778	12 %
2021	15646	3309	21 %

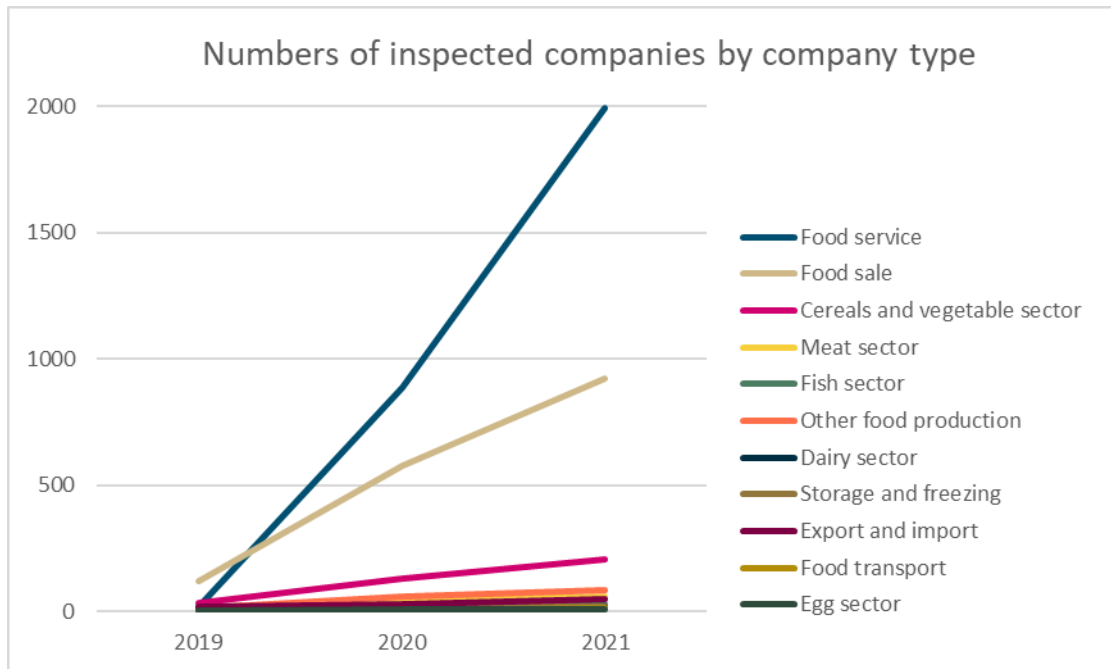


Figure 24. Changes in the control of food marketing by company type in 2019–2021

As an increased number of inspections was carried out in 2020 and 2021, rather than only focusing on high-risk sites, marketing control was more balanced. This can also be seen as the increased proportion of A ratings (Figure 25). The most common shortcomings leading to C and D ratings were the use of medicinal claims and unapproved health claims.

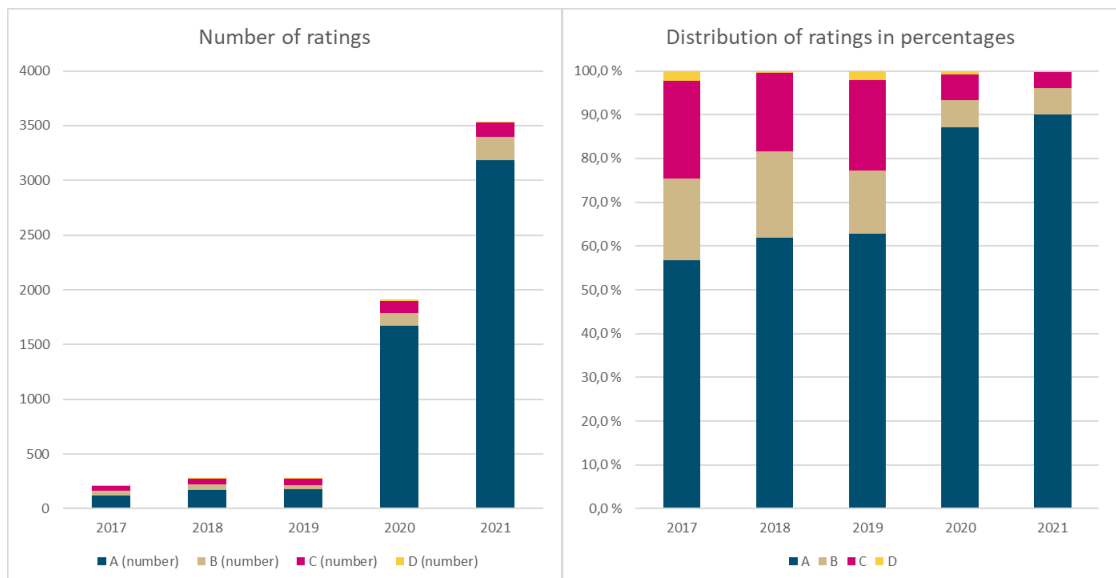


Figure 25. Number of ratings given in the control of food marketing and their distribution (%) in 2017–2021

## 6.5 Compliance of olive oils with requirements

Each Member State must ensure that the labelling of olive oils is correct and accurate and, in particular, that the trade description (category of oil) corresponds to the contents of the package.

Three different brands of extra virgin olive oil and one brand of olive oil were inspected for conformity with olive oil requirements as part of the Finnish Food Authority's control. Samples were taken from retail stores in different retail chains. Based on both chemical laboratory analyses and organoleptic evaluation, one of the extra virgin olive oils was of the quality indicated on the label, or extra virgin olive oil. Two products labelled as extra virgin olive oil were extra virgin olive oil on the basis of chemical laboratory analyses but, based on an organoleptic assessment, they were virgin olive oil, which is one grade lower. Based on chemical laboratory analyses, the class of the product labelled as olive oil was indeed olive oil. The labelling of the inspected extra virgin olive oils and olive oil was in order, both regarding the requirements of the olive oil regulations and general labelling regulations, except for the two products that had been labelled as extra virgin olive oil but which, on the basis of organoleptic assessments, turned out to be of the virgin olive oil grade. These incorrectly labelled product batches were withdrawn from the market.

See Figure 26 for the numbers of samples examined annually in Finland in 2018–2021 and the observed non-compliances.

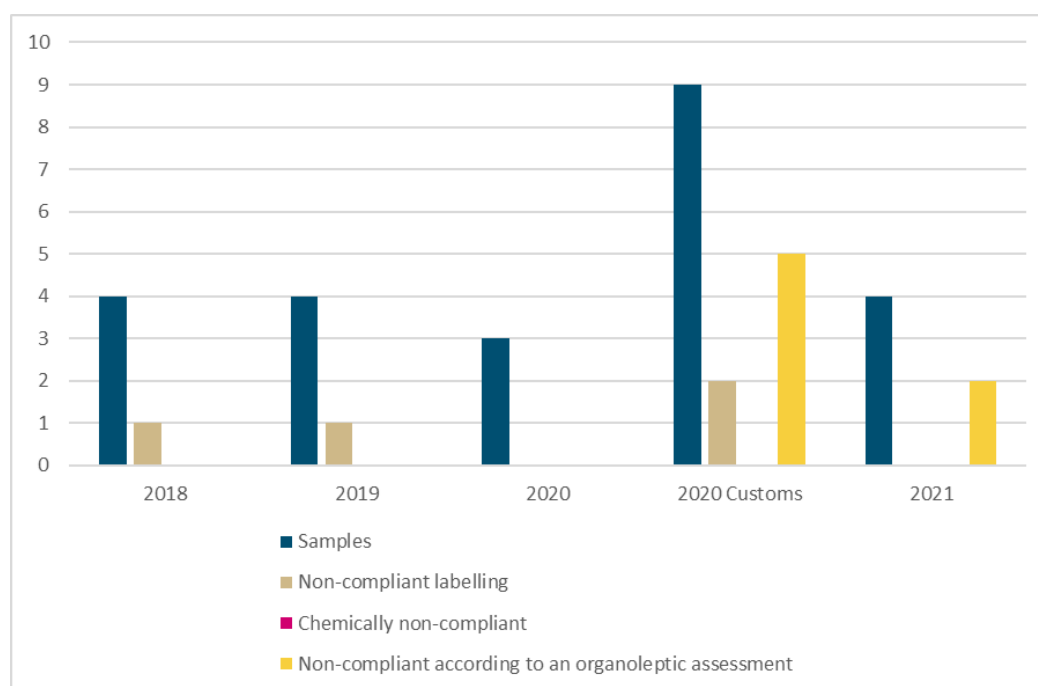


Figure 26. Compliance of olive oils in Finland 2018–2021. Number of samples taken each year and detected non-compliances. Data on the Customs project in 2020 have been reported separately.

## 7 MICROBIOLOGICAL MONITORING PROGRAMMES

### 7.1 Salmonella in food products

The national salmonella control programme has been included in the own check control programmes of slaughterhouses, low-capacity slaughterhouses and meat cutting establishments. Salmonella own checks were inspected on 43 sites in total, which is one third of all sites. The number of inspections was in the same range as in previous years. On these inspections, 94% of the operators were given an A or B rating and 6% a C rating. Minor shortcomings in own checks were found on seven sites (B). More serious problems (C) in sampling were detected on four sites. A follow-up visit was conducted on one of these sites in 2021, and the situation was found to have improved (A).

The salmonella control programme was modified in April 2021 by reducing the sample numbers. Additionally, the collection of some of the lymph node samples is now targeted, on the basis of the slaughterhouse operator's risk assessment, at animal groups in which the occurrence of salmonella may be higher. The sampling groups of the surface swab samples changed, and the group of pigs now includes fattening pigs, sows and boars alike.

In 2021, samples for the national salmonella control programme were taken at pig and cattle slaughterhouses based on the total numbers specified in the sampling plan for individual slaughterhouses prepared by the Finnish Food Authority. The collection of lymph node samples from sows and boars as well as cattle was more random than planned, and the number of targeted samples set as the goal was consequently not met. This is explained by the fact that the control programme was modified in the middle of the year. Samples were taken at low-capacity slaughterhouses, broiler, turkey and chicken slaughterhouses, cutting plants and establishments producing minced meat and meat preparations in compliance with the legislation and the Finnish Food Authority's instructions based on production volumes. For the numbers and results of the samples examined, see Tables 48 to 51.

The national salmonella control programme has been successful, and the salmonella status of Finnish meat has remained good. Salmonella bacteria were identified in at most 0.16% of the samples collected at slaughterhouses and meat sector establishments. The average occurrence is well below the national 0.5 % target.

Table 48. Samples taken at pig and cattle slaughterhouses and low-capacity slaughterhouses following the salmonella control programme in 2021

Sample type	Regulation requirement	Actual number of samples	Number of positive samples	Percentage of positive samples
<b>Lymph node samples - random *</b>				
Slaughter pig	780	1228	2	0.16
Sow and boar	780	1163	0	0.00
Cattle	780	1134	0	0.00
<b>Lymph node samples - targeted</b>				
Slaughter pig	1320	1508	0	0.00
Sow and boar	1320	1132	1	0.09
Cattle	1320	1143	1	0.09
<b>Carcass swab samples *</b>				
Pig	2100	2369	1	0.04
Cattle	2100	2177	0	0.00

\* the figures include samples collected in the early part of the year following the old programme as well as those collected following the new programme

Table 49. Neck skin samples taken from carcasses in broiler, turkey and chicken slaughterhouses in 2021

Animal	Number of samples	Number of positive samples	Percentage of positive samples
Broiler	1271	0	0.0
Turkey	271	0	0.0
Chicken	0	0	0.0

Table 50. Meat samples from cutting plants in 2021

Animal	Number of samples	Number of positive samples	Percentage of positive samples
<b>Finnish meat</b>			
Slaughter pig	1184	0	0.0
Sow and boar	207	0	0.0
Cattle	1125	0	0.0
Broiler	0	0	0.0
Turkey	86	0	0.0
Chicken	0	0	0.0
Duck	0	0	0.0
Goose	1	0	0.0
Guinea fowl	0	0	0.0
<b>Imported meat</b>			
Slaughter pig	3	0	0.0
Sow and boar	0	0	0.0
Cattle	145	0	0.0
Broiler	0	0	0.0
Turkey	0	0	0.0
Chicken	0	0	0.0
Duck	1	0	0.0
Goose	0	0	0.0
Guinea fowl	0	0	0.0

Table 51. Sampling at establishments that produce minced poultry meat and poultry meat preparations in 2021

Domestic meat	Number of samples	Number of positive samples	Percentage of positive samples
Broiler	728	0	0.0
Turkey	82	0	0.0
Chicken	0	0	0.0

Compliance with the sampling requirements of the control programme regarding samples from live animals is reported in the Animal health control (Eläinten terveyden valvonta) report.

## 7.2 Salmonella in feed

Pursuant to Finnish legislation, no Salmonella bacteria may be present in feed. Both official controls and own check controls by operators are in place to monitor the presence of Salmonella in feed. The Finnish Food Authority takes samples of feed produced in Finland and imported high-risk feeds and supervises operators to ensure that their own check controls are carried out. In addition, samples of animal by-products used as pet foods are taken as part of market control. If necessary, feed samples are also taken on animal farms to

identify the source of Salmonella infections diagnosed on livestock farms or when there is a reason to suspect that a farm has received feed contaminated with Salmonella. Feed sector operators have a statutory duty to carry out own check controls for Salmonella that focuses on the production and import of feed, as well as production facilities, storage and transportation.

The number of Salmonella analyses of feeds and feed environment samples conducted as part of official control in 2021 was 3,368 in total. Of the Salmonella analyses associated with imports, manufacture and market control, 2,677 targeted feed materials, 644 mixed feeds and six feed additives. In the control of primary production, a total of 37 feed and feed environment samples were additionally collected on farms with Salmonella infections for Salmonella analyses. Four feed environment samples were taken in an inspection of transport vehicles. Salmonella occurring in feed materials was mainly analysed in samples taken on imports. Salmonella analyses of mixed feeds and feed additives were mainly carried out on samples taken as part of domestic production and market control. Salmonella analyses of feed materials accounted for 81% of all Salmonella analyses (90% in 2020, 92% in 2019, 94% in 2018, 93% in 2017, 93% in 2016, 92% in 2015).

A total of 22 feed batches were found to be positive for Salmonella, either in official controls or an operator's own checks in connection with imports in 2021 (including both EU internal market trade and imports from third countries) (2020: 20, 2019: 24, 2018: 29, 2017: 16, 2016: 18, 2015: 5). While the number of contaminated batches was quite large, as in 2020, the batch sizes were partly smaller than before in 2021. Operators applied to the Finnish Food Authority for permission to treat the imported batches found to be positive for Salmonella, and the batches were only approved for use after they had been found to be clean. In total, batches that were positive for Salmonella accounted for 36 million kg of imported feed materials (2020: 36 million kg, 2019: 60.7 million kg; 2018: 57.7 million kg; 2017: 37.1 million kg; 2016: 35.6 million kg; 2015: 10.3 million kg).

In domestic fish feeds intended for livestock bred for meat, Salmonella was detected in three batches in connection with feed production. As a safety measure, a marketing ban and orders to recall batches and take corrective action were imposed on a total of ten batches of fish feed, and consequently no feed batches contaminated by Salmonella ended up in the feed chain, and food safety was not compromised.

Salmonella was not found in feed samples collected on farms due to Salmonella infections in animals. Salmonella was also not detected in feed environment samples taken from means of transport or in the market control of feeds. Salmonella was detected in two batches of frozen raw pet foods made from animal by-products (a total of 40 samples from feed made with by-products were tested). The marketing of these batches was banned, and the batches were withdrawn from the market.

[Feed control report 2021](#)

### 7.3 Campylobacter control in broilers

In accordance with the national Campylobacter control programme, all broiler slaughter batches are tested for Campylobacter in the period extending from the beginning of June till the end of October. In the other months, the Finnish Food Authority provides a guideline on testing targets for each poultry slaughterhouse, which is based on a calculation that takes into account the occurrence of Campylobacter in Finland in the intervening months.

Attainment of the targets set in the programme is evaluated based on the numbers of tests carried out at laboratories.

The national *Campylobacter* control programme has been integrated into the own check control programmes of broiler slaughterhouses. In 2021, *Campylobacter* own checks were inspected at three out of four poultry slaughterhouses, and no shortcomings were found (A).

For the sample numbers and positive results under the *Campylobacter* control programme at broiler slaughterhouses in 2021, see Table 52. Based on test results in 2021, the occurrence of *Campylobacter* in broilers has remained low. It has increased over a few years, however, and the highest occurrence of the period under scrutiny was recorded in 2021. See Figure 27 for the percentage of *Campylobacter* positive slaughter batches in all slaughter batches inspected in 2015-2021.

Table 52. Number of *Campylobacter* own-check samples and prevalence of *Campylobacter* at broiler slaughterhouses in 2021

Year	Period	Tested slaughter batches, target (number)	Tested slaughter batches, actual (number)	Number of positive slaughter batches	Percentage of positive slaughter batches
2021	1.1.-31.5. and 1.11.-31.12.	330	380	2	0.5
	1.6.-30.10.	All	1728	149	8.6
	Entire year	-	2108	151	7.2

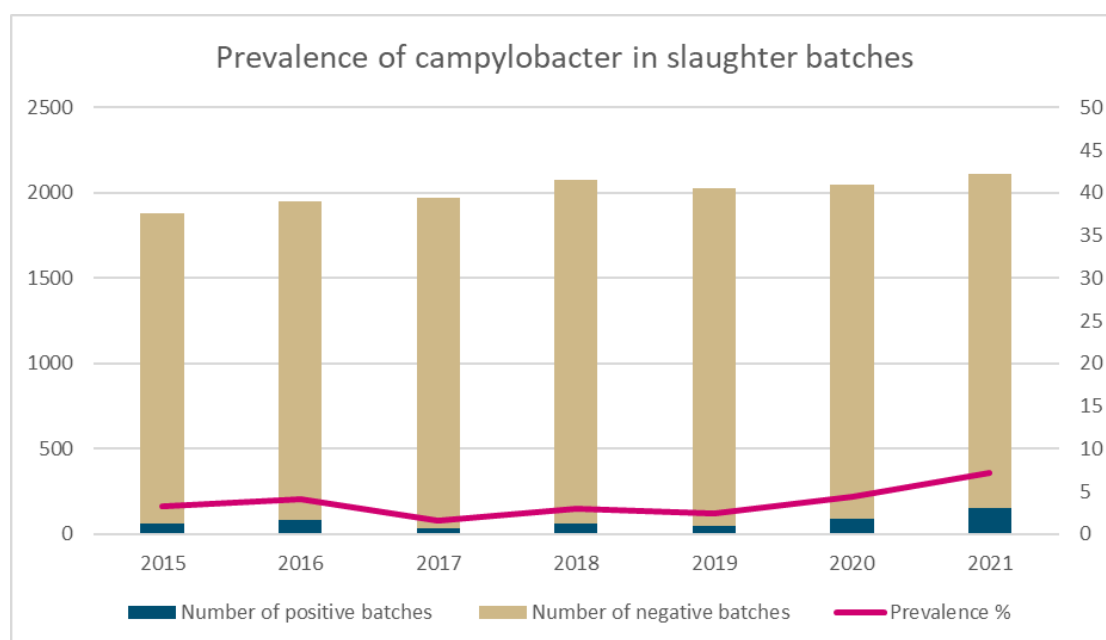


Figure 27. *Campylobacter* occurrence in broiler slaughter batches in 2015–2021

In addition to the national *Campylobacter* control programme, from the beginning of 2018, broiler slaughterhouses have tested broiler carcasses for *Campylobacter* in compliance with the test requirements set for all EU Member States. The proportion of samples in which the limit value of 1,000 cfu/g set for *Campylobacter* was exceeded during the monitoring period was less than 0.2%.



Table 53. *Campylobacter* in carcass samples from broiler slaughterhouses in 2018–2021

Year	Number of samples tested	Number of samples exceeding the limit value	% of samples exceeding the limit value
2018	580	1	0.17
2019	645	0	0.00
2020	595	1	0.17
2021	585	1	0.17

## 7.4 STEC control in cattle

In April 2021, the EHEC control programme for cattle was replaced by the STEC monitoring programme. Under the previous programme, faecal samples were collected from slaughter cattle, whereas cattle carcass swab samples are used in the new programme.

Planned tests of the STEC monitoring programme are included in the own check control programmes of cattle slaughterhouses. The slaughterhouse-specific number of annual samples is determined in the sampling plan drawn up by the Finnish Food Authority. In addition, STEC own checks are carried out at low-capacity slaughterhouses in which the yearly number of cattle slaughtered exceeds 100. The STEC own checks of cattle slaughterhouses and low-capacity slaughterhouses were inspected on five and EHEC own checks on four sites, or on seven sites in total. This represents around one cattle slaughterhouse out of three in 2021. The STEC own checks were compliant (A or B rating) in all slaughterhouses and low-capacity slaughterhouses inspected. A minor defect noted on one inspection (B) concerned sampling animals slaughtered one after the other, which meant that the sampling was not random.

The STEC monitoring programme was carried out as planned at cattle slaughterhouses. STEC sampling at low-capacity slaughterhouses was not implemented fully as required by the monitoring programme.

In 2021, 358 STEC surface swab samples were taken, of which 48 were confirmed as positive. STEC positive surface swab samples accounted for 13.4% of the samples collected. This figure cannot be compared with the number of positive samples in previous years, as the sample material has changed.

## 7.5 Recognition of controlled housing conditions for pigs and *Trichinella* tests

The official recognition of controlled housing conditions for pigs allows for a reduction in the number of *Trichinella* tests in connection with pig meat inspection. Pigs bred in officially recognised controlled housing conditions are protected from *Trichinella* infections throughout their lives, which means they do not need to be examined after slaughtering. Pigs bred in establishments officially recognised as having controlled housing conditions are exempt from *Trichinella* tests by an order of the Finnish Food Safety Authority.

The Finnish Food Authority (Finnish Food Safety Authority Evira until 31 December 2018) recognises controlled housing conditions of pigs upon application. The recognition can cover a single holding or a group of holdings ('compartment'). In 2021, there was one pig holding in

Finland recognised by the Finnish Food Authority as having controlled housing conditions. In practice, this means that around 500 slaughtered pigs were exempt from *Trichinella* tests in 2021.

## 7.6 Antimicrobial resistance monitoring programme

Antibiotic resistance in the food chain is monitored annually within the framework of the FINRES-Vet monitoring programme. This programme was launched at the beginning of 2021, and it is based on Commission Implementing Decision (EU) 2020/1729 and nationally selected control sites. The EU monitoring was carried out according to plans in 2021. In 2021, the monitoring programme covered for the first time fresh beef imported from third countries.

The zoonotic bacteria included in the programme are *Salmonella* and *Campylobacter*. In 2021, antimicrobial susceptibility was studied as part of the *Salmonella* control programme with *salmonella* strains isolated from cattle, pigs and poultry. The sensitivity of *Campylobacter* was examined for *C. coli* strains isolated from slaughter pigs under the EU programme and, by national decision, for *C. jejuni* strains isolated from broilers in the *Campylobacter* own check programme. The occurrence of *E. coli* bacteria that produce ESBL, AmpC and carbapenemases was monitored in 2021 in slaughtered pigs and in fresh pork and beef in retail stores. The presence of MRSA bacteria was surveyed in pork sold by retailers.

Whereas little resistance has been found each year in *Salmonella* strains isolated from domestic production animals, in 2021 *Salmonella* strains resistant to at least three antibiotics were found more often than ever before. A multiresistant monophasic *S. Typhimurium* was found on one pig breeding farm and one fattening pig farm; multiresistant *S. Kentucky* was found on one cattle breeding farm and one dairy cattle farm; multiresistant *S. Typhimurium* was found on two cattle breeding farms and two dairy farms; and multiresistant *S. Infantis* was identified on one cattle breeding farm.

Resistance to fluoroquinolones in *Campylobacter* isolated from farmed animals has increased since the 2010s, even though the share of resistant strains of *Campylobacter* isolated from broilers, in particular, has varied significantly from year to year. The proportion of *Campylobacter* resistant to ciprofloxacin isolated from pigs was significantly higher in 2021 than in previous monitoring years, or 2013 and 2017.

The occurrence of ESBL/AmpC *E. coli* in slaughter pigs has been low in the previous monitoring years of 2015, 2017 and 2019 (2% to 3%); in 2021, its occurrence increased to 6.5%. This was due to an increase in the occurrence of AmpC phenotype, in particular. No ESBL/AmpC *E. coli* bacteria were identified in beef and pork in 2021. The occurrence in beef and pork was similar to the previous monitoring years, in which these findings were isolated or non-existent.

The resistance of *E. coli* indicator bacteria in pigs has been monitored every two years since 2013. In 2021, resistance to tetracycline, sulfamethoxazole, trimethoprim and ampicillin was found, which has also been typical in the past. No resistance was found to other antibiotics in 2021, and less than 80% of the tested strains were completely susceptible to all antibiotics. The situation has remained relatively stable compared to the previous monitoring years.

## 8 CHEMICAL FOOD SAFETY

### 8.1 Prohibited substances, medicine residues and contaminants in animal-derived food products

The national contaminant control programme for live animals and animal-derived foods has been implemented annually as required under both national and EU legislation (Article 150 of Regulation (EU) 2017/625 of the European Parliament and of the Council and Annexes to Council Directive 96/23/EC). The goal is to make sure that prohibited substances are not used in livestock production and that food products do not contain residues of approved veterinary medicinal products at levels that exceed the maximum residue limits determined in the applicable legislation. The incidence rates and levels of contaminants (including heavy metals, pesticides and mycotoxins) from the environment in food products are also monitored under this programme.

In 2021, efforts were made to implement the national residue control programme almost as planned, despite the COVID-19 situation. No samples from wild game (elk) were tested. Tests were performed on a total of 4,137 samples, and nearly 50,000 results were obtained. The use of so-called multi-residue methods has been further expanded in analytics. See Table 55 for sample numbers based on production figures categorised by animal species or food products, and the distribution of tests between different groups of substances and the number of non-compliant samples in 2021. Some samples were tested for more than one category of substances. Samples are reported as non-compliant if they contain residues of approved veterinary medicinal products or other substances in levels that exceed the maximum residue limits or action limits, or if it can be demonstrated that animals have been medicated in violation of regulations or given prohibited substances. An official investigation is always conducted when non-compliances are observed or suspected.

Table 54. Number of samples tested in the contaminant control programme for animal-derived food products categorised by animal species or food products for tests in different substance categories and the number of non-compliant samples in 2021 (22 April 2022)

Animal category or animal-derived food product	Prohibited substances	Approved veterinary medicinal products	Contaminants	Total samples	Non-compliant samples (number) and detected residues
Bovines	767	408	154	1204	1 muscle/ibuprofen
Pigs	588	820	171	1416	
Poultry	402	327	38	625	
Sheep	19	28	12	47	
Horses	23	11	5	35	
Elk	0	0	0	0	
Farmed game	0	52	41	83	1 liver/ivermectin 5 liver/cadmium 8 kidney/cadmium 1 fat/HCB
Milk	209	311	101	311	1 benzylpenicillin 3 diclofenac
Fish	55	39	50	136	
Egg	142	201	50	201	
Honey	80	80	48	80	

In addition to the results shown in Table 54, small concentrations of some growth promoters not permitted for farmed animals or their metabolites may also occur naturally. Small concentrations of testosterone beta, nandrolone alpha and boldenone alpha were detected in bovine urine samples. Thiouracil was found in two urine samples from cattle. This may occur when animal feed has contained cruciferous plants. Nandrolone beta was detected in samples from pigs, and both nandrolone alpha and nandrolone beta were found in one urine sample from a horse. A low concentration of estradiol beta was found in one blood sample from a broiler.

The increased sensitivity of analytical techniques makes it easier to detect low, naturally occurring hormone concentrations without this being an indication of non-regulatory use of substances. No use of prohibited substances was detected.

Residues of approved medicinal products were detected in four milk samples; one had a concentration of benzylpenicillin that exceeded the limit value, and three milk samples contained diclofenac used as pain medication; preparations containing this substance have not, however, been approved for use for farmed animals in Finland. A low level of ibuprofen used as pain medication, which has no approval for use for farmed animals, was found in one sample from cattle. All these cases were officially investigated, but no clear reasons for the residue findings were identified. As regards diclofenac residues, the possibility of the sample having been contaminated already at the production farm could not be completely excluded. Ivermectin used for parasite control was found in one reindeer liver sample, probably because a treated animal had ended up in the wrong pen at the reindeer roundup.

As previously, a large share of liver and kidney samples taken from reindeer that were categorised as farmed game contained cadmium from the environment. Muscle samples were also tested, but no elevated concentrations of heavy metals were detected in them.

Small concentrations of HCB (hexachlorobenzene) were found in nine reindeer fat samples in total, and in one sample, the concentration slightly exceeded the limit value set in the pesticide legislation. No HCB residues were found in the muscle samples examined at the same time.

Small concentrations of mycotoxin Zearalenone or its metabolites were also detected in urine samples from pigs (n=47), cattle (n=6) and horses n=2) in 2021. Additionally, a low concentration of ochratoxin was found in a single pig kidney sample. One milk sample showed a concentration of aflatoxin M1 that was below the limit value.

The implementation and results of the contaminant control programme in 2021 were very similar to those in previous years (Table 55). Non-compliant samples accounted for 0.15%. This figure was slightly higher than the previous year's proportion (0-0.02%) of the tested samples, when possible residues from veterinary medicines are taken into account. When the numbers of samples containing contaminants are taken into account, the share of non-compliant samples was also slightly higher than in previous years (0.48% in 2021). The number of detected residue cases has partly also increased due to the fact that the analytical methods in use allow for the detection of a wider range of medicinal substances and lower concentrations. However, the low levels of residues detected in a few samples did not put food safety at risk.

*Table 55. Number of samples tested in the contaminant control programme for animal-derived food products, number of non-compliant samples and the percentage of samples tested in 2011–2021.*

Year	Sample quantity	Prohibited substances	Veterinary medicines	Contaminants	Percentage of non-compliant samples/excluding contaminants	Percentage of non-compliant samples/including contaminants
	(number)	(number)	(number)	(number)	(%)	(%)
2021	4137	0	6	14	0.15	0.48
2020	4110	0	0	11	0	0.27
2019	4196	0	1	14	0.02	0.36
2018	4265	0	0	14	0	0.33
2017	4218	0	1	10	0.02	0.28
2016	4234	0	0	10	0	0.24
2015	4344	1*)	0	13	0.02	0.32
2014	4324	0	0	17	0	0.4
2013	4341	0	0	33	0	0.76
2012	4424	0	1	38	0.02	0.86
2011	4369	0	1	48	0.02	1.1

\*) no use of prohibited substances detected

The use of prohibited growth promoters has never been detected in Finland. In 2021, a medicinal substance that has not been approved for use for farmed animals was found in one muscle sample from cattle.

Residues of approved drugs that slightly exceeded the limit value have only been found in individual cases. The results still indicate that foodstuffs produced in Finland are safe for consumption and that producers carefully comply with the regulations on medical treatment of animals, including withdrawal periods related to treatment.

The numbers of samples that contain contaminants have remained nearly unchanged from 2014 to 2021. The number of samples taken from farmed game has remained the same and, consistently with results from previous years, cadmium was found in a large share of the liver and kidney samples from reindeer. No samples were taken from wild game in 2014–2021, which means that the results do not include test results of visceral samples from elks as was the case in previous years. As it is commonly known that the visceral heavy metal content in game has increased, Finland has decided to not approve the liver and kidneys of cervids over one year in age as a food product. On the other hand, the number of samples containing mycotoxins varies greatly from year to year, and these results cannot generally be predicted. Regarding mycotoxins in feeds for farmed animals, farmers may in some cases be able to influence the feed quality by modifying their practices. Farmers should inspect the feed in late winter, in particular, especially if they had problems with preserving the feed, for example due to difficult weather conditions. This was evident in the samples that contained mycotoxins, as finding their residues was also fairly common in 2021.

The control of prohibited substance and approved veterinary drug residues is also a part of the control of cross-compliance under the EU common agricultural policy; consequently, non-compliances may also lead to the extension of the control to cover compliance with supplementing requirements and imply possible sanctions for farms that apply for agricultural aid.

As the contaminant control programme for animal-derived food products is implemented following EU regulations, the capacity of Member States to plan the control procedures based on their national risk profiles or to make significant year-to-year changes to the control is limited. New test methods are deployed to implement the programme, and their development will continue. In particular, new multi-residue methods provide new opportunities for testing for residues. Announced changes to the EU regulations will significantly change the content of the programme as from 2023, as the so-called contaminant tests that are currently part of the programme will be eliminated. In the future, the programme will only control the use of growth promoting hormones or other substances banned for farmed animals and the residues of approved veterinary drugs. There will also be minor changes to control systems. However, an effort will be made to continue the targeting of sampling both in terms of timing and location at food products or animal species with the highest risk of containing residues.

## 8.2 Plant protection product residues

The plant protection product (PPP) residue control programme for food products is implemented annually as required under EU legislation ((EC) No 396/2005, as amended) and the Commission's monitoring regulations. The objective of the control programme is to ensure that prohibited PPP residues are not present in food products and that food products do not contain approved PPPs at levels that exceed the maximum residue levels defined in legislation. Finland complies at the annual level with the obligations regarding the number of samples and analyses set in the European Commission's control programme. Member States are able to plan controls indicated by their national risk-based needs within the framework of the national part of the control programme. In addition to the coordinated control programme and its national part, PPP residues are controlled as required under the regulation on organic production ((EC) No 889/2008), directive on certain substances and residues in live animals and animal products ((EC) 96/23) and the so-called high-risk product regulation ((EC) No 2019/1973). In addition to monitoring compliance with these provisions,

PPP residue control produces information on the current situation of residues in domestic and imported products (from the EU Member States and third countries).

PPP residue control is also a part of the control of cross-compliance under the EU Common Agricultural Policy. If any non-compliances with the regulations that concern PPP residues are detected in a sample taken from a Finnish food product, auditors from the Centre for Economic Development, Transport and the Environment will control the use of pesticides on farms under the Finnish Food Authority' supervision. On farms that have applied for agricultural aid, supervision will, if necessary, be enhanced further to control cross-compliance.

Authorities work together to control PPP use and residues in food. The residue control programme is carried out in collaboration between municipal food control authorities (Finnish products and imported products once they enter the Finnish market), the Customs (other than animal-derived products from the EU internal market and third countries as they arrive) and the National Supervisory Authority for Welfare and Health Valvira (alcoholic beverages). The Finnish Food Authority also monitors Finnish organic products and animal-derived food products for PPP residues.

The control plans were implemented rather successfully as a whole, although the actual numbers of domestic plant-based products inspected, samples of animal origin, and plant-based products under organic legislation in the Finnish Food Authority's area of responsibility remained slightly below the planned level. On the other hand, the number of animal-derived samples referred to in the legislation on organic products collected by the Finnish Food Authority and the samples taken by the Customs and Valvira exceeded the plans. The Customs also took follow-up samples and samples based on the so-called high-risk product regulation (EU) 2019/1793 not included in the actual plan. For the actual number of samples compared to the goals of the PPP residue control plan, see Table 56.

Table 56. Results of PPP residue control (number of samples) compared to the plan in 2018–2021

Year	Customs			Finnish Food Authority			National Supervisory Authority for Welfare and Health		
	Plan	Actual number	%	Plan	Actual number	%	Plan	Actual number	%
<b>2021</b>	1.500*	1670	111.3	TOTAL 656	TOTAL 637	97	15	21	140
				138 (1)	127 (1)				
				0(2)	0(2)				
				221 (3)	189 (3)				
				237 (4)	229 (4)				
				60(5)	92(5)				
<b>2020</b>	1.500*	1542	103.0	TOTAL 602	TOTAL 525	87	15	22	147
				134 (1)	124 (1)				
				2(2)	2 (2)				
				230 (3)	206 (3)				
				234 (4)	191 (4)				
				2(5)	2 (5)				
<b>2019</b>	1.500*	1318	88.0	TOTAL 727	TOTAL 689	94.8	25	22	88
				135 (1)	117 (1)				
				10 (2)	10 (2)				
				206 (3)	205 (3)				
				296 (4)	285 (4)				
				80 (5)	72 (5)				
<b>2018</b>	1285	1321	103.0	TOTAL 606	TOTAL 575	94.9	25	20	80
				130 (1)	100 (1)				
				5 (2)	5 (2)				
				182 (3)	183 (3)				
				289 (4)	287 (4)				
				- (5)	- (5)				

\*the method used by the Customs for calculating planned samples has changed as from 2019.

<sup>1</sup>fruit and vegetables (incl. 12 organic samples in 2021)

<sup>2</sup> baby foods, infant formulas and weaning products

<sup>3</sup> foods of animal origin

<sup>4</sup> organic vegetables and plant-derived products (organic legislation)

<sup>5</sup> organic animal-derived products (organic legislation).

A total of 2,328 samples were tested as part of PPP residue control. Taking the measurement uncertainty into account, the maximum residue level (MRL) of PPPs determined in legislation was exceeded, or the requirements of legislation on organic products regarding residues were not fulfilled, in 71 samples in total (3.0% of the samples). Of these, foods violating organic legislation in which residues prohibited in organic production were found consisted of two samples of Finnish products and eleven products imported into Finland from third countries. The residue content of all products in breach of organic legislation was below the maximum level set for the corresponding conventional product, and they were consequently



fit for consumption as conventional foods. Two of these samples were issued with a notice, however, as their residue concentration was close to the maximum level taking the measurement uncertainty into account. The number of samples non-compliant with the Food Act consequently was 68 (2.5%). The competent food control authorities took the necessary measures in all cases of non-compliant products.

PPP residues were found in 956 samples (57%) taken from imported products (from EU Member States and non-EU countries), the largest part of which were fresh fruit and vegetables and rice. Non-compliant levels of PPPs led to the rejection of 68 product batches. Eleven of these batches were organic products containing residues prohibited in organic production. Any non-compliant products were prevented from entering the food product chain, and follow-up samples were taken from subsequent batches before releasing them to the market. Non-compliant product batches were destroyed in most cases. Numerous non-compliances that resulted in the prohibition of import or entry to market were detected in rice imported from India and Pakistan and oranges from Egypt.

In addition, 76 imported batches were given notices due to their PPP residue content. The residue levels of these batches were at, or slightly exceeded, the MRL but could not be verified as non-compliant due to the measurement uncertainty in the tests. Of these batches, 60 were food products imported directly from non-EU countries to Finland, and 16 were food products sold in the EU internal market, some of which had originated from outside the EU.

As part of the control of PPP residues, 71 batches of products placed on the market which were potentially an immediate health hazard to consumers were detected, or information on them was obtained, through the EU's RASFF rapid alert system. In these cases, the acute toxicity reference value was exceeded, or residues of a PPP not approved in the EU were detected. Among product recalls within the scope of PPP legislation, those resulting from ethylene oxide residues detected in food additives, such as xanthan gum, carob flour and psyllium husk powder, were prominent in 2021. These consumer recalls were made regarding numerous different batches of 72 products. Based on a risk assessment, 27 batches that were non-compliant in terms of PPPs were reported to the other Member States via the RASFF system.

In the 637 samples taken from Finnish products, residues that did not exceed the MRL level were found in a total of 37 samples (5.8%). These products included strawberries, cucumbers, Chinese cabbages and peppers as well as fat samples from reindeer. In addition, one fat sample taken from a reindeer was non-compliant due to hexachlorobenzene residues. It is assumed that this residue originated in natural products eaten by freely ranging reindeer. A muscle sample taken from the same reindeer was compliant, however. Pesticide residues prohibited in organic products were found in two samples of organic products from Finland. These included a small batch of flour and a rye sample. No clear reason could be found for the residues contained in these products. The samples that violated organic product legislation were, however, compliant with the requirements of the Food Act.

See Table 57 for the share (%) of samples not compliant with the Food Act in 2018–2021 and the share (%) of non-compliant samples out of all samples tested. See Table 58 for the numbers of products that were non-compliant with the provisions of food and organic legislation and products that received a notice in 2021.

Table 57. Percentage (%) of non-compliant samples (non-compliant as conventional foods with residue content exceeding the MRL) in 2018–2021

Year	Sample number	Non-compliant	Non-compliant
	number	number	%
2021	2328	58*	2.5
2020	2089	48*	2.3
2019	2029	34*	1.7
2018	1915	66	3.4

\* From 2019, non-compliant samples do not include samples which have been given notices during investigations carried out by the Customs, which were included in 2018.

Table 58. Share of non-compliant samples (food and organic legislation) detected in PPP residue control out of all samples in 2021

Origin	Customs				Finnish Food Authority			National Supervisory Authority for Welfare and Health		
	Samples tested	Residues found	Notices	Non-compliant	Samples tested	Residues found	Non-compliant	Samples tested	Residues found	Non-compliant
Finnish	0	0	0	0	637	40	3 <sup>4</sup>	0	0	0
EU products	809 <sup>1</sup>	428	16	14	0	0	0	17	0	0
Third-country products	861 <sup>2</sup>	528	60	54 <sup>3</sup>	0	0	0	4	0	0
<b>Total</b>	<b>1670</b>	<b>956</b>	<b>76</b>	<b>68<sup>3</sup></b>	<b>637</b>	<b>40</b>	<b>3<sup>4</sup></b>	<b>21</b>	<b>0</b>	<b>0</b>

1) Some samples were of third-country origin (the origin of all samples is not known)

2) 'Customs cleared products', or products imported to Finland from third countries, would be a more appropriate term

3) Incl. eleven organic samples non-compliant with organic product legislation, which had a residue content lower than the MRL set for conventional products but close to MRL and which, as ordinary products, would belong to the group 'notice issued'

4) Incl. two organic samples not compliant with organic legislation which had a residue content lower than the MRL set for the conventional product

In addition to the PPP tests, municipal food control authorities conducted a total of 20 inspections that focused on the adequacy and effectiveness of own check controls of PPP residues within the framework of the Oiva system (Oiva line 17.12). The control authorities have received instructions for risk-based selection of control sites monitored for PPP residues based on the impact and scope of the inspections. In 2021, all Oiva inspections resulted in A ratings, meaning that no shortcomings were observed in the management of PPPs (Table 59). As in previous years, it is likely that few inspections were carried out in 2021 in proportion to the assumed number of sites to be inspected. Training and guidance are still needed in order to improve the effectiveness and uniformity of control. The Control Network for Contaminants and Pesticide Residues organises training around three times a year and also strives to develop the Oiva monitoring of PPP residues. In addition, a guideline for the control of PPPs and contaminants is under preparation in 2022. This guideline also aims to make identifying the sites to be inspected easier.

Table 59. PPP residue control and its results as part of the Oiva system of the municipal food control authorities in 2018–2021

Year	Inspections	A	B	C	D	Guidance and advice	Notices	Coercive measures
	number	%	%	%	%	Number	Number	Number
2021	20	100	0	0	0	-	-	-
2020	21	95	-	5	-	-	1	-
2019	20	100	-	-	-	-	-	-
2018	32	100	-	-	-	-	-	-

## 8.3 Contaminants

The control programme for food contaminants is implemented as required under the EU legislation (No 1881/2006 (EC), as amended) and the Commission's monitoring recommendations. The objective of the control is to ensure that the levels of harmful contaminants do not exceed the MRL levels defined in the legislation and/or the levels considered safe, while also producing information on the current national status. The content of contaminant control has so far not been laid down in EU legislation. Consequently, the Member States plan the control according to their national risk-based needs.

The main focus of tests coordinated by the Finnish Food Authority is on creating national situational awareness and drafting legislation. In 2021, the sampling programme included in the control plan coordinated by the Finnish Food Authority was implemented well, and only some of the planned samples were not taken (Table 60). The foodstuffs tested in 2021 included salads, broccoli, Chinese cabbage, peppers, beetroot, berries, wheat, eggs, smoked meat and fish.

Table 60. Shares (%) and numbers of planned and actual samples tested for food contaminants in 2012–2021 (control and survey by the Finnish Food Authority)

Year	POPs	Nitrate	PAH	Acrylamide	Heavy metals	Mould toxins	Coumarin	Radioactive substances	Perchlorate	Erucic acid
	number/ %	number/ %	number/ %	number/%	number/ %	number/ %	number/ %	number/%	number/%	number/%
2021	10/100	10/100	20/100	-	31/103	9/75	-	-	-	-
2020	10/90	10/80	-	-	27/100	20/95	-	-	-	-
2019	10/100	10/100	17/100	16/84	41/114	12/50	-	-	-	17/100
2018	10/100	7/70	-	-	20/67	12/60	-	-	-	-
2017	10/100	12/120	34/85	40/100	34/85	8/80	-	-	-	34/85
2016	10/100	10/100	30/100	-	118/97	20/75	-	-	-	-
2015	-	15/67	10/120	-	-	71/82	-	-	50/100	-
2014	40/90	11/92	-	46/93	46/93	44/95	-	60/100	-	-
2013	40/90	32/78	-	32/44	46/93	34/94	30/100	-	-	-
2012	40/100	38/76	225/74	32/0	50/100	20/80	14/100	-	-	-

A total of 80 samples were examined as part of the control and survey coordinated by the Finnish Food Authority. The samples were analysed for several different compounds. Salads (n=10) were tested for nitrates, wheat grains (n=9) for mycotoxins, and broccoli (n=5),

Chinese cabbage (n=5), peppers (n=6), beetroot (n=5), berries (currants and highbush blueberries, n=5) and wheat (n=5) for heavy metals. Organic eggs (n=5) and free range eggs (n=5) were tested for dioxins, dioxin-like PCBs, indicator PCBs, perfluorinated surface treatments and brominated flame retardants. Traditional hot-smoked meats and meat products (n=10) and traditional hot-smoked small fish (at most 20 cm, and European river lampreys of all sizes) and fish products made from small fish (n=10) were tested for PAHs. The tests of smoked products were related to the permanent PAH derogation granted to Finland in 2020, which makes it possible for Finland to permit in its domestic market traditional smoked meat and meat products as well as traditional smoked small fish and fish products made from them, to which higher PAH maximum levels apply. The precondition for the PAH derogation is that the Member State monitors the presence of PAH compounds. In one smoked elk meat sample, the maximum permitted PAH levels were exceeded, whereas no other non-compliant products were found (Table 62). For some of the compounds, no maximum limit has so far been set in legislation (including perfluorinated surface treatments, brominated flame retardants, certain heavy metals and mycotoxins), but as a rule, their concentrations in foodstuffs were also very low. However, relatively high levels of perfluorinated alkyl compounds (PFAS) were found in some organic eggs. To identify the cause for this, the municipal food control authorities have requested feed reports from the production farms and information on any industry in the vicinity that might explain the higher concentrations. More extensive analysis of PFAS compounds in organic eggs will continue in 2022. In addition to these tests, the Finnish Food Authority has additionally also looked at contaminants within the framework of the contaminant control programme for animal-derived food products (section 8.1) and veterinary border inspections (section 3.1).

*Table 61. Number of samples tested as part of the control and survey of food contaminants (coordinated by the Finnish Food Authority) and the percentage of non-compliant products (%) in 2012–2021*

Year	Number of samples tested	Percentage of non-compliant samples
2021	80	1 (***)
2020	63	0
2019	100	0
2018	49	0
2017	172	2(**)
2016	179	1 (*)
2015	80	0
2014	149	0
2013	99	0
2012	316	2

\*) In two raw grain samples, the maximum permissible limit defined for ergot sclerotia in the legislation was exceeded.

\*\*) The maximum allowed limit defined for ergot sclerotia in legislation was exceeded in three raw grain samples. In one arugula sample, the maximum allowed limit defined for nitrate in legislation was exceeded.

\*\*\*) In one smoked elk meat sample, the legislative maximum limit for PAHs was exceeded. The municipal food control authorities initiated appropriate control measures to rectify the smoking process before new products can be placed on the market.

In addition to control coordinated by the Finnish Food Authority, the Finnish Customs and the municipal food control authorities have also monitored contaminants in foodstuffs. In 2021, the Customs tested a total of 1,022 food samples in different product groups for contaminants. These tests found 16 non-compliant products (Table 62). The largest number of samples, or more than 700, were tested for mycotoxins (ochratoxin A, aflatoxins, patulin

and fumonisins). Two product batches (children's biscuits, dried figs) were rejected because of ochratoxin A, and eight batches (nuts, mixtures of nuts and nut products (n=3), sesame seeds (n=2), dried dates (n=2) and chili pepper spice) were rejected due to aflatoxins. Products were also tested for PAHs, acrylamide, heavy metals and nitrate. Five product batches were rejected due to heavy metals (food supplements (n=3), risotto rice (n=2)) and one batch (spinach) was rejected due to nitrate.

*Table 62. Quantities of contaminant samples tested by the Customs in 2021 by product group and percentage of non-compliant samples*

Product group	Samples number	Non-compliant number	Non-compliant %
Fats and oils as well as fat and oil emulsions	25	0	0
Fruit and vegetables	176	4	2.3
Sweets	8	0	0
Cereals and cereal products	123	2	1.6
Bakery products	89	0	0
Fish and fish products	18	0	0
Foods for special diets	39	1	2.6
Non-alcoholic beverages	94	0	0
Alcoholic beverages	4	0	0
Food supplements	84	3	3.6
Processed foods not included in these groups	32	1	3.1
Other foods not included in these groups	330	5	1.5

Municipal food control authorities conducted a total of 372 inspections related to food contaminants within the framework of the Oiva system. See Table 63 for the distribution of inspection results. In 2021, most of the Oiva inspections resulted in A ratings (88%–100% of the Oiva lines); in other words, no shortcomings were observed in the management of contaminants. However, a slight increase could be seen in the shares of B and C ratings, especially for contaminants resulting from processing (Oiva line 17.15). Rather than indicating that the management of contaminants has taken a turn for the worse, this probably means that the control authorities' knowledge of these issues and, consequently, their courage to intervene has increased. C ratings were issued nine times in total in 2021. The most typical shortcomings were associated with the fact that food sector operators had not taken acrylamide or PAH control into account in their own checks. All in all, the results indicate that food contaminants were inspected fairly infrequently in relation to the assumed number of sites to be controlled. What needs to be considered is whether all sites that need to be inspected have been identified and if the assessment scale is used correctly. Training and guidance are still needed in order to improve the effectiveness and uniformity of control. The control network for contaminants and pesticide residues is a means of advancing this goal.

Table 63. Food contaminant control and its results as part of the Oiva system implemented by municipal food control authorities in 2017–2021

Oiva line to be inspected	Year	Inspections number	A %	B %	C %	D %	Guidance and advice number	Notices number	Coercive measures number
17.13 Contaminants from the environment	2021	25	100	-	-	-	-	-	-
	2020	15	86.7	6.7	6.7	-	2	1	-
	2019	26	96.2	3.8	-	-	-	-	-
	2018	25	96	4	-	-	1	-	-
	2017	21	81	19	-	-	4	-	-
17.14 Mycotoxins	2021	18	94	6	-	-	-	-	-
	2020	23	87	8.7	4.3	-	2	1	-
	2019	17	100	-	-	-	-	-	-
	2018	32	100	-	-	-	-	-	-
	2017	22	95	-	5	-	-	1	-
17.15 Contaminants resulting from processing	2021	319	88	9	3	-	29	10	-
	2020	318	91.5	7.2	1.3	-	44	5	-
	2019	348	91.6	7.0	1.1	0.3	-	-	-
	2018	112	91	7	3	-	18	3	-
	2017	62	81	16	3	-	10	2	-
17.16 other contaminants	2021	9	100	-	-	-	-	-	-
	2020	2	100	-	-	-	-	-	-
	2019	8	100	-	-	-	-	-	-
	2018	19	100	-	-	-	-	-	-
	2017	25	96	-	4	-	-	1	-

For the time being, national needs have been addressed in contaminant control, and the Member States have been able to plan the control from their national starting points. The announced amendments to EU legislation will significantly change the control of contaminants as from 2023; in the future, EU regulations will require the Member States to implement an annual control programme for certain contaminants. There will also be minor changes to control systems. As far as possible, efforts will be made to ensure risk-based sampling that targets the foods in which contaminants are the most likely to occur, both in terms of timing and location, also in the future.

## 8.4 Control of genetically modified foodstuffs

As no GM plants are cultivated in Finland for food, all genetically modified food products are imported, which means that the main focus of the authorities' product control is on the import controls of the Customs. Own checks of genetically modified foods in Finland are part of the Oiva control system. Coordinated by the Finnish Food Authority, around ten food samples are additionally taken every year with a risk-based approach as part of the control of genetically modified food.

In 2021, the compliance of genetically modified ingredients and their marketing was controlled on 32 Oiva inspections. While 97% of the inspections found no shortcomings, guidance was provided on 6% of them (Table 64).

Table 64. Monitoring of genetically modified ingredients in the Oiva system in 2021

Year	Number of inspections	Rating A	Rating B	Rating C	Rating D	Guidance (number)
2021	32	31	1	-	-	2

Nine food samples were taken following the Finnish Food Authority's monitoring and sampling instructions. The samples were taken by local food control authorities and the Finnish Food Authority's inspection veterinarians, and they were analysed in the Finnish Food Authority's laboratory.

Risk-based sampling was targeted at ingredients or finished foods that could contain GM materials. Organic products and products claiming to be 'GMO free' are also subject to the controls. Where possible, the samples were collected from raw materials used in production, making it possible to control the products entering the market in the early stages of their production chain. In 2021, the samples contained soybeans, soy flour, a soya protein product, maize, maize flour and crushed linseed.

The plan was to take ten samples (90% of which were actually taken). No genetically modified ingredients exceeding the limit of determination were found in any of the samples (Table 65). The label of one soybean sample contained the 'GMO free' claim, which is also used in products made from these soybeans.

*Table 65. Results of the GM sample collection coordinated by the Finnish Food Authority in 2021*

	Number of samples	GM detected (%)	GMO concentration exceeds the limit or unapproved GMO (%)	Voluntary marketing claim 'GMO free' in use (%)	Compliant samples (%)
2021	9	0	0	11	100

The Customs controls the conformity of plant-derived food products and composite food products imported from outside the EU and from EU Member States to Finland. The Customs analyses around 150 to 200 food samples each year for genetically modified ingredients. More information on customs control can be found on the Customs Laboratory's website at: <https://tulli.fi/en/web/tullilaboratorio/front-page>

## 8.5 Harmful and prohibited substances in feed

Feed control covers the whole supply chain from the primary production of feed to manufacture, import, export, marketing, storage, transportation and use on farms. The guidelines for official sampling of feeds are issued and the analyses are defined with a risk-based approach, and they account for the risk factors related to different types of feeds, including the possible transfer of certain harmful and prohibited substances to animal-derived foodstuffs or the possible sensitivity of animal species to different substances. Multi-methods are used extensively in the control to detect harmful and prohibited chemical as well as nutritional substances.

The targets for sample numbers in the official control of feeds were mainly reached according to plan in each area of control in 2021. While the official sampling activities of feeds partly had to be concentrated on certain periods due to the COVID-19 situation, they were mainly carried out as planned. The results of feed sample controls indicate that feeds produced and placed on the market in Finland for the most part continued to meet the safety and quality requirements laid down in feed legislation.

[Feed control report 2021 \(pdf; in Finnish\)](#)

[Analysis results of samples taken by the authorities](#) on the Finnish Food Authority's website (in Finnish).

The Finnish Food Authority had at its disposal a number of different multi-methods and/or combinations of methods for analysing feed samples that could be used to simultaneously investigate both harmful/prohibited chemical substances and nutritional constituents. A total of 14,984 analyses were conducted on the 3,385 samples collected as part of official feed control. Analyses of harmful and prohibited substances in feeds accounted for 84% of all official analyses (12,626 analyses). The official samples were extensively tested for residues of such substances as mycotoxins, heavy metals, pesticides, coccidiostats, medicinal products/other prohibited substances and genetic modification as well as the occurrence of ingredients/organisms banned in feed. Of all tests for harmful and banned substances in feeds, 67.1% were chemical analyses (8,472/12,626 analyses).

No non-compliant concentrations of mycotoxins, melamine and other nitrogen compounds, GTH markers, dioxins and PCBs, plant protection products, residues of active substances of coccidiostats or medicines were found in feeds in 2021. Additionally, no non-compliances were detected in feeds relevant to the control of genetically modified organisms, meaning that GMOs not approved in Europe were not found. Neither were any residues of approved genetically modified materials found in feeds that would have made it necessary to label the feed as genetically modified.

Heavy metals were found in one case of raw frozen pet food prepared by a Finnish producer, in which the cadmium concentration exceeded the maximum permitted level. The marketing of the batch in question was banned, and the batch was recalled. Horse meat and internal organs had been used as ingredients for raw frozen food. Cadmium accumulates in internal organs, in particular, and the feed business operator had not sufficiently accounted for this issue in the portions of the different raw materials used in the product. As a result of this case, the operator ceased to use horse meat and internal organs as ingredients in feed manufacture and also destroyed a newer batch of the corresponding product.

In another case, a complementary feed intended for specific nutritional needs of dogs manufactured by a Finnish producer was found to contain zinc citrate, which is a banned substance. Zinc citrate is an approved food additive and may be used in food supplements containing trace elements. It has not been approved as a feed additive, however, which means its use in feed manufacturing is not permitted. The marketing of this feed batch was prohibited, and the producer was ordered to destroy it. The operator was given an order to ensure that the composition of the feed, trace element concentrations and product labelling are compliant with the legal requirements.

The production volume of medicated feeds for food-producing animals was low during the year under review. Medicated feed was only produced for fish and piglets. Drug production and residue management by operators manufacturing medicated feeds were inspected in connection with the statutory inspections of these operators' establishments under the regulation on feed hygiene. The production volumes of medicated feed for fur animals also decreased significantly compared to the previous year.

For more detailed information on the preparation of medicated feeds, see the Finnish Food Authority's website.



## 8.6 Food allergens

An allergen defect is a case in which a product contains an ingredient which causes an allergy to some consumers (an allergen) but which is not listed on the label.

In 2021, a total of 73 cases of serious allergic reactions were reported to the Finnish National Anaphylaxis Register, 47 of which were caused by food, which is similar to the report numbers in 2019–2020. In 2018, 62 cases were reported, 39 of which were caused by food.

An allergen defect is a typical cause of recall. The number of recalls made due to allergen defects in 2021 remained at the same level for the second consecutive year (37), which is 14% of all recalls. In 2019, as many as 54 recalls related to allergens were made (27% of all recalls), and in 2018, the number of these recalls was almost three times as high as in 2017.

The underlying causes of allergen defects include allergen contamination in production, a labelling error or a product ending up in the wrong packaging.

Oiva inspections assess the control of allergens and substances that cause intolerance (Table 66). The inspection results in all sectors were very similar to the Oiva inspections in 2020. Based on the Oiva ratings, the activities fulfil the requirements as a rule, or only minor shortcomings have been observed in them.

*Table 66. Oiva results – allergens and substances that cause intolerances in 2021*

Sector	Inspected	Result/Number of inspections (%)			
		A	B	C	D
Food service	5983	5821 (97)	140 (2)	22 (0)	0 (0)
Food sale	671	642 (96)	19 (3)	10 (1)	
Food production/Fish sector	92	81 (88)	7 (8)	4 (4)	
Food production/Meat sector	213	174 (82)	33 (15)	5 (2)	1 (0)
Food production/Dairy sector	75	73 (97)	1 (1)	1 (1)	
Food production/Cereal and vegetable sector	297	288 (97)	7 (2)	2 (1)	
Food production/Other	79	74 (94)	5 (6)		
Food storage and freezing	10	10 (100)			

## 8.7 Nutritional safety

The Finnish Food Authority promotes nutritional safety by publishing on its website [population-level nutrition recommendations and other food recommendations intended for specific age groups and other target groups](#) produced by the National Nutrition Council. The Finnish Food Authority has ensured that all recommendations also include [general instructions on safe use of foodstuffs](#). The Finnish Food Authority maintains the instructions on safe use of food and publishes them on its website in Finnish, Swedish and English. The instructions on safe use have been updated based on feedback received through the online service, and the underlying evidence and expert knowledge base have been checked.

The Finnish Food Authority actively informs food system operators, social and health service professionals, municipalities and regional operators about health and sustainability enhancing, diverse, varied and moderate eating and special nutritional issues, thus promoting nutritional safety. The Finnish Food Authority's website offers a large information package [on wellbeing from nutrition \(in Finnish\)](#) which, in addition to information, contains operating models, good practices and self-assessment tools as well as national monitoring data on the population's food use and nutrition and the promotion of nutritional health.

Nutrition safety has been addressed in the [draft for the Nutritional treatment recommendation](#), which is undergoing an update. A specific section on food restrictions applicable to hospital food for patients with a weak immune system has been included in it. The recommendation also covers the basics of food hygiene, own checks, product information (including information on allergens and avoiding contamination), nutritional quality monitoring, internal audits and the Oiva system.

The Nutrition Commitment system administrated by the National Nutrition Council was maintained as part of Society's Commitment to Sustainable Development ([www.sitoumus2050.fi](http://www.sitoumus2050.fi)). An [evaluation report and development plan](#) have been completed on the Nutrition Commitment operating model. Underpinned by stakeholder feedback, the evaluation was in favour of continuing the use of this operating model: the model will be developed on the basis of proposals in cooperation with the Finnish National Commission on Sustainable Development, Motiva and stakeholders. By means of the Nutrition Commitments, food sector operators, the food industry, trade, mass catering and the food media can make visible their nutritionally responsible activities aiming to implement nutrition and food recommendations and improve the nutrition of the population. At the end of the year, the system consisted of around 70 commitments, most of which include a number of measures aiming to, among other things, improve the nutritional quality of food and to increase the supply and availability of meals and snacks compliant with the recommendations.

## 9 FOOD SAFETY RISK ASSESSMENT AND RESEARCH PROJECTS

### Risk assessment

Risk assessment related to food safety is carried out in multiannual projects focusing on specific themes. Due to the COVID19 pandemic, several projects are behind schedule.

[Rapid risk assessments](#) in crisis situations (systematic collection of up-to-date information on risks and risk factors) were conducted in association with SARS-CoV-2 and discussed from the One Health perspective. Participation in the Finnish Food Authority's SARS-CoV-2 work has continued since the beginning of the pandemic. Other continuous work has included various other expert services, monitoring of GM and novel foods imported into the EU internal market, participation in international and national working groups, including the EFSA Emerging Risks Exchange network and the National Nutrition Council, as well as training provision. The information, communication and risk assessment activities of the European Food Safety Authority (EFSA) between Finland, the EFSA and different Member States through the [EFSA Focal Point](#) hosted by the Finnish Food Authority have been lively.

Research on environmental risks affecting the food production chain has continued in the [Cysticercosis in cattle project](#) with the aim of assessing the possibilities for lightening the workload in different stages of meat inspection. The risk assessment part of the [LEX4BIO project](#) will only be launched in autumn 2022. This project seeks optimal recycled fertilisers and fertilisation methods to reduce adverse environmental impacts.

Food-borne viral diseases are expected to increase globally. The [VirSta](#) project assesses the effects of food production on the stability of hepatitis E (HEV) and African swine fever virus (ASFV) in foods containing pork. This project will also produce assessment tools for and information packages on HEV for the different stages of the food chain. Exposure to carcinogenic contaminants (process contaminants) and the burden of cancer associated with them are evaluated in the [risk assessment of process contaminants](#). During the year, research teams from outside Finland have also joined the research group of this project.

The [risk profile \(pdf\)](#) completed in the [Contaminants project](#) [https://www.ruokavirasto.fi/globalassets/yhteisot/riskinarviointi/projektit/ruokaviraston\\_tu\\_tkimuksia\\_1\\_2021\\_220921.pdf](https://www.ruokavirasto.fi/globalassets/yhteisot/riskinarviointi/projektit/ruokaviraston_tu_tkimuksia_1_2021_220921.pdf) to support the planning of food control highlighted key contaminants requiring monitoring in Finland and the knowledge gaps associated with them. The efforts to produce a more accurate estimate of [additive intake](#) were continued to support the monitoring of industrial use and consumption of food additives. The Finnish Food Authority participated in [The Just Transition – JUST-FOOD](#) project by producing an estimate of the impacts that different dietary options have on the heavy metal and mycotoxin exposure of Finnish people.

The statistical risk assessment models developed by the Finnish Food Authority are publicly available as open source codes and, if necessary, they can be modified for the user's needs. In recent years, turning them into computer applications has also become important from the perspective of international cooperation. The applications and source codes are available free of charge for all interested parties in model databases, including [GitHub](#) and [EFSAn Knowledge Junction](#). The use of artificial intelligence to make searches for information more efficient has continued.

The results of the [COMRISK project](#) concluded in 2020 emphasised the importance of communicating about risk assessments. This is why easy-to-use interfaces and tools are also being developed for the models, including the [RiskRanking](#), which illustrates food safety risks, and the [BIKE](#) model, which assesses consumer exposure to chemical and biological hazards. In addition, the modelling of food use data for the needs of risk assessment was studied using alternative methods.

As a continuation of COMRISK, the [ENCOMRAN](#) project was launched. Based on its results, EU level risk communication capabilities will be improved, and common guidelines will be created for more open risk communication and a more efficient risk analysis process. The [FS4EU project](#), the parties in which include not only risk assessment and risk communication actors but also all those participating in risk analysis together with their stakeholders, is also making an effort to improve communication and interaction between the different parties.

Efforts have also been made to improve risk assessment communication in everyday work both externally and within the Finnish Food Authority. Not only articles in professional journals and general press but also [a report on key food contaminants](#) were published in 2021. Additionally, a scientific article on the [BIKE model](#) and an article on [changes in the heavy metal exposure of adults](#) when they change their food use were published. The Finnish Food Authority also participated in an expert evaluation of FAO/WHO guidelines on [microbiological food risk assessment](#).

### **Research on microbiological food safety**

Finnish Food Authority and the University of Helsinki studied the occurrence of antimicrobial resistance and its prevention measures in joint projects.

A study examining plasmid epidemiology of ESBL bacteria found that a total of 4.5% of barnacle geese (n=200) were [ESBL \*E.coli\* carriers](#).

A project focusing on Africa studied bacteria in raw meat and found that 96% of the samples (n=100) contained *Escherichia coli* bacteria resistant to third-generation cephalosporins. In the same study, their occurrence in Finnish meat was 2%.

A joint project with the University of Helsinki studied the possibility of using bacteriophages (phage therapy) [to prevent the occurrence of MRSA bacteria in pig production](#). This Finnish project also examined the connection between the use of antibiotics for pigs and [the occurrence of resistant bacteria on farms](#).

A research project was carried out in 2020 with two slaughterhouses to investigate STEC sampling and analysis methods in slaughter cattle. The analysis of full genome sequencing results was completed in 2021. A total of 172 carcass surface swab, faecal and meat samples were examined in the project. STEC bacteria confirmed by culture were found in 9 out of 85 (11%) carcass swab samples and in 10 out of 70 (14%) faecal samples. No STEC bacteria were found in the meat samples (17 samples). The 21 isolated bacterial strains represented 15 different serotypes. More than a half of the STEC strains isolated from faeces and one fifth of the STEC strains isolated from carcass surfaces represented toxin genotypes that are assessed to have a high potential to cause severe symptoms ([FAO/WHO, 2018](#)). No STEC strain serotype O157 were found in the study (*E. Coli* O157). In 2021, *E. coli* O157 faecal sampling was replaced by cattle carcass surface swab sampling in STEC monitoring. The programme also expanded to include the entire STEC bacterial group. As analytics covers the

entire STEC group, this will provide plenty of additional information on the presence of STEC bacteria in Finnish cattle carcasses.

### **Chemical food safety and nutrition**

The final report of the National project on monitoring salt and nutrition value 2019–2021 initiated together with the Food Composition Division in summer 2019 was completed (section 10.3). In addition to planning, the Chemistry Unit participated in the analysis of samples. Slightly more samples were collected than planned. Of 138 samples in total, 38 were breads, 31 sausages and meat products used as cold meats, and 62 were convenience foods. The samples were analysed by the Chemistry Division. The sodium content was measured in sausages, cold meats and breads, which made it possible to calculate the amount of salt in the products. Fat, saturated fat (or saturated fatty acids), carbohydrates (sugars + starch), protein and salt content were additionally determined in convenience foods in keeping with the mandatory nutritional labelling. In addition, their ash and moisture contents were analysed and energy content calculated. Composition data on the selected samples were also submitted to the Fineli database. The final report is available on the [Ruokavirasto.fi](http://Ruokavirasto.fi) website.

The first part of a two-stage monitoring project funded by the Ministry of Agriculture and Forestry, 'Trans fat situation in the Finnish food market', was completed. The purpose of the project is, by using certain food, to monitor the impacts of the legislative amendment on trans fats in food sold to consumers in the Finnish market. Under Regulation (EC) No 2019/649, the maximum amount of trans fat other than that naturally present in fats of non-animal origin (industrial trans fats) in foodstuffs is 2 g/100 g. In the first part of the project, the concentration of added trans fat in foods was studied before the legislation entered into force, whereas in the second part, the study will be repeated once the legislative amendment on trans fat has been in force for at least one year. In addition, the calculation method of the industrial trans fat content following guidelines issued by the EU Joint Research Centre (JRC) was tested. The samples consisted of 122 foods that were expected to contain trans fat, including ice creams, vegetable fat mixtures, biscuits and various frozen foods. The fat content and fatty acid composition of the samples was analysed, and their natural and industrial trans fat content was calculated. The trans fat concentrations of the tested samples were low. Only two products exceeded the maximum requirement of Commission Regulation (EU) 2019/649. However, consumers can be expected to only use them occasionally. The samples were compliant with the legislation in force at the time of sampling. Composition analyses of these samples were also produced for the National Food Composition Database Fineli. The second part of the project will be conducted in 2022–2023.

## 10 PRIORITIES OF FOOD SAFETY IN 2021

### 10.1 Priorities of food safety control related to Oiva lines

#### **Control of maintenance (Oiva lines 2.2 and 2.3) and cleaning (Oiva lines 3.1 and 3.2)**

Supervising maintenance and cleaning was a priority of control both at registered and approved food establishments in 2021. The Finnish Food Authority started planning this work in 2019. The control of these priority areas continued in 2021, as some of the planned control visits could not be carried out in 2020 due to the COVID-19 epidemic. This priority area comprises Oiva lines 2.2 and 2.3 related to maintenance and lines 3.1 and 3.2 related to cleaning discussed below. The Finnish Food Authority will report and communicate on the control results in 2022 and 2023.

Maintenance and cleaning are basic elements in the operation of food establishments. Should these areas fail, contamination and poor condition of surfaces may impair food safety. With regard to maintenance and cleaning, the aim is to ensure that the work of municipal control authorities is consistent, to intervene in any shortcomings identified, and to ensure that the shortcomings are addressed on the agreed schedule.

The work on priority areas consisted of municipal food control authorities inspecting the Oiva lines related to maintenance and cleaning at the inspection sites following the plan, in addition to other aspects that the inspection plan covered. Maintenance and cleaning were also priorities of control at the approved food establishments inspected by the Finnish Food Authority.

Before the actual inspections went ahead in practice, lectures on this topic were given in connection with some training events. Together with the different regional state administrative authorities, the Finnish Food Authority held five training events for the food control authorities in the relevant regions in 2020. In addition, training was provided for the inspection veterinarians of the Finnish Food Authority's Meat Inspection Unit. In 2021, five training events were also held together with different regional state administrative authorities for the regional food control authorities.

#### **Marketing control (Oiva line 13.3)**

Controlling the marketing of foodstuffs (Oiva line 13.3 Marketing) was selected as a priority of national food control in 2020 and 2021.

Almost every company markets its products. Considering this, the marketing of foodstuffs has been inadequately controlled. The objective of the prioritised work was to ensure that the marketing of food products is controlled regularly, food business operators are treated equally, food products are marketed in compliance with the legislation, and consumers are not misled.

The prioritised work consisted of municipal food control authorities conducting the planned inspections at food establishments and, in addition to other planned lines, also inspecting Oiva line 13.3 Marketing in 2020–2021. The Finnish Food Authority offered training,

guidelines and interpretations to support operators and communicated about food marketing and its control under the theme #pikkasenlaiton.

Thanks to the prioritised work, the control levels of food marketing increased almost twenty-fold. In 2021, the marketing of food products was controlled on the Oiva inspections of one company out of five. The number of inspections increased especially in the areas of food service and sales. For more information on the national results of food marketing control, see section 6.4. Marketing of food products.

## 10.2 Projects

### **National salt and nutritional value monitoring project 2019–2021**

The national salt and nutritional value project was carried out between 1 July 2019 and 30 June 2021. While this was intended as a one-year project, due to the Covid 19 pandemic it was continued for another year.

By using the policy instruments of control, the Finnish Food Authority aimed to contribute to reducing the use and intake of salt at population level. The control was targeted at food groups subject to the requirement of indicating a high salt content on the product label laid down in national legislation. In particular, the need to label a food as having a high salt content was assessed. Other information to be provided on the food apart from salt content and nutritional value was also checked.

A total of 317 foods were inspected, of which 217 were packaged and 100 unpackaged. A total of 170 packaged foods were analysed for their salt content and, in addition, 62 of these samples were also analysed for other nutrient information to be provided on the package. The labelling requirements for packaged foods were mainly inspected by food companies and the Customs. The Customs checked the labelling of 39 products and analysed their salt content. Information on unpackaged foods was checked at retail stores.

The checks of the labelling on packaged foods focused on convenience foods, bread, sausages and other meat products used as cold meats, which were also included in the samples. The results of labelling checks showed that recipes need to be inspected more often at food production sites. Few shortcomings were found in packaged products controlled and tested by the Customs.

Bread was the unpacked food item that was checked the most often. A written indication of the high salt content was missing from around one out of five unpackaged products with a high salt content.

A total of 131 foods were examined at the Finnish Food Authority's laboratory. The tests showed that a worrying number of packaged products with a high salt content is still available in the market. Based on the analysis results and tolerance limits, approx. one out of five products tested in the Finnish Food Authority's laboratory had a high salt content. The study found that more information is needed regarding the analysis results of fats, saturated fatty acids and carbohydrates.

Lowering the statutory limit value for high salt content in foods of all categories to 0.1 g/100 g would be one way of reducing the population's salt intake. Plant protein products replacing

foods of animal origin should also be taken into account in this context. The study confirms that the data in Fineli food composition database are highly valuable for food business operators and that they should be continuously updated and supplemented. The salt and nutritional value monitoring project improved the capacity of the Finnish Food Authority's laboratory to examine nutritional information in food labelling.

In May 2022, the Finnish Food Authority will publish a report on the national salt and nutritional value monitoring project. This report will provide more information on the project and its results.

### **Pathogens in packaged leaf vegetables 2018–2020 project**

In 2018–2020, a national project examining pathogens in packaged leaf vegetables was conducted. The project focused on the occurrence of pathogens in retailed ready-to-eat leaf vegetables, salad mixes and fresh herbs. The samples were tested for the occurrence of Shiga toxin producing *E. coli* (STEC), enteropathogenic *E. coli* (EPEC) bacteria, as well as bacteria in the *Bacillus cereus* group and the *Bacillus thuringiensis* bacterium that is one of this group. The samples were also tested for *E. coli* to assess their hygienic quality.

The samples were collected between February 2018 and the end of 2020. The COVID-19 pandemic made it necessary to suspend the project for about six months between March and October 2020. The samples were collected and basic tests on them were carried out by local food control units. The Finnish Food Authority was responsible for planning the project and conducting any further tests on the samples as well as for collating and reporting the results. The final report of the project will be published on the Finnish Food Authority's website.

As part of this project, a total of 259 samples from 16 regions of different environmental health care control units were tested. All samples were examined for the presence of the *B. cereus* group and *E. coli* bacteria, whereas 250 samples were analysed for EPEC and STEC bacteria.

Presumptive presence of STEC (stx-gene) was detected in four samples. The cultivation result was negative for all four samples, but one STEC culture test finding from a sample submitted for further testing due to a presumptive EPEC finding is about to be confirmed. A presumptive EPEC finding (eae- gene without stx-gene) was made in 20 samples. Twelve samples in which a sufficiently strong presumptive PCR signal was detected were confirmed by cultivation. EPEC was confirmed by cultivation in four samples. These results indicate that the presence of STEC- and EPEC-bacteria in packaged leafy vegetables is possible but not common.

In 16 samples,  $\geq 10\,000$  cfu/g of *B. cereus* group bacteria were found. Bacterial strains related to 15 of these samples were sent to the Finnish Food Authority's microbiological testing unit. Further testing confirmed *B. thuringiensis* in strains related to 12 samples. No *B. thuringiensis* was identified in one of these samples, and the strains in two samples were mixed cultures. Based on the results, a large proportion (but not all) of the high levels of *B. cereus* bacteria were explained by the use of a biopesticide.

Low concentrations of *E. coli* were found (< 10 cfu/g or < 100 cfu/g) in 245 samples. In two samples, this concentration exceeded 1,000 cfu/g. The results for one sample had not been reported.



## 10.3 Other priorities

### **Improving preparedness to monitor and combat fraud in organic production 2020–2023**

Control of organic production has shown that over the long term, fraud can be detected not only by collecting samples but also examining the operators' balance sheets. While the initial plan was to prioritise the control of organic production for three years, a decision was made to continue this priority until the end of 2023. The theme of fight against fraud was continued in 2021 by evaluating organic operators' documentation. In 2021, separate sections on the priority areas were integrated into other training provided for the control authorities.

The control results indicate a need to further stress to organic operators the importance of record-keeping and entries to verify the trustworthiness of organic labelling.

### **Control authority's toolkit**

Implementation of the (Food) Control Authority's Toolkit priority coordinated by the Finnish Food Authority began in 2021. The plan is to continue this priority until the end of 2024.

The overall objective is to build up the administrative competence of the control authorities and to carry out inspections effectively and consistently. An effort to reach this goal is made by putting together the knowledge and skills needed in food control as a food control toolbox, in which information can be found easily and in a comprehensible form. Areas will be added to the toolkit as needed, and different issues will be emphasised and developed in different years.

An implementation plan for 2021–2024 was prepared in 2021. It is to include compiling the existing guidelines into a handbook for control authorities, producing new instructions for the handbook, improving the Finnish Food Authority's website for the food sector, developing the section on foods of the Pikantti extranet for authorities, and providing training for control authorities.

The actual implementation of the plan began by compiling and classifying guidelines, guides and other materials intended for food control authorities. The materials were also compared to guidelines found on the websites of corresponding agencies in other countries, with the aim of finding good models. A survey was addressed to food control authorities, in which they were asked about their wishes and expectations regarding the work on the priorities and any particular needs for a specific tool. The respondents called for a clear, easy-to-use and well-structured toolkit that would also serve as orientation material for new inspectors. They would also welcome new guidelines on several topics. In addition, the planning of the structure and format of the control authority's handbook and the work to gather the existing guidelines to lay the foundation for the handbook were initiated.



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